

FEDERAL RESERVE BANK OF ST. LOUIS

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REVIEW

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The Federal Open Market Committee in 1977

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THE policy objectives of the Federal Open Market Committee (FOMC) in 1977, as repeatedly expressed in the domestic policy directive to the Federal Reserve Bank of New York, were "to foster bank reserve and other financial conditions that will encourage continued economic expansion and help resist inflationary pressures, while contributing to a sustainable pattern of international transactions."¹ By lowering their long-run ranges for growth of the monetary aggregates, the Committee also intended to move gradually toward longer-run rates of monetary expansion consistent with general price stability.²

The desire of the FOMC to reduce gradually the growth of the monetary aggregates to rates consistent with general price stability was also expected to help "re-establish a foundation for economic stability over the longer term."³ Elaborations of this position are found in Chairman Burns' quarterly reports of the Board of Governors of the Federal Reserve System to Congress. Chairman Burns noted in February of last year that "a healthy and prosperous economy can be achieved only by pursuing policies that are consistent with steady progress toward restoration of general price stability."⁴ He went on to note that "substantial further reduction in growth rates of all the major monetary aggregates will be needed over the next few years if our Nation is to succeed in halting inflation."⁵

Chairman Burns did not anticipate that moving toward rates of monetary expansion consistent with price stability could come rapidly or without difficulty. But he observed in May that failure to adhere

to policies aimed at bringing about noninflationary economic growth would reduce the chances of sustaining the recovery and reducing unemployment.

In concluding this morning, I am obliged to observe that we have still a considerable distance to go in putting our financial house in order. Too often in the past, we have lacked the courage or the patience to stay long enough on a monetary and fiscal path that will lead to noninflationary economic growth. We cannot afford to backslide once again. Unless we achieve a less inflationary environment, there will be little chance of sustaining the expansion that is now in progress or of significantly reducing the high level of unemployment that is blighting the lives of millions of Americans. That, in a sentence, is the Board's central message to the Congress.⁶

As to how much of a reduction in money growth would be required to achieve general price stability over the next few years, Chairman Burns indicated that money growth would have to be less than the long-run growth rate of total output.

The long-run growth rate of physical production at full employment has declined in recent years and is probably around 3½ per cent at present. Judging by the experience of the past two or three decades, a stable price level would require a rate of expansion in M-1 that over the long run is well below the growth rate of total output.⁷

Thus, Chairman Burns envisioned in February 1977 that over a span of a few years the FOMC would have to reduce the growth rate of M1 from about 5½ percent in 1976 (from fourth quarter 1975 to fourth quarter 1976) to a rate of less than 3½ percent.

In 1977, however, no progress was made towards achieving the FOMC's long-run objective of a reduction in the growth of M1. Instead M1 growth accelerated to a 7.4 percent rate in 1977 (from fourth quarter 1976 to fourth quarter 1977). To understand how money stock growth could vary to such an extent from the FOMC's intended objectives, one must consider the other factors which the FOMC took into account in its shorter-run policy decisions. Further-

Note: Unless otherwise stated, citations throughout this paper are from either the "Record of Policy Actions of the Federal Open Market Committee" or "Statements to Congress," *Federal Reserve Bulletin* (February 1977-February 1978).

¹"Record" (July 1977), p. 665. Also see "Records" of March 1977 through February 1978.

²"Record" (March, June, September, December 1977), pp. 256, 570, 831, 1069, respectively.

³"Record" (March 1977), p. 256.

⁴"Statements" (February 1977), p. 122.

⁵*Ibid.*, p. 124.

⁶"Statements" (May 1977), p. 468.

⁷"Statements" (February 1977), p. 124.

Table 1

FOMC Operating Ranges 1977

Short-Run Ranges¹

Date of Meeting	Federal Funds Rate Range	Initial Federal Funds Rate Target	Period to which M1 & M2 apply	Ranges Specified		Actual Growth Rates	
				M1	M2	M1	M2
January 17-18 ^a	4 1/4 - 5%	4 5/8 - 4 3/4 %	Jan.-Feb.	3-7%	7-11%	3.1%	8.4%
February 15	4 1/4 - 5	4 5/8 - 4 3/4	Feb.-Mar.	3-7	6 1/2 - 10 1/2	3.1	7.9
March 15	4 1/4 - 5 1/4	4 5/8 - 4 3/4	Mar.-Apr.	4 1/2 - 8 1/2	7-11	12.4	11.1
April 19	4 1/2 - 5 1/4	4 3/4	Apr.-May	6-10	8-12	10.1	9.1
May 6 ²	4 1/2 - 5 1/2	5 1/4					
May 17	5 1/4 - 5 3/4	5 3/8	May-June	0-4	3 1/2 - 7 1/2	2.6	6.4
June 21 ^b	5 1/4 - 5 3/4	5 3/8	June-July	2 1/2 - 6 1/2	6-10	11.4	12.4
July 19	5 1/4 - 5 3/4	5 3/8	July-Aug.	3 1/2 - 7 1/2	6 1/2 - 10 1/2	12.1	11.6
August 5 ²	5 1/4 - 6	5 3/4					
August 16	5 3/4 - 6 1/4	6	Aug.-Sept.	0-5	3- 8	6.6	7.2
September 20 ^c	6-6 1/2	6 1/4	Sept.-Oct.	2-7	4- 8	9.7	9.1
October 17-18 ^d	6 1/4 - 6 3/4	6 1/2	Oct.-Nov.	3-8	5 1/2 - 9 1/2	5.3	7.4
November 15	6 1/4 - 6 3/4	6 1/2	Nov.-Dec.	1-7	5- 9	3.1	5.2
December 19-20 ^e	6 1/4 - 6 3/4	6 1/2	Dec.-Jan.	2 1/2 - 8 1/2	6-10	7.4	7.0
January 9, 1978 ²	6 1/2 - 7	6 3/4					

Longer-Run Ranges³

Date of Meeting	Target Period	M1	M2	M3	Credit Proxy ⁴
January 17-18	IV/76-IV/77	4 1/2 - 6 1/2 %	7-10%	8 1/2 - 11 1/2 %	7-10%
April 19 ^f	I/77-I/78	4 1/2 - 6 1/2	7- 9 1/2	8 1/2 - 11	7-10
July 19 ^g	II/77-II/78	4-6 1/2	7- 9 1/2	8 1/2 - 11	7-10 ⁴
October 17-18 ^h	III/77-III/78	4-6 1/2	6 1/2 - 9	8-10 1/2	7-10

¹Short-run ranges were adopted at each of the FOMC's regularly scheduled meetings. The ranges for the monetary aggregates were specified in terms of two-month simple annual rates of change from the month prior to the meetings at which the ranges were established to the month following the meeting. The ranges for the Federal funds rate were specified to cover the period from the meeting at which the ranges were adopted to the following regularly scheduled meeting. Short-run ranges were made available in the "Record of Policy Actions of the Federal Open Market Committee" approximately 30 days after each meeting.

²Telephone or telegram consultations were held between scheduled meetings for the purpose of modifying intermeeting ranges for the Federal funds rate.

³Chairman of the Federal Reserve Board Arthur F. Burns announced intended growth rates of monetary aggregates over the indicated one year periods in statements presented before Congressional Committees at intervals of approximately 90 days.

⁴At the July 19 meeting the Committee decided to replace bank credit proxy with a broader measure of all commercial bank credit. This change was due in part because of the growth in importance of nonmember banks (credit proxy is based on data solely for member banks) and in part because the proxy does not include certain borrowings by banks from the nonbank public.

^aMr. Balles dissented at this meeting because he believed that real GNP and prices now bore a closer relationship to the behavior of M2 than to that of M1. He was concerned that growth in M2 had been exceeding the Committee's longer-run range and about the consequent implications for future inflation. Therefore, he preferred a higher upper limit on the Federal funds rate range than was adopted, and preferred that the System aim initially for a funds rate of 4% instead of 4 1/4%.

^bMr. Coldwell dissented at this meeting because he favored a wider funds rate range of 5 to 5 1/2 percent, in order to provide more leeway for a reduction of the Federal funds rate should the rates of growth in M1 and M2 appear to be near or below the lower limits of their specified ranges for the June-July period.

^cMessrs. Lilly and Wallich dissented at this meeting because the directive allowed more firming in money market conditions than they thought appropriate in view of their judgment that the economic situation was not very strong. In addition, Mr. Lilly believed that further tightening in money market conditions would not be effective in dealing with the underlying structural inflation.

Messrs. Morris and Roos dissented on the grounds that the policy adopted represented an inadequate response to the rapid rates of monetary growth over recent months. Mr. Roos felt that, unless action was taken to reduce M1 growth now, inflation would accelerate and more drastic action would need to be taken later.

^dMr. Morris dissented at this meeting because he was convinced that the Committee should take more aggressive action to curb excessive growth in the monetary aggregates. He thought that short-term interest rates could rise further without significantly damaging short-term prospects for economic activity.

^eMr. Roos dissented at this meeting because he believed that the upper limit of the December-January range for growth in M1 allowed for the possibility of too rapid growth in that aggregate. In his opinion, M1 growth over this period at a rate in excess of 6 1/2 percent would require an excessively restrictive policy later if the FOMC's longer-range growth targets were to be achieved.

^fMr. Partee dissented. See fn. 15 of text.

^gMessrs. Coldwell, Jackson, and Roos dissented. See fn. 19 of text.

^hMr. Wallich dissented. See fn. 23 of text.

more, strong growth of credit in 1977 along with uncertainties about the relationship of money growth to economic activity affected the short-run implementation of the FOMC's operating objectives.

This article reviews the decisions of the FOMC in 1977. Table I summarizes the FOMC's economic policy directives in 1977, and a Supplement at the end of the article presents a more detailed meeting-by-meeting summary of FOMC discussions and decisions.

FOMC OPERATING TARGETS IN 1977

For the third consecutive year, the FOMC in 1977 publicly announced longer-run ranges for the major monetary aggregates, M1, M2, and M3. This policy was begun in early 1975 at the request of Congress as expressed in House Concurrent Resolution 133, which was passed on March 24, 1975. The substance of this resolution was made law in November of last year with the passage of the Federal Reserve Reform Act of 1977. This Act requires that the Board of Governors of the Federal Reserve System consult with Committees of the Congress on a quarterly basis with respect to its objectives and plans for the ranges of growth of the monetary aggregates over the next twelve months.

During 1977 Chairman Burns met with Congressional Committees at roughly 90-day intervals to present the intended ranges of growth of the monetary aggregates that the FOMC decided upon at its most recent meeting. These yearly ranges are based on the quarterly average for the most recent quarter to the quarterly average for one year in the future (see Chart I). The FOMC has repeatedly emphasized that targets of this nature are "subject to review and modification at subsequent meetings" and that "short-run factors might cause growth rates from month to month to fall outside the ranges contemplated for the year ahead."⁸

The month-to-month flexibility in the growth of the monetary aggregates is reflected in the shorter-run ranges which are set by the FOMC. These short-run ranges are specified over moving two-month periods. For example, the FOMC at its January meeting specifies short-run ranges for the monetary aggregates for the two-month January-February period.⁹ Then at the February meeting the FOMC sets new ranges for the February-March period. These two-month ranges,

along with the longer-run ranges, are shown in Table I. All of the two-month ranges for both M1 and M2 in 1977 were wider than the longer-run ranges announced by the FOMC.

Longer-Run Ranges

The FOMC began 1977 with longer-run growth ranges of 4½ to 6½ percent for M1, 7½ to 10 percent for M2, and 9 to 11½ percent for M3. These ranges, which had been announced in November 1976, covered the period from third quarter 1976 to third quarter 1977. The FOMC reviewed these longer-run ranges at its January meeting and decided to reduce the lower limits of the M2 and M3 ranges by ½ of a percentage point while leaving the M1 range unchanged. When Chairman Burns announced the new M2 and M3 ranges in February 1977, he stated that the downward adjustment of the ranges "largely reflects technical considerations" concerning the shifting of existing stocks of financial assets among market securities and time and savings deposits.¹⁰ In addition, he went on to state that:

Besides these technical considerations, the adjustment of the lower limit of the projected ranges for M-2 and M-3 reflects the Federal Reserve's firm intention to continue moving gradually toward rates of monetary expansion that over the longer run are consistent with general price stability. . . .

The projected range for M-1 in the year ahead reflects our assumption that the financial innovations now in train will continue to reduce materially the proportion of transactions balances that are held in the form of currency and demand deposits.¹¹

At the January meeting at which the above ranges were set, the Committee agreed that the outlook for economic activity had improved after the "pause" in the fourth quarter of 1976. But there was still concern expressed about the current high rates of unemployment and inflation, as well as the possible effects of the severe winter weather and the new Administration's proposed fiscal package.¹²

By the time of the April meeting when the longer-run ranges were again reviewed, the Administration's fiscal program had been substantially changed. The economic outlook had proceeded to improve during the first quarter, although there still remained some uncertainties about the impacts of proposed Adminis-

⁸"Record" (March 1977), pp. 256-57.

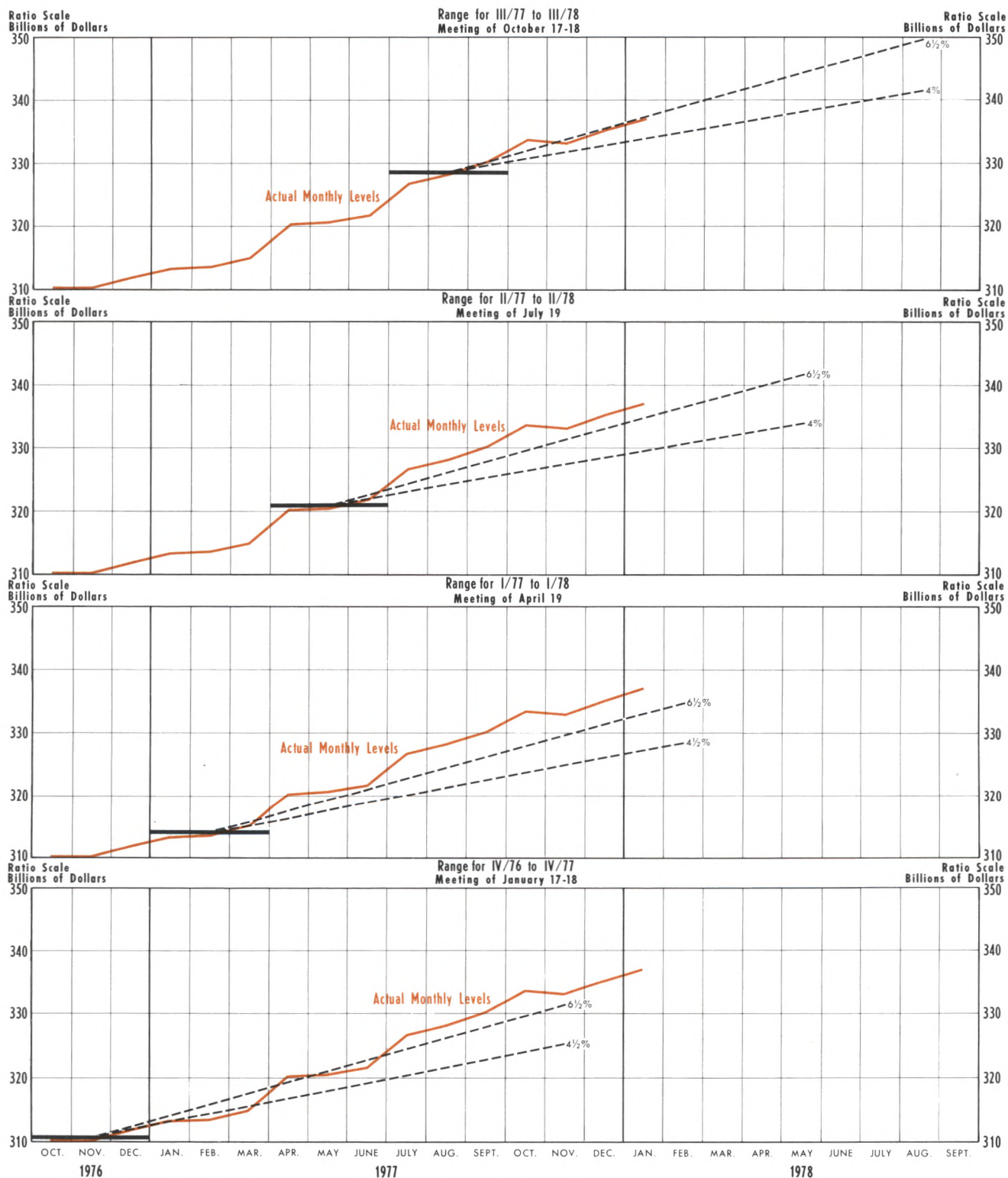
⁹Since the FOMC meets in mid-month, these 2-month ranges are actually set when a quarter of the 2-month period is over.

¹⁰"Statements" (February 1977), pp. 123-24.

¹¹Ibid., p. 124.

¹²"Record" (March 1977), p. 254.

Chart I
Twelve-Month M_1 Ranges Announced During 1977



tration policies — notably the energy program — and there was still concern about possible increases in inflation during the year.¹³

At the April meeting there was general agreement that the longer-run ranges should be reduced, but that only small reductions could be made at this time.

. . . members of the Committee were almost unanimous in believing that a reduction of some kind would be appropriate at this time as another step toward the ultimate objective of achieving longer-run rates of monetary expansion consistent with general price stability. However, opinions differed as to the specific reduction to be made. . . .

Partly because of the uncertainties associated with the energy program, there was little sentiment for making more than small reductions in the longer-run ranges at this time.¹⁴

The Committee decided in April to reduce the upper limits of the M2 and M3 ranges by $\frac{1}{2}$ of a percentage point — changing the ranges to 7 to 9½ percent and 8½ to 11 percent, respectively — while keeping the M1 growth range unchanged at 4½ to 6½ percent.¹⁵

In announcing these ranges to Congress on May 3, 1977, Chairman Burns noted:

The trend of growth in monetary aggregates is still rapid, perhaps much too rapid. To be sure, the Federal Reserve has moved fairly steadily toward lower ranges for monetary expansion during the past 2 years. But that movement has been extremely gradual; indeed, at the current pace it would require nearly a decade to reach rates of growth that are consistent with a stable price level.

I must report, moreover, that despite the gradual reduction of projected growth ranges for the aggregates during the past 2 years, *no meaningful reduction* has as yet occurred in *actual* growth rates.¹⁶ [Emphasis added.]

The longer-run ranges set in April followed a first quarter in which M1 grew at a quarterly average rate slightly below the lower limit of the long-run range of 4½ percent set in January, and M2 was reported to have grown at a quarterly average rate close to the midpoint of the long-run range set in January. In contrast, the July meeting followed a second quarter in which M1 grew at a quarterly average rate of about

8½ percent, well above the longer-run range's upper limit of 6½ percent set in April. M2 was reported to have grown in the second quarter at an annual rate in the upper half of its long-term range.¹⁷ The FOMC took these second quarter rates of growth of the monetary aggregates into account when discussing the longer-run ranges in July.

Moreover, it was observed that the annual rate of growth in M-1 from the first to the second quarter of 1977 had exceeded the range adopted by the Committee at its meeting in April; that despite the gradual reduction of projected ranges of growth for the aggregates during the past 2 years, *no meaningful reduction* had as yet occurred in *actual* rates of growth . . .¹⁸ [Emphasis added.]

The Committee then decided at this meeting to reduce the lower limit of the M1 range by $\frac{1}{2}$ of a percentage point, while leaving the ranges for M2 and M3 unchanged.¹⁹

Although some members wanted to reduce the ranges of M2 and M3 or wanted to reduce the upper limit of the M1 range as well, the majority of the FOMC rejected additional changes. It was suggested that reducing the upper as well as the lower limit of M1 might "run the risk of undesirable pressures in financial markets, a principal effect of which would be to slow growth in real GNP more than projected."²⁰

At the October 1977 meeting, members of the Committee agreed that the expansion in economic activity would likely continue for some time. Most members agreed with staff projections that growth in real GNP would accelerate in the fourth quarter and would continue at a moderate pace in 1978, although some members indicated that uncertainties about the outlook had increased recently.²¹

In reviewing the longer-run ranges, consideration was given to the fact that both M1 and M2 had increased in the third quarter at rates above the upper limits of their longer-run ranges — M1 increased at a

¹⁷After data revisions, the first quarter rate of growth of M2 was revised upward to an annual rate of 10.3 percent, slightly above the upper limit of the range set in January. The second quarter rate of growth of M2 was also revised upward — to 9½ percent, the upper limit of the range set in April.

¹⁸"Record" (September 1977), p. 831.

¹⁹Ibid., pp. 832-33. Messrs. Coldwell, Jackson, and Roos dissented from this action. They favored reducing the upper limit of M1, and Messrs. Coldwell and Jackson also wanted to reduce the ranges of the broader monetary aggregates.

²⁰Ibid., p. 832.

²¹"Record" (December 1977), p. 1064.

¹³"Record" (June 1977), pp. 568-69.

¹⁴Ibid., p. 570.

¹⁵Ibid., p. 571. Mr. Partee dissented from this action because he opposed implementing a downward adjustment at this particular time, although not opposing it as a long-term objective.

¹⁶"Statements" (May 1977), p. 467.

9.7 percent rate while M2 increased at a 10.7 percent rate. The FOMC again sought to make clear its determination to reduce the ranges of monetary growth, while at the same time assuring that growth in the aggregates would be sufficient to facilitate the expansion of economic activity. But it was also felt that the FOMC should emphasize that the Committee's basic goal was to contribute to the satisfactory performance of the economy rather than to pursue predetermined rates of monetary growth. Although this position is generally implicit at all meetings, it was felt that it should be emphasized at this meeting due to various uncertainties regarding recent M1 growth.

Uncertainty was expressed about the underlying causes of the expansion of the demand for money (narrowly defined) in the second and third quarters and about the implications of that expansion for policy. . . .

Because of the uncertainty about the underlying causes of the recent expansion in the demand for M-1 and about the prospects for its velocity, some members indicated that they now had less confidence in the behavior of the monetary aggregates as guides to monetary policy than they might have had earlier.²²

The Committee decided in October to reduce both the upper and lower ranges for M2 and M3 by $\frac{1}{2}$ of a percentage point, while leaving the range for M1 unchanged.²³ This action reduced the M2 and M3 ranges to $6\frac{1}{2}$ to 9 percent and 8 to $10\frac{1}{2}$ percent, respectively.

In the fourth quarter of 1977, the quarterly average growth rate for M1 was still outside the longer-run range of 4 to $6\frac{1}{2}$ percent; M1 increased at a 7 percent annual rate between the third and fourth quarters. The growth rate of M2 was within its longer-run range, however; M2 increased at a 7.8 percent rate between the third and fourth quarters. The slowdown in the growth of net time deposits reduced M2 growth in late 1977 as market rates of interest approached or rose above the ceiling rates of interest that could be legally paid on these types of deposits.²⁴

²²Ibid., p. 1067-69.

²³Ibid., pp. 1070-71. Mr. Wallich dissented from this action because he favored widening the M1 range by raising the upper limit to 7 percent while lowering the lower limit to 3 percent.

²⁴Net time deposits are defined as: savings deposits, time deposits open account plus time certificates of deposit (other than negotiable time certificates of deposit issued in denominations of \$100,000 or more by weekly-reporting large commercial banks).

Thus, in the last three quarters of 1977 the quarter-to-quarter growth rates of M1 exceeded the upper limit of the longer-run ranges set by the FOMC. After data revisions, M2 growth during the first three quarters of 1977 was at, or exceeded, the upper limits of the FOMC's long-run ranges. Although M2 growth in the fourth quarter slowed substantially due to the rise in market rates of interest, M2 increased 9.6 percent from fourth quarter 1976 to fourth quarter 1977. This rate of growth was near the upper end of the long-term range set at the beginning of 1977 (see Table I), but was above the upper limit of the long-term range announced in November.

On balance, the quarter-to-quarter growth rates of the monetary aggregates in 1977 often exceeded the rates of growth which the FOMC had established for the year ahead and which it felt would be consistent with its long-run objective of gradually reducing the growth rates of the aggregates. The reasons for this result involve the shorter-run objectives of the FOMC. As noted earlier, the FOMC has repeatedly stated that shorter-run factors may lead to monthly money growth that falls outside the longer-run ranges.²⁵

Shorter-Run Ranges

At each monthly meeting, the FOMC sets short-run ranges for M1, M2, and the Federal funds rate that are thought to be consistent with the longer-run goals of monetary policy. The shorter-run ranges for the growth rates of M1 and M2 are stated in terms of average growth rates over two-month periods, and are generally wider than the longer-run ranges for M1 and M2.

The shorter-run objectives for the Federal funds rate are stated in terms of both a range and a specific level that is thought to be consistent with the short-run ranges set for M1 and M2. For example, at the meeting held on April 19, 1977, the FOMC stated that the growth rates of M1 and M2 were "likely to be associated with a weekly-average Federal funds rate of about $4\frac{3}{4}$ per cent."²⁶ However, if the two-month growth rates of M1 and M2 appeared to "deviate significantly from the midpoints of the indicated ranges, the operational objective for the Federal funds rate shall be modified in an orderly fashion within a range of $4\frac{1}{2}$ to $5\frac{1}{4}$ per cent."²⁷

²⁵"Record" (March, June, September, December 1977), pp. 257, 571, 832, 1071, respectively.

²⁶"Record" (June 1977), p. 574.

²⁷Ibid.

The April domestic policy directive was an "aggregates directive" since it gave greater weight to growth rates of M1 and M2 than to money market conditions. Alternatively, the FOMC could have given the Open Market Desk a "money market directive" which would have given greater weight to money market conditions than to growth rates of M1 and M2. During 1977 there were four "money market directives" and eight "aggregates directives."²⁸ The differences between these two types of directives during 1977 can be more readily observed by citing the entire paragraph from the domestic policy directive which relates to the short-term operational objectives of the FOMC.

The aggregates directive of the April 19, 1977 meeting stated:

The Committee seeks to encourage near-term rates of growth in M-1 and M-2 on a path believed to be reasonably consistent with the longer-run ranges for monetary aggregates cited in the preceding paragraph. Specifically, at present, it expects the annual growth rates over the April-May period to be within the ranges of 6 to 10 per cent for M-1 and 8 to 12 per cent for M-2. In the judgment of the Committee such growth rates are likely to be associated with a weekly-average Federal funds rate of about 4¾ per cent. *If, giving approximately equal weight to M-1 and M-2, it appears that growth rates over the 2-month period will deviate significantly from the midpoints of the indicated ranges, the operational objective for the Federal funds rate shall be modified in an orderly fashion within a range of 4½ to 5¼ per cent.*²⁹ [Emphasis added.]

In contrast, the money market directive of the October 17-18, 1977 meeting stated:

At this time, the Committee seeks to maintain about the prevailing money market conditions during the period immediately ahead, provided that monetary aggregates appear to be growing at approximately the rates currently expected, which are believed to be on a path reasonably consistent with the longer-run ranges for monetary aggregates cited in the preceding paragraph. Specifically, the Committee seeks to maintain the weekly-average Federal funds rate at about 6½ per cent, so long as M-1 and M-2 appear to be growing over the October-November period at annual rates within ranges of 3 to 8 per cent and 5½ to 9½ per cent, respectively. *If, giving approximately equal weight to M-1 and M-2, it appears that growth rates over the 2-month period are approaching or moving beyond the limits of the indicated ranges, the operational objective for the*

weekly-average Federal funds rate shall be modified in an orderly fashion within a range of 6¼ to 6¾ per cent.³⁰ [Emphasis added.]

All of the aggregates directives in 1977, except January's, were of the same general form as the above April directive, while all of the money market directives in 1977 were of the same general form as the above October directive.³¹ In both forms of the directive, a level of the Federal funds rate is specifically given as a near-term operating target (see Table I). Thus, in following an aggregates directive, the Open Market Desk still uses a Federal funds rate as its operational objective.

The Open Market Desk's implementation of the FOMC's domestic policy directives in 1977 resulted in rates of monetary growth that often exceeded the longer-run target ranges set by the FOMC (Chart I), and which often exceeded the shorter-run ranges as well (see Chart II). The Federal funds rate, on the other hand, was almost always kept within its shorter-run ranges during 1977 (see Chart III). This result is not surprising given that the short-run implementation of policy remained, as in previous years, keyed to control of the Federal funds rate. Since the short-run Federal funds target was set not just in terms of a range but also in terms of a level within a range, one could expect that the Federal funds rate would fluctuate less than the monetary aggregates.

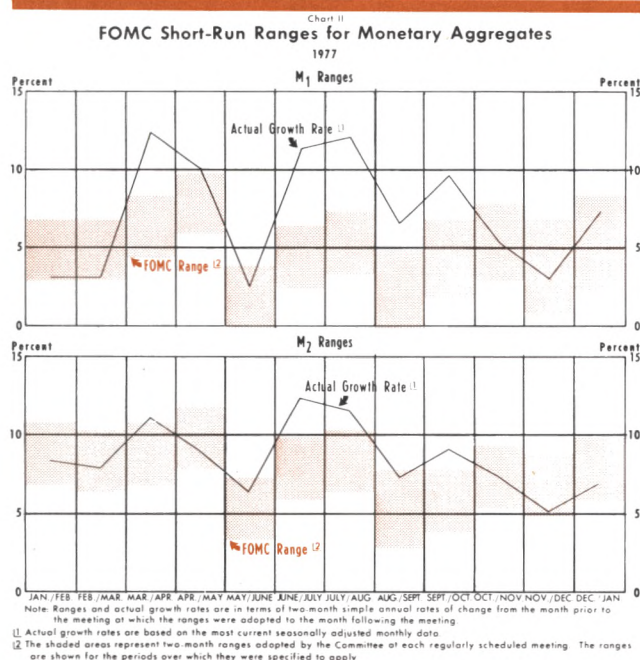
Under a money market directive, the Open Market Desk in 1977 sought to alter the Federal funds rate in response to growth of the monetary aggregates only if these aggregates grew, or were projected to grow, at rates approaching or outside the limits of their ranges. Since the shorter-run ranges for the aggregates were wider than the longer-run ranges, and since the FOMC in 1977 instructed the Desk to give equal weight to M1 and M2 in implementing policy, there could be substantial fluctuations in either M1 or M2 from the midpoints of their specified ranges without leading the Desk to change its operating target level for the Federal funds rate.

³⁰"Record" (December 1977), pp. 1073-74.

³¹The January directive had a less specific format than other domestic policy directives in 1977. In January the Committee sought "to achieve bank reserve and money market conditions consistent with moderate growth in monetary aggregates over the period ahead." See the "Record" (March 1977), p. 259. As was the case in previous years, specific ranges for the monetary aggregates and Federal funds rate were given in the "Record of Policy Actions" at the January meeting, instead of in the domestic policy directive. In addition, the January "Record" did not specify that the Federal funds rate should be changed in response to deviations from the *midpoints* of the monetary growth ranges, as was the case in other aggregates directives in 1977.

²⁸"Money market directives" were given to the Desk in June, October, November, and December. "Aggregates directives" were given to the Desk in January, February, March, April, May, July, August, and September.

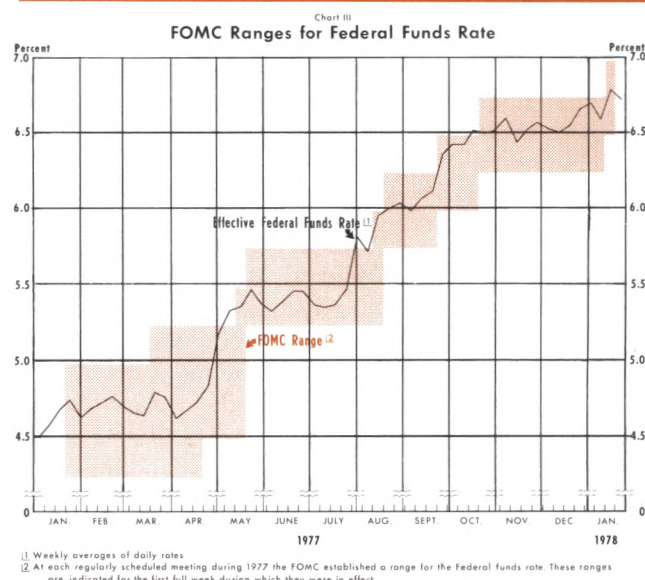
²⁹"Record" (June 1977), p. 574.



Under an aggregates directive, with the exception of January's directive, the Open Market Desk in 1977 sought to alter the Federal funds rate in response to growth of the monetary aggregates only if these aggregates grew, or were projected to grow, at rates significantly different from the *midpoints* of their ranges. However, since the FOMC again instructed the Desk to give equal weight to M1 and M2 in implementing policy, there could be substantial fluctuations from the midpoint of the range of one of the aggregates without leading the Desk to change its operating target level for the Federal funds rate, provided that the other monetary aggregate was growing at a rate close to the midpoint of its shorter-term range.

UNCERTAINTIES AFFECTING SHORT-RUN OPERATING TARGETS IN 1977

The possibility of wide short-run fluctuations in M1 and M2 was increased further in 1977 by the cautious approach taken by the FOMC in interpreting changes in these monetary aggregates. At the January meeting, the Committee took into account the fact that growth of M1 in 1976 had been significantly slower than expected due to the spread of various financial innovations that reduced the public's demand for demand deposits for transactions purposes. In contrast, growth of the broader money measures (M2 and M3)



had been more rapid than expected in 1976. Several members of the Committee suggested that these adjustments to financial innovations were expected to have less impact in 1977, so that M2 and M3 were expected to grow at somewhat slower rates in 1977 than they did in 1976.³²

Since the duration of the effects of these financial innovations could only be very roughly foreseen, the FOMC at the beginning of 1977 was faced with some uncertainty as to what extent future changes in the pattern of growth of the aggregates would be influenced by these innovations. This tended to lead the FOMC to react cautiously to changes in money growth. However, members of the FOMC reacted cautiously to changes in money growth for a number of other reasons as well, as can be seen by examining the Committee's discussions at various meetings.

For example, at the March meeting it was observed that increased economic activity over the weeks ahead would tend to increase the "demands for transactions balances" and thereby tend to increase the growth rates of the monetary aggregates.³³ At the April meeting, the Committee decided it would be willing to tolerate two-month ranges for monetary growth that were higher than the longer-run ranges determined at this meeting (see Table I) "because of the expectation that the forces contributing to rapid expansion in M-1

³²"Record" (March 1977), pp. 255-56, and "Statements" (February 1977), pp. 123-24.

³³"Record" (May 1977), p. 481.

in early April would prove to be transitory and that the bulge in growth for the month as a whole would for the most part be offset by slower growth later on."³⁴ At this meeting there was also discussion of uncertainties associated with the energy program, which some members of the Committee felt limited reductions in the longer-run growth ranges.³⁵

At the May meeting the Committee reduced their two-month ranges for M1 and M2, as they took account of a staff study which suggested that the large increase in M1 in April "raised the money stock sufficiently to accommodate much of the public's need for additional transactions balances in the second quarter and, consequently, that monetary growth was likely to be slow."³⁶ The conclusions of this study were also taken into account in setting the two-month growth ranges at the June meeting. However, a staff study indicated that demand deposits were likely to be increased more than usual in July as a result of the early distribution of social security checks. Due in part to the uncertainty which this technical factor introduced into the growth of money during July, the FOMC adopted a money market directive for the first time in 1977.³⁷

The FOMC returned to an aggregates directive at the July meeting after money growth was moderate in June. Although money growth was very rapid in July, data on M1 and M2 that became available after the July meeting were considered to be very tentative because of unusual patterns in the data received just after the power failure in New York City. In addition, the Committee at its August meeting expected money growth to slow in August and September. Consequently, an aggregates directive was maintained and the two-month ranges for money growth were lowered (see Table I).

However, at the September meeting it was noted that money growth had not slowed in August as much as was expected at the August meeting and that money growth was also expected to increase in September. Some members of the Committee thought that the recent higher growth in M1 reflected the end of the effects of earlier financial innovations. Thus, they thought the demand for money may have increased, returning to a more "typical" relationship between money and GNP.³⁸ There was considerable

disagreement among Committee members as to the appropriate ranges for the monetary aggregates and Federal funds rate at this meeting. The Committee decided on an aggregates directive with a higher range for M1 growth than that adopted at the August meeting (see Table I), but there were four dissenting votes. Messrs. Lilly and Wallich dissented because they felt the directive allowed more firming in money market conditions than was appropriate at the time, while Messrs. Morris and Roos dissented because they felt the directive was an inadequate response to recent rapid growth of the monetary aggregates.³⁹

At the October meeting, the growth rates for M1 and M2 were expected to increase at or above the upper limits of their September-October ranges. Uncertainty was expressed at this meeting as to "the underlying causes of the expansion of the demand for money (narrowly defined) in the second and third quarters. . . ." ⁴⁰

It was suggested that various changes in financial technology that had been resulting in substitution of income-earning deposits for demand deposits had become less powerful and, consequently, that increasing demands for transactions balances in the latest two quarters had had a greater effect on growth in M-1.⁴¹

Because of uncertainty about the causes of recent rapid M1 growth, some members "had less confidence in the behavior of the monetary aggregates as guides to monetary policy" and thought that it was "important to emphasize that the Committee's basic goal was to contribute to the satisfactory performance of the economy rather than to pursue pre-determined rates of monetary growth."⁴² Against this background of uncertainty, the FOMC decided on a money market directive and raised the two-month ranges for M1 and M2 growth.⁴³

Money market directives were also decided upon at the November and December meetings, while growth of the monetary aggregates slowed down during the last two months of the year. In November the Committee favored maintaining stable conditions in the money market and were willing to accept a wider

³⁴"Record" (June 1977), p. 572.

³⁵Ibid., p. 570.

³⁶"Record" (July 1977), p. 663.

³⁷"Record" (August 1977), pp. 736-37.

³⁸"Record" (November 1977), pp. 1002-3.

³⁹Ibid., pp. 1005-6.

⁴⁰"Record" (December 1977), pp. 1063 and 1068.

⁴¹Ibid., p. 1068.

⁴²Ibid., p. 1069.

⁴³Ibid., p. 1072. Mr. Morris dissented from this action because he preferred that the Committee take "more aggressive action to curb excessive growth in the monetary aggregates. . . ." (Ibid., p. 1074).

Organization of the Committee in 1977

The Federal Open Market Committee (FOMC) consists of the seven members of the Federal Reserve Board of Governors and five of the twelve Federal Reserve Bank Presidents. The Chairman of the Board of Governors is also, by tradition, Chairman of the Committee. The President of the New York Federal Reserve Bank is a permanent member of the Committee and, also by tradition, its Vice Chairman. All Federal Reserve Bank Presidents attend the meetings and present their views, but only the Presidents who are members of the Committee may cast votes. Four memberships rotate among the Bank Presidents and are held for one-year terms beginning March 1.

Members of the Board of Governors in 1977 included Chairman Arthur F. Burns, Vice Chairman Stephen S. Gardner, Philip E. Coldwell, Philip C. Jackson, Jr., David M. Lilly, J. Charles Partee, and Henry C. Wallich. In addition to Paul A. Volcker, President of the Federal Reserve Bank of New York, the following Presidents served on the Committee during January and February 1977: John J. Balles (San Francisco), Robert P. Black (Richmond), Monroe Kimbrel (Atlanta), and Willis J. Winn (Cleveland). In March the Committee was reorganized and the four rotating positions were filled by: Roger Guffey (Kansas City), Robert P. Mayo (Chicago), Frank E. Morris (Boston), and Lawrence K. Roos (St. Louis).

The Committee met regularly once each month during 1977 to discuss, among other things, economic trends and to decide upon the future course of open market operations. However, as in previous years, occasional telephone or telegram consultations were held between scheduled meetings.¹ During each regularly scheduled meeting, a directive was issued to the Federal Reserve Bank of New York stating the general economic goals of the Committee and providing general guidelines as to how the Manager of the System Open Market Account at the New York Federal Reserve Bank should conduct open market operations to achieve these goals. Each directive contained a short review of economic developments, the general economic goals sought by the Committee, and operating instructions to the Account Manager. These instructions were stated in terms of money market conditions and near-term rates of growth of M1 and M2 which were considered to be consistent with desired longer-run growth rates of the monetary aggregates. Special factors, such as conditions in foreign exchange markets, were also taken into account.

¹Consultations were held on May 6 and August 5, 1977 and on January 9, 1978 for the purpose of modifying intermeeting ranges for the Federal funds rate.

Decisions regarding the exact timing and amount of daily buying and selling of securities in fulfilling the Committee's directive are the responsibility of the System Open Market Account Manager at the trading desk of the New York Bank. Each morning the Account Manager and his staff decide on a plan for open market operations to be undertaken that day. In developing this plan, money and credit market conditions and aggregate targets desired by the Committee are considered, as well as other factors which may be of concern at the time. Each morning, the Account Manager, in a conference call, informs one voting President and staff members of the Board of Governors about present market conditions and open market operations which he proposes to execute that day. Other members of the Committee are informed of the daily program by wire summary.

A summary of the Committee's actions is presented to the public in the "Record of Policy Actions of the Federal Open Market Committee." The "Record" is released approximately 30 days after each meeting. Soon after it is released, the "Record" appears in the Federal Reserve *Bulletin* and, in addition, "Records" for the entire year are published in the *Annual Report of the Board of Governors*. The "Record" for each meeting during 1977 generally included:

- 1) a staff summary of recent economic developments, such as prices, employment, industrial production, and components of the national income accounts; and projections concerning real output growth for two or three quarters ahead;
- 2) a discussion of recent international financial developments and the U.S. foreign trade balance;
- 3) a discussion of recent credit market conditions and recent interest rate movements;
- 4) a discussion of open market operations, the growth of monetary aggregates, and bank reserve and money market conditions since the previous meeting;
- 5) a discussion of current policy considerations, including money market conditions and the movements of monetary aggregates;
- 6) conclusions of the FOMC;
- 7) a policy directive issued by the Committee to the Federal Reserve Bank of New York;
- 8) a list of the members' voting positions and any dissenting comments;
- 9) a description of any actions and consultations that may have occurred between the regularly scheduled meetings.

growth range for M1 which included relatively low growth. Slower growth of the aggregates in the last two months of the year was acceptable to the Committee in view of their earlier rapid rates of growth. At the December meeting the Committee again favored maintaining stable money market conditions. Taking account of the performance of the economy, the slowing in the growth of the aggregates, and uncertainties in financial markets associated with the end of the year, the FOMC did not feel that increases in short-term interest rates were warranted. On the other hand, with the decline in the value of the dollar on foreign exchange markets, the FOMC did not feel that decreases in short-term rates were warranted either.⁴⁴

The uncertainties about the monetary aggregates expressed at the monthly meetings reflect various cases of more general uncertainties. In presenting the quarterly report of the Board of Governors to Congress, Chairman Burns stated on February 3, 1977:

I must note, however, as I have repeatedly in the past, that profound uncertainties surround the relationships among the various monetary aggregates and between rates of monetary expansion and economic performance.⁴⁵

Furthermore, in the quarterly report presented to Congress on May 3, 1977, Chairman Burns discussed one of the reasons why monetary growth objectives are difficult to achieve. After noting that there had been no meaningful reduction in actual rates of money growth over the past two years despite reductions in the FOMC's longer-run ranges, he stated:

That *unintended* consequence is partly the result of data deficiencies that complicate the already formidable task of adjusting or approximating monetary growth objectives. Initial estimates of the monetary aggregates sometimes differ considerably from estimates made later when fuller data became available.

A factor contributing to the measurement problem has been the inadequacy of deposit data for nonmember commercial banks.⁴⁶ [Emphasis added.]

Mr. J. Charles Partee, a member of the Board of Governors, presented the views of the Board of Gov-

ernors to Congress on September 27, 1977, concerning the rapid rates of monetary growth between February and August. In his statement to Congress, he discussed sources of uncertainty in controlling the monetary aggregates.

Some would argue that the Federal Reserve should have responded more forcefully to the April and July bulges in the money supply. Indeed, a few would say that the reserves necessary to support the deposit expansion simply should not have been provided, letting financial markets and the economy suffer whatever consequences might result. But the FOMC continues to believe that the wiser course is to limit the speed with which money market conditions are adjusted to changing monetary growth rates. *We believe this partly because the monetary aggregates — particularly M-1 — have proved to be inherently unstable in the short run.* Bulges of a month or two in duration are often reversed subsequently, as was the case in the spring and summer of 1975 and again in 1976. Prudence in our actions is dictated also by the fact that *the relationship between the various measures of monetary growth and the performance of the economy is loose and unreliable*, since it is subject to rather abrupt shifts as the result of changing financial practices and economic conditions.⁴⁷ [Emphasis added.]

Instability in the demand for money is of particular importance to implementation of the FOMC's policy directives to the Open Market Desk, since in the short run the Desk seeks to accommodate the public's demand for money.

The FOMC's instructions to the Manager of the System Open Market Account regarding the management of bank reserves provide — to a considerable extent — for the accommodation of the public's demand for money in the short run, while at the same time prescribing a response when growth of money appears inconsistent with the Committee's long-term objectives.⁴⁸

If the public's demand for money is unstable in the short run, a point on which economists disagree, accommodating these shifts by holding short-term interest rates constant requires frequent changes in the supply of bank reserves. As a result, money growth rates could fluctuate considerably from month-to-month.

⁴⁴"Record" (January, February 1978), pp. 23, 106.

⁴⁵"Statements" (February 1977), p. 124.

⁴⁶"Statements" (May 1977), p. 467. The problem of data deficiencies mentioned by Chairman Burns became more difficult as 1977 progressed. Benchmark revisions based on 1977 Call Report data from nonmember banks were not made. Due to a reporting problem, no quarterly Call Reports from nonmember banks in 1977 were used to update the monetary aggregates.

⁴⁷"Statements" (October 1977), p. 890.

⁴⁸"The Implementation of Monetary Policy in 1976," Federal Reserve Bulletin (April 1977), p. 326. This article was adapted from a report submitted to the FOMC by Alan R. Holmes and Peter D. Sternlight, Manager and Deputy Manager of the System Open Market Account, respectively. John S. Hill and Christopher J. McCurdy were primarily responsible for its preparation.

CREDIT AND MONEY GROWTH

Month-to-month fluctuations in money growth can also be related to changes in the demand for credit. In his quarterly report of the Board of Governors to Congress on November 9, 1977, Chairman Burns discussed the growth of credit during 1977 as an additional reason for the rapid growth of money.

There is no rigid link between the total volume of credit outstanding in the economy and the Nation's stock of money, but movements in credit and money do tend, of course, to be positively related. If the demand for credit begins to strengthen at a time when financial institutions are relatively liquid, a good amount of credit expansion can occur without much — if any — change in monetary balances. But as the economy grows and credit expansion continues, sooner or later a need for enlarged money balances will arise in order to facilitate the enlarged total of credit transactions. Such a process has unquestionably been at work this year, and it explains in some measure why the growth of M-1 — the narrow money stock — has accelerated recently in relation to money growth earlier in this expansion.⁴⁹

At almost every FOMC meeting in 1977, data on the expansion of bank credit was reported as being strong (see Supplement).

To the extent that the short-term operating target of the Federal Reserve is keyed to stabilizing the Federal funds rate, increases in the demand for credit which put upward pressure on this interest rate will tend to be accommodated by the Open Market Desk. Thus, increased credit demands may be accommodated just as an increase in the demand for money is accommodated by the Open Market Desk. As pointed out in the above quotation by Chairman Burns, such an accommodation of increased credit demands apparently occurred in 1977.

Since an increase in the demand for money and an increase in the demand for credit can both be sources of upward pressure on the Federal funds rate, it may be difficult in practice for the Federal Reserve to distinguish between the two. Thus, by stabilizing the Federal funds rate through changes in bank reserves, the Federal Reserve may accommodate an increase in the demand for credit, with the result that the money stock rises.

MONETARY POLICY IN 1977: TIGHT OR EASY?

If the tightness or easiness of monetary policy is defined solely in terms of the changes in interest

rates, then monetary policy in 1977 was "tight" because interest rates increased during the year. On the other hand, if the tightness or easiness of monetary policy is defined in terms of the behavior of bank reserves or the money stock (M1), then monetary policy in 1977 was "easy" because these reserve or monetary aggregate measures increased more rapidly in 1977 than they did in 1976.

General descriptions of monetary policy — such as "tight," "easy," or "moderate" — rarely appear in the monthly "Record of Policy Actions of the FOMC." However, in the "Record" for the September 20, 1977 meeting it is mentioned that most FOMC members favored finding some "middle ground" in terms of a policy response to rapid growth in M1 and M2.⁵⁰ In discussing FOMC actions in the first ten months of 1977, Chairman Burns in November also described monetary policy as taking a "middle course."

Under the circumstances, we have judged it wise to move cautiously in adapting policy. . . . We well realize that the middle course actually followed — that of gradually limiting the availability of bank reserves and thereby slowing the growth of money — has left us open to the charge of temporizing. In fact, we did not temporize at all, but we did move prudently.

On the one hand, restrictive action vigorous enough to have kept M-1 growth within the projected ranges would, we believe, have forced a far steeper climb in short-term interest rates than actually has occurred since April. This could have proved destructive to the smooth functioning of financial markets and might eventually have brought serious injury to our economy.

On the other hand, a determined effort by the Federal Reserve System to prevent any rise in interest rates during recent months would have produced — in the face of the credit pressures that have been experienced — a rate of monetary expansion well above the rise that has actually occurred. That would have been very damaging, for it would have practically destroyed any remaining hope of achieving mastery over the inflationary forces that now move our society. . . .

By taking measures to curb the growth of money, we have demonstrated that we remain alert to the dangers of inflation. As a consequence, long-term interest rates, which nowadays are extremely sensitive to expectations of inflation, have remained substantially stable.⁵¹

Thus, Chairman Burns felt that in 1977 the Federal Reserve moderated increases both in interest rates and

⁵⁰"Record" (November 1977), p. 1003.

⁵¹"Statements" (November 1977), pp. 991-92.

⁴⁹"Statements" (November 1977), p. 990.

in money growth, and at the same time avoided increases in inflationary expectations.

SUMMARY AND CONCLUSIONS

The Federal funds rate was generally within the FOMC's short-run ranges during 1977. Growth of M1 and M2, on the other hand, frequently exceeded the FOMC's shorter-run ranges. Strong growth of credit in 1977 and uncertainties about the relationship of money growth to economic activity were both impor-

tant factors affecting the implementation of the FOMC's short-run operating objectives.

One of the FOMC's long-run objectives in 1977 was to reduce gradually the growth of the monetary aggregates over time to rates consistent with general price stability. During the year the FOMC reduced its longer-run ranges for growth of the monetary aggregates in pursuit of this policy. However, due to the rapid growth of M1 and M2 during the second and third quarters of the year, actual growth rates of the monetary aggregates were not consistent with the FOMC's longer-run objectives.

SUPPLEMENT

FOMC Discussions in 1977

This supplement consists of selected excerpts from the "Record of Policy Actions" for each of the FOMC meetings in 1977. Each "Record" includes analyses of current and projected economic developments, discussions of current policy actions, and long- and short-run operating instructions issued by the FOMC to the Trading Desk. The full text of each "Record of Policy Actions" appears in issues of the *Federal Reserve Bulletin*.

Meeting Held on January 17-18, 1977

Over most of the inter-meeting period incoming data suggested that the aggregates were growing at about the expected rates, and the Manager of the System Open Market Account conducted operations with a view to maintaining the Federal funds rate close to 4½ per cent — the level prevailing at the time of the December meeting. Near the end of the inter-meeting period, incoming data began to suggest that over the December-January period growth in M-1 would be somewhat above the range that had been specified by the Committee but that growth in M-2 would be near the midpoint of its range. With the Committee scheduled to meet in a few days, the Manager continued to aim for a Federal funds rate of about 4½ per cent, although with a little greater willingness to tolerate small deviations above that rate than below it.

In the discussion of the economic situation at this meeting, members of the Committee agreed that the outlook for growth in real output of goods and services had strengthened. . . . It was also observed, however, that even if growth in real GNP during 1977 were significantly greater than projected by the staff, rates of resource use in the fourth quarter of

the year still would not appear to be excessive; indeed, unemployment would still be relatively high.

Although Committee members in general now held a more favorable view of the economic situation and outlook than they had a month or two ago, attention was called to a number of problems. For one, the severity of the winter weather and its impact on the availability of fuels for industrial use posed a threat to output and employment in some parts of the country. Even though the unemployment rate was still unacceptably high, current and prospective rates of inflation also remained a source of major concern.

A measure of concern was also provoked by certain aspects of the Federal budget, after incorporation of assumptions about the new administration's fiscal proposals.

It appeared likely that over-all demands for funds in securities markets would continue to be sizable during the months just ahead.

. . . most members preferred to have operating decisions in the period ahead based primarily on the behavior of the monetary aggregates.

Meeting Held on February 15, 1977

Throughout the inter-meeting period incoming data suggested that growth in both M-1 and M-2 over the January-February period would be well within the ranges that had been specified by the Committee. Accordingly, the Manager continued to direct operations toward maintaining the Federal funds rate in the area of 4½ to 4¾ per cent.

In their discussion of recent economic developments and prospects, members of the Committee

agreed that the underlying situation was strong and that the losses in output, hours of work, and income resulting from the weather would soon be made up. Most members agreed with the staff projections suggesting that growth in real GNP would accelerate to a rapid pace in the second quarter — reflecting not only the recovery from the weather-induced losses but also the disbursement of tax rebates and related payments — and then would continue at a relatively good rate throughout the second half of the year.

However, one or two members expressed concern that the weather disturbance and the tax rebates might cause large swings in business inventory investment and therefore in total GNP.

Looking to the latter part of 1977 and into 1978, some questions were raised about the adequacy of industrial capacity. . . . Concern was expressed that the margin of unused plant capacity that could be drawn into production might be low in relation to the amount of unemployed labor. It was also observed that rates of capacity utilization varied considerably among industries and that during business expansions bottlenecks begin to spread through the industrial system long before over-all measures of capacity utilization reach relatively high levels.

It was suggested that the rise in prices might become more rapid as activity expanded during the period ahead.

Total credit at U.S. commercial banks increased considerably in January, following a small rise in December. Data for both months, however, were distorted by special influences — particularly a substantial increase in bank holdings of bankers acceptances late in 1976 that was largely reversed in January.

As to policy for the period immediately ahead, Committee members in general advocated continuation of about the current stance. They differed little in their preferences for ranges of growth in the monetary aggregates over the February-March period.

Meeting Held on March 15, 1977

Throughout the interval since the February meeting, the Manager of the System Open Market Account had continued to aim for a Federal funds rate in the area of 4½ to 4¾ per cent. In the early weeks of the interval, incoming data had suggested that growth in both M-1 and M-2 over the February-March period would be close to the midpoints of the specified ranges. Estimates of the 2-month growth rates subsequently were revised downward, but they remained reasonably well within their specified ranges.

In the discussion of the economic situation at this meeting, members of the Committee were in general agreement with the staff projection that real GNP

would expand at a rapid rate in the second quarter of 1977 and at a more moderate, but still rather substantial, rate in subsequent quarters.

Several members expressed concern about the recent and prospective behavior of prices.

It was observed during the discussion that, given the longer-run ranges for growth in the monetary aggregates adopted at the January meeting, the projected rates of increase in nominal GNP implied a rise in the income velocity of money that was large for this stage of a business expansion. In that connection it was noted that significant upward pressures on interest rates might develop later in the year, particularly if prices should rise more rapidly than projected or if inflationary expectations should strengthen. On the other hand, one member remarked that, while interest rates played a role, the predominant determinant of velocity changes was the state of confidence. On the basis of his judgment that confidence was improving, he thought it was likely that the rate of increase in velocity would be quite high. Another member observed that in almost every business expansion since World War II, the rate of increase in velocity had reached a primary peak, then dropped back before reaccelerating to a secondary peak not quite so high as the first one.

Total credit at U.S. commercial banks rose more in February than in any other month since the summer of 1974. Acquisitions of U.S. Treasury securities were especially large, holdings of other securities rose somewhat for the first time since November, and total loans continued to expand.

It appeared likely that over-all credit demands would remain strong in the period immediately ahead.

As to policy for the period immediately ahead, members of the Committee did not differ greatly in their preferences for ranges of growth for the monetary aggregates over the March-April period. It was suggested that the forces that had contributed to particularly slow growth in the monetary aggregates in February might be reversed and might contribute to rapid growth in March, and that such a development should not necessarily cause concern. It was also observed that the upward momentum of economic activity in the weeks ahead would tend to expand demands for transactions balances and thus to exert some upward pressure on growth rates for the monetary aggregates.

Meeting Held on April 19, 1977

Over most of the interval between the March and April meetings, incoming data suggested that the 2-month growth rates for M-1 and M-2 would be well within their respective ranges. Consequently, the Manager of the System Open Market Account continued to aim for a Federal funds rate in the area of 4½ to 4¾ per cent. Near the end of the period, however, it appeared that growth in M-1 would

exceed the upper limit of its 2-month range and that growth in M-2 would be in the upper part of its range. In those circumstances, the Manager aimed for a Federal funds rate of around 4¾ per cent.

The staff projections for subsequent quarters incorporated revised assumptions for fiscal policy, as a result of the President's announcement on April 14 of changes in his package of measures designed to stimulate growth in economic activity.

Growth in real GNP over the next few quarters was still projected to be substantial, reflecting strength in consumer demands and expansion of business investment in both fixed capital and inventories. The projections continued to suggest that the rise in the fixed-weighted price index for gross business product would be less rapid in the quarters immediately ahead than in the first quarter, when it had accelerated because of the adverse effects of severe weather. Upward price pressures over the next several quarters were nonetheless expected to be somewhat greater than had been anticipated earlier, partly because of further deterioration in the outlook for prices of some foods and partly because of the prospect of another increase in the minimum wage soon after midyear.

Withdrawal of the proposal for tax rebates was thought to be of considerable significance. Some members expected that this change, especially in conjunction with the measures aimed at reducing inflation, would contribute to improvement in business and consumer confidence and in that way would add strength to the economic outlook.

Attention was drawn to other potentially troublesome aspects of the developing economic situation. Thus, one member commented that growth in nominal GNP over the quarters ahead at the rate indicated in the staff projections — which did not take the energy program into account — might well be accompanied by considerable strain in financial markets.

Over the first quarter, expansion in total bank credit was greater than in any other quarter in 2½ years.

For the period immediately ahead, the principal new factor in the outlook for credit demands was the prospective shift in the position of the U.S. Treasury from a sizable net borrower to a temporary repayer of debt. At the same time, however, business demands for credit were still expected to expand as a result of continuing improvement in economic activity. Projections of consumer expenditures implied a continued high rate of growth in consumer credit outstanding, and expansion of mortgage debt was anticipated to remain large. State and local government borrowing was also expected to remain sizable.

As to policy for the period immediately ahead, the Committee members were willing to tolerate growth in the monetary aggregates over the April-May period within ranges that were higher than those adopted for the year ahead because of the expecta-

tion that the forces contributing to rapid expansion in M-1 in early April would prove to be transitory and that the bulge in growth for the month as a whole would for the most part be offset by slower growth later on.

Meeting Held on May 17, 1977

Data that had become available in the days immediately after the April meeting suggested that over the April-May period both M-1 and M-2 would grow at rates well within their specified ranges, although it appeared that growth in April would be strong. Accordingly, the Manager of the System Open Market Account sought to maintain the Federal funds rate at about 4¾ per cent or a shade higher. By late April, however, incoming data suggested that over the 2-month period M-1 was likely to grow at a rate considerably above the upper limit of its specified range and that M-2 was likely to grow at a rate close to the midpoint of its range. In those circumstances System operations in late April and early May were conducted with a view to raising the Federal funds rate toward 5¼ per cent, the upper limit of its specified range.

On May 6 the Committee voted to increase the upper limits of the range for the Federal funds rate from 5¼ to 5½ per cent, with the understanding that the Manager would use the additional leeway only if new data becoming available before May 17, the date for this meeting, suggested that the aggregates were strengthening significantly further on balance. Such additional strength did not develop in that period, and the Manager continued to aim for a funds rate of around 5¼ per cent. In the final days of the period, the rate actually fluctuated between 5¼ and 5½ per cent.

With respect to the economic situation and outlook, members of the Committee generally were of the view that the expansion in business activity was quite strong. In particular, they expected over-all growth to remain substantial for a number of quarters ahead.

The recent acceleration in the rate of price rise was a source of concern.

At U.S. banks, growth in total credit accelerated during April from the already brisk pace of the first quarter. All major loan categories expanded significantly further, and holdings of tax-exempt securities increased sharply for the first time since November.

As to policy for the period immediately ahead, members of the Committee thought that relatively slow growth in monetary aggregates over the May-June period would be appropriate in order to compensate at least in part for the exceptionally rapid growth in April. In considering the ranges of growth to be specified for the 2-month period, they took account of a staff analysis that suggested that the extremely large expansion in M-1 in April appeared

to have raised the money stock sufficiently to accommodate much of the public's need for additional transactions balances in the second quarter and, consequently, that monetary growth was likely to be slow.

Most Committee members did not wish to see a rise in the weekly-average Federal funds rate above 5¼ per cent during the inter-meeting period — at least not without further consultation. . . . In support of constraining the upper limit to 5¼ per cent, it was suggested that a further rise of 50 to 60 basis points — roughly the magnitude of the increase since the April meeting — was likely to have more significant repercussions on financial markets and that considerable uncertainty existed about the underlying strength of the monetary aggregates.

Meeting Held on June 21, 1977

Throughout the inter-meeting period, incoming data suggested that over the May-June period M-1 and M-2 on the average would grow at rates well within the specified ranges. Accordingly, the Manager continued to aim for a weekly-average funds rate of about 5½ per cent, and the rate remained close to that level during the period.

Staff projections suggested that in the second half of 1977 and in early 1978 the rate of growth in real GNP would be fairly rapid, although significantly less so than in the first half of this year. The projections also suggested that the rate of increase in prices would moderate from that in the first half but would remain comparatively high.

It was also suggested that confidence has been enhanced by System policies — specifically, by the promptness with which open market operations during the period between the April and May meetings responded to the April surge in monetary growth. The magnitude of recent declines in yields on long-term bonds was cited as partial evidence for this view.

At U.S. banks, growth in total credit slowed somewhat in May from the relatively rapid pace of April, but the rate was close to the average for the January-April period.

In considering policy for the period immediately ahead, the members of the Committee took account of the likelihood that growth in M-1 would remain relatively slow in June — continuing to respond to the April surge — but that growth from the first to the second quarter would nevertheless exceed the Committee's longer-run range for that aggregate. In July, according to staff analysis, expansion of M-1 was likely to be magnified by a purely technical factor — namely, distribution of social security checks earlier in the month than usual, thereby causing demand deposits to be larger than they otherwise would be over the 3-day weekend including July 4.

Most members favored giving greater weight than usual to money market conditions in conducting open market operations in the period until the next meeting because of uncertainty about M-1 growth rates in the near term. However, a number of the members expressed a preference for continuing to have operating decisions in the period ahead based primarily on the behavior of the monetary aggregates.

Almost all members favored directing operations — at least initially — toward maintaining the Federal funds rate at about its prevailing level of 5½ per cent.

Meeting Held on July 19, 1977

Throughout the inter-meeting period, incoming data suggested that over the June-July period M-1 and M-2 would grow at rates within those [their] ranges. Accordingly, the Manager of the System Open Market Account sought to maintain the Federal funds rate around 5½ per cent.

Staff projections suggested that the rate of growth in real GNP would be less rapid in the second half of 1977 than in the first and that it would slow somewhat further into 1978. The projections also suggested that the rate of increase in prices would moderate from that in the first half but would remain high.

In their discussion of the economic situation, members of the Committee agreed with the general outlines of the staff projections, which were described as presenting a fairly optimistic picture of prospective developments. Despite the broad consensus on the outlook, several members suggested that expansion in some sectors of demand might prove to be less strong than expected by the staff and that growth in real GNP was more likely to fall short of than to exceed the projected rates.

At U.S. commercial banks, growth in total credit slowed somewhat further in June and was slightly below the average for the first 5 months of the year. The slowing in June reflected declines in net acquisitions of Treasury and other securities. Growth of real estate loans accelerated to near-record pace, and growth of most other major categories of loans was substantial.

All members favored a return to basing decisions for open market operations in the period immediately ahead primarily on the behavior of the monetary aggregates. At its meeting in June the Committee had decided to give greater weight than usual to money market conditions in conducting operations in the period until this meeting.

Almost all members favored directing operations initially toward the objective of maintaining the Federal funds rate at its current level of 5½ per cent, but a few members suggested that operations

be directed toward achieving a slightly higher rate within a short time.

Subsequent to the meeting, on August 4, nearly final estimates indicated that in July M-1 had grown at an annual rate of about 18½ per cent and M-2 at a rate of about 16½ per cent. For the July-August period staff projections suggested that the annual rates of growth for both aggregates would be well above the upper limits of the ranges specified by the Committee in the next-to-last paragraph of the domestic policy directive issued at the July meeting.

The Manager of the System Open Market Account was currently aiming at a funds rate of 5¼ per cent, the upper limit of the inter-meeting range specified in the directive.

Against that background, Chairman Burns recommended on August 4 that the upper limit of the range for the Federal funds rate be increased to 6 per cent so that the Manager might have some additional leeway for operations, while continuing to take account of the current Treasury financing and financial market developments. He further recommended that this additional leeway be used very gradually, and only in the event that the aggregates continued to register values far beyond the Committee's objectives.

Meeting Held on August 16, 1977

Data that had become available in the days immediately following the July meeting suggested that over the July-August period both M-1 and M-2 would grow at rates in the upper parts of their specified ranges. These data were considered especially tentative, however, because unusual patterns in the figures received just after the power failure in New York City suggested that the failure might have introduced statistical distortions. The System Account Manager, therefore, continued to seek a Federal funds rate of about 5½ per cent. Later, however, when new data not only confirmed the initial signs of strength but also suggested that growth in the aggregates would be somewhat above the upper limits of the specified ranges, System operations were directed at achieving a higher Federal funds rate.

Information that became available on August 4 suggested that the growth rates in the aggregates in the July-August period would be well above the ranges specified by the Committee, and on August 5 the Committee voted to increase the upper limit of the range for the funds rate to 6 per cent. It was understood that the Manager would use this additional leeway very gradually and only in the event that the aggregates continued to register values far in excess of the Committee's objectives. When such strength in the aggregates did persist, the Account Manager aimed at a Federal funds rate of about 6 per cent.

In the Committee's discussion of the economic situation, the members agreed that the expansion was likely to continue for some time.

Total loans [in July] rose more rapidly than in any other month since last October, reflecting strength in most major categories.

In considering policy for the period immediately ahead, members of the Committee noted that growth in the monetary aggregates was expected to slow markedly in August and September. Because of the sharp increases in July, however, expansion in the third quarter as a whole — particularly in M-1 — would be relatively rapid. It was observed that considerably slower growth rates would be needed in subsequent quarters if monetary growth for the year ending with the second quarter of 1978 was to be kept within the ranges that the Committee had decided upon in July.

While the views of members on appropriate short-run policy did not differ greatly, a number of members placed particular stress on the need to resist further sizable increases in the monetary aggregates, noting that continued rapid growth would foster inflationary expectations and weakening of confidence within the business community. Other members put more emphasis on the sizable increase that had occurred since late April in the Federal funds rate and other short-term interest rates, and some expressed reluctance to seek further tightening in the money market at a time when growth in economic activity was showing signs of moderating. These members suggested that, in the absence of unusual behavior in the monetary aggregates, it would be desirable to maintain relatively stable conditions in the money market for the time being.

The members agreed that, in view of the July bulge in the monetary aggregates, no easing of money market conditions should be sought in the coming interval even if growth rates in the aggregates during the August-September period appeared to be quite low.

Meeting Held on September 20, 1977

Data that had become available in the weeks immediately following the August FOMC meeting suggested that over the August-September period M-1 was growing at a rate in the upper half and M-2 at a rate near the midpoint of their respective ranges. Accordingly, the System Account Manager continued to seek a Federal funds rate of around 6 per cent. Near the end of the inter-meeting period, growth in M-1 for the 2-month period appeared to be exceeding the upper limit of its range and growth in M-2 appeared to be in the upper half of its range. Therefore, the Manager sought a firming in the Federal funds rate to around 6½ per cent, and the rate averaged close to that level in the 5 days just prior to this meeting of the Committee.

In the Committee's discussion of the economic situation and outlook, the members agreed — as they had at the August meeting — that the expansion was likely to continue for some time, and most

of them expected that real GNP would grow at about the moderate pace projected by the staff. However, some members expressed doubts about the vigor of the expansion.

Concern was expressed about the outlook for both unemployment and prices. It was remarked that even if real GNP grew at a moderate pace over the next year, little progress would be made in reducing the unemployment rate. . . . Moreover, one member observed, recent experience had shown that high unemployment did not greatly reduce the rate of inflation, and the staff projections did suggest persistence of both a rapid rate of inflation and a high rate of unemployment.

At U.S. commercial banks, growth in total credit accelerated during August to a rate somewhat above the average for the first 7 months of 1977.

In their discussion at this meeting of policy for the immediate future, Committee members differed in their views on the appropriate response to the recent rapid growth in the monetary aggregates. It was noted that growth in M-1 and M-2 had not slowed so much in August as had been expected and that it apparently was picking up somewhat in September — making it likely that the rates of monetary expansion in the third quarter would be high relative to the Committee's longer-run ranges. Some members thought that the Committee's primary objective in the period immediately ahead should be to resist continued rapid expansion in the aggregates, in light of the implications of such expansion for inflation and inflationary expectations. On the other hand, some members advocated avoiding substantial increases in interest rates at present, in light of their doubts about the economic outlook. It was also noted that the recent high rate of growth in M-1 might represent a return to a more typical relationship between that rate and the growth rate in nominal GNP — following a period in which the demand for money had been held down by changes in financial practices — and accordingly that it might not warrant the kind of policy response that would be appropriate under other circumstances. Most members, however, were of the opinion that the Committee could not afford to ignore either the uncertainties in a generally favorable economic outlook or the recent high rates of monetary growth, and they favored finding some middle ground.

Meeting Held on October 17-18, 1977

In accordance with the Committee's decision, the Manager of the System Open Market Account began immediately after the September meeting to seek bank reserve conditions consistent with a Federal funds rate of around $6\frac{1}{4}$ per cent. Data that were becoming available at the same time suggested that over the September-October period M-1 and M-2 would grow at rates at or above the upper limits of the ranges specified by the Committee, and the esti-

mates of these growth rates were raised further on the basis of the data that became available in subsequent weeks. Therefore, the Manager sought a gradual firming in the Federal funds rate to $6\frac{1}{2}$ per cent, the upper limit of its specified range.

In the Committee's discussion of the economic situation, the members agreed that the expansion in activity was likely to continue for some time to come. They differed, however, in their assessments of the prospective vigor of the expansion.

Uncertainty was expressed about the underlying causes of the expansion of the demand for money (narrowly defined) in the second and third quarters and about the implications of that expansion for policy. It was suggested that various changes in financial technology that had been resulting in substitution of income-earning deposits for demand deposits had become less powerful and, consequently, that increasing demands for transactions balances in the latest two quarters had had a greater effect on growth in M-1. One member suggested that the demand for money had also been raised recently by increased uncertainty of various kinds — about conditions in the job market, about prices of securities, about foreign exchange rates, and about other elements in the economic situation — and that this had contributed to the apparent decline in the income velocity of M-1 in the third quarter. In his view, however, the decline in velocity more fundamentally reflected the sluggishness of economic expansion in the third quarter, and a pick-up in the pace of expansion once again might be accompanied by a sharp rise in velocity.

Because of the uncertainty about the underlying causes of the recent expansion in the demand for M-1 and about the prospects for its velocity, some members indicated that they now had less confidence in the behavior of the monetary aggregates as guides to monetary policy than they might have had earlier. It was felt, moreover, that those uncertainties made it particularly important to emphasize that the Committee's basic goal was to contribute to the satisfactory performance of the economy rather than to pursue pre-determined rates of monetary growth.

At U.S. commercial banks, growth in total credit was small in September following substantial expansion in the preceding 2 months.

As to policy for the period immediately ahead, members of the Committee were in relatively close agreement with respect to their preferences for ranges of growth for the monetary aggregates over the October-November period.

The members were agreed that little or no decline in the Federal funds rate should be contemplated under foreseeable circumstances, but views were divided with respect to the upper limit that should be set for the rate . . .

Meeting Held on November 15, 1977

Immediately following the [October] meeting, incoming data had suggested that over the October-November period M-1 and M-2 would grow at rates within their specified ranges. Accordingly, the Manager of the System Open Market Account sought to maintain the Federal funds rate at around 6½ per cent. In late October, however, additional data suggested that M-1 and M-2 were growing at rates approaching or moving beyond the upper limits of their ranges. Therefore, the Manager sought a slight firming in the funds rate. Still later, available data again suggested that growth in both aggregates would be within the ranges; hence the Manager's objective for the funds rate was returned to 6½ per cent.

Staff projections suggested that growth in real GNP would continue at a moderate, although gradually diminishing, pace throughout 1978. It was also expected that the rate of increase in prices would remain high.

In the Committee's discussion of the economic situation, the members agreed that the staff projections — suggesting that growth in real GNP would continue at a moderate, although gradually diminishing, pace throughout 1978 — were reasonable. There were, however, some shadings of view about prospects for the economy.

It was noted during the discussion that, according to projections of the Federal budget on a "high employment" basis, fiscal policy would move from a highly stimulative stance in the second half of 1977 to approximate neutrality by the end of 1978, unless some new fiscal initiatives were undertaken.

At U.S. commercial banks, growth in total credit accelerated in October from the relatively slow pace recorded in September. The pick-up reflected a vigorous expansion in bank lending that was offset only in part by a further reduction in holdings of Treasury securities.

In the discussion of policy for the period immediately ahead, members noted that growth in the monetary aggregates appeared to be slowing sharply in November. It was observed that for a number of reasons growth rates for December were particularly difficult to project, but even if they also proved to be low, two consecutive months of slow growth would be acceptable in view of the rapid monetary expansion of recent months. The comment was made that the sharp slowing in early November suggested that the aggregates might grow at reasonably satisfactory rates over the November-December period, assuming continuation of a Federal funds rate at about its current level. Many members indicated that they would like to maintain stable conditions in the money market for a time and that they were willing to accept a rate of growth in M-1 over the November-December period within a somewhat

wider range than usual, encompassing relatively low growth.

Most members expressed a preference for continuing to give greater weight than usual to money market conditions in conducting open market operations in the period until the next meeting of the Committee. However, a number of members were in favor of basing operating decisions primarily on the behavior of the monetary aggregates.

Meeting Held on December 19-20, 1977

Throughout the period between the November and December meetings, incoming data suggested that growth in M-1 and M-2 would be well within the ranges that had been specified by the Committee. Accordingly, the Manager of the System Open Market Account sought to maintain reserve conditions consistent with a Federal funds rate of 6½ per cent.

Staff projections for the year ahead, which were based on assumptions that did not include reductions in Federal income taxes, differed little from those prepared just before the November meeting of the Committee; they suggested that real GNP would continue to grow at a moderate, although gradually diminishing, pace throughout 1978. It was also expected that the rate of increase in prices would remain high and that the unemployment rate would decline gradually.

In the Committee's discussion of the economic situation, the members were in agreement that the expansion in activity was likely to continue throughout the year ahead. A number of members expressed the view that growth in real GNP during 1978 would be as strong as or stronger than that suggested by the staff projections. Other members foresaw substantial strength for the period immediately ahead — in response to the recent pick-up in final sales and consequent adjustment of inventory positions — but less strength later in 1978. It was noted, however, that the administration was planning to propose a substantial reduction in taxes on individual and business incomes in the new year, and that such reductions — depending upon their nature and timing — could have a significant effect on the course of activity.

... it was also observed that enlarged deficits in the Federal budget might be accompanied by increases in interest rates as the year progressed. It was suggested, moreover, that the rate of inflation could prove to be higher than expected and could, therefore, hamper the progress of the expansion.

In the Committee's discussion, serious concern was expressed about the recent weakness of the dollar in foreign exchange markets. While it was noted that depreciation of the dollar might in time contribute to improvement in the U.S. trade balance, it was pointed out that it contributed to the rate of inflation

in this country and weakened business confidence both here and abroad. Excessive appreciation of foreign currencies, it was suggested, could have adverse effects on over-all economic activity abroad and, consequently, on the U.S. trade balance. The observation was made that the position of the dollar would be strengthened by adoption in this country of an effective energy program, of a tax policy conducive to business investment here, and of a more effective attack on inflation, as well as by pursuit abroad of faster rates of economic growth.

At U.S. commercial banks, expansion of total credit in November was close to the fast pace in October. Bank loans continued to grow at a rapid rate, and the strength was broadly distributed among major loan categories.

In the Committee's discussion of policy for the period immediately ahead, the members took note of the slowdown in the growth of the monetary aggregates in recent weeks and of the uncertainties in financial markets usually associated with the year-end. Against that background and in light of the performance of the economy, it was observed that increases in short-term interest rates were probably

not warranted at this time. On the other hand, it was suggested, the weakness of the dollar in foreign exchange markets argued against declines in such rates. Accordingly, most members were in favor of the maintenance of prevailing conditions in the money market for the time being and of continuing to give greater weight than usual to money market conditions in conducting open market operations in the period until the next meeting of the Committee. However, some members indicated a preference for basing operating decisions in the period ahead primarily on the behavior of the monetary aggregates.

The Committee decided to include in the next to last paragraph of its directive to the Federal Reserve Bank of New York the following sentence: "In the conduct of day-to-day operations, account shall be taken of emerging financial market conditions, including the unsettled conditions in foreign exchange markets." This instruction was added to provide the Manager with somewhat greater flexibility, in part because of the Committee's view that pressures on the dollar in foreign exchange markets might appropriately influence the nature and timing of domestic open market operations from day to day.



Bank Reserve Requirements and Their Enforcement: A Comparison Across States

R. ALTON GILBERT and JEAN M. LOVATI

THE proportion of commercial banks that are Federal Reserve members has been declining steadily in recent years, continuing a trend of over three decades. By the end of 1976, the percentage of commercial banks belonging to the Federal Reserve System had declined to 39 percent, compared to 45 percent at the end of 1966.

The reason banks mention most frequently for withdrawing from Federal Reserve membership is the cost of reserve requirements imposed on members relative to reserve requirements of the various states for nonmember banks.¹ Thus, an examination of the nature of state reserve requirements forms an important part of any analysis of declining Federal Reserve membership.

Of the previous studies dealing with state reserve requirements, the most comprehensive is that by Robert E. Knight.² Knight listed the reserves required by each state on various classes of deposit liabilities and the bank assets which qualify as reserves. In the four intervening years since the Knight study was published, reserve requirements have been changed in several states. The description of reserve requirements in this paper expands upon those in previous studies by including information on how states monitor the reserve positions of nonmember banks and enforce reserve requirements.

RESERVES REQUIRED OF FEDERAL RESERVE MEMBERS

Member bank reserve requirements are discussed before considering state reserve requirements to facilitate comparison between them. Reserve requirements of Federal Reserve members on net demand deposits are graduated, marginal requirements being higher for larger banks (see Table I). Reserve requirements on time deposits also tend to be higher for larger banks because of the higher requirement on that portion of time deposits with initial maturities between 30 and 179 days in excess of \$5 million.

Table I

MEMBER BANK RESERVE REQUIREMENTS

Type of Deposit (Amounts in Millions of Dollars)	Percent
Net Demand: ¹	
first \$2	7 %
\$2 - \$10	9.5
\$10 - \$100	11.75
\$100 - \$400	12.75
over \$400	16.25
Savings	3
Time:	
Initial maturity of 30-179 days:	
first \$5	3
over \$5	6
Initial maturity of 180 days to 4 years	2.5
Initial maturity of over 4 years	1

¹Net demand deposits equal gross demand deposits less demand balances due from other domestic banks and cash items in the process of collection.

Member banks must hold their reserves as either vault cash or reserve balances with their Federal Reserve Banks. They must meet their required reserves on a weekly average basis. The average reserve balance a member bank must hold at its Reserve Bank during each settlement week (seven-day period ending each Wednesday) is based upon its average deposit liabilities two weeks earlier less the bank's average vault cash two weeks earlier.

At the end of each reserve settlement week, member banks must file reports on daily deposit liabilities and reserve balances. These reports are used to determine whether member banks are meeting their reserve requirements. If the banks are not meeting their reserve requirements, penalties are assessed in amounts equal to the average reserve deficiencies times an interest rate two percentage points per annum above the prevailing Reserve Bank discount rate.³

³The penalty is waived if a reserve deficiency is two percent or less of required reserves for a settlement week and offset by excess reserves of equal dollar value in the following settlement week. Also, a member bank with excess reserves in one settlement week equal to two percent or less of required reserves can have a reserve deficiency of equal dollar amount in the following settlement week without a penalty. For a more detailed discussion of Fed reserve requirements, see Robert E. Knight, "Guidelines for Efficient Reserve Management," Federal Reserve Bank of Kansas City *Monthly Review* (November 1977), pp. 11-23.

¹Peter Rose, "Exodus: Why Banks are Leaving the Fed," *The Bankers Magazine* (Winter 1976), pp. 43-49.

²Robert E. Knight, "Reserve Requirements: Part 1: Comparative Reserve Requirements at Member and Nonmember Banks," Federal Reserve Bank of Kansas City *Monthly Review* (April 1974), pp. 3-20.

NATURE OF STATE RESERVE REQUIREMENTS

Specification of Required Reserves and Reserve Assets

Information on reserve requirements of individual states for various classes of deposit liabilities and on the types of assets that are counted as reserves is presented in Table II. This information was obtained from the bank supervisors of each state.⁴

Reserve requirements differ greatly among states, with Illinois being the only state with no statutory requirements. Most states have higher reserve requirements on demand deposits than on time and savings deposits, and in three states the reserve requirement ratios apply to total deposits. Two states, Massachusetts and Rhode Island, do not require any reserves on time and savings deposits. In 19 states various types of deposit liabilities, primarily government deposits, are not subject to reserve requirements.

All states with reserve requirements count vault cash and demand deposits at correspondent banks as reserves.⁵ In 27 states the banking authorities must approve correspondent banks as depositories if demand balances due from those banks are to be counted as reserves by nonmember banks. In 18 states cash items in the process of collection (CIPC) are

also counted as reserves. Nonmember banks may meet various proportions of their required reserves with earning assets in 22 states, with remaining shares of required reserves to be met with cash assets. In six states nonmember banks may meet all of their reserve requirements with interest-earning assets, generally unpledged U.S. Treasury securities or state and local government securities; therefore, they have no *cash* reserve requirements.

Comparison of Federal Reserve and State Reserve Requirements

Reserve requirement ratios are higher in some states than those for Federal Reserve member banks, as indicated by comparing Tables I and II. However, reserve burdens of member banks relative to those of nonmembers cannot be determined just by comparing reserve requirements of the Federal Reserve to those of the various states because of several differences in the types of assets that are counted as reserves for members and nonmembers.

Nonmember banks may hold their cash reserves in the form of vault cash and demand balances at correspondents. Eighteen states allow nonmember banks to count cash items in the process of collection as reserves, and in other states many nonmember banks effectively count CIPC as reserves by classifying their uncollected funds as demand balances due from correspondents. Member banks, on the other hand, may hold their cash reserves only as vault cash and reserve balances at their Reserve Banks. Member bank reserve

⁴Most of the state bank supervisors provided this information in October or November of 1977.

⁵Correspondent banks hold deposit balances of other banks and provide services to those banks.

Table II

STATE RESERVE REQUIREMENTS

State	Deposits Subject to Reserve Requirements	Current Reserve Requirement Ratios	Reserve Assets Eligible to Meet Requirements			
			Vault Cash	Demand Balances Due From Banks	Securities	Other
Alabama	T Dem	10%	X	X		
	TS	3%	X	X		
Alaska ¹	T Dem-US _d -SL _d	20%	X	X		
	TS-US _t -SL _t	8%	X	X		
Arizona ¹	T Dem-US _d -SL _d -R _d	10%	X	X ²	X ³	{ CIPC }
	TS-US _t -SL _t -R _t	4%	X	X ²	X ³	
Arkansas	T Dem	FR	X	X ²		{ CIPC ⁴ }
	S	3%	X	X ²		
	T	{ 3% first \$5 million, plus 5% over \$5 million }	X	X ²		

STATE RESERVE REQUIREMENTS (Continued)

State	Deposits Subject to Reserve Requirements	Current Reserve Requirement Ratios	Reserve Assets Eligible to Meet Requirements			
			Vault Cash	Demand Balances Due From Banks	Securities	Other
California ¹	T Dem-US _d -SL _d -R _d -CIPC-Due From ⁵ TS-US _t -SL _t	FR 5%	X (at least 20%)	X ²	(up to 80%) ⁶	
Colorado ¹	T Dep-US _d -SL _d -US _t -SL _t	15%	X	X ²	X ⁶	
Connecticut	T Dem-Due From -CIPC T	12% first \$5 million, plus 12.5% over \$5 million 3%	{ at least one-sixth }	{ X ² }	{ up to one-sixth ⁷ }	
Delaware ¹	T Dem-US _d -SL _d TS-US _t -SL _t	7% first \$100 million, plus 9% over \$100 million 3%	{ at least 50% ^{2 8} }	{ }	{ up to 50% ⁹ }	
Florida ¹	T Dep-US _d -SL _d -US _t -SL _t	20%	X	X	X ⁶	
Georgia ¹	T Dem-US _d -SL _d -R _d TS-US _t -SL _t -R _t	15% 5%	(at least 50%) ^{2 10 11} X	X ² X	(up to 50%) ¹² X ¹³	CDs ¹⁴
Hawaii	T Dem-US _d -SL _d TS-US _t -SL _t	12% 5%	{ at least 25% }	{ up to 75% ² }		
Idaho	T Dem TS	15% 5%	X X	X ² X ²		
Illinois	(No statutory reserve requirements)					
Indiana	T Dem TS	10% 3%	X X	X X		CIPC CIPC
Iowa	T Dem TS	7% 3%	X X	X ² X ²		
Kansas ¹	T Dem-US _d -SL _d TS-US _t -SL _t	FR FR	X X	X X		
Kentucky	T Dem TS	7% 3%	(at least 75%) ¹⁵ X	X X	(up to 25%) ¹⁶ X	CDs ¹⁷
Louisiana	T Dem-CIPC TS	{ 7.5% first \$2 million, plus 10% \$2-\$10 million, plus 12% \$10-\$100 million, plus 13% \$100-\$400 million, plus 14% over \$400 million } 3%	{ at least 50% }	{ }	{ up to 50% ¹⁸ }	
Maine	T Dem-TTL S T NOW	10% 2% 4% 8%	X X X X	{ X ^{2 11} }	X ¹⁹	{ Fed funds sold }
Maryland	T Dem-US _d -SL _d TS-US _t -SL _t	15% 3%	(at least two-thirds) X	X X	(up to one-third) ²⁰ X ²¹	
Massachusetts	T Dem plus time deposits subject to withdrawal within 30 days	Boston - 20% Others - 15%	{ at least 15% }	{ up to 80% }	{ up to 80% ⁹ }	
Michigan	T Dem TS	11% 6%	X (at least 10%) ²	X ²	(up to 90%) ¹³	

STATE RESERVE REQUIREMENTS (Continued)

State	Deposits Subject to Reserve Requirements	Current Reserve Requirement Ratios	Reserve Assets Eligible to Meet Requirements			
			Vault Cash	Demand Balances Due From Banks	Securities	Other
Minnesota	T Dem	The following percentages are not marginal requirements but apply to total demand deposits: 7% \$0-\$2 million 9.5% \$2-\$10 million 11.75% \$10-\$100 million 12.75% \$100-\$400 million 16.25% over \$400 million	at least 70% ¹⁵		up to 30% ¹⁹	
	S	3%				
	T	3% maturing in 30-179 days 2.5% maturing in 180 days to 4 years 2% maturing in 4 or more years				
Mississippi	T Dem	FR	at least 70%		up to 30% ²²	
	TS	FR				
Missouri	T Dem	FR	at least 50%, including CIPC ²		up to 50% ²³	
	TS	3%				
Montana	T Dem	7.5% first 2 million, plus 10% over \$2 million	X	X ²		
	TS	3%	X	X ²		
	Due to Banks ²⁴	10%	X	X ²		
Nebraska	T Dem	15%	at least 50%		up to 50% ²⁵	
	TS	5%				
Nevada ¹	T Dem-US _d -SL _d	FR	X	X ²		
	TS-US _t -SL _t	FR	X	X ²		
New Hampshire	T Dem	12%	at least 60%		up to 40% ²⁶	
	TS	5%				
New Jersey	T Dem	FR	X	X ²		CIPC
	TS	FR	X	X ²		CIPC
New Mexico	T Dem	12%	at least 50%, including local CIPC ²		up to 50% ²⁷	
	TS	4%				
New York	T Dem-CIPC- Due From ⁵	Same as FR except one percentage point lower on all deposit size categories	X	X ²		
	TS	FR	X	X ²		
North Carolina ¹	T Dem-US _d -SL _d	8% first \$2 million, plus 10% \$2-\$10 million, plus 12% \$10-\$100 million, plus 13% \$100-\$400 million, plus 15% over \$400 million	X	X ²		CIPC
	S	3%	X	X ²		CIPC
	T-US _t -SL _t	Maturing within 180 days: 3% first \$5 million 6% over \$5 million Maturing in 180 days or more: 3%	X	X ²		CIPC
North Dakota	T Dem	8%	X	X ²		
	TS	2%	X	X ²		

STATE RESERVE REQUIREMENTS (Continued)

Reserve Assets Eligible
to Meet Requirements

State	Deposits Subject to Reserve Requirements	Current Reserve Requirement Ratios	Vault Cash	Demand Balances Due From Banks	Securities	Other
Ohio	T Dem S T	7% 3% { Time deposits of \$100,000 and over maturing in less than 6 months: 3% first \$5 million 6% over \$5 million Other time deposits: 3% }	X at least 40% ²⁸	X { } { } { }	 up to 60% ²⁹	
Oklahoma	T Dem TS	FR FR	X X	X ² X ²		CIPC CIPC
Oregon	T Dem-US _d TS-US _t	12% 4%	X X	X ² X ²	X ²¹	CIPC CIPC
Pennsylvania	T Dem S T	12% 3% { 3% first \$5 million, plus 5% over \$5 million }	 at least 50% ²	{ } { } { }	up to 50% ³⁰	
Rhode Island ¹	T Dem-US _d (no reserve requirements on time and savings deposits)	15%	X	(up to 60%) ²	X ³¹	
South Carolina	T Dem TS	7% 3%	X X	X X		CIPC ³² CIPC ³²
South Dakota ¹	T Dep-US _d -SL _d -US _t -SL _t	17.5%	(at least 40%) ^{2 15}		(up to 60%) ¹³	
Tennessee	T Dem TS	10% 3%	X X	X X		{ Local CIPC }
Texas	T Dem TS	15% 5%	X X	X ² X ²		CIPC Time Deposits and CIPC ³³
Utah	T Dem TS	FR FR	X X	X X		
Vermont ¹	T Dem-US _d -SL _d TS-US _t -SL _t	27% 6.5%	X X	X X	{ X ³⁴ }	
Virginia	T Dem-R _d TS-R _t	10% 3%	X (at least 75%) ^{11 15}	X ¹¹ { }	(up to 25%) ³⁵	CIPC
Washington	T Dem TS	{ 7% first \$2 million, plus 9.5% \$2-\$10 million, plus 11.75% \$10- \$100 million, plus 12.75% \$100-\$400 million, plus 15% over \$400 million } { Maturing in 30-179 days: first \$5 million - 3% over \$5 million - 6% Maturing in over 4 years: 1% Other maturities: 3% }	X X	X X		CIPC CIPC
West Virginia	T Dem TS	7% 3%	{ at least 20% }	X X		CIPC CIPC
Wisconsin	T Dem Reserve Banks ³⁶ Other	20% 12%	{ at least two-thirds }	{ } { }	up to one-third ³⁷	

STATE RESERVE REQUIREMENTS (Continued)

State	Deposits Subject to Reserve Requirements	Current Reserve Requirement Ratios	Reserve Assets Eligible to Meet Requirements			
			Vault Cash	Demand Balances Due From Banks	Securities	Other
Wisconsin	TS					
	Reserve Banks ³⁶	20%	{ at least five-twelfths }	{ }	{ up to seven-twelfths ³⁷ }	{ }
	Other	12%				
Wyoming ¹	T Dem-USd-SLd	20%	{ at least 50% ^{2 15} }	{ }	{ up to 50% ³⁸ }	{ }
	TS-USL-SLt	10%				

¹Exemption applies only to public deposits which are secured by pledged securities.

²Demand balances at approved depository banks.

³Unpledged U.S. Government securities maturing within six months.

⁴Cash items in the process of collection on insured local banks, where local banks are those domiciled in the same or immediately adjoining municipalities.

⁵Demand balances at banks other than approved depository banks.

⁶Unpledged negotiable direct U.S. Government obligations.

⁷U.S. Government bonds.

⁸Unsecured trust funds held as demand deposits due from other banks may not be counted as part of reserves.

⁹Unpledged debt obligations of the State, its political subdivisions, or the United States.

¹⁰If amount of deposit is in excess of 10 percent of depositing bank's capital and surplus, state must approve depository.

¹¹Net of reciprocal deposits.

¹²Unpledged U.S. Government or agency obligations maturing within one year, or certificates of deposit maturing within one year. The maximum amount deposited with any one bank shall not exceed \$100,000 or 10 percent of the depositing bank's reserve requirement, whichever is greater.

¹³Unpledged U.S. Government or agency obligations.

¹⁴Unpledged certificates of deposit not used to meet reserve requirements against demand deposits.

¹⁵Includes CIPC.

¹⁶Up to 25 percent of reserve requirements against demand deposits may be met with U.S. Government or agency obligations maturing within one year or certificates of deposit of any Kentucky bank.

¹⁷Certificates of deposit of any Kentucky bank.

¹⁸Up to one-half of required reserves may be met with unpledged direct U.S. Government obligations maturing within one year or obligations of the State of Louisiana maturing within two years, except that state obligations may account for no more than one-fourth of total required reserves.

¹⁹Unpledged U.S. Government or agency obligations maturing within one year.

²⁰Debt obligations of the State, its political subdivisions, or the United States.

²¹Debt obligations of the State or the United States.

²²Up to 30 percent of required reserves may be invested in direct obligations of the U.S. Treasury or other obligations fully guaranteed by the U.S. Government which mature within one year; a portion of the 30 percent maximum, not to exceed one-half, may be met with negotiable certificates of deposit issued by Mississippi banks which mature within one year.

²³Up to 50 percent of required reserves may be invested in unpledged U.S. Government obligations maturing within five years and unpledged Federal funds sold to approved depositories.

²⁴Nonmember banks designated as reserve depositories must maintain, in addition to the reserve requirements on all demand deposits, reserves of 10 percent on demand deposits due to other banks.

²⁵Up to one-half of required reserves may be met with unpledged U.S. Government securities, at market value, or obligations of the Commodity Credit Corporation, at face value.

²⁶U.S. Government obligations maturing within two years.

²⁷Direct unpledged U.S. Government obligations maturing within 100 days.

²⁸Of required reserves on time and savings deposits, 5 percent may consist of unassigned values of life insurance policies owned by the bank, covering the lives of directors, officers, or employees of the bank, under which the bank is sole beneficiary of the cash surrender value of the policy.

²⁹Debt obligations issued, insured, or guaranteed by the United States.

³⁰Debt obligations of the Commonwealth, its political subdivisions, the United States, or other marketable obligations approved by the state banking authorities.

³¹U.S. Government or agency obligations maturing not more than 91 days from computation of reserves.

³²Cash items collectible within 10 days.

³³The reserve requirement on time and savings deposits may be met with time deposits at approved depositories.

³⁴Of total required reserves, 40 percent must be in the form of vault cash, demand balances due from other commercial banks, and direct U.S. Government obligations maturing within one year. The remaining 60 percent may be held in U.S. Government or agency obligations of any maturity, and one-third of this 60 percent may be obligations of the State of Vermont.

³⁵Unpledged U.S. Treasury obligations maturing within one year.

³⁶Approved by state banking authorities as reserve bank.

³⁷U.S. Government securities and general obligation bonds and notes of the State of Wisconsin maturing within 18 months.

³⁸Unpledged U.S. Treasury bills.

KEY TO CODING

FR	Same as reserve requirements of Federal Reserve	SLt	State and local government time deposits
T Dep	Total deposits	Due From	Demand deposits due from domestic commercial banks
T Dem	Total demand deposits	Rd	Reciprocal demand deposits
T	Time deposits	Rt	Reciprocal time deposits
S	Savings deposits	CIPC	Cash items in process of collection
USd	U.S. Government demand deposits	TTL	Treasury tax and loan accounts
USL	U.S. Government time deposits	NOW	Negotiable Orders of Withdrawal
SLd	State and local government demand deposits	CD	Certificate of Deposit

balances are only *collected* reserves since members receive credit to their reserve accounts for checks deposited with their Reserve Banks on a time schedule which approximates the time required for collection of the checks.

Most member banks with total deposits up to about \$50 million hold demand balances at correspondents almost as large as the demand balances held by nonmember banks of similar size.⁶ An important explanation of this behavior by member banks is that most of them in that size range make little use of Reserve Bank services, using those of correspondent banks instead.⁷ As a result, member banks tend to hold substantially higher ratios of cash to total deposits than nonmembers of comparable size.

Monitoring and Enforcing Reserve Requirements

State reserve requirements have little relevance for banks unless states establish methods of monitoring the reserve positions of nonmember banks and forcing them to keep their reserves up to required levels. In the survey, state bank supervisors were asked to describe their methods of monitoring and enforcing reserve requirements. Their responses are presented in Table III. This information does not indicate whether state reserve requirements actually influence behavior of nonmember banks, but is presented to fill a void in information available on state reserve requirements.

One aspect of reserve requirements presented in Column (1) is reserve settlement periods, that is, the periods over which reserves and deposit liabilities are averaged in determining whether banks are meeting their reserve requirements. Half of the states have either two week or semimonthly reserve settlement periods, while 15 states have weekly reserve settlement periods. Eight supervisors indicated that either reserves of nonmember banks in their states are not averaged or no reserve settlement period is specified. In such states examiners determine a bank's reserve assets and required reserves as of the examination date. If a bank's reserves are not adequate as of that day, some states then average reserves held and required reserves over longer periods of time. Other

states give the bank a specified period of time to bring their reserves up to required levels.

Monitoring procedures are described in Column (2) of Table III. In 11 states nonmember banks are required to file reports with their supervisors on daily reserves and deposit liabilities at the end of each reserve settlement period. In 28 other states banks are required to keep such records for inspection by state bank examiners, but do not send reports on reserve positions to their supervisors. Eight states require banks to send notice of reserve deficiencies to their supervisors within a few days after reserve settlement periods in which such deficiencies occur. States generally impose fines on banks which do not send such notices.

One of the ways states enforce reserve requirements is to impose dollar penalties for reserve deficiencies; 19 states have dollar penalties for reserve deficiencies. Information on those penalties is presented in Column (3) of Table III. Some supervisors indicated that in their states dollar penalties are seldom imposed, either because their banks seldom have reserve deficiencies or because penalties are often waived. However, other supervisors indicated that penalties are imposed often in their states, giving specific frequencies and total dollar amounts.

States that do not have dollar penalties for reserve deficiencies generally have other enforcement powers. The most common non-dollar penalties are prohibitions on making loans or paying dividends while banks have reserve deficiencies. Also, in 14 states bank supervisors have authority to declare banks with reserve deficiencies unsound and to close them. The supervisors indicated that these non-dollar penalties are seldom imposed.

SUMMARY

The reasons most commonly given for declining Federal Reserve membership deal with the level and form of reserve requirements on Federal Reserve member banks relative to those imposed by states on nonmember banks. Upon examination, however, comparisons of reserve requirements of member and nonmember banks are difficult. Deposits subject to reserve requirements differ between the Federal Reserve and state banking agencies, and among states. The periods over which reserve accounts must be settled also vary among states, from weekly periods (as with the Federal Reserve) to monthly periods (as in one state).

⁶Knight, "Reserve Requirements: Part 1," p. 11.

⁷R. Alton Gilbert, "Utilization of Federal Reserve Bank Services by Member Banks: Implications for the Costs and Benefits of Membership," this *Review* (August 1977), pp. 2-15.

Table III

ENFORCEMENT OF STATE RESERVE REQUIREMENTS

State	(1) Reserve Settlement Period	(2) Periodic Reports	(3) Penalty for Deficiencies	(4) Comments
Alabama	Weekly	None ^{1 2}	Federal Reserve discount rate plus 2 percent per annum on each \$1,000 of average deficiency	Penalties on reserve deficiencies became effective in December 1975. From then to April 1977, \$6,000 in penalties were collected. The high deficiency rate was due to elimination of local clearings as reserve assets in December 1975.
Alaska	Reserves not averaged	None ¹	No dollar penalty. ⁵ Possible penalty for failure to keep records of reserve positions — \$5,000.	
Arizona	Biweekly	Biweekly	No dollar penalty	
Arkansas	15 days	None ¹	8 percent per annum	Numerous reserve deficiencies were discovered during examinations prior to 8 percent penalty, but such occurrences have decreased since instituting the penalty.
California	Biweekly	Biweekly	Penalty rate ranges from 6 percent to 12 percent per annum depending upon size of deficiency relative to total deposits. ⁷	
Colorado	Weekly	None ¹	No dollar penalty	
Connecticut	Semimonthly	None ³	No dollar penalty ^{4 5 7}	
Delaware	Semimonthly	Semimonthly	No dollar penalty ⁷	
Florida	30 days	None	No dollar penalty ^{5 7}	Reserve assets are compared to required reserves as of the examination date. If reserves are deficient that day, a 30 day average is calculated.
Georgia	Biweekly	None ^{1 2}	\$50 per day for failure to notify state of deficiency ^{4 5 7}	Violations of reserve requirements occur rarely.
Hawaii	Weekly	None ¹	No dollar penalty ^{4 7}	
Idaho	Biweekly	Biweekly	No dollar penalty ^{4 5}	A bank may not make additional loans while its reserves are deficient. This penalty would be imposed only after two warnings.
Indiana	Biweekly	None ¹	No dollar penalty ^{4 5}	
Iowa	5 days	None	\$100 per day of reserve deficiencies	Compliance with reserve requirements is checked as of examination period. Reserve deficiencies are infrequent and penalties are applied only as a last resort.
Kansas	None	None ¹	No dollar penalty ^{6 7}	
Kentucky	Biweekly	None ¹	No dollar penalty	
Louisiana	Semimonthly	None ^{1 2}	If reported deficiency in reserves is not restored within period satisfactory to state, or if state banking authorities discover unreported deficiency, penalty of 6 percent per annum may be imposed.	Reserve deficiencies do not occur frequently.
Maine	Weekly	Weekly	Penalty at variable rate not to exceed 10 percent per annum; imposed when deficiency is greater than 2 percent of required reserves ⁴	

ENFORCEMENT OF STATE RESERVE REQUIREMENTS (Continued)

<u>State</u>	<u>(1) Reserve Settlement Period</u>	<u>(2) Periodic Reports</u>	<u>(3) Penalty for Deficiencies</u>	<u>(4) Comments</u>
Maryland	Reserves not averaged	None. Reserve requirements are calculated on a day-to-day basis at the time of examination.	No dollar penalty. Continued violations can lead to removal of directors and officers of a bank.	
Massachusetts	Weekly	Weekly	No dollar penalty assessed for reserve deficiency. Penalty for not reporting deficiency is \$1,000 per week or imprisonment for not more than one year.	
Michigan	Biweekly	Biweekly	No dollar penalty	Repeated reserve deficiencies could bring about a cease and desist order from the state. A penalty of \$50 is assessed for not filing reports on reserve positions.
Minnesota	Biweekly	None ¹	For each biweekly period of reserve deficiency, penalty of \$50 or 12 percent per annum on reserve deficiency, whichever is greater	Penalties for reserve deficiencies assessed on 54 out of 547 nonmember banks in 1976
Mississippi	Biweekly	None ¹	\$50 for each day a bank's reserves are deficient, unless covered by excess reserves in the previous or following bi-weekly period	In recent history all reserve deficiencies have been covered by excess reserves in the previous or following biweekly periods.
Missouri	Weekly	None ¹	No dollar penalty ^{4 6}	
Montana	Weekly	None ¹	No dollar penalty ⁴	Examinations disclose few reserve deficiencies, and most of those are of one week duration.
Nebraska	Weekly	None ¹	8 percent per annum on reserve deficiencies plus \$5 per day of reserve deficiencies ^{4 5 7}	
Nevada	15 days	None ¹	No dollar penalty	Excessive or continued deficiencies discovered during examinations are reported to bank management and Board of Directors. Banks have 60 days after examination to rectify reserve deficiencies.
New Hampshire	Reserves not averaged	None	No dollar penalty ^{4 5}	
New Jersey	Semimonthly	None ¹	No dollar penalty ⁶	Violations of reserve requirements are infrequent.
New Mexico	Reserves not averaged	None. ² Reserves are checked as of examination date.	If reserve deficiency is discovered as of examination date, the penalty is \$100 per day while deficiency continues.	
New York	Weekly, with lagged reserve requirements and carry-over provision identical to that of the Federal Reserve	Weekly	Penalties range from 6 percent to 12 percent per annum, depending upon size of deficiency relative to deposit size of bank.	Penalties are not mandatory, but imposed only if a bank is deficient for two consecutive weeks.
North Carolina	Biweekly	None ²	No dollar penalty ^{4 5}	Penalties are not imposed with significant frequency.
North Dakota	Weekly	None ¹	If a bank is deficient in reserves as of examination date, it has 30 days to rectify, or the state may impose a penalty of \$100 or 7 percent per annum on deficiency, whichever is greater.	

ENFORCEMENT OF STATE RESERVE REQUIREMENTS (Continued)

State	(1) Reserve Settlement Period	(2) Periodic Reports	(3) Penalty for Deficiencies	(4) Comments
Ohio	Biweekly	None ²	No dollar penalty ^{6 7}	
Oklahoma	Semimonthly	Semimonthly	After two consecutive periods of deficiency, penalty at rate of 2 percentage points per annum above the Federal Reserve discount rate is assessed.	In 1976, 13 penalties were assessed on 7 banks. Penalties may be waived, but this is rarely done, except for penalties under \$25.
Oregon	Reserves not averaged	None ¹	If bank has a reserve deficiency on any day, it has three days to eliminate the deficiency, or a penalty is assessed. The penalty rate is 2 percentage points per annum above the Federal Reserve discount rate.	
Pennsylvania	Biweekly	None ^{1 2}	No penalty for reserve deficiency, but a \$50 fine assessed per day for not reporting a deficiency within three days	
Rhode Island	Weekly	Semiannually	No dollar penalty ^{4 5 7}	
South Carolina	Reserves not averaged	None ¹	No dollar penalty	Very few reserve deficiencies found by examiners
South Dakota	Weekly	None ¹	\$50 per day of reserve deficiency	Very few penalties each year
Tennessee	Weekly	None ¹	No dollar penalty ^{4 5 7}	
Texas	Weekly	None ¹	Three grace periods per year, fine of \$50 for fourth weekly period of reserve deficiency, with fines increasing up to \$500 per period for 10 or more periods of reserve deficiency	
Utah	Biweekly	None ^{1 3}	No dollar penalty ^{4 7}	No record of penalties for reserve deficiencies ever having been imposed
Vermont	Reserves not averaged	None ³	No dollar penalty	Only occasionally are banks found to have reserve deficiencies.
Virginia	Biweekly	None ¹	No dollar penalty	Violations of reserve requirements could be punishable as a misdemeanor. State banking authority is not aware of the penalty ever having been imposed.
Washington	Semimonthly	None ^{1 2}	Penalty is \$100 per reserve settlement period of deficiency or prime rate plus 2 percentage points times average deficiency, whichever is smaller.	In 1976, 11 fines were imposed.
West Virginia	Biweekly	Biweekly	Penalty rate is 2 percentage points per annum above Federal Reserve discount rate. ⁴	In 1975, 19 penalties imposed for reserve deficiencies, in 1976, 38 penalties imposed
Wisconsin	Biweekly	None ¹	If bank does not make up deficiency within 30 days after notice from state, a fine of \$100 for each biweekly period of reserve deficiency may be imposed. ^{4 7}	Violations occur infrequently, and no penalties have been imposed during the past 15 years.
Wyoming	Biweekly	Biweekly	No dollar penalty ^{4 5 7}	

¹Records of reserve positions must be kept by banks for inspection by examiners.²Banks must report reserve deficiencies to state shortly after deficiencies occur.³Reserves are checked at time of examination. Spot checks are made for periods between examinations.⁴Making loans is restricted during periods of reserve deficiency.⁵Declaring dividends is restricted during periods of reserve deficiency.⁶Banks with reserve deficiencies may be forced to comply with reserve requirements through cease and desist orders.⁷Continued failure to comply with reserve requirements can lead to liquidation of the bank by the state.

More importantly, the form in which reserves may be held differs crucially between requirements of the Federal Reserve and those of the states. While member banks must hold their reserves in cash or as deposits in their Federal Reserve Banks, nonmember banks in a majority of states may invest their reserves in interest-earning assets. Nonmember banks in seven states have no cash reserve requirements; in six of those states they may meet all of their reserve requirements with interest-bearing assets, and in Illi-

nois, nonmember banks have no statutory reserve requirements.

It is also important to note that enforcement of reserve requirements by most states is not as strict as that by the Federal Reserve. Thirty-seven states do not require nonmember banks to file frequent reports detailing reserve positions. Moreover, 30 states have no dollar penalties assessed on banks with reserve deficiencies.