

RECENT MONETARY POLICY

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**Sherman J. Maisel, Governor
Federal Reserve System
Washington, D. C.**

I want today to comment informally on two issues of monetary and Federal Reserve policy which seem to me to be mistreated in much of the economic literature. I don't think that the traditional view is necessarily wrong, but it does I believe lead to a misinterpretation of both what the Federal Reserve does and secondly of the time period within which we should expect to measure the results of alteration in monetary policy.

My first point is that I believe that most people, including, unfortunately, many in the Federal Reserve System, have an incorrect idea of how monetary policy works, and of how the Federal Reserve controls monetary policy.

We all know the elementary textbook case in which the Federal Reserve creates reserves and thereby bank deposits. In the one-bank case, money is created based upon the amount of new reserves and the reserve ratio.

In the next more complicated textbook case, we show five or six banks and show that it takes a little while for the new reserves to be multiplied into a given amount of money. When we are sophisticated, we point out in modern terminology that banks are profit making organizations and therefore don't create money automatically. Banks must want assets before they create liabilities. Since these are not always available, banks don't automatically create liabilities, but sometimes increase their excess reserves. (Although in the last ten years, this complication doesn't add much because the amount of change in excess reserves has not been great.)

If you teach according to these cases you might conclude, as do many people, that last month the Federal Reserve by creating y reserves increased the money supply by x%. Or, you might point out that in April the Federal Reserve increased the money supply by 11% and then decreased it by 2% in May. These figures trigger lots of articles stating how can the Federal Reserve be so foolish. Why do they create so much money in one month and then decrease it the next? Wouldn't it be much better if they would just create reserves at a given rate and call it quits? The answer, I believe, is that the textbooks do not paint an accurate picture of how the Federal Reserve influences the money supply even though it is suggested in the more advanced literature such as in articles by

Tiegan or Gutentog.

The point that I want to stress is this--under present policies, reserves and the money supply are endogenous not exogenous variables. The Fed influences them, but Federal Reserve policy variables are only some among many forces impinging on their growth. What the Federal Reserve does is to influence the marginal cost of money to banks. When their marginal costs change, banks alter their assets. It becomes more or less worthwhile for a bank to sell or purchase investments. Depending upon changes in market conditions, the bank will change their asset holdings. As a result, banks will also change their liabilities to the same extent. Depending upon what form their liabilities take, the narrowly defined money supply or time deposits or demand deposits or government deposits will alter. As a result, the bank's required reserves two weeks from now will change. The Federal Reserve under its present operating system, will furnish most of those required reserves. Reserves are furnished after the fact, after the money supply has increased or the amount of bank liabilities and assets have increased. Reserves are furnished as virtually an automatic process.

So when you teach about the Federal Reserve, you should say that the Federal Reserve changes its policies in order to change the marginal cost of money to the banks. As a result of altered cost-price relationships, the growth of monetary aggregates or, in the assets and liabilities of banks is altered. Under this strategy, the operational directives of the open market committee to the manager of the open market account say, "Change the rate at which you are purchasing bills in the open market in order to influence those short-term rates upon which you have the greatest impact." These rates are those for Federal Funds and dealer borrowing rates. Such rates plus many other factors influence the treasury bill rate. For example, currently, because the Treasury has gotten to the point where it is paying off debt on a seasonal basis instead of borrowing, it probably has more impact on the three month bill rate than the Federal Reserve does in any given week. There are

other important influences such as state funds, corporation offerings, etc. Assume that you are at a given level of short-term rates, the Fed open market operations may move the Fed Fund rate by 10, 15, or 20 basis points and their pressure on the bill rate in the same way. At the same time, however, other market pressures may have a greater impact in the opposite direction. All of these conflicting movements take place with some relationship to the discount rate. So that if the discount rate is moved, there is a new peg around which these other rates are aligned.

Let me write this strategy as a set of relationships. How does the Fed influence what I call the intermediate monetary variable? The IMV (intermediate monetary variable) can be a monetary aggregate. Some people might define it as interest rates. Many would probably think of it as either bank assets or liabilities, or they might think of it as one type of bank asset or bank liability.

This picture of operations can be expressed symbolically:

- Where:
- IMV = Intermediate monetary variable
 - R_b = Borrowed reserves
 - R_f = Free reserves
 - Q = Q ceiling
 - r_b = Treasury bill rate
 - r_f = Federal funds rate
 - r_c = Call money rate to dealers
 - GNP = Economic activity
 - L = Liquidity preference of corporations, banks, financial institutions, etc.
 - T = Treasury cash management
 - r_d = Discount rate
 - RR = Required reserves
 - S = Open market operations
- Then:
- $$\text{IMV} = M(R_b, R_f, Q, r_b, r_f, r_c, \text{GNP}, L, T) \quad (1.0)$$
- $$r_b; r_f; r_c = r(r_d, R_b, R_f, \text{GNP}, L, T) \quad (2.0)$$

The change in the intermediate monetary variable, however defined, is determined by the interaction of the Federal Reserve controlled variables; certain money market rates strongly influenced by the Federal Reserve; changes in output and prices; movements in the financial sector and liquidity functions; and the Treasury as in (1.0).

The Federal Reserve action may influence directly the IMV. It also will influence money market rates as in (2.0).

$$RR_{T+2} = IMV \quad (3.0)$$

$$R_b; R_f = R (RR, S) \quad (4.0)$$

The change in the intermediate monetary variable approximately determines the change in required reserves two weeks later (3.0). Given the change in required reserves, the manager of the Open Market Account can (within the limits of his operating misses) determine exactly the level of net free reserves (4.0). The banking system, given a level of net free reserves, determines its own level of borrowings and excess reserves simultaneously.

In other words, this IMV then is a function of such things as: the amount of net borrowed reserves in the System; regulations such as Q. (In the past three months the relationship of market rates to Q has had a major impact upon bank assets and bank liabilities.) It also depends upon short-term rates--say the short-term rate on the Treasury bill, the short-term rate on Federal Funds, the short-term rate on dealer loans. It also obviously depends on what is happening to the economy. It will depend upon the liquidity preference function of the economy, and in the short run will depend very greatly on treasury operations--how the treasury borrows and how the treasury handles its cash balances. If you look at banks you'll note that the treasury balances in banks will fluctuate from three to eight billion or will fluctuate by five billion over rather short-term periods. The amount of change in bank assets and bank liabilities results from an interplay of all these forces. It does not result from the fact that the Federal Reserve says

that next month we're going to create \$22,000.00 of reserves in order to alter bank assets and liabilities by \$100,000.00. That is my first point.

As a related item to this first point, let me call attention to the need for more careful definition and use of the concept of the money supply. If you look at the rates of growth in the monetary aggregates, everybody must be impressed by the tremendous differences in period-to-period movements of the different definitions of the money supply. Currently what you would expect to happen would vary greatly depending which monetary aggregates you believe in. We now are at a period when the differences among the rates of change in these variables have been very great. If you believe that short-run movements are important you would expect the economy to react in a very different manner, depending on which definition you trusted. For example, I have here a breakdown going back approximately 16 months. It is divided into three periods. In the first period the bank credit proxy (roughly equivalent to the old Friedman M_2) rose at an annual rate of 3 1/2% at the same time M_1 , the narrowly defined money supply grew at a rate of 8%. In the next period they changed at annual rates of 14.1 and 3.4, respectively. While in the last period M_2 declined at a rate of -3.2% while M_1 was rising at 3%. As you can see, these are rather large differences. This to me means that we need some way of deciding which among these monetary aggregates to use. It also may mean that we need some way of deciding what are logical periods when we talk about the monetary aggregates. We know that over five years differences aren't great. But in a year or two years, particularly with the sorts of policies we have been having, their movements vary a good deal.

My second point is to call attention to a problem in relating monetary policy and monetary theory. Currently we really have two or three major types of monetary theories. These, however, have to be broadened to get explanations as to how and when monetary policy will alter price, output, and employment.

As economists, we normally list five ways in which monetary policy influences the level of spending. (If we are pure quantity theorists, we don't have to be concerned with the level of spending. We can say that monetary policy is going to affect prices directly.) But most of us are probably not pure quantity theorists and we're not willing to agree that in $MV=PO$, "V" and "O" are constants, and that therefore "P" is a direct function of "M".

We assume that all four of these factors are variables. We must explain how monetary policy influences spending rather than velocity alone. One way is through the stock of money--this is the simplest and most direct view. Changes in the amount of money are directly transmitted into changes in spending. Questions do arise as to what constitutes money. They have been very important in recent periods. There are also questions as to whether changes in money and spending are or are not proportional. In other words, what is the degree to which "V" varies and the degree to which you can predict changes in "V"? What variables influence "V"? What time lags exist? Are these long or short? Are they regular or irregular? But the general point of those who stress the stock of money is a belief that people will spend less when they hold less money. A decrease in the rate of money creation will be followed by a fall in the rate of new spending.

The second path from changes in monetary policy to changes in spending is through the cost of capital. This is a good Keynesian approach. The level of interest rates is an important factor determining the amount purchasers will spend on real estate and other long-lived assets. If interest rates rise ceteris paribus, less should be spent on plant and equipment, on housing, probably also on consumer durables and on governmental investment.

Third we have the wealth effect. This says consumer spending is influenced by their net worth. Consumers will demand less when their net worth falls. Therefore, monetary policy has a deflationary impact inso-

far as it tends to lower the prices of stocks and bonds. When it lowers the assets of households, they spend less.

The fourth path is through the availability of credit. If you tighten monetary policy, you make credit less available. This leads to credit rationing in particular areas. On the other hand when you expand, you make credit more available. Banks can increase their intermediation or banks create credit which goes into the hands of spenders. The spenders then purchase, and you get a multiplier effect as a result of the new spending.

Finally, spending might be influenced by psychology or expectations. This raises the question of how much people do or do not change their spending policy as a result of psychology or expectations.

These are the five channels between monetary policy and spending. What concerns me is that when I look at most monetary theory, whether it stresses portfolio adjustment or the wealth impact, or the cost of capital--and to a certain extent, the money stock--all are theories under which we would expect very long lags between policy changes and movements in prices and employment. In fact, if you look at the Brookings or the FRB-MIT econometric models, or similar ones, you find only a little monetary impact on prices, for three years or so. You probably don't get even half your price impact until well after the third year. The price impact of any change in monetary policy this year in fact will still be felt four or more years from now.

In contrast, some have taken the money stock theory and have run regressions which seem to say, we'll get a spending impact in an average of about nine months. If you put your trust in those models, you probably get about 50% of your spending impact between the 8th and 13th month. You still, however, have to move from that spending impact and ask when will prices be changed. Again this puts you out a long time into the future. I won't argue about the validity of those regressions

or the validity of those theories. In any case, I think one might agree that whichever basic theory we teach them, they don't give you much short-run impact for monetary policy.

I would guess, however, that if we go beyond the simplified theories, we can find a basis for believing in a shorter run impact. What must be done is to add to the theories as they now stand a credit availability and expectations factor. While I don't give much weight to expectations, I would note that some of my colleagues put a great deal of weight on them. I personally would put most of my stress on availability and the impact on spending of the creation of credit. I think these do explain how monetary policy has a shorter run impact by limiting or increasing the amount of credit banks and financial institutions can create and thereby shifting directly spending functions. But it seems to me that if you stick with the more traditional monetary theories, you really don't find much reason for using monetary policy--certainly not for countercyclical purposes. You would have to conclude from these theories that monetary policy ought just to do its thing by remaining almost constant along some line and sticking close to it. However, if you look at availability and expectations, then I believe you can find some reason for shifts in policy.