Is There an Optimal Money Supply?: Discussion

Allan H. Meltzer
Carnegie Mellon University, am05@andrew.cmu.edu

Follow this and additional works at: http://repository.cmu.edu/tepper
Part of the Economic Policy Commons, and the Industrial Organization Commons

Published In
DISCUSSION

ALLAN H. MELTZER: There are two distinct ways of interpreting the question that serves as a title for this session. On one interpretation, the question asks whether recent advances in the theories of growth and money include the development of a set of necessary and sufficient conditions for an optimum. Although I shall comment briefly on the implications of theoretical work at this level of abstraction, the second interpretation of the question interests me more. On that interpretation, the title asks whether the conclusions of the analysis are applicable, perhaps with minor change, to a money using economy. I shall discuss only one aspect of this question, whether the analysis recognizes the essential difference between a monetary and a non-monetary economy. This is a very basic question as Bob Clower has reminded us on this and on several other occasions.

First a few words about the implications and conclusions. For as long as most of us can remember, monetary theorists have been exhorted to dispense with “ad hocery” and apply the standard principles and practices used in other branches of economic theory. Research on the optimal stock of money is responsive to that demand. Money is generally outside fiat paper money and is produced at zero marginal social cost. The private marginal opportunity cost of holding money is made positive and equal to the rate of interest on non-money assets. As in other applications of standard welfare theory, any difference between private and social marginal cost gives rise to an external economy or diseconomy that can be removed, in principle, by imposing an appropriate tax or granting a subsidy. To attain an optimal allocation of resources, the government must pay interest to money holders and it is generally recommended that this be done by forcing a rate of deflation that drives the nominal rate of interest to zero. By assumption the marginal social cost of deflating the economy is zero, so the marginal net social benefit per period is the amount of resources that are released from their previous use—economizing on cash balances. The alternative policy and the one recommended to Harry Johnson, is to pay interest on reserves, and currency and on deposits if the latter exist.

A second main conclusion of the analysis is that the tax or subsidy through inflation has an allocative effect. This conclusion is implicit in the argument for the existence of an optimum, but the explicit proof of the allocative effect—or as it is known, the non-neutrality of monetary policy in a growing economy—necessarily precedes the discussion of means of achieving an optimal allocation. The proof of non-neutrality has not been reached by applying the relevant portions of the theory of public finance and taxation, but the main point can be grasped readily within that framework. In the theory of public finance, any tax borne entirely by owners or holders of a specific type of asset has an allocative effect unless the tax falls on pure Ricardian rents or the profits of a pure, profit maximizing monopolist. The tax on cash balances does not meet these requirements for neutrality, hence the choice of a rate of monetary growth and rate of inflation is not neutral.


The comments in this paper are the result of lengthy discussions of the issue and many years of joint work with Karl Brunner. I want to acknowledge, also, financial assistance from the National Science Foundation and the Ford Foundation's Distinguished Research Professorship at Carnegie-Mellon University.

1. For references see my survey “Money, Intermediation and Growth,” Journal of Economic Literature, March 1969.
The practical force of these conclusions, however, is weakened by the failure to consider differences between anticipated and actual rates of price change and the private and social costs of acquiring information, adjusting portfolios, and adjusting rates of consumption and allocations between labor and leisure. These costs of adjustment must be counted as the price society pays to reach an optimum. If costs of acquiring information are high and adjustment is slow, the cumulated present value of the resource cost of moving from a market equilibrium to an optimum may exceed the present value of the resources released by the recommended policy of satiating cash balances.

My reason for bringing up this point is not simply to note that like all pathbreaking analysis, research on optimal monetary policy raises more new and interesting questions than it answers. The problem is more basic. By neglecting transaction costs, including under that heading costs of acquiring information about market prices and the qualities of goods, the analysis of optimal monetary policy misses the essential difference between money and other assets and between a monetary and a barter economy. The missing elements are explanations of the role of money, of the services provided by the asset called money and the difference between money and bonds. Both the Clower and Johnson papers make clear that the discussion of optimal money has focussed almost entirely on social and private costs and very little on the sources of productivity or utility, whereas it is from the differences in the services rendered by money and bonds that we can expect an explanation of the coexistence of these two assets in portfolios containing real assets and equities.

Let me summarize the principal arguments. For Samuelson, the use of money saves shoe leather by reducing the number of trips to the bank. Money is an inventory used to bridge the gap between receipts and payments. Presumably, money, bonds and real assets coexist in his analysis, and money is held as an alternative to "bonds" for the usual (Baumol-Tobin) reasons. Both Clower and Johnson rely on the Baumol-Tobin argument but restrict their analyses to a world in which there are two types of assets one of which is a real consumer good. The other is either money or bonds. Instead of saving shoe leather by reducing the number of trips to the bank, individuals now reduce transactions costs, still measured in inches of shoe leather, by reducing the number of trips to the supermarket. Costs of acquiring information and arranging payments schedules are neglected in the new, as in the older, application of the inventory model. There is no explanation of why the economy continues to use money once it has remained for some time on an optimal growth path.

What is the difference between interest bearing money and interest bearing bonds in this analysis? There is no uncertainty; payments schedules are fixed; information is a free good; and all price changes are fully and instantaneously anticipated. Each of these potential explanations of the productivity of money and the use of money as a medium of exchange is ruled out. Yet money is used and held. If the only service rendered by money is the synchronization of receipts and payments, why are payments not made in interest bearing bonds, produced at zero marginal social cost? Why do money and bonds coexist when the economy reaches and remains at a static equilibrium or moves along an optimal growth path? The latter is an important ques-


tion that Pesek and Saving tried to raise with their argument about the productivity of money. The fact that their answer is dismissed as unacceptable does not give us a reason to dismiss the question.

Friedman's attempted answer is most explicit and therefore most revealing. He invokes a non-observable, non-pecuniary yield to summarize the services rendered by money and assumes that at any positive rate of interest, a dollar of real money balances provides more of these non-pecuniary services than a dollar of real bonds or other real assets. If optimal monetary policy derives the market rate of interest to zero, the marginal non-pecuniary services of money and bonds are zero. Money and bonds continue to be held, however, because the cumulated sum of the pecuniary and non-pecuniary returns on the infra-marginal units make the real stocks of both assets sources of utility. If we accept these arguments, money and bonds remain in portfolios. Johnson and Marty make essentially the same argument about the services of money but are less explicit about the services of bonds.

Note that the entire argument depends, as Friedman recognizes, on the assumption that a dollar of real money balances is a better source of non-pecuniary services than a dollar of other real assets. To justify the assumption, Friedman appeals to our intuitive belief that "money is a more efficient carrier of non-pecuniary services" such as pride of possession, and feelings of security that he and others summarize in the overworked, undefined term "liquidity."

This seems a weak foundation on which to rest both the entire distinction between a monetary and a non-monetary economy and the conclusion about optimal monetary policy. Accepting the appeal to intuition is particularly difficult in this case because in the economy under discussion all market exchange ratios are known, all price changes are correctly foreseen and the only service of money is to serve as an inventory. In the economy, why can't the inventory gap be closed by holding verbal promises to pay, produced whenever they are required without any trips to the bank. Interest bearing government perpetuities, produced at zero marginal social cost, can be used to make payments. Once again, why do money and bonds exist?

Money emerged in most societies at a very early stage of man's social development, and using money as a medium of exchange appears to have been an important means of reducing the cost of making payments. The development of money and a lower cost payment mechanism, in turn, made trading and exchange less costly. Trade expanded and with the expansion came further development of the payments mechanism, including the use of bonds, credit and other means of deferring payments. The fairs of the Middle Ages provide impressive evidence of ways in which the use of money as a medium of exchange and as a unit of account contributed to the development of market economies. The acceptance of gold as an international medium of exchange and the basis of the nineteenth century payments system is additional evidence of the connection between the use of a common money and the expansion of trade. More recent evidence comes from the discussions of the importance of a stable, generally accepted, international money for the expansion of trade and the development of institutions like the Euro-dollar market to produce money services. Tradi-

tional explanations of the services of money—particularly the use of money as a medium of exchange and unit of account—provide the base on which to build an explanation of the productivity of money and the difference between money and bonds. In all but the most primitive economies, a small group of assets with very similar properties function as mediums of exchange. One task of monetary theory is to explain why this is so.

The conclusions about optimal monetary policy may provide important implications for the conduct of actual policy, as Johnson suggests. Or, the proof of optimality may be no more than a demonstration that the economy discussed in our theory is not a monetary economy. I don't think we can find the means of choosing between these two answers until we leave the two asset world and provide more information about the properties of assets.

I have come to a stopping place, but I don't want to end on a negative note. We can judge how far events and analysis have brought us by recalling that only a generation ago, interest payments on demand deposits were outlawed and taxes on money balances were urged as desirable. Theoretical work on money and growth is a major forward step in the development of monetary theory as a part of economic theory. From these developments, we can expect to obtain a firmer foundation for social policy. Meanwhile, I believe we can accept some of the main policy conclusions—the advantages of permitting competitive banking, removing the prohibition against interest payments on demand deposits, and steady, or at least steadier, growth of money—on the basis or analysis that is much less restrictive and better validated than the theory used to establish the set of propositions we now call optimal monetary policy.