

## *The Federal Reserve's Modus Operandi*

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Some economists may be quite sure that the Federal Reserve should operate by fixing the stock of money. I am not; and to begin, what I thought I would do is explain why. Nor am I sure, by the way, that the Federal Reserve ought to operate by pegging rates on Treasury obligations. I once was, and not all that long ago. But, regrettably, I have become less so.

The question, as I would put it, is whether the Federal Reserve should fix the stock of money, however defined, or alternatively peg the rate on three-month Treasury bills and as well, perhaps, the rates on, say, five- and ten-year Treasury bonds. This is not quite the same as asking whether the Federal Reserve should fix the stock of money or, in contrast, operate as it has been. If there is an interest rate among the variables used in defining money market conditions, it is the Federal funds rate. And the record is quite clear; the spread between the funds rate and the three-month bill rate, or any of the rates on longer-term Treasury obligations, has not been constant.

If pressed to defend how it operates, the Federal Reserve might put forward a political rather than an economic argument. Reaching back in history, it might cite the fuss caused by the none-too-gentle slide in Treasury bond prices after World War I. Market participants may, however, be a good deal more sophisticated than they were—so may Congressmen and Senators.

But, even if not, an economist can perhaps be permitted to assume that the Federal Reserve operating by pegging Treasury rates is not wildly absurd. The only question is whether, in the national interest, the Federal Reserve ought to fix the stock of money or peg Treasury rates (and, thereby, I assume, all other rates).

It could also be too easy, simply assuming that the Federal Reserve can make the stock of money as large or as small as it wants; and over some reasonably brief interval of time, not three months but rather a week or at the outside a month. If it cannot, then

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approximating any desired three-month average could involve changing the weekly or monthly average, possibly even sharply; and sharp changes would presumably not be good. Having the same reserve ratio for all kinds of member bank deposits ought to help. But even if different ratios will likely persist (for no very good reason, near as I can tell), I shall nevertheless assume here that the Federal Reserve can indeed make the stock of money whatever it wants, maybe not on the day, but on the week or month.

Were the Federal Reserve entirely certain about the economic structure which constrains it, and entirely accurate in its forecasts, then how it operated would make no difference. It could decide to fix the stock of money or peg interest rates with any old coin, fair or unfair, that happened to be handy. We are all well aware, however, having lived through 1965 and 1968, that uncertainties are the essence of the policymakers' reality. And what would seem to be true is that how the Federal Reserve ought to operate depends on what its uncertainties are and, to speak loosely, how great each is.

I can illustrate this proposition, taking nominal GNP as the Federal Reserve's target variable. I could just as well take some measure of the imbalance on international account; but if I did, some might object that with a floating dollar, or flexible exchange rates all around, the Federal Reserve would not have to bother.

#### *Choosing the Random Variables*

It might be assumed—quite unrealistically, to be sure, but as a beginning—that total demand for current output has an exogenous component (government spending, say), which is the only random variable. On this assumption, fixing the stock of money would seem to make more sense than pegging interest rates. As between the two ways of operating, the fixing of the stock of money yields a smaller variance for GNP. Why it does, may be obvious. It is just that with the stock of money fixed, there is a kind of automatic stabilization. Without the Federal Reserve doing anything, any discrepancy between the expected and actual values of exogenous demand produces a stabilizing change in interest rates, and thereby a stabilizing change in the induced component of total demand. With interest rates pegged, however, there is no stabilizing change in the induced component of demand, whatever the discrepancy between the expected and actual values of the exogenous component. The actual stock of money may differ from the expected stock, but this is of no consequence.

It might also be assumed—again, quite unrealistically—that one or another of the coefficients of the money-demand equation is the only random variable. On this assumption, fixing the stock of money would evidently make less sense than pegging interest rates. As between the two ways of operating, the fixing of the stock of money yields the larger variance for GNP. By pegging rates, the Federal Reserve gets itself back, as it were, to a certain world; there can be no discrepancy between desired GNP and actual GNP. With the money stock fixed, however, any discrepancy between the expected and actual demands for money forces a discrepancy between desired GNP and actual GNP.

And if the exogenous component of demand and one or another of the money-demand coefficients are both random variables? Whether the Federal Reserve should fix the stock of money or peg interest rates depends then (if independence is assumed) on the ratio of the two variances: that of the exogenous component of demand and that of the money-demand coefficient. With a sufficiently large variance for exogenous demand, fixing the stock of money makes more sense than pegging interest rates; and for a sufficiently small variance, fixing the stock of money makes less sense.

To approximate reality even reasonably well, it likely should be assumed that the Federal Reserve is not only uncertain about whatever exogenous variables there are, but also about the private sector's responses to a change in interest rates. Assuming this, one can still get a condition, though, which determines how the Federal Reserve ought to operate. For the pegging of interest rates, there is one reduced-form equation, what I refer to as the *r*-equation. For the fixing of the stock of money, there is another reduced-form equation, the *m*-equation. Now, for variances of the random variables appearing in the *r*-equation which are large enough—in comparison, that is, with the variances of those variables appearing in the *m*-equation—fixing the stock of money makes more sense than pegging interest rates; and for variances which are small enough, fixing the stock of money makes less sense than pegging interest rates.

But my point is this: we do not know how the various variances compare; so far as I am aware, no one has checked. I grant, however, that I might be better acquainted with the economics literature than I am.

*\*Note:* This proposition, and those of the immediately preceding paragraphs, are proved in my paper, "The Optimum Monetary Instrument Variable" (Xeroxed), a copy of which may be obtained by writing to the author.

It could be, of course, that there are better assumptions than those I have used, most of which I have conveniently not set out, and that there is, therefore, a better condition than mine. Then, by all means, let this better condition be derived, and the appropriate calculations made. Until they have been, we must all, it seems to me, be unsure about how the Federal Reserve ought to operate.

It would help considerably if we could agree on which is more variable, the demand for current output or the demand for money. There may be those who know, possibly even for sure; but among those who know, there is, I think, less than universal agreement.

I might put my point differently: It seems to me not good enough to simply exhibit an historical association between the stock of money, however defined, and some measure of current output. Though the association might be strong indeed, fixing the stock of money could still make less sense than pegging interest rates.

#### *Use of a Proviso Variable*

There is another way in which the Federal Reserve might operate. It might use a proviso clause, with either the stock of money or some index of interest rates as the proviso variable. It could, for example, hold interest rates at pre-determined values through some portion of the policy period, until an initial reading on the stock of money had been obtained. Then it could change rates, possibly in proportion to the discrepancy between the actual stock of money and the expected stock. Or it could fix the money stock at some pre-determined value, and then at some point, depending on what interest rates had averaged, possibly change its target value. Actually, the Federal Reserve has been using a proviso clause for some time now, but the proviso variable has been the bank credit proxy. The Manager of the Open Market Account has been automatically adjusting as the values of those variables—among them the Federal funds rate and free reserves—which together define money market conditions. What I have to say about the use of a money stock proviso clause (the stock of money being the proviso variable) may therefore be of some relevance.

The rationale for using a money stock proviso clause is simple enough. For the stock of money, there is a relatively short information lag. What matters ultimately is actual GNP; but it becomes known only with a considerable lag—a longer lag than that with which the actual stock of money becomes known.

Again, it might be assumed that total demand for current output has an exogenous component, and, further, that this exogenous component (which for the Federal Reserve could be government spending) is the only random variable. On this assumption, pegging interest rates subject to a money stock proviso clause makes more sense than simply pegging interest rates. Knowing no more than what the stock of money actually was in, say, the first half of the policy period, it is still possible to infer with perfect certainty what actual GNP was and to adjust interest rate target values properly. Simply pegging interest rates implies a certain variance for GNP; but pegging interest rates subject to a money stock proviso clause implies a smaller variance.

But if pegging interest rates subject to a money stock proviso clause makes more sense than simply pegging them, then fixing the money stock, subject to an interest rate proviso clause, makes still more sense. This will not be surprising; as I said before, with exogenous demand as the only random variable, simply fixing the stock of money makes more sense than simply pegging interest rates.

#### *Policy with Two Random Variables*

What if there are two random variables, though, exogenous demand and one or another of the money-demand equation coefficients? Then it is not generally possible, knowing only what the actual stock of money was, to infer with certainty what actual GNP was, or what interest rates should be over the remaining portion of the policy period. Consider this: the stock of money is observed to have been less than expected. It could be that exogenous demand was less than expected, and that, therefore, actual GNP was less than desired GNP. But it could also be that the actual desired stock of money was less than expected, and that exogenous demand was greater than expected. The trouble is that, depending on which inference is correct, interest rates should be either increased or decreased.

Even with two (or, indeed, several) random variables, using a proviso clause may, however, still be possible—perhaps advantageous as well. But again, it cannot be said at this point whether the Federal Reserve ought to use a proviso clause or, if so, which sort. Whether it ought to peg interest rates and use the stock of money as its proviso variable, or alternatively fix the stock of money and use some index of interest rates as its proviso variable, depends in part on how certain variances compare. To repeat, this we do not know.

*Fixing the Stock of Money*

In talking about how the Federal Reserve should operate, I have, so far, assumed GNP to be the target variable. Perhaps I ought now to assume that the target variable is some measure of the imbalance on international account, or that there are two target variables—GNP and some measure of international account imbalance—and go right on. I am going to stick, though, with GNP as the target variable, and inquire briefly into whether there would be any unfortunate side effects if the Federal Reserve were to operate by fixing the stock of money.

This is how the Federal Reserve ought to operate, provided that the demand for current output is sufficiently more variable than the demand for money. I shall therefore assume that it is. But in fixing the stock of money, the Federal Reserve does not ensure what interest rates will be; it determines expected values, not actual values. And it is the possibility of random, short-run fluctuations in rates, resulting from random changes in the demand for money, which has caused concern.

The Treasury, responsible for raising the Federal government's money, comes immediately to mind. So does the Federal Reserve's operating rule: that there be no change in policy (in discount rates, say, or reserve requirements or the target value for the funds rate) from shortly before the Treasury announces its financing terms until the newly issued securities have been pretty much distributed. Although I could be quite wrong on this, it is my impression that when the Treasury is, so to speak, in the market, the Federal Reserve contrives to keep rates within rather narrow limits—which is precisely what it could not do if it were fixing the stock of money.

I have heard it argued that without Federal Reserve assurances about interest rates, largely implicit perhaps, the Treasury would not be able to sell coupon securities. Allegedly, there would be no underwriters. The risks would be too great. Underwriters might, though, simply demand and get a larger underwriting premium. It is difficult to judge, but they might. The Treasury's average borrowing cost would increase. But this could be a reasonable price to pay. Also, if the Federal Reserve were operating by fixing the stock of money, there would be no need for it to hold Treasury obligations of differing maturities, so the Treasury might limit itself to such maturities as it could sell by auction.

Possibly, I am too optimistic. Still, it seems to me that with modest institutional changes the Treasury could get by without help from the Federal Reserve. This is likely something the new Treasury staff has been thinking about.

Through the years, central bankers have insisted on the desirability of week-to-week and day-to-day stability of interest rates—undoubtedly with good reasons, which, however, have largely remained their secret. Until all these reasons are made public—and the present would be a very good time—we must, I think, accept that the Federal Reserve could operate by fixing the stock of money. Random, short-term fluctuations in rates there would be, but not great upsets.

This is not to say, though, that the Federal Reserve should operate by fixing the stock of money or, if so, that it should increase the stock of money at a constant rate.