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MONEY AND INCOME

Remarks of

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Few things fascinate mankind as much as money. And one thing that seems almost invariably true is that, at least from the standpoint of the individual, the supply of money is seldom as plentiful as the supply of theories about it. Since even a simple theory may give significant insights into the workings of the economy and of the monetary system, it has been beneficial to have so many. I hope we will never cease to have new theories nor tire of examining the old ones along with the new.

In the course of these examinations, however, we ought to remember the warning given every beginning student of economics: stay on guard against oversimplification, especially when it is proposed that a theory be used as the basis for determining a policy that is to be applied in practice.

For purposes of study, in furtherance of the understanding of particular processes, oversimplification may be positively helpful--as when we assume "all other things remain unchanged," even though in fact they do not.

For policy purposes, however, particular theories may have marked deficiencies. They may apply only in the long run, and not at all in the short. They may describe mainly underlying tendencies and touch upon only a segment of reality. When used for policy proposals without these factors being taken into account, they may lead to prescriptions that would do more harm than good.

Economic history is full of theories that have attempted to prove that if the supply of money or credit could be made to behave in accordance with certain simple criteria, nearly all economic problems would be solved. Since scarcely anything could be more attractive or convenient, it is not surprising that the perennial search for such single, simple solutions is still in progress--and perhaps in full cry, to judge by the samples carried daily in the press of simplistic monetary proposals or policies advocated by some of our most eminent professional economists, by generally well-informed political leaders, and by well-trained financial writers.

Today I would like to discuss some of the reasons why I think that theories that accept or overemphasize (in my judgment) the money supply as the major determinant of income would serve poorly as the basis for formulating monetary policy, in contrast to those that stress the need to consider the interactions of non-monetary together with all monetary causes of shifts in income and spending.

For ease of exposition, I will use the terms "money supply theory" or "money supply only" for propositions that put most stress on changes in the money supply as the prime determinant of economic activity, and "money-income-expenditure" theory for those which stress the need to look at a broader list of variables. (While I have gone over the literature carefully and have tried to be representative in statements of views, an individual believer in either theory may well object that his views are not fairly represented. Almost anybody who has written in either area could almost

certainly come up with past statements that would enable him to disavow the theories as they are presented here.)

Briefly I feel the analysis leads me at least to conclude that while important contributions have been made to show that "money does matter," this is far from the conclusion and it leads to entirely different policy prescriptions from claims that "only money matters." The belief that control of the money supply would be the most efficient type of governmental economic policy is not supported by either the facts or theory. It pays too little attention to the basic non-monetary causes of instability and to changes in the demand for liquidity.

Because our economic system is complex, we need complex theories to analyze it. We must take into account changes in demand whether they come from government spending, from psychological factors, from endogenous cycles, from the money supply, from shifts in liquidity preferences or innumerable other forces. By considering a large number of variables which alter income, employment, and prices, we can explain and predict what is happening to the economy. Based on this knowledge, a flexible monetary and fiscal policy can be more efficient than a single variable policy in reducing the amount of instability and increasing the growth rate of the economy.

Velocity and Interest Rates

Before taking up some rather faulty assumptions upon which the money supply theory seems to me to rest, I'd like to absolve the theory of one such assumption that is, however, embraced in the associated policy prescription of a constant growth in the money supply. That is the assumption of a stable link between money and income. Stress is placed in the prescription not the theory on the stable long-run relationship between income and changes in money. Price and interest impacts on money demand under normal circumstances are said to be slight. While the velocity of money admittedly fluctuates in the short run, emphasis is on its stability over the long run.

It is this assumption that allows the relationship to be turned on its head. Money can be thought of as the tail which wags the dog. Money is exogenously determined by the Federal Reserve System. To make the public willing to hold the money stock, income must adjust to the level of money. This leads to the concept that if money grows at a constant rate, income will also grow at a constant rate. Discretionary monetary policy should be replaced by one based on a more or less constant growth in the money supply.

The theory itself points out that the demand for money depends upon interest rates as well as upon income. As a result, adjustments to changes in either the supply of money or the desire to spend can occur by alterations in interest rates and in the velocity of money. The demand for money changes with interest rates. A change in the supply of money may alter interest rates, not income.

Thus, the direct causal link between money and income is broken. An excess of money over the demand for it may cause people to buy bonds in place of, or in addition to, commodities. A rise in the demand for goods may similarly raise interest rates. A given supply of money may not halt the expansion of demand from non-monetary sources. It may support a higher income level by turning over more rapidly.

It is, of course, true that there is a way in which changes in bond prices and in velocities may affect spending. An excess of money holdings may be passed on through successive portfolios via shifts in yields on assets. People and institutions see short-term gains in selling bonds at high prices. As one does so after another, the outcome eventually will be more spending, but how much more cannot be foreseen. How high a degree of leverage the money stock can exert on income, particularly in any short or intermediate period, is questionable.

While avoiding this error of which they are at times accused, the "money supply only" theories do seem to me to neglect, ignore, or dismiss as insignificant a number of other highly important points.

Non-Monetary Causes of Spending Shifts

One is the effect on the economy of changes in spending caused by wars, changes in the size and composition of the population, alterations in technology, government programs, the expected return on capital, and shifts in exports. The impact on income may become cumulative through operation of the multiplier-acceleration process as well as through the

effects produced by changes in expectations. Progress and growth can lead, and have led, to destabilizing movements in demand. Furthermore, there is no obvious force in the economy which would prevent these movements from becoming explosive in either direction.

Monetary factors may, of course, interact with these other changes. If there are changes in the rate or level of spending, and the money supply cannot adjust, changes will be produced in interest rates, bond prices, and wealth. These changes will react in turn upon future expenditures. Those who stress non-monetary causes of instability believe that purely monetary reactions arising from a stable money supply will be too slow, and perhaps too weak, to offset the instability arising from non-monetary causes. Velocities will shift; interest rates alter; desires for liquidity will change. Because monetary influences are felt with a lag, immediate market reactions to non-monetary developments can increase rather than offset instability.

Market Imperfections May Raise the Costs of Monetary Movements

Another matter the money-supply theory appears to neglect (or assume away) is the problem of sectoral adjustments to monetary changes. It is well established that monetary changes have a differing impact on sectors of the economy. Yet the theory assumes that shifts in demand as a result of changes in interest rates or in the availability of credit will either be smooth or not excessively inefficient. In contrast, the money-income-expenditure approach points out the degree to which laws, rules,

regulations, market institutions, and market imperfections influence income, and to the extremely uneven adjustments to which these factors may lead. These uneven adjustments may in turn bring about unexpected results with heavy costs.

In constructing a theory simply to aid in understanding, as I noted at the outset, it may be proper to disregard the legal and institutional structure of the economy in order to study basic tendencies. In formulating policy, however, the economy's true reactions cannot be treated so cavalierly. Analysis for policy must consider the channels through which economic forces move. Policies do not sail the smooth seas of theoretical assumptions. They must steer their course among the rocks and shoals of laws and institutions.

Money supply theorists assume perfection in the working of credit markets, though perfection is as rare in markets as in life. The imperfections that characterize markets in practice serve in fact to reallocate credit with seriously destabilizing results. If each sector of the economy had equal access to all capital markets--as it does not--everything would work through the price mechanism and allocational goals would be well served. If markets were truly impersonal--as they are not--those with the projects promising the best return would be the ones to get the credit. But the truth is that forces other than prices play major roles in the market place.

When credit is tight (loanable funds are scarce in relation to demand in the economy), this becomes glaringly apparent. For example, there is really little in a long-standing customer relationship to tell a bank that a prime depositor has a particularly meritorious project. Yet, at times of credit stringency, he is given credit on favorable terms while other applicants with excellent projects are rationed out of the market for considerations that are perfectly logical to the bank. If markets functioned with perfect economic efficiency, this would not happen.

For the economy in general, the most important effect of high interest rates has been to restrict the flow of funds to the housing market as the bond market has attracted funds that in other times were deposited in mortgage lending institutions (due to legal interest rate constraints and the slow turnover of assets at these institutions).

Because real resources move slowly, this failure of credit to flow to its most efficient point constitutes an important stabilization problem. It is difficult to move labor geographically or to retrain a plumber to be an engineer. Also, unions can halt entry of new labor into the market just as monopoly and oligopoly halt entry of new businesses. Given this lack of real factor mobility, a temporary shift of credit may cause structural unemployment. It also may in the case of housing lead to an inflationary rise in rents and the cost of living if the supply of residences lags demand. It may be true that the resources would move given enough time. But the length of time required is much longer than is practical for the business cycle, and the reallocation is neither perfect

nor cheaply accomplished. Nobody suggesting specific policy proposals today can responsibly ignore these imperfections.

Fiscal Policy Is not Insignificant

Also ignored, neglected, or downplayed by faithful adherents to the money supply theory is the extremely significant role the government's expenditures and its deficit may play in determining the course of economic and financial developments. The expansion in expenditures caused by the war in Viet Nam has had major impacts on our economy in recent years. Wars can cause major changes in income irrespective of how they are financed. But the ease and efficiency with which resources are shifted to the war effort is not independent of tax policy and how the war debt is financed.

To prove that a money creation rule could take the place of fiscal and debt management policy, one must show that by maintaining a constant growth in the money supply changes in other policies would be reduced to insignificance. But most economists agree that the opposite is true. Tax and debt policy can create a more efficient system of transferring resources. The level of demand is not dependent entirely on the money supply and independent of the method of financing. Financing through borrowing rather than through taxing may cause significant structural changes. Most experience indicates that the level of production and the amount of resources available for the war can be influenced by fiscal and debt policy. Who pays for the war and how income is redistributed also would be different under a system which used money supply as the key policy variable.

In order to ignore the question of whether goods and services are purchased by the government or private spenders, one must assume that borrowing to reallocate resources is an efficient way of reallocating them. In addition, aggregate demand must not increase.

If the government spends the proceeds of its bond issue on real resources while only part of the funds come from household demand for real resources the latter is not true. If funds are raised by taxes, the person taxed has his wealth reduced. The reduced wealth makes it difficult for the taxpayer to borrow to augment his income. It appears that a person who turns in more money in taxes reduces his consumption by more than one who turns in this same additional amount to pay for a bond. A change in income or wealth produced by governmental expenditures may alter spending even if the supply of money is unchanged.

Since the pattern of government demand differs so much from that of household demand, an increase in governmental expenditures requires a major shift of resources. When the government borrows heavily to pay for its expenditures, bond rates may be pushed up enough to cause major alterations in the flow of funds. Some users of credit may get more, while others are fully supplied. In general, the lack of mobility of factors of production limits the effectiveness of high interest rates in reallocating resources. The impediments to accomplishment of such shifts in terms of rigidities, bottlenecks, etc. are significant and cannot be ignored. A tax program may be far more efficient in freeing the type of resources required and in insuring that no large quantities of resources lack demand.

Shifts in the Demand for Money

As economists we recognize that market equilibria can be altered by a shift in either supply or demand. For stability to result from a constant supply, demand must not shift. This, however, doesn't appear to be the case of the demand for money and credit. Desires for liquidity have shifted rapidly. We have just experienced such a major shift. In addition, expectations about future profits also may move rapidly.

Unless we can raise the cost of capital relative to expectations about future profits, we cannot slow the boom without causing grave structural disorders. There are situations in which expectations are even destabilizing for the system. An expected price inflation feeds itself by encouraging people to buy goods and to draw down money balances. This sort of expectation may not be amenable to a rule about the rate of growth of money.

Some expectations about returns on capital may be stabilizing after awhile, but there is little guarantee that the short-run problem will be costless. A sharp reduction in expected return on capital may cause major disruptions. For stability, the use of fiscal policy or discretionary monetary policy may be quite necessary in such a situation. Similarly, if expected returns promise to outpace the cost of capital, especially as in a situation where business firms are particularly liquid, fiscal policy or discretionary monetary policy may be needed to dampen the elements giving rise to those expectations. In neither case should the money supply continue to expand at a constant rate. For it to do so would in the former case not make it easy enough for people to borrow; in the latter case it would make it too easy.

What Is Meant by the Supply of Money?

The concept of the money supply is far more complex than it sometimes appears. Major differences in policy suggestions may follow from how the "money supply" is defined.

There are at least four different versions of what the money supply is. While the movements of the money supply in all four versions are related, the growth rates of the respective "supplies" may differ greatly over periods of a quarter or even a year. Whether or not these differences are significant and which versions of the money supply should be considered as a primary index for policy depends upon one's complete theory.

Sometimes money supply theorists talk as if currency in circulation and private demand deposits were all that mattered. At other times, they add private time deposits to get a larger version of the money supply. Movements of these two "money supplies" differ considerably. Because the government's cash balance is large and it rises and falls rapidly as the government takes in receipts and pays its bills, time and demand deposits also grow at a rate different from total commercial bank deposits. The behavior of total deposits of commercial banks in turn may differ considerably from those of savings banks and savings and loan associations.

Although some slippage exists, the total most directly affected by Federal Reserve operations is that of commercial bank deposits. Yet the total that seems to fit most theories best is total deposits of all institutions. Moreover, even with a constant level of deposits,

significant effects may result from alterations in the equal but opposite side of the balance sheet--loans and investments. There are many cases where the person to whom bank credit is loaned will influence the total amount of spending. To find these effects, we must look at bank loans and assets as well as the money supply.

A policy that recommends strict control of a particular monetary total must properly define the total to be controlled. The recommendation could apply to anything from free reserves to all financial assets. To be operational, two characteristics must prevail. First, the target total must be under the control of the Federal Reserve. Second, the relationship between the targeted variable and spending must be clearly defined. A choice then depends on both practice and theory.

The one thing that the Federal Reserve can control precisely is the volume of bonds in its portfolio. Although total non-borrowed reserves --those made available through purchases of government securities in the open market--are also within the reach of the Federal Reserve fairly constantly, the money supply, in contrast, is the result of interactions of the banks, the public, and the Federal Reserve. In general, the further you get from a definition of the targeted variable in terms of open market operations the more difficult it becomes to determine how Federal Reserve policy will affect it. Depending on the definition of money used, the total supply of it may be affected by public substitution between demand and time deposits, by shifts from public to private deposits, and by switches to bank deposits from other financial assets.

If control over the total money supply is all that is needed, as the money supply theorists suppose it to be, the composition of the total must be of no consequence. But if the total alone is important, there must be some unifying purpose in holding all the assets included in the total. If time deposits are included, the motive cannot be transactions. It must have to do with liquidity or some other measure. If the measure were broadened so that all interest rate effects were internalized, the relationship to income might be more stable. But broadening theory to such a measure is to eliminate the control of the Federal Reserve.

Statistical Studies

At times over-exuberant believers in the money supply theory seem to be stating that there is little use quibbling over the theory because the facts have been proved statistically, and that there is an empirical if not necessarily a theoretically valid law justifying the policy of constant growth of money supply. When we examine all the many studies in this sphere and the relevant debates, it becomes clear that no such certainty exists.

We face, of course, the typical problem of drawing conclusions about an extremely complex system from partial statistics. Looking at post-Korean data, we can correlate about half of quarterly changes in the GNP with changes in various definitions of the money stock. (Total member bank deposits or credit seem to do best.) The models giving such correlations contain lagged distributions for three to five quarters.

Similarly, we find sets of expenditure variables which give equivalent results. In each case, we must still look to other factors to account for the majority of changes that have occurred. This can be done with more complete models such as have been constructed at the Federal Reserve based upon the money-expenditure-income theories.

Our problem is not merely that of looking at a bottle that is half empty and also half full. The problem is a good deal more complex. In each case, we can by theoretical reasoning improve or dissipate the initial statistical results. Most of the models used in such tests tend to be too simple. As an example, some published studies have argued at length over the use of claimed misuse of the concepts of "turning points" to attempt to prove either theory.

A comparison of turning points in no way does justice to a model in which various factors other than money affect GNP. This is particularly true when monetary policy is expected to offset part of the expansionary force of autonomous expenditures or of a runaway in expected return on capital. The effectiveness of policy depends on the relative strengths of the two opposing forces, not on the point in time when policy changes. If a strong expansionary policy action were to be coupled with a weak downward movement in other forces, one would expect the policy's effect would be more swiftly felt than if the other forces were moving down rapidly. The necessary ceteris paribus conditions are not represented in some of the statistical work.

The fact that eminent scholars can draw different conclusions from similar data is, of course, not surprising. We are dealing with extremely complex matters. There are innumerable ways of specifying the basic models as well as of fitting data. No one can or should be convinced purely by past statistical results. One must be convinced by the underlying theories and by the ability to use the concepts in arriving at useful predictions and policy judgments.

Conclusion

My conclusion from this analysis is that a flexible package of policies based on forecasting should not be replaced by a single policy. As economists we must continue to examine theories new and old, but we ought not, without greater cause than we have yet been shown, abandon the system of analysis which looks at numerous variables and considers as relevant for policy the entire broad structure of our economy. It seems to me, on the evidence to date, that no policy based only on the control of the money supply will suffice.

While important contributions have been made to economic research to show that "money does matter" in determining the course of the economy, that is a far different thing from claiming that "only money matters," and the policy prescription to which it leads is entirely different. Policy based on a broader, more complete analysis should in my opinion lead the economy to more success in achieving the goals set for it.

Our problem in trying to use the various instruments of monetary policy to help steer the course of the economy to its goals--maximum employment and steady economic growth with relatively stable prices--is comparable to that of a bus driver trying to get to the top of a mountain. If the road were completely straight with a constant slope, it might make sense for him to lock his steering wheel in place and hold his accelerator at a fixed level. If, however, the mountain curves and changes its slope rather frequently, nothing could be more disastrous than an attempt by the driver to lock his steering gear in place and apply a constant flow of gasoline. He would be far more likely to reach his goal by using his steering wheel, his brakes, and his accelerator to help adjust to the variations in his road.

In like vein, it seems to me that the American economy is too dynamic to achieve stability from a single policy rule such as "hold the growth of the money supply constant."