The Role of Operating Guides in U.S. Monetary Policy: A Historical Review*

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The operating techniques employed by the Federal Reserve to implement monetary policy since the end of World War II have undergone substantial evolution. This process has been guided by a number of important developments: (1) the "rediscovery of money", following an extended period in the 1930's and 1940's during which monetary policy played a relatively minor role; (2) the breaking away of the Federal Reserve from Treasury control in 1951; (3) various new analytical insights into the workings of monetary policy; and (4) the advent of inflation as a persisting — though presumably not permanent — fact of life. The shift away from the gold exchange standard towards floating rates, on the other hand, had little effect on the choice of Federal Reserve operating techniques.

The focus of this essay is on the particular operating techniques used to implement Federal Reserve open-market policy. Since open-market rates, on the other hand, had little effect on the choice of Federal not deal with secondary instruments, such as the discount mechanism, and changes in reserve requirements. Nor does it seek to evaluate the successes and failures of open-market operations in achieving their ultimate policy goals — for employment, prices, economic growth, and the balance of payments.

It is important to note that the Federal Reserve's approach to open-market policy has been substantially influenced by the organizational structure through which these actions must be decided and carried out. Policy decisions are made by the Federal Open Market Committee (FOMC) which consists of five of the twelve presidents of regional Federal Reserve Banks, along with the seven members of the Board of Governors. The seven presidents who at any one time are not members

* The views expressed herein are our own and do not necessarily reflect those of the members or the staff of the Board of Governors of the Federal Reserve System.

nevertheless participate in these meetings. The logistics of bringing this group together is one reason meetings ordinarily are limited to one a month.

Between the monthly Federal Open Market Committee meetings — which are held in Washington — policy is implemented by the Manager of the System Open Market Account at the Federal Reserve Bank of New York. Because of the complex and decentralized nature of this policy mechanism, it has been necessary to develop explicit and rather formal procedures, both for expressing policy decisions reached at meetings and for delegating their execution between meetings to the Manager.

I. World War II Pegging of the Yield Curve on U.S. Government Securities

In connection with the financing of the Second World War, the Federal Reserve, at the request of the Treasury, had undertaken to maintain approximately the level and term-structure of interest rates prevailing when the war began. While this decision was critical to the efficient financing of the war, it made it difficult for the central bank to pursue its traditional function of managing the nation's supply of money and credit.

To fulfill its commitment to "peg" interest rates, the Federal Reserve had to stand ready to buy (or sell) Treasury securities in the secondary market when offerings (or bids) by other investors threatened to force yields to rise (or fall) appreciably relative to the "pegged" structure[1]. The Federal Reserve did not buy securities directly from the Treasury, but its support operations in the secondary market in effect guaranteed the Treasury a ready demand for the new securities issued to finance the war.

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[1] The characteristics of this yield structure were a 3-month rate of 3/8 per cent, a 7-to-12-month rate of 7/8 per cent, and a 20-year rate of 2-1/2 per cent. This structure was broadly believed to reflect liquidity preference — the fear that long-term rates might rise and the consequent desirability for investors seeking to avoid capital losses to stay with short-term assets. It was widely recognized that pegging of such a rate structure was internally inconsistent. If long-term securities were expected to remain truly pegged until maturity, there was no point in holding any security with a lower yield but no lower risk. However, anyone who acted on this theory and bought the 2-1/2 per cent bonds of September 1972 on the presumption that Federal Reserve pegging had removed the risk of investing at the long end of the market would have seen his bonds depreciate to a low of 78-24/32 in early 1960.

During the war, investors — individuals, financial intermediaries, nonfinancial corporations, and all the rest — had willingly acquired Treasury securities because many alternative uses of their funds were being circumscribed by wartime controls. After the war, however, many investors sought to dispose of these holdings. This forced the Federal Reserve to acquire all offerings that threatened to push yields above the official "pegs". In the process, bank reserves, bank credit, and the money supply were all expanded.

The consequences of this abdication of Federal Reserve control over the supplies of money and credit came to a head during the Korean War. Since the public could cover its war-inflated needs for funds simply by dumping excess holdings of marketable Treasury debt on the Federal Reserve at "pegged" prices, the Federal Reserve — in the words of its own Chairman — became "an engine of inflation". After a difficult and prolonged confrontation between the Administration and the Federal Reserve, an "Accord" was reached with the Treasury in March of 1951 which finally freed the Federal Reserve from its lingering World War II commitment to "pegging".

II. Transition from "Pegging"

Altough the 1951 "Accord" with the Treasury ended the Federal Reserve's commitment to maintain rigid interest rate "pegs", the process of withdrawing completely from official support of the Government securities market occurred gradually. In particular, support of the issues involved in Treasury financings continued until nearly the end of 1952.

Not surprisingly, there were differences of judgment within the Fedral Reserve System as to how rapidly and how completely the Federal Reserve should pull back from market support of this type. Fears were voiced that upon withdrawal of official buying prices Government bonds might drop drastically, forcing financial institutions that had invested in longer term bonds — on the assumption that their prices would be stabilized — to suffer heavy losses. In addition, there was considerable concern that — in the wake of the "pegging" experience — the secondary market for U.S. Government securities might not be sufficiently broad and active to accommodate the substantial volume of transactions needed to implement an effective monetary policy.

To help resolve questions raised by these various concerns, the Federal Open Market Committee, in early 1952, initiated a broad study of the U.S. Government securities market and its relation to Federal Reserve operations. While this study was in progress and the support of Treasury financings was continuing, questions concerning the selection of appropriate operating targets for the management of monetary policy were not considered in any systematic way. To some extent the limited focus on explicit operating targets in this period probably reflected a presumption among the "old hands" on the Committee that the operating approach used prior to the "pegging" episode would simply be reinstituted. In any event this, in effect, is what happened.

Results of 1952 study[2]. The 1952 study concluded that, if the Federal Reserve's open market transactions were to be carried out effectively, they would consistently have to represent only a relatively small share of total dealer transactions with all participants in the Government securities market. Only when this condition prevails can open-market operations be transacted with little direct impact on market prices. Because the bulk of the Federal Reserve's transactions are of a "defensive" type, it was (and still is) considered important for the FOMC to be able to influence bank reserves without significantly disturbing securities prices. "Defensive" type operations are designed to keep the posture of monetary policy essentially unchanged by offsetting fortuitous fluctuations in bank reserves that result from other factors, such as currency flows, adjustments in float, and changes in the Treasury's balance at Federal Reserve Banks.

The 1952 study concluded that the Government securities market at that time did not adequately satisfy these necessary conditions for an effective implementation of monetary policy. Because market professionals did not have a clear perception of the reasons for given System actions in the market, or of the magnitude of transactions to expect in given market sectors, they were reluctant to take investment positions of their own in Government securities or to carry the inventories needed to promote and accommodate an active volume of private investor trading.

Acting on these findings, the Federal Open Market Committee, in March 1953, introduced several new operating procedures designed to improve the functioning of the Government securities market. First,

[2] Report of the ad hoc subcommittee on the U.S. Government securities market.

to reduce market uncertainties about Federal Reserve intentions, the Federal Open Market Committee announced that henceforth operations would be initiated solely "to effectuate the objectives of money and credit policy" and "not to impose on the market any particular pattern of prices or yields". To bolster the credibility of this promise, the Federal Open Market Committee also stated that it would confine its market transactions to very short-term securities, preferably bills — except for the rare situation where intervention over a broader maturity range might be needed "to correct disorderly market conditions". In market circles this procedure came to be known as the "bills only" doctrine.

Additional constraints were imposed on transactions of the System Account Manager at times of Treasury financings. Specifically, he was directed to refrain at such times from purchasing (1) maturing Treasury issues for which an exchange was being offered, (2) new issues being offered in an exchange, and (3) any outstanding issues with maturities comparable to those of the new issues.

When it announced these modifications of its approach to Treasury financings, however, the Federal Open Market Committee stated that it was still prepared to maintain an "even-keel" in monetary policy during financing periods. In other words, the Federal Reserve would refrain from any action at times of Treasury financing which might be interpreted by market participants as a change in monetary policy.

Subsequent modifications of 1953 restrictions. The 1953 "bills only" doctrine was viewed by some members of the Federal Open Market Committee at the time as essentially a temporary measure intended to ease the transition from "pegging". Actually, however, the constraint was maintained until early 1961. Moreover, during the intervening period System operations were extended to longer term securities — to help "correct disorderly markets" — on only two minor occasions.

The 1961 decision to end this procedure was prompted by a special situation that developed during the 1960 - 61 recession. System efforts to combat the recession through an "easy" money policy had exerted downward pressure on U.S. short-term interest rates at a time when higher short-term rates abroad were encouraging capital outflows and tending to augment a large U.S. balance-of-payments deficit. To help minimize the downward pressure on U.S. short-term rates, the Federal Reserve sold Treasury bills in volume from its portfolio and then offset the resulting drain on bank reserves with market purchases of longer

term Government securities. In addition, when there was a need to add to the overall supply of bank reserves, the System often met the need through purchases of intermediate- and long-term securities rather than bills. The U.S. Treasury bolstered this System effort to maintain the bill rate by concentrating the bulk of its cash borrowing during the period in Treasury bills.

Many analysts outside the Federal Reserve System interpreted this abrupt 1961 shift in operating technique to an emphasis on purchases of longer term securities as evidence that the Federal Open Market Committee was trying to "twist" the yield curve on U.S. Government securities. Actually, in the Federal Open Market Committee's view, avoiding a depressing effect on bill rates was the primary consideration. In any event, econometric studies suggest that the power of open-market operations to twist the yield structure — raising short and lowering long rates — is minimal. Moreover, any temporary effect the System "swaps" may have exerted on long-term rates in 1961 was completely swamped by the offsetting influence resulting from the massive Treasury advance refundings being undertaken at the same time.

Since 1961, the Federal Reserve has continued to make periodic transactions in longer term U.S. Government securities. And in August 1971 its operations were extended to the full maturity spectrum of the market for Federal agency securities as well. However, these transactions in longer term securities have been restricted exclusively to purchases; have occurred only at times when the Federal Reserve needed to supply reserves; and have been typically — though not always — limited to situations in which dealers were willing sellers of securities at close to prevailing market prices.

Since these constraints on System operations in longer term securities are now well understood by market participants, such transactions no longer create the types of uncertainties that prevailed just after the 1951 "Accord". Moreover, as economists have come to understand better the overriding importance of market interest rate expectations in determining the maturity structure of security yields, outsider pressure on the Federal Reserve to step up its purchases of longer term securities as a means of "twisting" the yield curve at times of economic recession have greatly diminished.

"Even-keeling" today. The importance of the System's "even-keel" commitment on Treasury financings — originally an avoidance of mone-

tary policy changes during roughly three weeks, four times a year — has also diminished in recent years. In the late 1950's and early 1960's this commitment was particularly important, because Treasury refundings operations were concentrated in large quarterly financings, and the prices and coupon rates on new issues involved in those operations were set several days in advance of the offering dates. In those circumstances, the refundings were vulnerable to any updrift in market interest rates that developed between their announcement and offering dates.

During recent years, however, virtually all of the Treasury's new marketable debt offerings have been auctioned. Since auctions set the rates of new issues on the actual date of offering, rather than on the announcement date, and allow the market, rather than the Treasury, to determine the price once the Treasury has set the volume to be sold, the possibility that a financing will not be fully subscribed because of last-minute shifts in market rates has been minimized. Because of the emphasis on auctioning and other debt management innovations, the need to constrain monetary policy initiatives close to Treasury financing periods has been reduced.

III. Return to Traditional Operating Targets[3]

After the spring of 1953 — with the major transition questions raised by the abandonment of "pegging" fairly well resolved — the Federal Open Market Committee began to focus more concertedly on the question of appropriate operating targets. It soon became clear that the general terms like "neutrality", "active ease", and "restraint" which members had been using to characterize their policy preferences needed much more explicit definition to be meaningful.

To help meet this need, some Committee members began to support their expression of policy preferences at Federal Open Market Committee meetings with a more complete spelling out of the analytical reasoning through which their judgment was reached. Usually, they then specified an explicit set of near-term financial conditions which they believed would be consistent with their desired policy approach. The particular conditions specified usually included desired levels or changes

[3] The ultimate "target" of policy is a favorable performance of the economy as reflected in output, prices, and employment. The financial variables used to define desired policy ranges, and referred to here as "targets", are merely means to achieving this broader end, and not targets in any final sense.

in key short-term interest rates, plus related totals for member bank borrowing and excess reserves at Federal Reserve Banks. Over time the excess reserves-member bank borrowing relationship began to be expressed as a desired range of "net free" or "net borrowed" reserves[4].

However, while the staff furnished great supporting detail on recent economic and financial events, no integrated projections were provided suggesting how alternative sets of net reserve and money market rate specifications were likely to be reflected in the behavior of money, bank credit, and bond yields and how, under their influence, the economy itself might evolve. Each Committee member was left to judge for himself the likely results of his proposed actions.

In the late 1950's and early 1960's some members began to question the Committee's emphasis on money market conditions and net reserves as operating targets for open-market policy. They noted, in particular, that the same level of net reserves could mean rather different things about the effects of policy at times when credit demands at banks were strong than when credit demands were weak. An effort by the Federal Reserve to maintain a given level of free reserves at a time when the banks, facing strong credit demands, were trying to use up their free reserves through credit expansion would lead to monetary and credit expansion. A similar Federal Reserve effort to hold free reserves constant when banks, facing weak credit demands, were willing to see their free reserves rise would lead to contraction.

This point was driven home by developments in early 1960 when the money supply and total reserves at banks contracted appreciably during the initial phase of the 1960 - 61 recession. In that period the Federal Reserve was reluctant — for balance-of-payments reasons — to reduce the System discount rate in line with declines in short-term market rates. With the relative cost of market sources of funds thus declining, banks elected to repay borrowing from the Federal Reserve as their customers' loan demands dropped off. The Manager of the System open-market account — following the Federal Open Market Committee's instructions to hold net reserves in a given range — did not permit net borrowed reserves to decline as rapidly as banks wanted. Thus, the Manager held back on the provision of nonborrowed reserves, and total

[4] When excess reserves exceed member bank borrowings, the net position of the banking system shows "free" reserves; when borrowings exceed excess reserves, there are "net borrowed" reserves.

reserves at banks contracted. This episode contrasted sharply with some earlier periods when general demands for bank credit had been strong and the Committee's tendency to hold to a given net reserve target had contributed to very rapid growth in total reserves, money, and bank credit.

The Federal Open Market Committee's focus on interest rate targets, a corollary of the free reserves approach, also began to be questioned more generally at this time, on the grounds that it tended to minimize the Committee's attention to the performance of money and credit aggregates. Since interest rates are procyclical, in that they move up and down with swings in economic activity, they generally tend to make the posture of monetary policy appear countercyclical, whether money and credit are behaving countercyclically or not. Thus, there was concern that a primary emphasis on interest rate targets could lead to inappropriate behavior of the money and credit aggregates. During the early 1960's, operating targets actually used by the Committee, nevertheless, continued to be focused on net reserves and money market conditions.

As the 1960's progressed, however, Committee members began to focus more than they had earlier on the performance of the aggregates, especially the volume of bank credit. This increased Committee interest in the aggregates was supported by improvements in the available data and by continuing staff reviews and analyses of their behavior. In addition, the Committee began to reflect its increased attention to the importance of the money and credit aggregates through revisions in the structure and wording of the policy directives given monthly to the Open Market Manager.

IV. Experimentation with Quantitative Targets

Around the mid-1960's the Federal Open Market Committee and its staff began to study and experiment with more precise ways of choosing and expressing relevant targets for open market policy. As the discussion proceeded, two types of targets were differentiated.

First, it was recognized that the net reserve and money market rate variables which the Committee had stressed up to that point were essentially "operating targets" suitable for expressing immediate operating objectives and instructions. Data on these measures were available almost immediately, and System open market operations could exert

an immediate impact on their behavior[5]. For this reason, the Manager of the System Account could be held responsible for reaching such targets during the period between Committee meetings.

The second type of target variable — represented by money supply and bank credit — was of an intermediate character, less closely related to Federal Reserve operations. Data for these variables were available with longer time lags. Moreover, because they responded with a lag to changes in operating targets of the first type, they had to be influenced indirectly through adjustments in the type-one targets. As a result, when target variables of the intermediate type deviated from the Committee's desired ranges, the Manager's chances of correcting such deviations within the intermeeting period (through adjustments in the operating variables) were not very great.

Despite these limitations on the Committee's short-run ability to control the intermediate target variables, Committee members began to place a higher premium on them — initially stressing bank credit and then as time passed, more the monetary aggregates. This change of attitude reflected the developing view that bank credit and money provided a more predictable link to the ultimate policy goals of output, prices, and employment. In particular, as inflation increasingly separated real interest rates from nominal, many analysts began to view nominal interest rates as seriously flawed for target purposes and turned increasingly to the financial aggregates as substitutes.

The Federal Open Market Committee's focus thus turned more explicitly to the linkages in the monetary process — running from the initial policy impacts on money market and marginal reserve measures (borrowed, excess, and free reserves) through growth in money and bank credit and changes in long-term interest rates, to the ultimate

[5] Starting in the mid-1960's large U.S. commercial banks with temporary reserve deficiencies began to press more actively to borrow excess reserves (Federal funds) from banks with temporary reserve surpluses — even when the interest cost of such funds rose above the Federal Reserve discount rate. Although borrowing directly from the Federal Reserve System would have been cheaper in such circumstances, members often elected to borrow Federal funds instead — typically for one day at a time. In this way they avoided the close surveillance of their operations by Federal Reserve discount officers that typically accompanies any extended borrowing from the System. Because of this preference for borrowing Federal funds, a national market for Federal funds developed rapidly. Since Federal Reserve operations to ease or tighten the bank reserve base are immediately reflected in the Federal funds quotation, this rate began to be viewed as the primary bellwether of Federal Reserve policy intentions — superceding the rate on 90-day Treasury bills.

behavior of output, prices, and employment. To assist its ongoing analysis of these linkages, the Committee needed not only studies of past relationships, but also projections of expected future relationships. Consequently, in addition to its usual reports on recent economic and financial developments, the staff began providing an integrated economic projection of likely future developments.

As time passed, the forecasting procedures used and the types of documentation provided by the staff became increasingly sophisticated. Basically, judgmental projections made by staff experts with long experience in forecasting were melded with results obtained from econometric models. Two types of models were used: one, the Board's basic model of the United States economy (developed initially in conjunction with consulting economists from the University of Pennsylvania and the Massachusetts Institute of Technology); and the other, smaller models that focused more explicitly on the relationships of money supply and interest rates to national income.

Committee efforts to incorporate intermediate — and especially monetary aggregate — targets into its actual operating procedures evolved gradually, starting in the spring of 1966. The first step was to add a proviso clause to the policy directive the Committee used to control operations of its Account Manager between meetings. Prior to 1966, the operating clause of the policy directive had simply directed the Account Manager to gear his intermeeting actions either to the maintenance of roughly the conditions then prevailing in money markets, or to some modest tightening or easing of those conditions. The record of the Committee's discussion at the meeting was relied on to give the Manager guidance as to how the term "prevailing conditions" should be interpreted, or how much these conditions should be modified if the Committee had decided on some tightening or easing of policy.

With the introduction of the proviso clause, the Committee's policy directive continued to direct the Manager to seek either prevailing, or somewhat tighter or easier money market conditions, but with the qualification that he should modify this objective if bank credit (or some other aggregate measure) deviated significantly from some recent or anticipated general pattern of behavior. The following operating directive voted at the Federal Open Market Committee's November 22, 1966, meeting provides an example:

"To implement this policy, System open market operations until the next meeting of the Committee shall be conducted with a view to attaining some-

what easier conditions in the money market, unless bank credit appears to be resuming a rapid rate of expansion."

This experimentation with proviso clauses was part of a more general Committee effort during the late 1960's to exert more effective control over the management of open-market policy. While the language of the policy directive itself remained quite broad, its general wording began to be linked through staff documents prepared for the Committee to an explicit set of money market conditions and expected growth ranges for the aggregates.

At the November 1966 meeting cited above, for example, supporting staff documents indicated that the directive language quoted would be consistent with net reserves fluctuating around zero, a 3-month Treasury bill rate around 5 per cent, and bank credit expansion in a 2 to 4 per cent annual rate range. These specifications, of course, were linked to the directive language actually adopted by the Committee. Similar specifications had been provided to support alternative directive possibilities, which the Committee majority had discarded.

The Committee's decision to begin providing explicit specifications of the financial conditions thought to be consistent with the general language of suggested alternative directives had essentially two purposes: one was to improve communication among Committee members themselves, as they deliberated on possible policy choices; the other was to exert closer control over the intermeeting actions of the Committee's agent, the Open Market Account Manager.

For the nearly four years that the Federal Open Market Committee qualified its operating directive with proviso clauses, the operations of the Account Manager were actually modified in accordance with such clauses in only a small number of intermeeting periods — and then only slightly. Thus, while monetary and credit aggregates played a role, money market conditions continued to be the dominant operating targets for open-market policy during those years, and there was no explicit linkage of the proviso clause to any view of a desired longer run trend in the aggregates.

At the beginning of 1970 the Federal Open Market Committee began to change its emphasis. During the succeeding 2 - 2 1/2 years operating directives usually stressed bank credit and money as primary targets with money market conditions subordinated to a proviso role. Average growth ranges were specified for both the bank credit proxy and the

money supply. The time span chosen for this specification became the two-month period encompassing the current and succeeding meeting. These growth target ranges were to be achieved provided that in the process key money market rates — chiefly the Federal funds rate — did not move outside their own stated range. Even with this general emphasis on money and credit as primary targets, however, actual growth in these measures often continued to deviate significantly from the Committee's specified ranges. Since the Committee remained reluctant to authorize wide ranges for possible change in money market rates, the System Account Manager was restrained in the aggressiveness with which he could move to counter deviations in money growth rates, and, as noted earlier, the aggregates responded to his actions with a lag.

A special subcommittee of the Federal Open Market Committee charged with suggesting means of improving control of the monetary aggregates recommended in 1972 that the Committee try to experiment with total or nonborrowed bank reserves as an operating target. The subcommittee acknowledged that past efforts to realize specified growth ranges for the money supply had often been frustrated by an unwillingness of the Committee to set a Federal funds constraint that permitted a sufficiently wide movement in rates. It concluded that a shift of emphasis to reserves might help the Federal Open Market Committee to overcome this evident reluctance.

Responding to this suggestion, the Federal Open Market Committee did begin to experiment with reserve measures as operating targets. Total reserves were quickly discarded for this purpose, because wide month-to-month fluctuations in Treasury balances at banks (which are not included in the money supply) would often have resulted in misleading (to outside observers) negative growth rates in the total reserve target. To avoid this problem, the Committee adopted "reserves against private deposits" (RPD) as its target variable.

In practice, the RPD measure also proved difficult to work with. Shifts within the deposit structure — from demand to time deposits, and from demand deposits at large banks to demand deposits at smaller banks — created marked changes in required reserves for given totals of private deposits. These variations reflected the widely different structure of reserve requirements that apply to deposits of different types and sizes. As a result of these differences, the multiplier between RPD and the money supply proved to be highly unstable. Consequently, the

Federal Open Market Committee soon concluded that it was preferable to continue using money market conditions as its immediate operating target.

V. Operating Targets Presently in Use

Pursuant to the Federal Reserve Reform Act, the Federal Reserve now reports quarterly on its prospective 12-month growth ranges for three measures of the money supply (M_1, M_2, and M_3) and one measure of bank credit[6]. The Federal Open Market Committee generally reviews and votes on these ranges once each quarter, just prior to the quarterly appearances before Congress. The ranges reflect the Committee's judgment of what is needed to promote the optimum attainable performance of the economy over the period ahead.

At each of its monthly meetings the Federal Open Market Committee then sets two-month ranges of tolerance for growth in M_1 and M_2[7]. While these shorter run ranges are consistent with the 12-month average set quarterly, the two-month ranges that make up the the longer averages can assume a number of different monthly patterns within that average. Since the Committee also stands ready to change its 12-month ranges whenever the economic outlook suggests the need, the Federal Open Market Committee retains considerable discretion to adjust the two-month ranges at its monthly meetings. Its actions on these short-run ranges, thus, continue to represent the primary focus of open market policy.

When the actual money supply performance deviates from the Committee's stated two-month ranges, the System Account Manager is still constrained by a Federal funds rate proviso in his efforts to offset these deviations. He can initiate countering open-market purchases or sales

[6] M_1 includes (1) demand deposits at all commercial banks other than those due domestic commercial banks and the U.S. Government, less cash items in the process of collection and Federal Reserve float; (2) foreign demand balances at Federal Reserve Banks; and (3) currency outside the Treasury, Federal Reserve Banks and vaults of all commercial banks.

M_2 includes M_1 plus savings deposits and time deposits at commercial banks other than negotiable CD's of $ 100,000 or more, issued by large weekly reporting commercial banks.

M_3 includes M_2 plus deposits at mutual savings banks, savings and loan shares, and credit union shares.

Bank credit includes total bank loans and investments (measured on a monthly average basis) less interbank loans.

[7] Data are not available on a sufficiently timely basis for the other M's and the bank credit proxy.

only so long as these operations — or other market factors — do not push the weekly average Federal funds rate outside its specified range — usually a spread of 50 to 100 basis points. If growth rates for M_1 and M_2 (weighted in some manner, in late 1977 approximately equally) appear to be remaining outside the Committee's desired ranges, and the Manager's actions to counter this deviation have moved the funds rate to the upper or lower limit of its range, he must request new instructions from the Committee.

So long as the funds rate remains within its specified range, the Manager does have leeway to respond to evidence that weighted growth rates for M_1 and M_2 are approaching or moving outside the limits of their ranges. He will usually begin to take offsetting market action when the aggregates move substantially into the upper or lower halves of their ranges. As a result, the Committee's current operating procedures do encourage the Account Manager to respond somewhat more sensitively to deviations in growth of the aggregates from desired rates than was the case in the late 1960's and early 1970's. It should be reiterated, however, that the full effect on M_1 and M_2 of a change in the funds rate occurs, not within the one-month intermeeting period, but cumulatively over a period of roughly six months.

VI. Operating Problems in the Use of Monetary Targets

With the Federal Reserve now placing substantial emphasis on the monetary aggregates as policy targets, it has had to decide how to deal operationally with a number of difficult conceptual and statistical questions. A select committee of academic experts described the essential requirements for an effective aggregates target as follows:

"In conducting monetary policy, the Federal Reserve should use as an intermediate target that monetary total (aggregate), or those totals, through which it can most reliably affect the behavior of its ultimate objectives — the price level, employment, output, and the like. Which total or totals best satisfy that requirement depends in turn on (1) how accurately the total can be measured; (2) how precisely, and at what costs including unwanted side effects, the Fed can control the total; and (3) how closely and reliably changes in the total are related to the ultimate policy objectives[8]."

The experts' report identified three conceptual bases that might logically be used as policy targets. One is to regard money as "corres-

[8] *Improving the Monetary Aggregates,* Report of the Advisory Committee on Monetary Statistics, Board of Governors of the Federal Reserve System, page 7.

ponding to the assets that are the non-interest-bearing fiat issues of the ultimate monetary authority" — or the "monetary base". In the United States this base consists of circulating currency, plus reserves (deposits) held at Federal Reserve Banks by commercial banks that are members of the Federal Reserve System.

The second base identified is to view money as assets that are used as media of exchange. Traditionally, this definition has included currency in circulation plus demand deposits at commercial banks (or M_1). The third base is "to regard money as assets that serve as 'a temporary abode of purchansing power' and are, or are readily convertible into media of exchange"; in other words, it encompasses both the transactions and store of liquidity functions of money. The report noted that many scholars view this third base as more closely and reliably related to ultimate policy objectives than the other two. However, the report also noted that this base has the most ambiguous empirical content of the three — in the sense that it could correspond to a wide range of broader aggregate possibilities[9].

Under existing data collection arrangements, constraints imposed by the timeliness with which statistics become available have led the Federal Reserve to express its two-month intermeeting policy targets exclusively in terms of M_1 and M_2, with related information provided on the monetary base. While data on the broader M's and bank credit are available only after significantly longer time lags, M_3 and bank credit have been used — along with M_1 and M_2 — when setting the Committee's longer term 12-month growth ranges.

Accuracy of measurement. The accuracy-of-measurement test cited by the academic experts as necessary for a good policy target is better satisfied by the monetary base, which poses few measurement ambiguities, than by M_1 and M_2. Measurement of the M's is complicated, because public holdings of money cannot be identied directly. They have to be estimated from bank records which unfortunately are not always reported consistently and pose certain problems of definition and consolidation. Moreover, deposit data for banks that are not members of the Federal Reserve System are available only for brief quarterly benchmark periods. Between benchmarks they must be estimated from a rather sketchy sample.

[9] Possibilities cited included M_2 and M_3; M_4, and M_5 (M_2 and M_3 plus large CD's); plus a number of other permutations that combine deposit-type instruments with liquid market securities.

While these problems appear to have introduced some uncertainty in measurement of the aggregate supply of money outstanding, their impact on short-run *changes* in that supply generally appears to have been quite limited. Thus, measurement problems do not appear to have been a major limitation in selecting an effective policy target.

On the more critical question of effective control, the Federal Reserve has found it quite difficult to exert close shortrun control over M_1 and M_2 without risking unwanted side effects on interest rates. Also, relationships between the monetary targets and the ultimate objectives of policy have proved to be substantially less predictable desired.

Control of the aggregates. Federal Reserve efforts since 1970 to control growth in the M's have placed the greatest emphasis on M_1[10]. These efforts have been complicated, however, because the ratio (or multiplier) between bank reserves and M_1 tends to vary, depending on the form the growth in M_1 takes.

When growth in M_1 assumes the form of an expansion of currency-in-circulation, this creates an equivalent dollar-for-dollar drain on the supply of reserves available to the banking system. But when the M_1 increase reflects a growth in bank demand deposits, the increased need for reserves is less than the rise in deposits due to the fractional reserve nature of the banking system. Similarly, since existing regulations call for a higher reserve requirement at the margin as a given bank's total deposits expand, the increased volume of reserves needed by the banking system to support a given dollar growth in demand deposits will be different depending on the sizes of the banks at which the deposit growth occurs. Finally, if banks as a group change their relative desire to hold excess reserves, the ratio between reserve growth and money growth can be changed.

Even if the Federal Reserve could accurately forecast the currency and deposit mix the public was likely to demand and hence the reserve growth needed to accommodate some specified growth in M_1, it would be reluctant to force the financial system to conform to this rigid growth pattern. Since demands for M_1 also tend to be quite variable in the short run — due to a variety of institutional considerations that often are not very responsive to short-term changes in interest rates — any rigid

[10] While the System Account Manager has recently been directed to weight M_1 and M_2 equally when evaluating their actual growth patterns in relation to the Committee's desired ranges, the fact that M_2 includes M_1 still places the greatest effective weight on M_1.

Federal Reserve commitment simply to supply the reserves its projections of the deposit mix showed would be needed to achieve a desired rate of growth in M_1 could be expected to produce marked short-run fluctuations in market interest rates.

In practice, the Federal Open Market Committee has been unwilling to seek such close short-run control over growth in the money supply. This reluctance reflects the Committee's belief that the short-run volatility in market interest rates likely to result from such a policy would risk greater disruption to the economy than the short-run instability in money growth rates the policy was seeking to avoid.

When incoming data show a sudden large acceleration or slowing in money growth rates, the Committee must decide whether the change is simply a temporary aberration likely to be soon reversed, or represents a more fundamental change in money demands that stems from a basic adjustment in the performance of the economy. If the Federal Open Market Committee acted immediately to counter an observed change in money growth, and the change then proved to be temporary, the action could tend to be destabilizing and require a subsequent offsetting adjustment. Since Federal Open Market Committee actions affect the public's willingness to hold money with a lag through their influence on interest rates, such a process of attempted fine tuning could at times produce perverse results.

To minimize this risk, the Federal Open Market Committee typically has adopted an intermediate position. Confronted with an unexpected overshoot or undershoot of its money growth targets, the Federal Open Market Committee has taken moderate action, neither fully ignoring nor fully responding to the miss, until the underlying growth tendency can be differentiated from the noise of short-term aberrations in the data. This approach, of course, poses some risk that needed countercyclical policy actions will be less timely than desired. But the Committee believes that the accentuated short-term interest rate volatility likely to result from any instant effort to achieve greater fine tuning of the aggregates poses a greater risk. This Committee judgment has been bolstered by Federal Reserve research which suggests that temporary aberrations in money growth rates create few difficulties for the economy so long as desired growth rates are effectively attained over periods of two to four quarters.

Relationships to ultimate objectives. Relationships between the monetary aggregates and measures of ultimate economic activity have proved

to be substantially looser in practice than is typically implied by economic theory. This appears to have been particularly so for the monetary base. For M_1 and M_2 changes in the ratio of money to GNP (or the income velocity of money) have been somewhat more stable. But both M_1 and M_2 have exhibited significant shifts in velocity at critical points.

Looseness in the relationship between growth of M_1 and GNP has been accentuated in recent years by a number of important institutional innovations that have encouraged the public to shift transactions balances from the non-interest-bearing demand deposits that are included in M_1 to new types of interest-bearing transactions accounts that are included in M_2 and M_3. In New England, for example, savings and loan associations and savings banks have been authorized to promote interest-bearing NOW accounts that permit holders to use "negotiable orders of withdrawal" very much as they would checks. And even credit unions have begun to offer "share-draft" accounts that serve much the same functions. In order to remain competitive, some commercial banks have reciprocated by offering NOW accounts of their own.

In the face of this expanded competition among banks and other types of thrift institutions, the Federal Reserve and the Federal Deposit Insurance Corporation have sought to keep the conditions of competition among institutions of different types reasonably balanced by relaxing some of the earlier restraints on commercial bank offerings of savings deposits. For example, where previously commercial banks had been allowed to offer savings accounts only to individuals and nonprofit institutions, these accounts can now be extended to businesses and State and local governments as well. In addition, holders of savings accounts have been allowed to transfer funds by telephone from savings to demand deposits — instead of being required to make transfers by mail or in person as was the case before. Finally, a proposed regulation has been published for comment which would permit banks to offer overdraft privileges on checking accounts, under an arrangement that covers a depositor's overdraft with an automatic transfer of funds from his savings account.

All of these innovations encourage the public to economize on M_1, by holding more of their transactions balances in various interest-bearing forms of M_2 and M_3. In addition, mutual funds are now offering shares in pools of money market assets that can be liquidated on demand. These serve the liquidity function of money very effectively and to that extent help the public to economize on holdings of M_2 and M_3 as well.

The public's expanded resort to interest- bearing transactions accounts has strengthened the case for use of a relatively broad measure of money as a policy target. The particular broader measures that have been available, however, pose important practical operating problems of their own.

For example, while large negotiable bank certificates of deposit (CD's) at large banks — on which there are no interest rate ceilings — are excluded from M_2 on the grounds that they behave more like securities than deposits, similar large certificates issued by smaller banks remain in M_2. The difference of treatment is explained by a lack of timely data on CD's at smaller banks. Since the nature of these other CD' is much the same as those at larger banks, however, they, too, should probably be excluded in principle from M_2.

M_2 and M_3 also include certain types of smaller CD-type accounts that are subject to interest rate ceilings, offer higher yields in return for extended maturities (out to seven years), and carry substantial penalties for early withdrawal. These accounts, too, are more comparable to market securities than they are to the transactions and savings-type deposits most typically viewed as money.

Relationships between changes in the broader M's and GNP are further flawed by the distortions which interest rate ceilings on time and savings accounts sometimes introduce into deposit flows. In situations where yields on competing market securities rise from levels below to levels above ceiling rates on deposit accounts, growth in M_2 and M_3 can slacken abruptly. Not only are current savings flows diverted to the higher yielding market securities, some thrift accounts accumulated at lower rates in the past may also be redirected for reinvestment in market securities. In the opposite situation, when rates on liquid market securities drop through official ceilings to levels significantly below those available on thrift accounts, flows to depositary institutions are typically augmented. For this reason, observed changes in growth rates for M_2 and M_3 have to be carefully evaluated to judge how much of the indicated shift may simply be attributable to distrotions in savings flows arising from arbitrary changes in market yields relative to depositary rate ceilings.

These practical difficulties of selecting a monetary target with predictable links to GNP reemphasize a continuing strand of Federal Reserve thought, that there is no single formula or operating target that can be relied on to work effectively in all circumstances. For this

reason the Federal Reserve has typically hedged its commitment to any given operating target — by checking observed performance against other relevant economic data to determine whether the presumed linkage between that target and economic activity is in fact working as expected. The future evolution of Federal Reserve monetary policy techniques is unforeseeable, depending as it does in large measure upon developments in the economy, especially the degree to which inflation can be overcome. But the practice of not committing itself entirely to any one operating technique, which is deeply founded in history, is likely to continue.

Zusammenfassung

Die Rolle der Steuerungsgrößen in der amerikanischen Geldpolitik: Ein historischer Rückblick

Dieser Beitrag behandelt die Steuerungsmaßnahmen und monetären Orientierungsgrößen für die amerikanische Geldpolitik seit dem Ende des Zweiten Weltkrieges. Während der späten 30er und während der 40er Jahre spielte die Geldpolitik eine relativ unbedeutende Rolle. Ende der 40er Jahre machte die Politik einer starren Stützung des Marktes für Staatsanleihen, vom Schatzamt gesteuert, die US-Zentralbank zu einem „Inflationsmotor". Die 1951 zwischen der Federal Reserve und dem Schatzamt getroffene „Abmachung" stellte die Unabhängigkeit der Geldpolitik wieder her. Um einen Rückfall in eine marktwidrige Festsetzung der Zinssätze zu vermeiden, beschloß die US-Zentralbank Anfang 1953, ihre Offenmarktgeschäfte auf Wertpapiere mit sehr kurzer Laufzeit zu beschränken. Diese Politik wurde unter der Bezeichnung „bills-only"-Doktrin bekannt. Mit der Ausrichtung dieser Offenmarktgeschäfte auf unmittelbare monetäre Ziele, insbesondere auf kurzfristige Zinssätze und „freie Reserven" der angeschlossenen Banken (member banks), versuchte die US-Zentralbank reale Ziele wie Wachstum, Vollbeschäftigung, Preisniveaustabilität sowie das Zahlungsbilanzgleichgewicht zu beeinflussen.

Nachdem die Federal Reserve sich zunächst auf kurzfristige Zinssätze und freie Reserven festgelegt hatte, stieg sie Anfang der 60er Jahre auf sogenannte Zwischenziele um, indem sie sich auf das Geldmengenwachstum und auf die Zunahme der Bankkredite konzentrierte. Innerhalb dieser Entwicklung wurden zunächst Bankkredit- und später Geldmengenziele zur Begrenzung der Zinssatzentwicklung eingesetzt, wobei jedoch dies seine Grenzen fand, wenn gravierende Folgen für die Geldmengen- und Kreditexpansion drohten. Später wurden die Rollen von Geldmenge und Zinssätzen vertauscht mit monetären Zielen als Hauptaufgabe und Zinssätzen als festgesetzte Beschränkung. Die wachsende Bedeutung, die den Geldmengenzielen während der 70er Jahre zukam, war ein Spiegelbild der wachsenden Inflation und der Möglichkeit, daß unter diesen Bedingungen nominale Zinssätze für die Geldpolitik keine ver-

läßliche Richtschnur darzustellen brauchen. Jedoch blieb die US-Zentralbank dabei, sowohl die Zinssätze als auch die Geldmenge als Orientierungsgrößen in Betracht zu ziehen.

Unter den verschiedenen Geldmengenkonzepten wurde der Geldmenge M_1 (Bargeld und Sichteinlagen) besondere Beachtung geschenkt. Mit Blick auf das nachlassende stabile Verhältnis zwischen einerseits M_1 und andererseits den Zinssätzen und dem Einkommen, das man ab 1974 feststellen konnte, wurde jedoch M_2 (M_1 plus Termin- und Spareinlagen bei commercial banks) gleiches Gewicht zugemessen.

Summary

The role of operating guides in U.S. monetary policy: A historical review

This essay discusses operating techniques and policy guides for U.S. monetary policy since the end of World War II. During the late 1930's and 1940's, monetary policy had played a relatively minor role. In the late 1940's, the policy of rigidly supporting the Government securities market, mandated by the Treasury, made the Federal Reserve an "engine of inflation". The 1951 "Accord" between the Federal Reserve and Treasury restored the freedom of monetary policy. In early 1953, to avoid relapsing into "pegging" of interest rates, the Federal Reserve decided to confine its open market operations to very short-term securities, a policy that came to be known as the "bills only" doctrine. By focusing these open-market operations on immediate financial targets, especially short-term interest rates and the "free reserves" of member banks, the Federal Reserve sought to influence real sector objectives such as growth, employment, price level stability, and the balance of payments.

From this emphasis on short-term interest rates and free reserves, the Federal Reserve in the early 1960's began to shift toward so-called intermediate targets, by focusing on the growth of money and bank credit. In this process, first bank credit and later money supply targets initially were used to constrain interest rate objectives, setting limits on the latter whenever the consequences for money and credit expansion threatened to become inappropriate. Later, the respective roles of money supply and interest rates frequently were reversed, with monetary targets as the primary objective and interest rates as the limiting constraint. The growing emphasis on money supply targets, during the 1970's, reflects the mounting inflation and the possibility that, under these conditions, nominal interest rates may not be a reliable guide for policy. The Federal Reserve continues, however, to take into account both interest rates and money supply.

Originally, primary emphasis among the different concepts of the money supply was given to M_1 (currency and demand deposits). In view of the diminished stability in the relation of M_1 to interest rates and income which began to be felt in 1974, however, equal weight has been given to M_2 (M_1 plus time and savings deposits in commercial banks).

Résumé

L'importance des instruments d'orientation de la politique monétaire américaine: une rétrospective historique

Cette étude traite des actions de conduite et des grandeurs monétaires d'orientation de la politique monétaire américaine depuis la fin de la deuxième guerre mondiale. A la fin des années 30 et au cours des années 40, la politique monétaire n'a joué qu'un rôle relativement insignifiant. A la fin des années 40, la politique de soutien rigide du marché des emprunts d'Etat pratiqué par le Trésor fédéral fit de la banque centrale des USA un "moteur d'inflation". En 1951, un accord entre la Federal Reserve et le Trésor rendit à la politique monétaire son autonomie. Afin d'éviter de retomber dans une fixation des taux d'intérêt contrariant le marché, la banque centrale décida au début de 1953 de limiter ses opérations d'open market aux titres à très court terme. Cette politique fut appelée la doctrine des "bills-only". Par l'orientation de ces opérations d'open market sur des buts monétaires, immédiats, en particulier sur des taux d'intérêt à court terme et des "réserves libres" des banques associées (member banks), la banque centrale des USA s'efforça d'influencer des objectifs réels, tels que la croissance, le plein emploi, la stabilité du niveau des prix et l'équilibre de la balance des paiements.

Après avoir arrêté sa politique de taux à court terme et de réserves libres, la Federal Reserve passa au début des années 60 à des objectifs intermédiaires, où elle se concentra sur l'expansion du volume monétaire et sur l'acroissement des crédits bancaires. Au cours de cette évolution, l'on arrêta dans un but de restriction du développement des taux d'intérêt des objectifs pour le crédit bancaire d'abord et pour la masse monétaire ensuite, qui se heurtèrent cependant à des limites lorsque menacèrent des retombées graves pour l'expansion du volume monétaire et du crédit. Par la suite, les rôles du volume monétaire et des taux d'intérêt furent confondus avec des objectifs monétaires comme fonction principale et les taux d'intérê comme limitation étabile. L'importance croissante consentie pendant les années 70 aux objectifs de la masse monétaire refléta l'inflation croissante et la possibilité dans ces conditions pour les taux d'intérêt nominaux de ne pas devoir représenter pour la politique monétaire une règle sûre de conduite. La banque centrale américaine persista néanmoins à utiliser comme grandeurs d'orientation tant les taux d'intérêt que la masse monétaire.

Parmi les divers concepts du volume monétaire, la masse M_1 (caisse et dépôts à vue) bénéficia d'une attention particulière. Dans l'optique de la déstabilisation de la relation constatée depuis 1974 entre d'une part M_1 et d'autre part les taux d'intérêt et le revenu, l'on a cependant accordé valeur égale à M_2 (M_1 plus dépôts d'épargne et à terme des banques commerciales).