

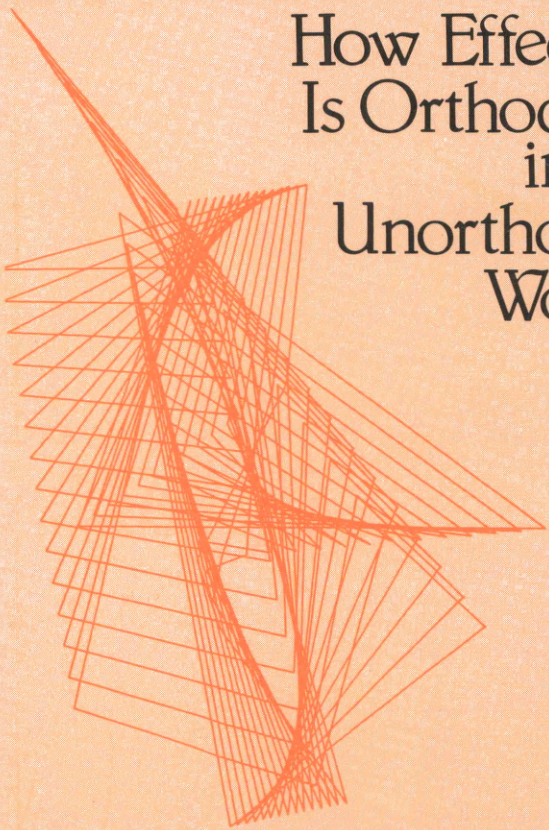
BUSINESS

REVIEW

Federal Reserve Bank of Philadelphia

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An abstract orange line drawing consisting of numerous overlapping, intersecting lines that form a complex, somewhat chaotic shape. The lines are thin and vary in length and orientation, creating a sense of movement and depth. The drawing is set against a light orange background.

How Effective
Is Orthodoxy
in an
Unorthodox
World?

**Commentary:
Monetarism
and Practical
Policymaking**

On Active and Passive
Monetary Policies

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The Federal Reserve Bank of Philadelphia is part of the Federal Reserve System—a System

which includes twelve regional banks located around the nation as well as the Board of Governors in Washington. The Federal Reserve System was established by Congress in 1913 primarily to manage the nation's monetary affairs. Supporting functions include clearing checks, providing coin and currency to the banking system, acting as banker for the Federal government, supervising commercial banks, and enforcing consumer credit protection laws. In keeping with the Federal Reserve Act, the System is an agency of the Congress, independent administratively of the Executive Branch, and insulated from partisan political pressures. The Federal Reserve is self supporting and regularly makes payments to the United States Treasury from its operating surpluses.

Monetarism and Practical Policymaking*

by Edward G. Boehne, Senior Vice President
Federal Reserve Bank of Philadelphia

Nearly 75 years ago a professor at Yale University—named Irving Fisher—turned a truism into a policy prescription that Milton Friedman has popularized as “Monetarism.” The truism is that GNP equals the amount of money available for spending multiplied by the number of times money is used. If the number of times money is used (velocity) is predictable, then GNP can be controlled simply by regulating the supply of money. On this proposition rests the foundation of modern monetarism.

Why then doesn't the Federal Reserve

religiously follow such a simple, neat policy prescription to stabilize the economy and rid it of inflation? Paraphrasing H. L. Mencken, it is because for every human problem there is a solution which is simple, neat, and unrealistic. This is not to say that the Fed has not made mistakes; it has. Or, that the Fed knows all that it needs to know about the economy; it doesn't. But it is to say that the actual implementation of monetary policy—whether through the targeting of the reserve base or the Federal funds rate—is much more imprecise and complicated than many have come to believe.

For one reason, as we have learned particularly in recent years, the use of money is not always that predictable. Velocity can bounce around for meaningful periods of time for

*Based on a talk given to the Philadelphia Investment Group at the Union League, Philadelphia, Pennsylvania, September 5, 1979.

known and unknown reasons. For example, in 1975, velocity grew at a faster rate than it had in the first year of any economic recovery since 1950, thus making it more difficult for policymakers to set goals for appropriate monetary growth rates. Or, more recently, with the onset of telephone and automatic transfer services, money market funds, and other new services and innovations, velocity has been much more unpredictable than usual. The economic significance of the commonly measured money supply, therefore, has been difficult to interpret. To have followed the aggregates strictly early in the year would have led to unwarranted declines in interest rates.

True, many of these financial innovations are related to Regulation Q and the prohibition against paying interest on demand deposits. But the fact is that market impediments do exist and innovations do occur that affect the velocity of money and distort the meaning of the money supply.

The second and more important reason for not adhering to textbook monetarism is that the economic and social costs are just too great to be generally acceptable. Economists have charts showing that monetary growth and inflation move closely together. That they do this over long periods of time is undeniable, but the linkage between them is not so direct or painless as simple charts would portray.

As the 1974-75 recession demonstrated, tight money can reduce inflation, but it reduces jobs, production, incomes, and profits far more in the process. The link is not between money and inflation, it is between money, prosperity, and then inflation. While as a nation we are pretty good at sharing our gains, as yet we haven't figured out a socially acceptable way to share our losses. As a consequence, a policy of prolonged recession and high unemployment to dampen inflation is not acceptable. Some monetary accommodation, even in a period when financial discipline is underscored, may be necessary

to allow for the effects on the rate of inflation of such nonmonetary forces as oil-price hikes, bad harvests, Federal deficits, and the like. The more intense these inflationary pressures are, the more difficult becomes the Fed's job of restraining monetary growth without excessively adverse effects on jobs, sales, output, and financial markets. In short, monetary policy can "lean against the wind," as the saying goes, but because we live in a political economy it alone cannot change the direction of the wind.

Implementing an effective anti-inflation policy, therefore, requires initiatives on a wide front. Clearly, fiscal restraint is essential along with monetary restraint. But so are policies that stimulate investment, rejuvenate productivity, cut back on regulatory burdens, help brake the wage-price spiral, and foster competition, especially in markets where government itself contributes to higher prices. None of these is a substitute for the essential ingredient of monetary restraint, but monetary restraint can't go far enough, long enough to unwind inflation without some help. Hopefully, after more than a decade of persistent and worsening inflation, the national resolve is firming to the point where it is possible to maintain in place a broad-based policy that will lead in time to price stability.

Despite the simplicity, neatness, and attractiveness of Irving Fisher's equation, the implementation of monetary policy is still an art—not because the Fed wants it to be, but because that is the nature of the economy and policymaking environment in which the Fed operates. There are always hard-to-gauge trade-offs in society between long-term and short-term considerations, employment and inflation, and equity and efficiency, that have to be made with imperfect knowledge by imperfect people with imperfect results. And there are always those who make the job sound easier than it really is.

Current Monetary Dilemmas: How Effective Is Orthodoxy in an Unorthodox World?

*by David P. Eastburn, President
Federal Reserve Bank of Philadelphia**

As a practitioner of monetary policy, I am fascinated by two widely divergent kinds of advice people are now offering the Fed. What I'd like to talk about for a few minutes today reflects an effort to find my way between these views.

One view is the orthodox one, held by many very savvy and prestigious people, but particularly by money-center bankers, here and abroad. This is the idea that inflation is

still the old problem of too much money chasing too few goods. Its solution is still a stiff dose of good old-fashioned monetary discipline, painful as it may be. Paul Volcker's appointment and recent moves by the Fed toward higher interest rates have been well received by people holding this view because they see these developments as confirming their idea of what the Fed should do.

A second view is that the economy is becoming increasingly unorthodox and that in this new environment orthodox measures by the Fed are not effective. People who take this line are a much more varied group than those who hold the orthodox view, and their recommendations are much less definitive.

*Remarks delivered before the Financial Analysts of Philadelphia at the Racquet Club, Philadelphia, Pennsylvania, September 12, 1979. The views expressed are mine and do not necessarily reflect those of my colleagues in the Federal Reserve System.

For one reason, the unorthodox people are negative about what the Fed can do rather than positive about what it should do. And for another, different individuals have different reasons why the Fed can't be effective. Some of these reasons are:

- Inflation is caused by OPEC.
- Inflation is caused by government deficits.
- Inflation is caused by labor unions.
- Higher interest rates no longer bite.
- Even a recession no longer can solve inflation.
- The whole idea of controlling the economy through the demand side is passé; what is needed is policy to affect the supply side.

So what does the Fed do? Is orthodoxy still effective?

ORTHODOXY

Many economists in recent years have been heard to say, "I'm not a monetarist, but . . ." You can count me as one of these. I don't follow the monetarist line to the point of holding to an invariable growth rate of money regardless of the effect on interest rates, but I certainly believe that money is a basic cause of the inflation we now have and that a slower growth rate is essential in getting rid of inflation. All other efforts to combat inflation will surely fail without monetary discipline. If this puts me in the orthodox camp, I'm happy to be there.

But I'm just as convinced that the problem isn't all as simple as some orthodox viewers might think. We live in a *political* economy. This fact tells me, for one thing, that exercising monetary discipline unmercifully would provoke a counterproductive reaction which would produce even worse inflation. So I believe the Fed should guard against precipitating a money crunch and a serious recession. I also believe that various gov-

ernmental efforts on the social front are important to relieve undue and unfair impacts of recession or slow economic growth. I happen to have certain ideological reasons for thinking this way, but one can also believe this for purely practical reasons. Monetary discipline simply won't work unless there is awareness of these practical, political, realities.

So I'm wary of advice that the Fed simply turn the screw. Doing so without considering the pertinent circumstances could impose an unwise dose of monetary discipline.

UNORTHODOXY

Among those circumstances are the facts cited by those who take the unorthodox view. The economy is different than it was, and resorting to monetary orthodoxy in a world of economic unorthodoxy poses very difficult problems for the Fed. The various arguments I have attributed to those who espouse the unorthodox view fall into two categories. The first involves different forces external to monetary policy which the Fed has to decide whether to validate or not. The second involves the impact of inflationary expectations. Let me take each one in turn.

Validation. The most severe shock to the economy in recent years has come from OPEC increases in oil prices. Clearly, these increases have raised the overall level of prices as well as the price of oil. This needn't necessarily have happened, however. If other prices had gone down enough to offset the increase in oil prices, the OPEC action wouldn't have been inflationary. The Fed could have helped this come about by sufficiently slowing money growth.

As you know, we haven't done that and, in fact, have validated at least part of the increase in oil prices. The reason, of course, is that the OPEC shock in itself has tended to depress the economy, and for the Fed to add to that impact a highly restrictive policy would have had a very depressing effect. We have been in a Catch-22 position. If we had offset all of the OPEC price effects, we

would have aggravated the recession. If we had validated all of it, we would have aggravated inflation. As a result we have followed a middle course.

The validation problem, however, was with us long before OPEC. It often comes with budget deficits, which many people regard as the most inflationary force of all. The record of large deficits is distressingly familiar, but let me mention a new fact that just has come to my attention: the 1970s promise to be the first decade in our entire economic history with not a single year of surplus.

Now, we in the Fed have been known to speak in loud and clear tones about the evils of budget deficits. The increased spending and borrowing which are involved tend, when the economy is operating relatively near capacity, to raise prices. But again, this needn't last if the Fed refuses to validate the higher prices by sufficiently slowing money growth. This hasn't happened. As in the case of the OPEC price increases, the Fed has validated part of the deficits and offset part of them.

Finally, the validation problem is associated with the wage-push phenomenon, which many who espouse the unorthodox view think is the main cause of inflation. When wages rise faster than productivity, they force prices up. If the higher prices are not validated by increases in money growth, however, demand will not support them. Producers will lay off workers, sales will slow, and the economy will turn down. In fact, the Fed has validated part of the price increases caused by the wage push.

I want to make two points out of all this. First, those who take the unorthodox view are *not* correct in asserting that OPEC, budget deficits, and wage pushes make monetary policy impotent. The Fed can offset all these forces by sufficiently slowing money growth. But, second, those who espouse the unorthodox view are correct when they say that these external forces greatly complicate the Fed's decisionmaking. OPEC actions, deficits,

and wage-push pressures at the same time cloud the picture and sharpen the dilemma which the Fed faces.

In hindsight, it is probably true that the Fed has validated too much and not offset enough. Certainly, the rate of money growth has been higher than we would like it to have been. But responsible policy could not have had monetary policy offset all of these forces completely. The Fed does have a responsibility for weighing the risks of aggravating inflation against the risks of recession. You may not agree with how it has assessed these risks and acted on them, but it is hard to conclude that *some* validation of these external forces was an unwise thing to do. In the future, whenever the problem arises, each situation will have to be evaluated separately. Overall I would favor some validation, although not as much as in the past.

Expectations. Many of those who espouse the unorthodox view claim that monetary policy is ineffective because of inflationary expectations. The fact of increasing inflationary expectations is familiar to all of us. The magnitude of the increase comes as a shock. In the 1950s, inflation was expected to be about one-half percent (on average, that is, because in the early 1950s people were expecting deflation). In the 1970s, expectations have averaged close to six percent and currently are nearing nine percent. This increase in expectations is perhaps the biggest fact that distinguishes our economy from that in which orthodox policy was presumed to operate.

It raises questions, first, about the effectiveness of high interest rates. Mortgage lenders, for example, constantly marvel at how young couples can take on mortgage debts at 11 percent plus without seeming to bat an eye. The reason, of course, is that house prices are increasing at a rate closer to 15 percent; and if home buyers expect the trend to continue, the *expected* real rate is negative.

There is no question that inflationary expectations greatly change the way people

regard high and rising interest rates. Yet, I believe the argument has been overdone. The fact that expected real rates are negative may mean that existing rate levels do not discourage some people from borrowing. But borrowers who incur debt at today's high nominal rates still take on large burdens of servicing the debt. Unless their incomes and cash flow are rising equally as fast as their debt burdens, they are going to feel the pinch. Many businessmen I talk with indicate that high nominal interest rates do indeed bite.

The most telling argument of the unorthodox viewers is that even a recession and high unemployment may not make a permanent dent in inflation. Rather than trading more unemployment for less inflation, we may find ourselves with more of both. Their reason, again, is inflationary expectations.

Back in the 1960s, economists seized on the so-called Phillips curve both as an explanation of what goes on in the economy and as a guide to policymakers. The Phillips curve showed that unemployment was low when wages were rising rapidly (during periods of inflation) and unemployment was high when wages were rising slowly (during periods of recession). Accordingly, policymakers who wanted to slow down inflation had to decide how much unemployment they were willing to tolerate.

Well, it is now fashionable to say that the Phillips curve is obsolete. Shifts in expectations shift the entire curve in ways that are hard to predict. Why? Because workers are concerned about their *real* wages and will demand higher wages to make up for higher prices. So we have two results. First, a higher level of inflation is now associated with any given level of unemployment. Thus, achieving price stability requires a bigger increase in unemployment in the short run than was the case 20 years ago. Second, rather than ending up with more of one and less of the other, we sometimes end up with more of both unemployment and inflation, or what has been termed stagflation. If in-

flationary expectations are rising fast enough, their impact on inflation can overwhelm the effect of a slowing economy or even a recession.

The point of all this is not that expectations make monetary policy ineffective but that they call for a different approach. The simple concept of monetary policy is that it tightens during booms and eases in recessions, and the record during the postwar period does show sharp changes in money growth and interest rates over the course of the cycles. But now, with inflationary expectations so high, this kind of up-and-down policy can be self-defeating. As the economy slows further in coming months, it will be important for the Fed not to move precipitously to ease. People need to see that the effort to eliminate inflation is proceeding by persistent steps to slow money growth. This persistence probably must continue for several years if inflation expectations are to be reduced.

SUMMING UP

So where does all this come out? By now you can see that the sharp distinction I made at the outset—between those who advocate a more orthodox view of the economy and those who say the world has changed so much that traditional monetary policy is ineffective—was overdrawn. There is some, but not complete, truth in both views.

Monetary discipline is essential to the elimination of inflation; the rate of money growth must be worked down. But the development of an unorthodox economy adds new constraints on orthodox monetary remedies. Undue tightness can produce counterreaction that will only embed inflation more deeply. Undue ease can aggravate inflationary expectations. Too much validation can make inflation worse; too little can lead to severe recession. The trade-off between inflation and unemployment is much more uncertain than it used to be.

I come out of this with the conviction that monetary policy is still effective but that it has become much more difficult and compli-

cated. At the same time, good monetary policy is even more essential. I agree with those who argue that efforts are needed to strengthen the supply side of the economy. Vigorous steps to raise productivity will help to restore the dynamism of the economy and help to reduce inflation. But demand management is not obsolete; demand and supply management must reinforce each other.

Finally, in this environment the Fed has a special responsibility to lend an element of consistency to public policy. Fine tuning is now discredited (although I suspect that if the economy ever comes closer to what we

once thought of as normal, it may come again into vogue). Our problems in these days of double-digit inflation are more gross. They require a firmer hand and a longer view. Whether the American people will sit still for a gradualist solution to inflation remains to be seen. Whether the Fed will be able to exercise the persistence and constancy which a gradualist solution requires remains to be tested. Certainly, if any institution can perform this role, the Fed, with its independence from short-run political influences, is in a position to do it.

From the Philadelphia Fed . . .

This new booklet contains summaries of four panel discussions of Philadelphia's economic future held at the Federal Reserve Bank in 1978 and 1979. Copies are available without charge from the Department of Public Services, Federal Reserve Bank of Philadelphia, 100 North Sixth Street, Philadelphia, Pennsylvania 19106.



On Active and Passive Monetary Policies: What Have We Learned from the Rational Expectations Debate?

By Donald J. Mullineaux*

When you are confronted by any complex social system, be it an urban center or a hamster, with things about it that you're dissatisfied with and anxious to fix, you cannot just step in and set about fixing with much hope of helping . . . You cannot meddle with one part of a complex system from the outside without the almost certain risk of setting off disastrous events that you hadn't counted on in other, remote parts. . . .

Intervening is a way of causing trouble.

Lewis Thomas, "On Meddling,"
in *The Medusa and the Snail* (New York: Viking Press, 1979).

Dr. Thomas is a biologist and we can forgive him if he is more concerned about meddling with hamsters than with other social systems of at least equal importance, such as the national economy. His fundamental point, that trying to improve matters often ends up making things worse, has long been a point of debate, however, among

those who have studied government policies aimed at stabilizing the economy. Economists who side against meddling with the economy have typically done so for precisely the same reason that Dr. Thomas counsels hands-off policies—that we are just too ignorant of how systems like hamsters and economies work to be able to accomplish any good. This view holds out the promise, of course, that one day we may be smart enough to conduct economic policy without "causing trouble." Those who come down for meddling contend that our economic knowledge, though quite imperfect, is sufficient to allow the

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good effects to outweigh the bad.

A new and controversial school of thought about how the economy operates recently has shifted the focus of this long-running debate. This approach, known as the rational expectations theory, suggests that it may well be *impossible* to design policies to stabilize things like unemployment or production of goods and services, *regardless of how much we know about how the economy works*. As the label suggests, this new idea centers on the way people form expectations of economic events and argues that forecasts of, say, inflation will take account of all the factors that actually determine how fast prices rise. The strong conclusions concerning stabilization policies have led this view's adherents to argue that the Federal Reserve should abandon active efforts to influence the economy and adopt a passive stance of setting a constant growth path for the money supply and never deviating from it.

Given the importance of the issues, this rational expectations theory has been much scrutinized of late. A number of issues have been raised by critics in attempts to reestablish an activist role for monetary policy. These efforts focus on several different aspects of the new theory. While the debate is far from settled, enough may now be known to draw some *tentative* conclusions about the desirability of activist efforts to influence the national economy.

RATIONAL EXPECTATIONS: A CHALLENGE TO MONETARY ACTIVISM

Monetary policy activists contend that by appropriately adjusting the growth of the money supply, the Federal Reserve can offset disturbances to the economy and thereby reduce fluctuations in output and unemployment. As an example, suppose that businessmen become extremely pessimistic about the profit outlook and cut back on spending for new plant and equipment. The fall-off in business spending would be accompanied by an unplanned accumulation of inventories,

and firms would respond by laying off workers and lowering production. Rising unemployment and declining levels of income would mean that households also would trim their spending, perhaps triggering an economic recession.

Such a scenario provides a cardinal opportunity in the eyes of policy activists. By accelerating growth in the money supply, the Fed can boost overall demand for goods and services. This happens because as more money is injected into the economy than people originally intended to hold, they will attempt to reduce their money holdings by purchasing more goods or financial assets. Purchasing more goods adds directly to demand, while buying more financial assets indirectly boosts demand by lowering interest rates in financial markets. With a sufficient dose of stimulus, policy activists contend, the Fed can offset the reduction in demand—and any other predictable disturbance—so that production and unemployment remain stable.

The rational expectations theorists are skeptical of this argument, however.¹ They do not deny that the increases (declines) in money growth will boost (reduce) total demand. But they question whether these policy-induced shifts in demand will have any influence on the behavior of *suppliers* of goods and services. If the production decisions of businesses are not somehow linked to policy changes, then output and unemployment will not be responsive to changes in money growth. Adherents of the rational expectations view claim that the existence of such a link requires that any shift in money growth be *unanticipated* by the public at large. But, they continue, because people form their expectations rationally, it is *im-*

¹For a more complete discussion of the logic of rational expectations theory, see Donald J. Mullineaux, "Money Growth, Jobs, and Expectations: Does a Little Learning Ruin Everything?" *Business Review*, Federal Reserve Bank of Philadelphia, November/December 1976, pp. 3-10.

possible for the Fed continuously to engineer shifts in money growth that are unanticipated. Their conclusion: there can be no systematic link between Fed policy actions and firms' decisions about how much to produce.

Why do the rational expectations theorists claim that money growth shifts must be *unexpected* if they are to be related to output and unemployment? The answer is a little complex. Economic logic tells us that firms will produce more output when they sense higher demand for their goods *only* if they're convinced that there has been a *relative* demand shift—an increase in demand for their product relative to demand for all goods and services.² But higher money growth doesn't produce a relative demand shift; rather, it increases the demand for all goods and services—*aggregate* demand. Therefore, firms will produce more output on the heels of higher money growth only if they *fail* to recognize that aggregate demand is higher and mistakenly conclude that there has been an increase in the relative demand for their goods. Rational expectations theorists claim that business will suffer this kind of misjudgment precisely when an increase in money growth comes unexpectedly. Having no information on the *source* of the increased demand, firms treat it as a relative shift.

When a shift in money growth is *anticipated*, however, then firms are aware that demand for their product is up simply because aggregate demand is higher. Recognizing that the cost of labor and raw materials will be rising at roughly the same pace as their output price, they make no attempt to in-

crease production. The sole result, then, of an *anticipated* increase in money growth is a higher inflation rate, or so the rational expectations school contends.

If only shifts in unexpected money growth have effects on output and unemployment, why not have the Fed engineer whatever amount is necessary to achieve an unemployment rate target? The rational expectations answer: it can't be done. If people recognize that the Fed increases money growth every time unemployment rises, they will use this information in making forecasts. Thus the Fed's response will come in the form of higher *anticipated* money growth, which brings *only higher inflation*. Any systematic policy response by the Fed will eventually be learned by the public and built into its forecast. Unless the Fed has better information than the public, there is no way the central bank systematically can surprise people so as to achieve a lower unemployment rate. Once the Fed has reduced money growth to levels consistent with a low rate of inflation, the best monetary policy is one that sets a constant growth target for money and sticks to it, regardless of the state of the economy. This passive stance would prevent monetary policy from being a source of instability, or so rational expectations adherents claim.

Though a number of economists seem sympathetic to the rational expectations view, others have raised questions about the logic of the argument. In each case, the points made, if valid, are sufficient to restore at least the feasibility of activist monetary policies aimed at influencing unemployment and output.

ACTIVISM REHABILITATED?

Attempts to restore the credibility of activist policies have focused on several steps of the rational expectations logic. One line of thought argues that it simply is not correct to claim that changes in *anticipated* money growth don't affect variables such as unemployment. But the same logic that underlies

²It is only when firms sense a *relative* increase in demand that stepping up production schedules will increase profits. If firms know that demand for their product is up by, say, 10 percent simply because demand for *all* goods has increased that much, then it won't pay to produce more output. The reason is that a 10-percent rise in aggregate demand will mean that prices for labor and raw materials will be rising at roughly this pace. When costs are rising at the same rate as output prices, profits won't rise as firms produce more output.

this view also tells us that any relation between expected money growth and unemployment (or output) is likely to be quite limited in scope. A second challenge argues that expectations are *not* fully rational, over short periods of time at least. Many economists are troubled by this argument, since it suggests that people ignore or misuse information when making forecasts. Still another view is that even though people forecast rationally, the Fed can bring about *unexpected* money growth, provided the time horizon of money-growth anticipations is sufficiently long relative to the period over which policy is initiated. If the money-growth forecast that matters to the determination of output covers, say, a two-year period, then once expectations are formed, the Fed should have ample time to respond to new information and generate an unexpected shift in money growth.³

None of these arguments implies that the central bank *should* adopt activist policies by trying to offset disturbances to the economy. Rather, they suggest that, contrary to the rational expectations argument, activist policies are at least potentially useful—they *could* work. There may be other considerations that argue against activist policies, however.

Is Expected Money Growth Neutral? A venerable proposition in monetary economics states that, *in the long run*, an increase (decrease) in the money-growth rate will produce a proportionate increase (decrease) in the inflation rate and that the level of

output will be unaffected. In economists' jargon, money is neutral with respect to production over the long run. These older analyses failed to draw any explicit distinction between expected and unexpected money growth, but what lies behind this work is the notion that in the long run all changes in money growth will be anticipated ones. The novel aspect of the rational expectations theory is the statement that, even in the short run, monetary growth changes that are anticipated will be neutral.

But is this a valid claim? Some economists think not. They argue that even increases in *expected* money growth are likely to raise the rate of production by causing people to readjust their asset holdings. In particular, as expected inflation rises on the heels of higher anticipated money growth, people will decide to hold less of their wealth in the form of money (which bears no interest) and more in the form of financial and real assets. (Real assets are those which provide their owners with physical service flows, such as stereos, refrigerators, computers, factories, and so on.) Why would people undertake such a shift? Because as they come to foresee higher and higher prices down the road, they recognize that their current holdings of money not only yield no interest but also represent command over a smaller and smaller future volume of goods and services. This means that money is providing less service to its holders in terms of its ability to buy things, so people decide to hold less of their wealth as money and more in the form of other assets. But as more new factories and machines are purchased, production quite naturally rises since factories and machines are used to produce output.⁴

³Some have criticized the rational expectations view on the grounds that it assumes perfectly flexible prices. But because of information costs or noncompetitive behavior by some firms, prices in reality are likely to be sticky—to adjust only slowly to changes in demand or supply. It has been demonstrated, however, that sticky prices can be compatible with the rational expectations logic. See Bennett T. McCallum, "Price Level Adjustments and the Rational-Expectations Approach to Macroeconomic Stabilization Policy," *Journal of Money, Credit, and Banking* 10 (November 1978), pp. 418-436.

⁴While *firms* might readjust their asset holdings by building new factories and buying new equipment, households of course will purchase either consumer durables or financial assets. Nevertheless, the behavior of households still affects the stock of plant and equipment since the funds they place in the credit markets or the stock market will facilitate the acquisition of new equipment by firms.

How large is this effect of anticipated money growth on output? An exact answer is No one knows; but there seems to be good reason to think the overall effect is probably small. First of all, there is a potential offset to any positive impact of increases in anticipated money growth on output. If people are holding less money, it becomes more costly to buy things—more time and energy are used up running to the bank or the automatic-teller machine. But if more effort is used up transacting, less time is available for producing goods and services, which offsets some of the output gain from having more factories and machines. Second, people already are holding a fairly small percentage of their total wealth in non-interest-bearing money. In the first quarter of 1979, for example, people and firms held about \$359 billion of currency and demand deposits.⁵ This represents only about five percent of total estimated consumer wealth of some \$6.8 trillion. There just isn't much room for a very big effect on the stock of machines and factories stemming from shifts out of non-interest-bearing money. Unless some evidence is turned up showing that this logic is badly off base, the anticipated money-output link appears to be a weak reed on which to build a case for an activist monetary policy.

Are Expectations Rational? The assumption that people form expectations rationally is a key building block in the case against activist policies. But what makes a forecast rational? Unfortunately, the term 'rational' has been used in a number of different senses. Originally, expectations of inflation

were said to be rational if, on average, they were formed with full knowledge of the process that *actually* determined the inflation rate.⁶ For example, suppose that in every month the inflation rate is equal to the prior month's money-growth rate. Then a rational expectation of *next* month's inflation is *this* month's money-growth rate. Using any other forecasting scheme would yield an irrational expectation. In a sense, this example loads the dice in favor of rational expectations because it suggests that the actual inflation rate is determined in very simplistic fashion. Thus it would be easy to detect such a relationship and use it in forecasting. In truth, the actual inflation process is (1) apparently quite complex and (2) only known approximately.⁷ One way to find out whether expectations are rational in this rather strong sense would be to conduct a test. But a direct test requires that we have a good measure of inflation expectations and that we know the process that actually determines the inflation rate. While there are some measures of inflation expectations, they have a number of shortcomings.⁸ And a quick perusal of two or three economic journals will convince any reader that there is no generally accepted notion of how inflation gets determined.

Lacking a suitable test to decide the issue, some claim that common sense tells us that expectations can't be rational. After all,

⁶The qualifier 'on average' means that in any particular instance expectations can differ from what full knowledge of the inflation process would imply. When we average over all predictions, however, these differences should tend to cancel each other, so that there is no systematic difference between subjective inflation expectations and the values implied by full knowledge of the actual inflation process.

⁷This represents a problem for the rational expectations theory only to the extent that there are systematic gaps in our knowledge of the inflation process—that something very fundamental to determining the inflation rate has gone unnoticed.

⁸Some examples: nonrepresentative samples, lack of quantitative data, brief historical sample periods.

⁵The stock of non-interest-bearing money is actually smaller than this figure. The reason is that although commercial banks cannot make explicit interest payments on demand deposits, they often pay interest indirectly by providing checking-account services at a price below their cost of production (no-charge checking, etc.). It appears likely that explicit interest on demand deposits will soon become legal, so that currency will be the only non-interest-bearing component of money. The outstanding stock of currency presently is a little over \$100 billion.

making rational predictions requires that people possess mountains of information about the things that matter for determining inflation and that they also know how it all fits together. Being a less than humble lot, these economists note that since they aren't all that sure of the whys and wherefores of inflation, surely the man-in-the-street can't be.

The somewhat disarming response by rational expectations adherents to this argument is to agree with it for the most part but then to claim that, in making key decisions about what to buy and sell, people act as if they knew the true inflation process. This shifts the burden of testing away from the question of how people form expectations—a process that is very difficult to observe and measure—and toward the issue of how people behave in various markets. A definitive test here requires that observed outcomes of market processes—quantities bought and sold and prices—be sufficiently different when people have rational expectations from the outcomes that result when they don't. In financial markets, the existing evidence appears quite favorable to the rational expectations view, but in markets for goods and services and in the labor market the evidence is much less clear cut. (See the article by Poole in Suggested Readings.) Thus we must conclude that we don't yet know enough to decide the question of whether expectations are rational in this strong sense of the term.

There is a weaker version of rationality, however, that requires only that people fully exploit relevant information, economically speaking, when making predictions.⁹ If people can't improve on their forecasts by better utilizing the information at hand, then the

rational expectations result that an activist policy can't influence things like unemployment and output continues to hold. Whether or not this crucial condition holds in reality depends on how people go about *learning* the actual process of inflation. (See the Friedman article in Suggested Readings.) Unfortunately, we know very little to date about how this learning takes place. There is evidence, however, that information on past inflation and past money growth is efficiently exploited in some inflation forecasts, which would imply that the condition for the rational expectations theory to hold is satisfied. (See the Mullineaux article in Suggested Readings.) But the expectations analyzed were those of a group of economists rather than those of the public at large, and there may be differences in forecasting ability between the two groups. Once again, we must conclude that the evidence is not convincing enough one way or the other to confirm or deny the view that expectations are rational. No matter how the term is defined, we don't yet know enough about how people form expectations to decide the case for or against an activist policy on these grounds.

Can the Fed Systematically Engineer an Unexpected Change in Money Growth? Participants on both sides of the debate on activist monetary policy seem agreed that there is a causal connection between, say, unemployment and *unexpected* money growth. The question then becomes: can the Fed produce an unanticipated shift in money growth? The rational expectations logic says No. If the Fed systematically shifts its money-growth targets over time in response to the ups and downs of everyday economic activity, people will notice this and build the information into their expectations about money growth.

One response to this argument might be that the Fed could engineer an unexpected shift in money growth by following deliberately deceptive policies—that is, by announcing its intentions to follow one policy but pursuing another. Ethical issues aside, it seems hard to argue that the Fed could fool the public *systematically* about its policies,

⁹The qualifier 'economically' recognizes the fact that forecasting is costly. Forecasting requires time-consuming activities such as information gathering, computation, and reflection. It will be economically rational to consider more information only when the benefits exceed the costs. The benefits of more information come in the form of a better (more accurate) forecast.

provided Fed actions possess some rhyme or reason. Suppose policy shifts are keyed off changes in the unemployment rate. People will come to recognize this and base their policy anticipations not on what the Fed announces but on what they've learned about how the Fed actually behaves. For many reasons, then, deliberate deception should be ruled out as a means of engineering unexpected money growth.

But perhaps there is another route to follow. A recent argument suggests, for example, that if the time horizon over which people form expectations about money growth is sufficiently long, then the Fed probably can bring about an unanticipated policy shift. (See the 1977 article by Fischer in Suggested Readings.) Suppose that the expectations that are relevant to current decisions by businessmen about how much to produce were made, say, two weeks ago. Then there is very little time for the Fed to observe an increase in unemployment and respond to it by resetting its targets for money growth. But what if the relevant anticipation about money growth was formed, say, two or three years ago? Then there seems to be ample time for the Fed to recognize a disturbance to the economy and shift its policy stance to counteract it. How long is the time horizon of the money-growth forecast that is actually relevant to decision-makers? Since we know that people frequently make *long-term contracts* to buy and sell certain goods and services (labor, for example), at least some behavior appears related to expectations that span a fairly long horizon. Workers frequently contract to supply labor services for a two-year or three-year period at negotiated terms. Suppose that those terms are predicated on workers' expectations that prices will rise five percent a year and involve an annual wage increase of seven percent. If, one year into the contract period, the Fed observes some recessionary disturbance, it could announce and pursue higher money-growth targets. While workers might revise their inflation expectations as a

result, they cannot adjust their wages until a new contract is negotiated.¹⁰ As actual inflation increases, the wage rate adjusted for inflation (the real wage) falls, and firms will hire more workers. Unemployment declines and production rises, temporarily at least. The same result occurs if firms set prices on their products one or more time periods prior to the period over which they will apply (as catalogue stores must do).

These arguments essentially claim that if wages and prices are *sticky* (because of contracts or any other reason), then there may be a sufficiently long horizon of expectations to allow the Fed to produce a systematic deviation of actual money growth from what was expected. Such a policy does not involve deception in the sense discussed above. People recognize the shift in Fed policy, but because it is based on information that becomes available only after the contract is in force, they cannot immediately react to it. Thus the Fed can at least temporarily engineer money growth that is unanticipated.

Is there evidence to support this sticky-price unexpected-money linkage? One study has attempted to determine the length of the horizon over which anticipations of money growth are relevant to production. The evidence was not sufficiently clear cut to identify a two-year horizon as more or less consistent with reality than a one-year horizon. One might argue, however, that either period is sufficiently long to permit the Fed to counteract an observed disturbance. This means that the Fed is at least in principle capable of reducing period-to-period *fluctuations* in the unemployment rate. But it could not affect

¹⁰Some labor contracts are indexed to the rate of inflation; that is, wages are adjusted automatically according to a prearranged schedule to reflect changes in the average price level. Indexed contracts will force monetary policy to lose its effectiveness only if the wage is indexed in a way which duplicates the effects of one-period contracts. While the majority of labor contracts are not indexed at all, those which are do not typically work like a series of single-period contracts.

the average unemployment rate over longer periods—that is, maintain a rate permanently lower than that consistent with balanced conditions in the labor market. While more empirical work is sorely needed, this “sticky price in relation to the expectations horizon” argument appears at *this time* the most fruitful ground on which to base a case for the feasibility of activist monetary policy.¹¹

DOES ‘SHOULD’ FOLLOW FROM ‘COULD’?: A CASE FOR A MODIFIED PASSIVE POLICY

The rational expectations case against an activist monetary policy is founded on three premisses, each a matter of considerable controversy: (1) people form expectations rationally; (2) expected changes in money growth do not affect output or employment decisions; and (3) while unexpected changes in money growth do influence output and employment, the Fed cannot systematically bring about unanticipated shifts in money growth. Unfortunately, the evidence brought to bear to date has not been sufficiently strong to settle any of these contending issues, so that the question Is an activist monetary policy feasible? has no clear-cut yes or no answer.

Suppose, however, that one judges that theory and evidence have uncovered enough chinks in the rational expectations armor to justify a stabilization role for monetary policy. Does it follow that the Fed *should* undertake activist policies? Not at all. Some economists have long argued that, although activist monetary policies can *potentially*

play a useful role in reducing fluctuations in output and employment, the appropriate stance for the Fed is to follow a passive policy (set a constant growth-rate target for money and stick with it). Having studied the historical policy record, they contend that the knowledge about the economy required to carry out a successful activist policy is simply not yet available to policymakers. They also suggest that adopting an activist policy opens the Fed to political pressures that may result in actions that are actually destabilizing in a longer run setting.

The argument against a passive policy is that the Fed would be immobilized during periods when it could take actions that would yield obvious benefits—in the face of some very large recessionary shock to the economy, for example.

But perhaps there is a middle ground between highly activist and passive policies. Given doubts that very activist policies will produce more good than ill, perhaps the best monetary strategy for the Fed is to adopt a fundamentally passive stance (pursue fixed growth-rate targets), *except in the face of major disturbances to economic activity*. Presumably the constant growth rate for money that the Fed would pursue would be one consistent with a low level of inflation over the long run, or perhaps—as some have argued is desirable—a small rate of *deflation* (falling prices on average). A prompt move to such a level of money growth would be undesirable, however, since it would no doubt induce a sizable recession. Hence the implementation of the modified constant-growth strategy would have to be delayed until the Fed had achieved a gradual reduction in money growth to levels consistent with society’s long-run inflation goals.

This *modified constant growth-rate policy* combines the major advantages of a passive policy stance—avoidance of ill-timed, destabilizing policy actions—with those of an activist mode—flexibility to respond to *major disturbances*. Policy might still be destabilizing on occasion, however, since there may

¹¹It should come as no surprise that this argument has its critics among those in the rational expectations camp. They argue that the type of contract studied is inferior, in terms of the welfare of both workers and firms, to a different kind of contract that would consider employment determination as well as wage issues. With this better type of contract, the rational expectations result holds. (See the Barro article in Suggested Readings.) The response to this argument is that though these latter contracts seem better in theory, they are not the kind that we presently find in labor markets.

be problems in recognizing a major shock. But average policy performance should be improved. When the lack of strong justification for activist policies is combined with the historically observed failure of fine tuning, prudent judgment argues strongly for the modified passive policy. Future research may overturn this conclusion and demon-

strate either that there is *no scope* for any activist policy or that there is considerable justification for frequent stabilization moves by the Fed. Until one or the other of these extreme views is vindicated, however, keeping "hands off" most of the time should "cause less trouble" but perhaps buy us a little good when times are quite bad.

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