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MONEY, CREDIT, AND BANKING LECTURE

Monetary Policy

Theory and Practice

MILTON FRIEDMAN*

In respect of the theory of monetary policy, I am reminded of the comment that Jacob Viner made many years ago at a meeting of the American Economic Association about Alfred Marshall's economics: "What is new is highly unlikely at this late date also to be true and significant."¹ Consequently, I shall restrict my remarks on theory to trying to summarize what I regard as the present intellectual position.

I want to devote most of my time to two other topics: first, the actual practice of monetary policy, with special reference to some examples from American experience; second, the reasons why the practice has been what it has been. In these areas, history keeps on turning up new evidence about old principles. It's still true that much of what's true is not new. But it's no longer true that what's new is not true.

*I am indebted to Robert D. Auerbach, William G. Dewald, David E. Lindsey, Allan H. Meltzer, and members of the audience when this lecture was delivered for comments on the initial version of this paper. I hardly need emphasize that not all comments reflected agreement.

¹"Marshall's Economics, The Man and His Times," *American Economic Review* 31 (June 1941): 224.

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1. THE THEORY OF MONETARY POLICY

The role for monetary policy depends on what James Buchanan has called the monetary constitution, in particular, the domestic monetary standard, and international monetary arrangements.

If a domestic money consists of a commodity, a pure gold standard or cowrie bead standard, the principles of monetary policy are very simple. There aren't any. The commodity money takes care of itself. The analysis of the factors that determine the price level in terms of the commodity money is largely an exercise in conventional price theory. However, a pure commodity standard has little relevance, either today or for much of the past. Even when an international gold standard was regarded as the norm, it involved a large admixture of fiat elements. And today, throughout the world, the domestic monetary standard is a fiat standard, a standard in which money is issued by governments backed only by the words that are written on pieces of paper.

With respect to international arrangements, three basically different types can be distinguished: a single commodity standard internationally; a system of managed, fixed exchange rates such as prevailed during the Bretton Woods period, in which the domestic monetary standard is fundamentally a fiat standard, but in which exchange rates between countries are fixed by some kind of an agreement; and, flexible exchange rates among domestic currencies.

Under either a pure commodity standard or a managed, fixed exchange rate standard, domestic monetary policy has some leeway in the short run because of the time that it takes for adjustments to occur, but little leeway in the long run. In practice, this statement needs qualification because a managed fixed-rate system of the Bretton Woods variety is unlikely to be adhered to and hence will tend to degenerate, at least from time to time, into a flexible rate system. It is arguable that there was more variability in exchange rates during the Bretton Woods period than before or since.

The rest of this lecture deals with the current system, namely, a domestic fiat currency plus a system of flexible exchange rates. A system of flexible exchange rates does not in practice mean a system of completely unmanaged, floating rates. I wish it did, but it doesn't. It means in practice dirty floating instead of dirty fixed rates. (As a believer in cleanliness, I'm in favor of both clean fixed rates and clean floating rates.)

Let me emphasize, however, that the system we now take for granted—a domestic fiat standard plus flexible exchange rates among currencies—is a relatively recent arrival, though I believe that it will prevail for a long time. That combination has become the norm in the United States only since August 15, 1971, the day that President Nixon closed the gold window and thereby ended the Bretton Woods period. Even then it took several years before the notion that the exchange rates were to be fixed once again was really given up, and we embarked on the present system. Moreover, the current Administration is the first to adopt and announce a policy of avoiding governmental intervention into the exchange rate market, except, it is said, under “extreme circumstances.”

The theory of monetary policy under the present monetary constitution reduces to two parts: the strategy of monetary policy and the tactics that should be followed by the people who guide monetary policy. Put differently, what should be the ultimate objectives of monetary policy? What should be the proximate targets and instruments? Both issues have generated much discussion and given rise to an extensive literature. Also, views on both have converged remarkably, so that today opinions differ little on either strategy or tactics. Let me emphasize at once that the convergence of views did not arise from the persuasiveness of the theoretical arguments advanced by people like myself, Allan Meltzer, Karl Brunner, and others, or by people who have differed with us. The convergence is due not to theoretical reasoning, but to the brute force and impact of actual experience.

A. *Strategy*

With respect to ultimate objectives, it's easy to cite the holy trinity that has become standard: full employment, economic growth, and stable prices. However, reciting that Holy Trinity begs the fundamental question. What is the special role of monetary policy in contributing to these objectives? Three views have been held about the appropriate strategy: first, that monetary policy should be directed specifically at promoting full employment; second, that it should be directed at promoting growth through cheap money, through keeping interest rates low; and third, that it should concentrate on price stability.

Experience and not theory has demonstrated that the first two strategies are not feasible, that monetary policy is not an effective instrument for achieving directly either full employment or economic growth. As a result, there is today a worldwide consensus, not only among most academic economists but also among monetary practitioners, that the long-run objective of monetary policy must be price stability, or, to put it more generally, control of the absolute level of prices, because the objective could be a specified rate of inflation or deflation. Such a long-run objective is in principle consistent with the short-run objective of pursuing the long-run policy in a manner that contributes to minimizing economic fluctuation, that avoids introducing unnecessary elements of disturbance into the economy.

B. *Tactics*

With respect to proximate instruments and targets, the fundamental issue is the one that was raised by Henry Simons nearly fifty years ago, namely, "Rules versus Authorities."² Should the tactics be determined by relatively mechanical rules that are publicly promulgated, or by the discretion of authorities instructed to follow the right policy at the right time for the right objective?

Whatever way the fundamental issue is decided, there remains the operating question of what rules should be adopted, or, how authorities should be guided. Here too there is a trinity of possible tactics: first, using what are called euphemistically money market conditions, which really means interest rates, both as a target

²"Rules versus Authorities in Monetary Policy," *Journal of Political Economy* 44 (1936): 1-30, reprinted in Henry C. Simons, *Economic Policy for a Free Society* (Chicago 1948), pp. 160-83.

and also as an instrument; second, using monetary aggregates as a target, but money market conditions or interest rates as an instrument for achieving that target; third, using monetary aggregates as a target and control over the monetary base, that is, the obligations of the monetary authority, as the instrument.

On tactics, too, opinion has converged remarkably, again not due to persuasive theoretical reasoning but to experience. Experience has demonstrated that it is simply not feasible for the monetary authority to use interest rates as either a target or as an effective instrument. Were it feasible for the Federal Reserve to adopt and achieve a target interest rate, it is inconceivable that the prime rate would ever have risen to over 20 percent. In principle, given sufficient knowledge about market behavior, it is possible to use money market instruments to achieve monetary aggregate targets. However, experience has demonstrated that monetary authorities are in practice unable to achieve in this way the degree of control over monetary aggregates that seems hypothetically possible. Hence, there is now wide agreement that the appropriate, short-run tactics are to express a target in terms of monetary aggregates, and to use control of the base, or components of the base, as an instrument to achieve the target. The end result is widespread rhetorical agreement by central banks around the world to what has come to be called a monetarist policy. (I may say that personally I do not like the term “monetarism.” I would prefer to talk simply about the quantity theory of money, but we can’t avoid usages that custom imposes on us.)

A monetarist policy has five points: first, the target should be growth in some monetary aggregate—just which monetary aggregate is a separate question; second, monetary authorities should adopt long-run targets for monetary growth that are consistent with no inflation; third, present rates of growth of monetary aggregates should be modified to achieve the long-run target in a gradual, systematic, and preannounced fashion; fourth, monetary authorities should avoid fine-tuning; fifth, monetary authorities should avoid trying to manipulate either interest rates or exchange rates.

Almost every central banker in the world today agrees verbally to at least the first three of these five points, and most also to the fourth. The fifth is unquestionably the most controversial. However, in many cases, the profession of faith is simply lip service, and does not carry over to actual practice, which brings me to the second part of my lecture.

2. PRACTICE

Rhetoric is one thing. Performance is often a very different thing. The fascinating and challenging question, I believe, is how to explain the frequent wide discrepancy between rhetoric and practice.

A. *International*

Internationally, those countries that have broadly followed the five-point monetarist policy have succeeded in controlling inflation and have done so while achieving relatively satisfactory economic growth.

Among the advanced countries of the world, the outstanding example is Japan. In 1973, Japan's inflation rate was around 25 percent per year, following monetary growth at a similar rate. Japan brought the rate of monetary growth down drastically, to the neighborhood of 10 to 15 percent, and has continued to reduce it still further. After an intervening recession—by Japanese standards, not necessarily ours—of about eighteen months, inflation started to come down. It came down gradually and steadily, reached a level below 5 percent, then temporarily went up after the most recent oil shock. Since then, it is starting to come back down again, and clearly seems under control. And the reduction of inflation has been accompanied by a growing economy.

West Germany is another example, not quite as successful, not quite as dramatic, but still, on the whole, successful with respect to both inflation and economic growth because it has followed a policy of controlling the quantity of money along monetarist lines.

Among the less developed countries, Chile provides an even more dramatic case. In 1975, Chile had an inflation rate of about 800 percent per year. It has brought that down to under 20 percent a year, has now pegged its exchange rate to the U.S. exchange rate, having decided that, bad as U.S. monetary policy is, it is likely to be more successful than their own. They are therefore reconciled to achieving, or suffering, our rate of inflation.

In Chile, as in Japan, an initial period of about a year and a half of great difficulty was followed by highly satisfactory real growth along with declining inflation. Real growth in Chile has been in the neighborhood of something like 6 to 10 percent a year during the past three or four years.

In my experience, these countries are exceptions. In most countries that I know about, lip service, not actual adherence, has been paid to monetarist policies. Essentially every major country, and many a minor one, proclaims monetary growth targets annually and pronounces its determination to stick to them. However, any relation between the targets and actual monetary growth is purely coincidental. The United States is a particularly egregious case. So I propose to concentrate on experience in the United States.

B. United States

Ever since the establishment of the Federal Reserve System, every chairman of the Federal Reserve Board, indeed, I suspect every member of the board, has proclaimed that the Federal Reserve will not be an engine of inflation. Yet the Federal Reserve System was an engine of inflation during both world wars and has been one in peacetime since at least 1960.

My examination of that experience impresses me with the unbelievable strength of bureaucratic inertia in preventing the system from learning from experience. The inertia has prevailed not only since 1960, but for the whole sixty-seven years of the Federal Reserve's existence. With perhaps a few minor exceptions, the system has repeatedly been unable or unwilling to change its methods of operation in order to benefit from its own experience.

I stress the long duration of bureaucratic inertia for a very important reason. All of us tend to personalize issues, to say, if only the right person were chairman of the Federal Reserve its policy would be fine; or if only the right person were president or secretary of the Treasury. No doubt it makes a difference, and sometimes a big difference, who is in charge of the system, or the Treasury, or the White House. However, so far as the Federal Reserve System is concerned, the same inability to learn from experience has prevailed under a succession of personalities. Information about the name of the chairman of the Federal Reserve is of little or no use in describing the behavior of the Fed—though the name of the president apparently is.³ I conclude that the problem is somehow rooted in the institutional structure of the Federal Reserve System.

I shall sketch very broadly the basis for my conclusion about the Fed's longstanding inability to learn from experience, and then turn to some more specific examples.

In our book on U.S. monetary history, Anna Schwartz and I found it possible to use one sentence to describe the central principle followed by the Federal Reserve System from the time it began operations in 1914 to 1952. That principle, to quote from our book, is: "If the 'money market' is properly managed so as to avoid the unproductive use of credit and to assure the availability of credit for productive use, then the money stock will take care of itself."⁴ The principle is, of course, the Real Bills doctrine of the nineteenth century—so the continuity extends not only back to 1914, but even to the early nineteenth century when Henry Thornton had already given a correct theoretical analysis of the problem and had indicated the fallacy of this approach.⁵ It also, unfortunately, extends forward to the present—manifested most recently in the 1980 credit controls instituted by President Carter.

From 1952 to October 1979, the system gradually began to pay lip service to monetary aggregate targets. However, there was no change in procedures, only in the wording of the Federal Open Market directives. From October 1979 to date, there has been no real improvement in performance. But something more than lip service has been paid to changing procedures.

In preparing for this talk, I reread the proceedings of a conference held at Nantucket under the auspices of the Boston Federal Reserve Bank in June 1969. Out of that conference came a book entitled *Controlling Monetary Aggregates*.⁶ It was a depressing experience to reread those proceedings. The same people are now saying the same things they were saying then. The people who were then talking about the difficulty or impossibility of controlling the quantity of money through controlling the base are still saying much the same thing. Parts of those conference proceedings could be interchanged bodily with large sections of the most recent Federal Re-

³See Robert E. Weintraub, "Congressional Supervision of Monetary Policy," *Journal of Monetary Economics* 4 (April 1978): 341-62.

⁴*A Monetary History of the United States, 1867 to 1960*, National Bureau of Economic Research Studies in Business Cycles, no. 12 (Princeton: Princeton University Press 1963), p. 629.

⁵*An Enquiry into the Nature and Effects of the Paper Credit of Great Britain* (1802), ed. by F. A. v. Hayek (Augustus M. Kelley 1965), pp. 86-87, 244, 252-53.

⁶The Federal Reserve Bank of Boston, 1969.

serve's apologia, to which I shall return, and no one would notice the difference. Indeed, I was surprised to find that Allan Meltzer had proposed, at that conference, the procedure that the Federal Reserve has recently adopted, of setting a monetary aggregates target subject to a specified numerically wide range of Federal Funds rates. Of course, in his defense, I should note that he considered such a procedure a transitory expedient. He wanted the range to be widened and widened until it disappeared. However, it is a sign of how little progress we have made that hardly a point entering today's discussion is absent from that 1969 discussion.

I want to consider four specific examples: first, the policy of pegged interest rates followed during World War II (I include this example to emphasize again that the issue is not one of particular personalities, but rather of institutional structure); second, the movement from controlling money market conditions to trying to control monetary aggregates; third, lagged reserve requirements and its adoption; fourth, defensive open market operations.

1. *Pegged Bond Prices.* The Great Depression shocked the Fed into inactivity. From 1933 to 1941, the Federal Reserve essentially followed a wholly passive policy, devoting all its energy to keeping its bond portfolio unchanged. Insofar as there was any active monetary policy, it was conducted by the Treasury Department. The passive policy finally degenerated in 1942 into an explicit policy by the Federal Reserve of pegging the prices of government securities, that is, of establishing a pattern of rates on securities of different maturities—short-term bills, long-term bonds, and so on—and maintaining it there by standing ready to buy, or sell, any amounts offered or demanded at those rates.

In 1947, five years later, some tentative steps were taken that did not change the principle but simply changed slightly the difference between the short-term rate and the long-term rate.

In 1951, nine years after the program had been adopted, the famous Federal Reserve-Treasury accord was negotiated, under which the Federal Reserve was freed from its commitment to pegging government bond prices. However, the Fed continued to do so. It did not really unpeg the prices of government securities until 1953. So it took all told eleven years from the inception of that policy until its termination, though at no point in that whole eleven years was any valid intellectual argument presented in favor of the policy. The policy was not even consistent with the Federal Reserve's own view because, after all, adherence to the Real Bills doctrine does not call for pegging interest rates. It calls for distinguishing between productive and unproductive uses of credit.

Why was that program ended? Did the initiative to end it come from within the system? Not at all. It was ended entirely as a result of three sources of outside pressure. One was the Korean War, which produced a change in anticipations that in turn led to a sharp jump in monetary velocity and to the emergence of inflation. The second, and, in my opinion, unquestionably the more important in terms of the immediate effect, was pressure from Senator Paul Douglas, the famous University of Chicago economist—the first recent example of the influence of the Chicago

school on monetary policy. Senator Douglas conducted a series of hearings on monetary policy. Throughout those hearings, he kept hammering away on the undesirability of pegging bond prices. I have very little doubt that his pressure played a critical role in finally producing the Federal Reserve–Treasury accord.⁷ The third source of outside pressure came, after 1952, from the Eisenhower White House.

2. *Money Market Conditions to Monetary Targets.* The gradual transition from money market conditions to monetary targets from 1953 to 1979, a period of twenty-six years, is a more complex story.

The unpegging of government bond prices in 1953 was followed by lip service by the Federal Reserve to monetary growth as a long-run target. However, to the best of my knowledge, it did not set any specific monetary growth targets for itself until 1975, when Congress required it to do so. The phrase that really mattered was one that was popular at the time, namely, that the Federal Reserve should “lean against the wind” as a short-run policy without any very clear specification of what wind or when.

The first sign of movement by the Fed came in 1966 when it introduced into its directive to the manager of the Federal Open Market Account (the “desk”) a proviso clause that instructed the desk to maintain specified money market conditions provided that doing so did not lead to an undesirable expansion of credit. Even that minor step, which was just words and had no significance in practice, was produced by external pressure arising from the Vietnam War and the emergence of inflation rates of something like 2 or 3 or 4 percent—regarded at the time with great horror.

In 1969, the conference on controlling monetary aggregates that I have already referred to was organized by the Boston Federal Reserve Bank. That was the first real step from within the system to bring in outside people to explore the question of the operating procedures that would best control monetary aggregates.⁸

In that same year, I wrote a letter to William McChesney Martin, then chairman of the Federal Reserve, noting that two issues were under discussion: first, whether a monetary aggregate ought to be the policy target; second, whether, if it were the target, the system could control it. I suggested that the issues be separated, and that there be carried out at the New York Fed “a dry run to test the possibility of

⁷For a discussion of this episode and full references to the relevant congressional hearings, see Friedman and Schwartz, *A Monetary History of the United States*, pp. 595, 621–27. See also George S. Tavlas, “The Chicago Tradition Revisited: Some Neglected Monetary Contributions, Senator Paul Douglas (1892–1976),” *Journal of Money, Credit, and Banking* 9 (November 1977): 529–35.

⁸Prior and subsequent to this time, outside persons were invited to meet with the members of the board in Washington from time to time. I attended many such meetings of so-called academic consultants. They were interesting experiences, no doubt instructive to the many Federal Reserve personnel who sat around the sides of the boardroom, where the meeting was invariably held, without participating. However, I finally concluded that the meetings were called purely for window-dressing purposes. I was unable to detect any influence whatsoever exerted by the consultants’ comments on the system’s actions. Indeed, the choice of the particular consultants invited to attend seemed designed to guarantee offsetting and contradictory advice, leaving the Fed free to pursue its own devices. However, even on those rare occasions when something approaching a consensus emerged, I could detect no subsequent effect on policy.

achieving money supply targets and to develop and calibrate the necessary techniques.”⁹ Such procedures would then be available when and if the first issue was decided in favor of monetary aggregates.

I refer to this letter, not to advertise the suggestion I made, but rather because of the reply that I received from Chairman Martin. I quote from his reply: “I seriously doubt that we could ever attain complete control [of monetary aggregates], but I think it’s quite true that we could come significantly closer to such control than we do now—if we wished to make that variable our exclusive target. But the wisdom of such an exclusive orientation for monetary policy is, of course, the basic question.”¹⁰

That’s a very instructive statement. First of all, it says what the Fed had repeatedly denied and was to deny throughout the rest of the period that I’m talking about, that it *could* control the monetary aggregates. But second, the Fed didn’t really mean it. The reply was simply designed to immobilize me—as I later learned from an economist in the Fed’s Research Division, who boasted to me about his cleverness in constructing that reply. And of course it did immobilize me. Why conduct a study to figure out how to do something the Fed already knew how to do?

Almost simultaneously, at the Nantucket conference, Alan Holmes, who ran the desk in New York, and Sherman Maisel, who was at that time a member of the Federal Reserve Board, were proclaiming that the Fed could not in fact control the money supply. Yet also, to show the conflicting currents within the system, Richard Davis, a member of the research staff at the New York Federal Reserve Bank, wrote in the course of a long piece dated 1969, “The system is likely in the future to judge its behavior more on the basis of . . . monetary and bank credit growth rates than it has in the past and less on the basis of money market conditions.” He went on to say: “It can be argued that the use of money market targets has in practice deprived the system of any effective means of controlling aggregates.”¹¹ So within the system in 1969, twelve years ago, people were recognizing the problem.

In 1970, the directive was changed again after Arthur Burns became chairman. Monetary growth was put first and money market conditions second. However, that change turned out to be pure lip service, and was later deemphasized.

In that same year (November 26, 1970), I repeated to Arthur Burns the recommendation I had made to Chairman Martin.¹² I also recommended that the Fed

⁹The letter went on to say: “This experiment could be conducted entirely by the Fed. However, if for any reason you would prefer it to be a cooperative effort with academic scholars, I would be very pleased to have our Workshop in Money and Banking at the University of Chicago cosponsor the experiment and share its cost. It would fit very well indeed into our program of research.” Letter from Milton Friedman to William McChesney Martin, January 29, 1969.

¹⁰Letter from William McChesney Martin to Milton Friedman, April 7, 1969.

¹¹“Short Run Targets for Open Market Operations,” unpublished paper dated December 1969.

¹²Chairman Burns adopted a different tactic than Chairman Martin, replying “There is merit in his [Steve Axilrod’s] suggestion that a study of the operational uses of reserve aggregates be undertaken in your money and banking workshop with whatever help he and others of the Board can render to make the project realistic.” (Letter from Arthur F. Burns to Milton Friedman, January 18, 1971.)

I replied that I had decided that a project by our workshop alone was not desirable. “The problem is to develop workable operating procedures, not to study basic monetary relations. That fits neither our

establish two committees of outside and inside people, one to study procedures for controlling the money supply, the other to study the measurement of the money supply. The first committee was never established; the second was appointed three years later (January 31, 1974) and turned in its report in early 1976. Some minor recommendations were adopted, and this committee provided part of the stimulus to the redefinitions of the monetary aggregates in 1980 and 1981. However, its two major recommendations have still not been adopted.¹³ With respect to one of these, the treatment of seasonal, another committee was appointed, which has just recently turned in a report.¹⁴

In 1972, George Kaufman wrote: "The Federal Reserve has increased its own difficulty in controlling the stock of money. Ironically, these actions have coincided with a tendency toward greater Federal Reserve emphasis on monetary aggregates as intermediate targets. However, to the extent the increased difficulty supports the long voiced contention of some Federal Reserve officials that they are unable to control the stock of money even if they so wished, the actions truly represent a self-fulfilling prophecy."¹⁵

In 1975, Congress passed Concurrent Resolution 133, which expressed "the sense of the Congress" that the Fed "maintain long-run growth of the monetary and credit aggregates commensurate with the economy's long-run potential to increase production," and provided that the Fed "consult" Congress at regular intervals about its "objectives and plans" for monetary growth and "report to the Congress the reasons" for any subsequent departure from these objectives.¹⁶

At the time, I believed that this resolution was a major breakthrough, describing it as "perhaps the most important change [in the structure of monetary policy] since the banking acts of the mid-1930s." In justifying this judgment, I wrote: "Though superficially innocuous [because it has no teeth], the resolution represents the first

academic function nor our research competence. It is a job for the Fed not for us." (Milton Friedman to Arthur F. Burns, March 15, 1971.)

I did, however, offer to use the workshop as a forum for discussion of alternative approaches, and subsequently arranged a series of sessions at which economists from the Fed in Washington, the New York desk, the St. Louis Bank, as well as academic economists presented papers on the subject, the results of which I passed on to the Fed.

¹³*Improving the Monetary Aggregates: Report of the Advisory Committee on Monetary Statistics*, by George L. Bach, Chairman (Washington, D.C.: Board of Governors of the Federal Reserve System, June 1976).

¹⁴The other, a revised method of consolidating data from different financial institutions, was never implemented, presumably because it would have reduced reported M1 by a large sum, and the Fed's research staff never succeeded in explaining the source of the discrepancy between the proposed method and the method currently in use.

¹⁵The actions stressed by Kaufman as increasing the difficulty in controlling the stock of money included: "1. Encouraging proliferation in the number of deposit categories subject to different reserve requirements, 2. . . . [and] different interest rate ceilings, and 3. Unintentionally promoting a proliferation in the number of nondeposit categories excluded from the definition of money supply." In a footnote, he added "the introduction of lagged reserve requirements." George G. Kaufman, "Federal Reserve Inability to Control the Money Supply: A Self-Fulfilling Prophecy," *Financial Analysts Journal* 28 (September-October 1972): 22, 57, 58.

¹⁶Quoted from the text of the resolution. The substance of the resolution was later incorporated in the Federal Reserve Act in the form of an amendment to the act passed in late 1977. (See Weintraub, "Congressional Supervision of Monetary Policy," p. 344.)

time since the Fed began operation in 1914 that the Congress has (1) specified monetary and credit aggregates as the Fed's immediate target, (2) enjoined it to produce steady monetary growth in line with output growth, (3) required it to state its objectives publicly in advance, and (4) required it to justify publicly any departure from them. All four elements are major changes. The Fed has shifted among alternative targets—monetary aggregates, interest rates, exchange rates; it has produced widely varying rates of monetary growth; it has never specified long-range numerical objectives and has decided its short-term objectives in camera, making them public long after the event; it has reported to Congress in vague terms that have resisted strict accountability.¹⁷

In the event, my judgment proved wide of the mark. The Federal Reserve had strongly opposed the resolution and had tried to prevent its passage. When it was passed, it pledged cooperation, but then proceeded to undermine it so subtly and effectively that the resolution has proved to be a noteworthy minor step rather than the major breakthrough that I had mistakenly interpreted it as being. James Pierce, who served on the research staff of the Board of Governors for many years, made a more accurate assessment of the likely effect of the resolution in 1977—two years after it was adopted—when he wrote: “Whatever can be said for Congressional supervision of monetary policy, it has not produced closer control over the monetary aggregates and it has not lessened the Fed's penchant for stabilizing movements in short-term interest rates. It appears safe to conclude that increased Congressional oversight has not altered the conduct of monetary policy.”¹⁸

As Pierce explains, the Fed undermined the resolution in two ways. First, “It appeared before the banking committees armed with growth rate ranges for five different measures of monetary and credit aggregates. With this menu of aggregates it was able to create confusion and to direct attention away from policy objectives and toward the technical question of who has the best M.”¹⁹ Moreover, it could shift attention back and forth from one M to another, depending on which one put the Fed in the best light. In general, the various M's show similar movements but at times there have been sharp differences, primarily as a result of “disintermediation” or “reintermediation” produced by the varying impact of Regulation Q—a particular example of George Kaufman's “self-fulfilling prophecy.”²⁰

A second way in which the Fed undermined the resolution was by “introducing a shifting base for its projections for the various M's”²¹—what has come to be known as base drift. It reported its targets each quarter (alternately to House and Senate committees) in terms of a range of rates of monetary growth (for example, 4 to 6

¹⁷Milton Friedman, “Congress and the Federal Reserve,” *Newsweek*, June 2, 1975.

¹⁸James L. Pierce, “The Myth of Congressional Supervision of Monetary Policy,” *Journal of Monetary Economics* 4 (1978): 363–70; quotation from p. 369.

¹⁹*Ibid.*, p. 364. For the Fed's opposition, see Arthur F. Burns, testimony to Congress, February 25, 1975, *Federal Reserve Bulletin*, March 1975, pp. 150–55; for the response after enactment, see his testimony of May 1, 1975, *Federal Reserve Bulletin*, May 1975, pp. 280–88.

²⁰In recent years, but only in recent years, the Fed has favored eliminating the ceilings, at least for time and savings deposits. So have many commercial banks.

²¹Pierce, “The Myth of Congressional Supervision of Monetary Policy,” p. 364.

percent per year for the next year). The implication for the level of the money supply depends on the base figure to which these targets are applied. The Fed proceeded to apply them each quarter to the actual (not targeted) level of the prior quarter, thereby essentially burying any failures to achieve the target in the base. In effect, this meant that, in statistical terms, the money supply was a random walk, and the target rates of growth were essentially irrelevant, or, at most, applied to the next quarter rather than the next year.

It was repeatedly suggested to the Fed—by the Shadow Open Market Committee, members or staff of congressional committees, myself and other academic economists—that the targets be expressed in terms of the absolute level of the money supply with a constant band (of say 1 percent) around the targeted level. This change, which required no legislation, would have eliminated base drift. The Fed consistently expressed interest in such suggestions but equally consistently did not implement them. In 1978, the Humphrey-Hawkins Act reduced base drift by restricting changes in the base to once every half year instead of every quarter.

Finally on October 6, 1979, the Federal Reserve made a dramatic announcement of a change in procedure. Like all previous major moves by the Fed, this one too was a delayed reaction to external events or pressure, on this occasion, a collapse of the dollar abroad because of a lack of confidence in monetary policy and rising U.S. inflation. Chairman Volcker flew back from the meeting of the International Monetary Fund in Belgrade, where the foreign pressure came to a head, in order to issue the announcement. Despite that announcement of a change in operating procedures, the Fed reverted briefly to a straight Federal Funds target in the spring of 1980.

My final item is that the Fed in late 1980 deployed some of its ablest technicians to examine the operation of the new procedures. The result was a two-volume, 685-page study published in early 1981 containing an excruciatingly detailed analysis of the experience since October 6, 1979, plus an examination of earlier experience as a basis for judging the new procedures.²² The two volumes contain some highly competent and relevant technical studies. However, Stephen H. Axilrod's initial "Overview of Findings and Evaluation" skims lightly over any negative conclusions about current procedures (see next section) and, instead, stresses that "the variability in money growth of the past year appears to be related to an unusual combination of circumstances," and that while "a number of modifications to the operating procedures . . . might be considered . . . these modifications all have certain disadvantages."²³

In reporting the results to Congress, the Fed stated that "the research suggests that the basic operating procedure represents a sound approach to attaining the longer-run objectives set for the monetary aggregates. However, the Federal Open Market Committee and the Board of Governors will be considering modifications"—a familiar tune to those of us whose professional work has im-

²²*New Monetary Control Procedures*, Federal Reserve Staff Study, Board of Governors of the Federal Reserve System, February, 1981.

²³*Ibid.*, pp. A6, A24.

posed the dreary duty of reading the periodic reports of the Fed to the Congress over the years.²⁴ As has occurred repeatedly, there is a striking contrast between highly professional and competent staff studies, and the platitudinous and self-serving conclusions drawn from them by the Fed's leaders—not only for public consumption, but judged by the failure to implement the conclusions of such studies, as a guide to their own actions.

Nonetheless, the very massiveness of the two-volume apologia is significant. It testifies to the Fed's recognition that its prestige and credibility are at an all-time low and to its own uneasiness about its procedures.

3. *Lagged Reserve Requirements.* Member banks calculate required reserves for a reserve period (now one week for all banks, before 1968, two weeks for some) on the basis of average daily deposits during that period. Before 1968, reserves held to satisfy requirements were calculated for the same reserve period.²⁵ This system of contemporaneous reserve accounting was changed in 1968 so that reserves held to satisfy requirements for any week consisted of vault cash held during that week plus deposits at the Fed two weeks later. At the time, internal memos in the Fed, one of them prepared by George Kaufman whom I've already referred to and who at the time was employed by the Chicago Federal Reserve Bank, pointed out that lagged reserve accounting would make it more difficult to control the quantity of money. The measure was adopted nonetheless in the belief that it would be welcomed by small banks and might help to stop their departure from the system—a constant concern of the board.

From 1970 to 1972, Warren Coats did a doctoral study at the University of Chicago on the impact of lagged reserve accounting. That study documented decisively that the introduction of lagged reserve requirements had substantially increased the variability of almost anything of interest, roughly doubling the variability of free reserves, of the Federal Funds rate, of borrowing—you name it.²⁶

In 1970, I wrote to Arthur Burns summarizing the initial findings by Coats. My letter was analyzed by Stephen Axilrod. I quote one sentence of a long reply: "It may well be that the two-week lag has not produced the benefits that were attributed to it." Most of the rest of the reply went on to minimize the importance of the issue—the precise stance that the system has adopted from then to now. One sentence from my reply to Arthur Burns in reaction to Axilrod's memorandum is equally applicable to most subsequent Fed memos that I have seen on the subject: "Frankly, what bothered me about Steve's response was less its lack of rigor than its defensive tone, a tone which I have repeatedly encountered in Federal Reserve responses over many years."²⁷

²⁴Quoted from *Monetary Policy Objectives from 1981*, Summary Report of the Federal Reserve Board, p. 15.

²⁵Because deposits and vault cash were calculated on a beginning of day basis, but reserves at the Fed on an end of day basis, there was, to be precise, a one-day lag instead of the present two-week lag.

²⁶Warren L. Coats, "The September, 1968, Changes in 'Regulation D' and Their Implications for Money Stock Control," Ph.D. dissertation, University of Chicago, 1972.

²⁷Letter of Milton Friedman to Arthur F. Burns, October 13, 1970.

The rest of the paragraph from my letter which began with the sentence quoted in the text is equally applicable to most later responses: "Of course, there were good and what seemed like sufficient reasons

In 1975, I testified before the Senate Banking Committee on problems of monetary control. One of the items I referred to was lagged reserve accounting. Senator Proxmire asked the Federal Reserve Board for comment. The Federal Reserve Board sent one of its apologia in which it wrote that “Lagged reserve accounting . . . would appear to have little, if any, adverse effect on monetary control if the Federal Funds rate is the day-to-day target. Even if reserve aggregates were given more emphasis as an operating target . . . , the lag in reserve accounts would present only a minor problem. It does appear to limit the precision of monetary control through reserves in the very short run, but a two-week lag poses no real impediment to monetary control over a more relevant longer period”—an exact echo of Chairman Martin’s letter to me of 1969, and of Stephen Axilrod’s memo of 1970.²⁸

Nearly two years later, responding to a letter from Congressman Reuss, head of the House Banking and Currency Committee, urging the end of lagged reserve requirements, Arthur F. Burns wrote: “None of the evaluative work done by the Board staff suggests that lagged reserve accounting seriously impedes the management of the monetary aggregates or contributes to disruptive money-market conditions” (July 20, 1977). That letter was followed, several months later, by a detailed, 23-page Fed memorandum (dated October 6, 1977) which reached “essentially the same conclusions as in earlier reports.”

Reuss sent the Fed’s memorandum to a number of outside experts other than myself to ask for their judgment. The four who replied were unanimous in rejecting the Fed’s reply as a valid justification for lagged reserve accounting and in urging that lagged reserve accounting should be terminated.²⁹ On April 18, 1978, Reuss sent those results to G. William Miller, who had replaced Burns as chairman of the Fed. In that letter, Reuss also referred, as he had in previous letters to Burns, to four experts within the Federal Reserve System who had published articles critical of lagged reserve requirements. In congressional testimony on July 28, 1978, Miller said: “In terms of operations, it would be preferable to be on a current basis” and that the system would consider restoring contemporary reserve accounting, “once we can alleviate some of the membership problems.”

On April 3, 1980, Chairman Reuss wrote to Paul Volcker, who had replaced Miller as chairman of the Fed, repeating his earlier endorsement of three reforms: ending lagged reserve requirements, staggering closing dates, and tying the discount rate to a market rate. In making the letter public on April 9, 1980, Reuss noted: “The Federal Reserve has said in the past that they have been unable to adopt these reforms because of the membership problem. With the passage of the Depository

for going to lagged reserves. Of course, any possible change is going to have adverse as well as favorable effects that must be weighed against one another. But it is equally true that the ablest and best intentioned of men can make mistakes and that the most important task is not to defend and rationalize what has been done, but to explore open-mindedly ways of improving the existing system of operation.”

²⁸Yet at about the same time, an economist in the Division of Research and Statistics, Board of Governors, Federal Reserve System, wrote a comment pointing out the adverse effects of lagged reserve accounting compared with contemporaneous accounting: Daniel E. Laufenberg, “Contemporaneous vs. Lagged Reserve Accounting,” *Journal of Money, Credit, and Banking* 8 (May 1976): 239–45.

²⁹The four were: Edgar L. Feige, with collaboration of Robert T. McGee; William Poole; Warren L. Coats, Jr.; and George G. Kaufman.

Institutions Deregulation and Monetary Control Act of 1980, there are no longer valid excuses for waiting.”

In June 1980, the system circulated a proposal to eliminate lagged reserve accounting. In the fall of 1980, it withdrew the proposal and postponed it for at least a year. In its early 1981 Summary Report to Congress, it said, “The Board has already indicated its inclination to switch from the present system of lagged reserve accounting to a system in which required reserves are posted essentially contemporaneously with deposits and will continue to study the technical feasibility of such a system”—this, thirteen years after the mistake was made, and almost as long after the measure was essentially unanimously recognized, inside and outside the Fed, as a hindrance to effective control of the quantity of money. Moreover, is it really necessary “to study the technical feasibility of . . . a system” that was in operation for the first fifty-four years of the Fed’s operating life? Have computers that seriously reduced the capacity of banks to keep track of deposits and reserves?

On January 1, 1981, the number of institutions reporting to the Fed weekly was nearly tripled under the new act.³⁰ Personally, I regard it as utterly inexcusable for the Federal Reserve to have delayed the elimination of lagged reserve accounting until after this major increase in the number of institutions subject to their requirements. How can it justify requiring all of those additional institutions to enter under one method of reporting and then a year later require them to change to another?³¹

The contrast between the technical staff papers in the February 1981 two-volume Fed study and the policy pronouncements of the Fed is particularly sharp with respect to lagged reserve requirements. The staff papers contain twelve references to lagged reserve accounting, and a fairly detailed examination of their quantitative effect on the stability of monetary multipliers. Without exception the statements are adverse to lagged reserve accounting by comparison with contemporary reserve accounting.³² Yet that apparently has had no impact on the Fed’s resolve to “continue to study” the issue.

To avoid misunderstanding, let me emphasize that I do not regard the ending of lagged reserve accounting as the be-all and end-all of improvements in operating procedures. It would be possible for the Fed to control monetary growth more effectively than it has even with lagged reserve accounting. Other changes in proce-

³⁰On December 31, 1980, 5,422 banks were members of the Federal Reserve System and required to report. On July 1, 1981, the number of institutions reporting weekly numbered 14,169. An additional 8,554 reported to the Fed quarterly.

³¹The numbers in the preceding footnote overstate the size of this problem, since many small institutions satisfy reserve requirements wholly by vault cash, which is now on a contemporaneous basis.

³²For example, “Ignoring the short-term problem created by lagged reserve accounting,” Richard G. Davis, p. 33.

In re a penalty or a tied discount rate, a “system of this type would not be possible under the existing system of lagged reserve accounting” and “under a contemporaneous reserve accounting system, tying of the discount rate to the current level of the federal funds rate would create less of a problem,” Peter Keir, pp. 43, 47.

“Lagged reserve accounting appears to be a major factor explaining the high variability of the reserve multipliers.” “The system of lagged reserve accounting makes the monthly average required reserve ratio by type of deposit quite unstable . . . and quite unpredictable as well.” “However, the reinstatement of contemporaneous reserve accounting would seem to be a prerequisite for strictly maintaining a total reserves or total base operating target.” David E. Lindsey and others, pp. 13, 52–53.

All references are to *New Monetary Control Procedures*.

dures could produce an equal or larger improvement. Moreover, I agree with the Fed's conclusion that lagged reserve accounting has a more serious effect on the controllability of week-to-week or month-to-month monetary growth than of the longer-term growth which is basically more important.

I have nonetheless stressed lagged reserve requirements for two reasons. First, it is such a crystal clear case of a mistake made by the Fed which it has stubbornly refused to rectify under four different chairmen despite the weight of evidence, from inside and outside the system, on its adverse effects on monetary control. Second, short-term swings in monetary growth do no great harm if they are not only actually reversed but also *widely expected to be reversed*. But there's the rub. The wide short-term swings, partly due to lagged reserve accounting, have eroded the credibility of Federal Reserve policy statements and that credibility can only be restored by actions.

4. *Defensive Open Market Operations*. What is the problem here? In the year 1980, the Federal Reserve made gross open market purchases of securities of something over \$800 billion, and gross transactions, including sales or maturities being rolled over, of more than double that amount. The net change in the portfolio was \$4.5 billion. The open market desk therefore made \$184 worth of purchases gross and roughly twice that amount of transactions (purchases plus sales) in order to add one dollar to its portfolio. Why all this churning? It accounts for something like one-quarter to one-half of all the transactions of U.S. government securities dealers other than the Fed itself. It generates millions of dollars of fees for the dealers involved. But what function does it have for monetary policy, and why has it occurred? It has occurred for only one reason: the mode of operations the Fed has adopted, including a reserve accounting period under which every bank in the United States settles on Wednesday.³³

In 1964, Albert Cox and Ralph Leach proposed one partial solution to this problem.³⁴ They proposed lengthening the reserve period to a month and staggering settlements so that a quarter of the banks would settle each week. I proposed at the same time keeping the weekly settlement period but having a fifth of the banks settle each day, so a fifth of the banks would settle on Monday, Tuesday, Wednesday, Thursday, Friday, and simultaneously calculating actual and required reserves on a per-working-day basis so that Friday would not, as now, count for three days. In 1966, both solutions were rejected by a Fed subcommittee. In the years since, economists and others have repeatedly proposed something along this line.

In 1978, Chairman Reuss proposed staggering the reserve accounting periods to Chairman Miller. It was rejected. On January 12, 1981, Representative St. Germain, the new chairman of the House Banking, Finance and Urban Affairs Commit-

³³The effect of same-day settlement on so-called "defensive open market operations" was greatest when the Fed was using the federal funds rate as its day-to-day target. It has far less effect on "churning" under current procedures. However, it still has a very important effect on the variability of the federal funds rate, and therefore, indirectly, on the variability of other short-term interest rates.

³⁴Albert H. Cox, Jr., and Ralph F. Leach, "Defensive Open Market Operations and the Reserve Settlement Periods of Member Banks," *Journal of Finance* 19 (March 1964): 76-93. The same proposal has been repeated and urged in *Morgan Guaranty Survey* (July 1981): 7-10, but without reference to the Cox-Leach article.

tee, wrote to Anthony Solomon, president of the New York Federal Reserve Bank, referring to the “huge amount of repurchase agreement transactions” and asking for information about them.³⁵ In my opinion, there is no reason for gross purchases to exceed the net change in the portfolio plus whatever purchases are necessary to replace maturing securities. As I shall spell out more fully below, I believe that this buying, selling, and churning serves no useful function. All it does is to muddy the waters, introduce uncertainty and speculation, and generate commissions for bond dealers and activity for people in the system.

3. EXPLANATION

The preceding pages have documented an extraordinary record of bureaucratic inertia, of mistakes that have not been corrected despite their widespread recognition. What is the explanation?

As I noted at the outset, I do not believe an answer can be found in terms of the particular personalities who have been in charge because the resistance to learning from experience has persisted for more than six decades. Moreover, similar bureaucratic inertia is present everywhere. Every large bureaucratic organization knows that the way it has been conducting things is the only way its task can be performed. That’s true for private business. It’s true for government. However, in general, bureaucratic inertia is subject to check by a bottom line. In private business, the check is provided by monetary losses. When losses occur, something has to be done. People get fired. In government, the check is much more limited, but at least so far as Congress is concerned, there is a bottom line, namely, getting elected. Hence Congress has to respond to voter disenchantment.

I believe that the fundamental explanation for the persistence and importance of bureaucratic inertia in the Federal Reserve System is the absence of a bottom line. The Fed is not subject to an effective budget constraint. It prints its own money to pay its expenses.³⁶ The Federal Reserve does not have to face the voters. The members of the board are appointed by the president. If appointed for a full fourteen-year term, they are not eligible for reappointment. If appointed to complete an unexpired term, they may be reappointed for a full term, and hence do face something of a bottom line.

Mark Toma has recently written an interesting paper directed at examining “the role played by a particular factor—discretionary profits—in motivating the actions of Federal Reserve officials.”³⁷ His approach is along the lines that have been developed by economists such as James Buchanan, Gordon Tullock, William Nis-

³⁵Letter from Fernand J. St. Germain to Anthony M. Solomon, June 12, 1981.

³⁶Its recorded income is a large multiple of its expenses. However, that is a pure bookkeeping operation. Since the Fed is essentially a branch of the government, the bonds it holds are obligations of one government agency to another. The economic essence of the situation is that the Fed prints the money (or makes equivalent bookkeeping entries) to pay itself the interest, part of which it uses to pay its expenses, part of which it turns over to the Treasury, that is, in effect cancels.

³⁷“Inflationary Bias of the Federal Reserve System: A Bureaucratic Perspective,” mimeographed paper, California State University, Northridge.

kanen, George Stigler, of analyzing bureaucratic behavior, not in terms of stated objectives, but in terms of the self-interest of the bureaucrats.³⁸ He takes Anna Schwartz's and my analysis of monetary policy as exemplifying the straw man that he is attacking. His criticism is largely justified. In the analysis of monetary policy in our book, we paid only passing attention to the self-interest of the people conducting monetary policy. More recently, we have all become familiar with the idea of applying to governmental performance the same approach that we apply to private business enterprises. The social function of business or government is one thing; the forces that control behavior may be very different.

Toma examines what he describes as "revisions in the country's 'monetary constitution'" in the mid-1930s and 1947. His approach is, I believe, even more directly applicable to the kind of issues that I have been discussing. For example, why is it that over its whole history, the Federal Reserve has been so much concerned with retaining members? As noted, that concern was the reason for introducing lagged reserve accounting.

Monetary theorists have demonstrated that the conduct of monetary policy does not require that the Federal Reserve System have any member banks. I have argued frequently that it would be desirable to separate the regulatory and monetary control activities of the Fed. The latter requires simply that the monetary authority have a monopoly on the printing press or its equivalent to control the total amount of high-powered or base money. Control over the base exerts about as much influence on nonmember commercial banks as on member banks, on thrift institutions as on commercial banks, and so on in unending circle.

The Federal Reserve's concern with membership, though it always cites monetary control grounds, cannot be explained on those grounds. It derives rather from the prestige, sense of importance, power, and effective lobby that the system gains by supervising many thousands of banks and other financial institutions—5,422 member banks before January 1, 1981; more than 22,000 institutions subject to Federal Reserve requirements since then. Member bank support of the Fed's actions has played a major role in giving the Fed influence on Congress.³⁹

Why the enormous resistance of the Fed to moving to monetary aggregates? Fundamentally, I believe, because monetary aggregates permit far more effective monitoring of performance and accountability for achieving targets than money market conditions.

Who of us wants to be held responsible for our mistakes? It's not very nice to have a bottom line. If we don't have a bottom line, why should we introduce one?

The annual or more frequent statements by chairmen of the Federal Reserve to congressional committees have a common script. If things have gone well in the

³⁸After this lecture was delivered, I learned that this approach had been applied to the Bank of Canada in a sophisticated and persuasive fashion by Keith Acheson and John F. Chant in three articles published in 1972 and 1973: "The Choice of Monetary Instruments and the Theory of Bureaucracy," *Public Choice* 12 (Spring 1972): 13–33; "Mythology and Central Banking," *Kyklos* 2 (1973): 362–79; and "Bureaucratic Theory and the Choice of Central Bank Goals," *Journal of Money, Credit, and Banking* 5 (May 1973): 637–55.

³⁹In return, the member banks have received many and varied benefits.

economy, the Fed takes full credit and the chairman explains that it was all due to the wise policies followed by the Fed. If things have gone badly in the economy, the chairman explains that the reason was the limited powers of the Fed to offset external disturbances that were beyond the Fed's control. He then assures the committee that the Fed will now be able to correct any of its own past deviations from desirable policy, and that next year, all will be well—subject of course to unpredictable external events. The statements of general principles and desirable policies are always excellent—both wise and theoretically sound. The explanation of defects in past performance is always ad hoc and exculpates the Fed.

Why the opposition to staggering settlement dates or to other devices for reducing gross market transactions? Because the churning gives people who are involved in it a sense of importance, makes them involved in big deals. Why even, to get down to picayune details, the resistance to the prompt issuance of open market directives? I and others have argued over the years that the open market directive ought to be issued promptly after it is reached, and not much later—it used to be postponed for six months, then three months, now one month.

Why? Because stressing that these directives are so enormously important that immediate knowledge about them would give speculators an opportunity to make a killing, gives the board a sense of importance. Secondly, it offers very good jobs to ex-officials who are hired by firms in Wall Street because they are believed able to read the tea leaves and figure out what the Fed is really doing.

To avoid misunderstanding, let me emphasize that I am not saying that people in the system deliberately pursue these measures for these reasons. Not at all. As economists, we treat a business enterprise as if it were solving a large number of complex simultaneous equations even though the persons running that business enterprise never went to school and learned mathematics. We justify that procedure by saying that if we analyze them *as if* they are rationally and knowingly pursuing the maximization of profit, we'll get a good approximation of their behavior. In the same way, I am trying to analyze the forces at work, and not to describe the detailed motivation or personal behavior of the people involved. All of us know that what's good for us is good for the country. We all know that what we are doing is important, that it performs a real and useful function. How can a person be in a position of buying and selling billions of dollars of securities every day, subject to pressure and influence from important people—and resisting that pressure—and yet believe that it is “full of sound and fury, signifying nothing”? So I am not criticizing specific individuals. I have often argued that the human species is distinguished from animals much more by its ability to rationalize than by its ability to reason.

Finally, to suggest the importance of what I've been saying, consider the effect of adopting the following policy—one that is not ideal, but could be put into effect within a few weeks or months if the Fed decided to do so, and, in my opinion, would produce a stabler monetary environment that would enable inflation to be eliminated with relatively little interim adverse effect on output and employment.

1. Replace lagged reserve accounting with contemporary reserve accounting

2. Make the discount rate a penalty rate, and tie it to a market rate so it automatically moves
3. Eliminate any attempt to introduce a seasonal into the money supply. One of the greatest sources of obfuscation has been the talk about seasonally adjusted money supply. There is no seasonal in the money supply except what the Fed permits
4. Set a target path for several years ahead for a single aggregate—for example, M2 or the base. It is less important which aggregate is chosen than that a single aggregate be designated as the target
5. Make reserve requirements uniform for all components of that aggregate
6. Estimate the change over an extended period, say three or six months, in the Fed's holdings of securities that would be necessary to approximate the target path over that period. Divide that estimate by 13 or 26. Let the Fed purchase precisely that amount every week in addition to the amount needed to replace maturing securities
7. Eliminate all repurchase agreements and similar short-term transactions
8. Finally, announce in advance and in full detail the proposed schedule of purchases and stick to it.

Such a policy would assure control over the monetary aggregates—not from day to day but over the longer period the Fed now insists is all that matters. It would remove uncertainty about Fed policy and establish credibility for that policy. It would leave to the market the day-to-day and seasonal adjustments that the market is well qualified to handle—and could do so far more effectively if it knew precisely what the Federal Reserve intended to do, than in the present state of uncertainty, with the weekly guessing game about Fed intentions that follows each Friday's release of the figures on money supply.

But it would have other effects as well. The open market desk could be replaced by the part-time activity of one employee to make the designated purchases. He would be buying roughly \$100 million a week, not as now \$184 hundred million or more than \$18 billion. The Federal Open Market Committee could meet once every three or six months instead of monthly. The research staff at the Federal Reserve and at the twelve banks could be cut drastically. A large fraction of those research staffs—for the most part highly trained and competent economists—have as their main function preparing their presidents for the monthly open market meetings.

The Federal Reserve governors, who now devote 90 percent of their time, not to monetary control but to their regulatory functions, could spend 99 percent of their time on such regulatory functions. They would do far less harm that way than the harm which they have been doing with the additional 9 percent they now spend on monetary control.

Again, I am not criticizing individuals. You or I would react in the same way if we were in their position. That's why, unfortunately, this policy, however desirable it might be in the abstract, is not likely to be adopted, if left to the discretion of the Fed.

There is, I believe, only one realistic alternative. That is somehow to establish a bottom line. One such policy proposed by the Shadow Open Market Committee that would do so is to require by law that the Federal Reserve Governors submit their resignations at the end of any year in which the growth of a specified monetary aggregate has departed from the advance target by more than a designated amount. Unfortunately, I do not really think that's feasible. The only two alternatives that do seem to me feasible over the longer run are either to make the Federal Reserve a bureau in the Treasury under the secretary of the Treasury, or to put the Federal Reserve under direct congressional control. Either involves terminating the so-called independence of the system.⁴⁰ But either would establish a strong incentive for the Fed to produce a stabler monetary environment than we have had.

A simple version of congressional control would involve a congressional directive to the Fed to adopt and implement the eight-point policy outlined above. That policy incorporates principles that are widely accepted and to which the Fed itself pays lip service. It is practicable and achievable within a matter of months. Its adoption would terminate promptly and credibly a policy course that has reduced the Fed's prestige and credibility in the financial markets of the world to an all-time low.

⁴⁰See Milton Friedman, "Should There Be An Independent Monetary Authority?" in Leland B. Yeager, ed., *In Search of a Monetary Constitution* (Cambridge: Harvard University Press, 1962), pp. 219-43.