Public Policies as Causes of Fluctuations

*by Allan H. Meltzer**

ONE MAIN DIFFERENCE between the analysis of business cycles or fluctuations in the pre- and post-Keynesian eras is that much less explicit attention is now given to flushing out the alleged "causes" of fluctuations. "Overconsumption" and "underinvestment" theories and the like that dominated much of the pre-war discussion have been discarded or absorbed in a general "multiplier-accelerator" framework. Present-day economists are more willing than their predecessors to take an eclectic approach and to view cycles as a delayed response to prior (autonomous) changes, anticipated or actual.

A comparison of pre- and postwar discussions shows how substantial are the gains attributable to the research done within the newer framework. However, the widespread tendency to ascribe fluctuations to autonomous changes has two drawbacks. First, it suggests that autonomous and induced changes can be separated reliably when observing actual changes. Recent exchanges make clear[1] that we have neither a satisfactory theoretical basis nor an accepted empirical method for distinguishing autonomous from induced. The lack of clarity about the appropriate dividing line between the concepts is made apparent, on the one hand, by the practice of using the econometric terms exogenous and endogenous as synonyms for autonomous and induced, and, on the other, of blurring the distinction between the newer econometric terms and the older statistical terms, dependent and independent. Disputes about the variables which are and are not "exogenous" have surfaced several times and most recently in the exchanges between Andersen and Jordan and their critics.[2] For most economists, the dispute over what is—or is not—exogenous is even more useful than Bayesian terminology for dismissing as irrelevant evidence one is disinclined to accept.

* I have benefitted from helpful discussion with Karl Brunner and financial support of my work on money from the National Science Foundation.

[1] M. Friedman and D. Meiselman, "Relative Stability of Monetary Velocity and the Investment Multiplier in the U. S., 1897–1958" in Commission on Money and Credit, *Stabilization Policies* (Englewood Cliffs, N.J.: Prentice-Hall, 1963). A. Ando and F. Modigliani, "The Relative Stability of Monetary Velocity and the Investment Multiplier," *American Economic Review* 55 (September, 1965). M. DePrano and T. Mayer, "Tests of the Relative Importance of Autonomous Expenditure and Money," *ibid.*

[2] L. Andersen and J. Jordan, "Monetary and Fiscal Actions: A Test of Their Relative Importance in Economic Stabilization," *Review*, Federal Reserve Bank of St. Louis (November, 1968) and "Reply," *ibid.* (April, 1969); and F. deLeeuw and J. Kalchbrenner, "Comment," *Review*, Federal Reserve Bank of St. Louis (April, 1969).

ALLAN H. MELTZER *is Professor of Economics at Carnegie-Mellon University.*

Second, the emphasis on autonomous changes as a cause of fluctuations directs attention away from analysis of the mechanism generating the changes described as autonomous. There is, of course, nothing in the analysis forcing this neglect. Keynes's own work emphasized the cyclical effects of autonomous changes in investment and the role of businessmen's anticipations as a cause of autonomous changes in investment, as is well-known.

Discussion of the principal causes of autonomous changes arises occasionally in the monetarist–fiscalist controversy. However, the discussion of causation is much older and, in one aspect, reflects the desire to explain why fluctuations occur in a capitalist economy. The part of the latter question that I shall address here is the relative responsibility of the public and private sectors for departures in both directions from a full employment equilibrium at which the actual and anticipated rates of price change are equal. In the following sections, I present Keynes's view, or more accurately, an interpretation of his views, describe some characteristics of two broad alternative views of the cause of unanticipated changes in expenditure, and interpret the evidence obtained as a consequence of the very variable policies of the past few years.

The issues are large, and I do not attempt to do more than scratch the surface. My excuse, if one is needed in a symposium of this kind, is that the consequences of variability are often overlooked by economists and policymakers or submerged in the dispute between advocates of rules and authority.

KEYNES'S VIEWS

Keynes's discussion in the *General Theory* stressed the importance of reductions in spending, particularly private investment spending, as a cause of recessions or depressions and emphasized the actions that might be taken by governments to damp fluctuations. His mature views on causation are more difficult to uncover. As late as 1930, Keynes attributed both the depression and the excess of private saving over private investment to inappropriate government policies, particularly inappropriate central bank policies. Writing in 1937,[3] Keynes stressed the general problem of acquiring information about future prices and rates of return in an uncertain and changing world. Central bankers' errors of judgment receive much less attention in his later work, and changes in the "degree of confidence" receive much more. I believe that while Keynes never abandoned his earlier views on causation, he revised them considerably during the eight-year period. His earlier rather than his later views appear to me to be more compatible with U.S. experience in both the interwar and postwar periods.

Keynes of the *Treatise* and even more Keynes of the *Essays in Persuasion* was scornful of the analysis and the policies of bankers, central as well as

[3] J. M. Keynes, "The General Theory," *Quarterly Journal of Economics* (1937) reprinted as chapter x of *The New Economics*, S. Harris (ed.) (New York: Alfred Knopf, 1952).

private. In the *Treatise*, Keynes talked repeatedly and at length about the inadequacies of monetary policy during the interwar period and the limitations imposed by bankers, then asked:

> Yet who can reasonably doubt the ultimate outcome—unless the maintenance of misguided monetary policies is going to continue to sap the foundations of capitalist society?
>
> If, then, these are the causes, was the slump avoidable? And is it remediable? *The causes to which we have assigned it* [the depression of 1929–30] *were the outcome of policy;* and in a sense, therefore, it was avoidable. Yet it is evident that the policy could not have been radically different unless the mentality and ideas of our rulers had also been greatly changed. That is to say, what has occurred is not exactly an accident; it has been deeply rooted in our general way of doing things.[4]

In subsequent paragraphs, Keynes considered, and dismissed as unlikely, the notion that what was later called a liquidity trap would prevent large scale Federal Reserve and Bank of England open market purchases from reducing the long-term rate of interest.

Keynes' views on the subject of monetary policy, central bankers, and the liquidity trap were much the same when he wrote the *General Theory*. The main point Keynes makes about the possibility of a liquidity trap and the breakdown of monetary policy is sandwiched between two statements that are critical of central bankers for not acting boldly and for not dealing in long-term debts.[5]

I believe he saw the policy problem as one of finding a way around the central bankers with their peculiar and incorrect ideas about monetary policy. His solution was to operate on the expenditure side of the government's budget constraint. There was considerable precedent. In the first half of the 19th century, the Bank of England had twice refused to take action in times of panic or crisis. A proposed way out of the crisis was to have the Treasury issue Exchequer bills to its creditors and to have the Bank accept the bills, thereby expanding its discounts and the monetary base. I believe Keynes was aware of this bit of history.

For Keynes, the line of causation continued to run from changes in investment to changes in output. The shift in view, if there was one, was in the treatment of autonomous changes in investment as relatively independent events in place of his earlier treatment of the excess of saving over investment as a consequence of the inappropriate monetary policies of the interwar years.

The strict Keynesian interpretation[6] of the *General Theory* as a theory in which monetary policy is irrelevant pushed the causal issue into the background. With money irrelevant, there is no point to asking whether the decline

[4] J. M. Keynes, *A Treatise on Money* (New York; Harcourt, Brace and Company, 1930) vol. II, pp. 384–5. Emphasis added.

[5] *The General Theory of Employment, Interest and Money* (London: Macmillan, 1936), p. 207.

[6] On the distinction between Keynes' and Keynesian theory, see A. Leijonhufvud, *On Keynesian Economics and the Economics of Keynes* (New York: Oxford University Press, 1968).

in investment expenditure results from a previous decline in the growth rate of money or is an independent event. With central bank policies irrelevant, or largely so, interest in the principles governing the appropriate conduct of monetary policy waned. As a result, policymakers' attention remained fixed on changes in short-term interest rates just as it had in the interwar period.

Comparing Two Views of Causation

Standard economic theory says nothing about whether changes that start in the private or public sector are the more important cause of fluctuations. Autonomous changes in the principal real factors that are taken as given—tastes, technology, anticipations, or inequality in the distribution of income and wealth—served as the starting point or basis for many a theory of the cycle. Public policies—fiscal, monetary or expropriation of private property—are then viewed as the means of offsetting, correcting or preventing cyclical disturbances. Marx, Schumpeter, the Keynesians and numerous over- or under-consumption, or over- and underinvestment, theories belong here.

The alternative view makes inappropriate government policies, including, for earlier epochs, acceptance of institutional arrangements such as the rules of the gold standard, the main cause of cycles.[7] Irving Fisher, Keynes in the *Treatise*, Friedman and Schwartz in the *Monetary History* and elsewhere, and my own work with Brunner are examples of this approach.

In principle, there is no conflict between the two approaches. Both private and public arrangements, actions or inaction may cause cycles. Many 19th century economists, following Thornton, accepted the monetary theory of the cycle implicit in the description of the price–specie flow mechanism that was operative under the gold standard without denying the possibility of a cycle resulting from changes in agricultural output. Modern growth theory provides a means of summarizing the role of real and monetary factors in a more general way and implies that an economy leaves the prevailing optimal growth path when there are changes in time preference, labor force participation or productivity on one side or differences between the expected and actual rates of inflation on the other.

In practice, economists' descriptions and policy discussions, however, generally emphasize one rather than both sets of factors. The difference was brought out during the debate over the causes of the decline in real output early in 1967. Some economists attributed the decline mainly to prior, autonomous changes in the demand for inventories. Others singled out the prior decline in the growth rate of money as the most important cause.

[7] In the chapter of the *General Theory* titled "Notes on the Trade Cycle," Keynes deals with the question in detail. Aside from changes in the rate of population growth, the main reason given for a decline in investment is that the rate of interest remains high. The language and the argument of this section remind the reader of the *Treatise*, and at one point Keynes refers the reader to the *Treatise*.

The problem is to find autonomous changes in a modern economy that affect a substantial number of private decision-makers in the same way and that are sufficiently large and pervasive to generate declines or increases in expenditure just as changes in weather and harvest caused fluctuations in times past. Economists, who follow the standard interpretation of the *General Theory* are inclined to assign this role to autonomous changes in investment or inventory expenditure and to assume that such changes are the result of changes in attitude and outlook. Unlike Keynes of the *Treatise* or Fisher, economists who take this view do not regard changes in attitude and outlook as a delayed response to prior changes in money or in other government policies.

Those who single out destabilizing monetary policies as a main cause of fluctuations found important additional support for their view in the 1966–67 experience. The reason is that 1966–67 is one of the few periods in which monetary and fiscal policies not only moved in opposite directions but changed by large amounts. The restrictive monetary policy forced the government to finance a growing budget deficit by issuing debt rather than by increasing the monetary base and the stock of money. The summer and fall of 1966 provides one of the few examples in modern monetary history of the Federal Reserve maintaining a constant or falling monetary base at a time when the government sold a comparatively large amount of new debt.

The importance of these few quarters of 1966 for a broad test of the economy's response to monetary and fiscal policies is apparent from Table 1, showing the growth rates of seasonally adjusted real and nominal output in eleven periods during the past few years. The division into five periods labelled M1–M5 in the upper part of the table is based on the maintained average growth rate of money; in each period, the growth rate of money remained relatively constant. The six periods B1–B6 in the lower part of the table were selected to represent periods of relatively unchanged fiscal policy. From period M2 to period M3, the growth rate of money and the budget deficit moved in opposite directions. The GNP growth rate lagged two quarters responded in the direction to be expected from the changed growth rate of money.

Table 1 provides some other useful comparisons. Periods M2 and M4 have relatively similar maintained average growth rate of money and very different average budget deficits. The growth rates of nominal GNP (lagged two quarters) are similar in the two periods. A comparison of M1 and M2, however, shows that the same growth rate of nominal GNP followed very different monetary policies. This is the period of the 1964 tax cut, and periods B1, B2, and B3 permit us to look at the effect of the tax cut in more detail. The growth rate of nominal GNP rose from B1 to B2 following the tax cut despite the slightly lower growth rate of money. The more stimulative budget policy in B3, however, was more than offset by the highly variable monetary policy of 1965–66. Comparing B1 or B2 to B3, we find that the same average growth rate of money and a much increased budget deficit, were followed by a decline in the

TABLE 1

MONEY, DEFICITS AND OUTPUT, 1962–69*

Period and Dates (1)	$\Delta M/M$ in per cent (2)	Avg. Deficit in billions (+ indicates surplus) (3)	Percentage Growth Rate of GNP Lagged two quarters behind Col. (1) Real (4)	Nominal (5)
M1				
3Q62–2Q65	3.7	+8.6	6.1	8.2
M2				
2Q65–2Q66	5.8	−0.9	4.8	8.2
M3				
2Q66–4Q66	−0.1	−4.6	0.7	3.3
M4				
4Q66–3Q68	6.4	−10.8	4.4	8.8
M5				
3Q68–2Q69	4.9	+5.1	2.0p	6.0p
B1				
4Q62–4Q63	3.8	+12.3	5.5	7.1
B2				
4Q63–2Q65	3.6	+6.3	6.6	8.5
B3				
2Q65–4Q66	3.8	−2.1	3.4	6.5
B4				
4Q66–2Q68	6.0	−12.4	4.8	9.0
B5				
2Q68–4Q68	6.3	−0.5	2.3	7.4
B6				
4Q68–2Q69	4.8	+7.5	1.7p	5.5p

NOTE: Money is Currency and Demand Deposits; Deficit is full employment budget deficit (surplus).
* All Data at seasonally adjusted annual rates from Federal Reserve Bank, St. Louis; p = preliminary or estimated.

GNP growth rate. The decline followed the increased variability in the growth rate of money.

Those who emphasize the variability of monetary policy as a cause of fluctuations find support for their position in the 1966–67 experience. The average growth rate of money remained unchanged, but the variability increased and the growth rates of real and nominal output declined. However, the data in Table 1 speak to only a part of the issue. Both monetary and fiscal changes are public policies, so the comparison of the response to monetary and fiscal policies does not distinguish between public policies and autonomous private actions as causes of instability.

A second source of recent evidence on the causal role of money comes from the forecasts made with the first published version of the Andersen-Jordan equation. Critics of Andersen and Jordan have concentrated their attention on econometric practice and have ignored forecasting performance. Table 2 reproduces the forecasts made in the first published version of the model,[8] as

[8] Andersen and Jordan, *op. cit.*, Table 5, p. 23. I have reproduced only the forecasts conditional on a four per cent rate of monetary expansion.

TABLE 2

QUARTERLY CHANGES IN GNP AND PREDICTIONS MADE BY THE ANDERSEN-JORDAN EQUATION

Quarter	Actual Change	Predicted Change (billions of dollars, annual rate)	Error
4Q/68	16.1	16.0	−0.1
1Q/69	16.2	15.0	−1.2
2Q/69	16.1	15.2	−0.9
3Q/69	17.5[p]	12.3	−5.2

[p] Preliminary or estimated.

much as a year in advance of the actual changes. Since the average growth rate of money was approximately 4 per cent for the year shown, Table 2 compares actual changes in nominal GNP to the forecasts made in November, 1968 assuming a 4 per cent growth rate of money, currency, and demand deposits.

Table 2 slightly overstates the forecasting power of the Andersen-Jordan equation. The growth rate of money was above the 4 per cent average early in the period and approximately zero in the latter part of the period. However, allowing for the higher growth rate of money in the earlier period and the lower growth rate in the later period changes the errors made in particular quarters without substantially altering their average. The effect of variability should appear later.

Comparison with forecasts of GNP made at approximately the same time (November, 1968) using models that emphasize the importance of changes in autonomous expenditure provides some evidence on the merits of the two conceptions. Both the Wharton and the Michigan models underestimated the changes in GNP in the first half of 1969. In November, 1968, the Wharton model forecast a $5.2 billion rise in the first quarter and a $7.4 billion increase in the second quarter of 1969. The Michigan forecast for the first quarter was $4.4 billion. The poorer predictive performance of the models that assign importance to the causal role of changes in private autonomous expenditure helps to discriminate between the two views. While no single comparison or set of predictions for a brief period can be entirely persuasive, the evidence from the forecasting performance is additional, relevant evidence that both gains support from and lends support to the evidence obtained from earlier time periods and other countries. Unlike the evidence from the regressions, there is in this case no need to repeat the well-known caveat about interpreting correlation as causation.

An important drawback for my purposes with the regression results in the Friedman and Meiselman or Andersen and Jordan equation and Keran's more recent results,[9] is that none of the equations separate private from public actions. Either the autonomous variable combines the fiscal variable with autonomous private expenditure in a single autonomous variable or private autonomous expenditure is excluded from the regression.

[9] M. Keran, "Monetary and Fiscal Influences on Economic Activity—The Historical Evidence," *Review*, Federal Reserve Bank of St. Louis, (November, 1969).

A problem with the discussion of specific episodes results from the tendency to concentrate on periods in which inappropriate policy caused a large change in GNP and to neglect any period in which large changes in the growth rate of money failed to produce a large change in GNP. The Andersen-Jordan equation implies that, on the average at current levels and under current conditions, a maintained one per cent change in the growth rate of money translates into a one per cent change in the growth rate of nominal GNP after four quarters. If their estimates are less reliable in other periods than in 1968–69, it should be possible to find periods in which large changes in the growth rate of money are not followed by large changes in GNP, provided such disconfirmations occurred either during the sample period or before. A careful examination of the postwar or other periods may also uncover evidence of the causal role of changes in autonomous private expenditure that cannot be explained as a delayed response to past changes in public policy. From such periods, we can expect to learn much about the conditions under which autonomous private changes either caused fluctuations or were offset by stabilizing public policies. Until such evidence is presented, however, I accept the implication of the Andersen-Jordan results—that government monetary policies are a main cause of fluctuations in output.

Some Additional Evidence on the Sources of Change in Money

Studies of the determinants of the demand for money and of the stock of money provide some evidence on the roles of the public and private sector. If changes in tastes, technology or opportunities are the main causes of instability in the economy, one way in which the instability would become apparent is through sudden and unpredictable shifts in the demand for money. Ability to predict the demand for money from a knowledge of the past relationships between the demand for money and a few determinants is evidence that the function does not shift in an unpredictable way under the impact of changes in taste, attitude or opportunities. Such evidence has been produced by a number of writers using different demand equations.[10]

Prediction of changes in the stock of money using a small number of variables to summarize government policies provides evidence on the extent to which changes in the stock of money are mainly the result of government policies, or as is often alleged, mainly a response to changes in the demand for money or the demand for financial assets. Proponents of the "new view" of monetary theory have revived some of the issues discussed at length by 19th century economists and questioned the extent to which the government is able to control the nominal stock of money.

Economists who emphasize the causal role of government policies, particularly monetary policies, in fluctuations claim that changes in the stock of

[10] For a summary of the evidence see, D. Laidler, *The Demand for Money* (Scranton: International Textbook Co., 1969).

nominal money are primarily the result of government policies. For them, changes in the demand for real money balances reflect mainly the attempts by institutions and individuals in the private sector to reestablish desired money balances in response to changes of various kinds. While evidence of an ability to predict changes in the stock of money cannot be conclusive, such evidence suggests the extent to which government policies are a main cause of fluctuations in money.

Several years ago, Brunner and I estimated the relation between monthly changes in money, currency and demand deposits, and monthly changes in current and lagged values of the monetary base and Treasury deposits at commercial banks. We found that most of the variance of the monthly changes in money for the more than 200 months ending in March, 1965 were explained by the current and lagged changes in the two variables representing Federal Reserve and Treasury policies.[11]

Figure 1 shows the predicted and actual changes in the non-seasonally adjusted stock of money for a more recent period. The predictions in the chart are based on the parameters estimated in the earlier regression, rather than a revised or updated version. Nevertheless, the predicted and actual changes are generally in the same direction, and the predicted changes tend to be large when the actual changes are large, small when the actual changes are small, and positive or negative as the actual changes are positive or negative. The chart suggests, as do the earlier data, that by far the larger part of the observed changes in the stock of money are the result of government policies.

Moreover, positive errors tend to be followed by negative errors. In twenty-five of the thirty-seven cases, the sign of the error term changed from one month to the next. This suggests that the errors are partially offsetting, so that the prediction of bi-monthly or quarterly changes are more accurate than the predictions shown. With some further improvements and allowance for changes in the public's desired holding of currency and time deposits, prediction of the monthly or quarterly changes in money can be improved. However, mention of the factors expressing changes initiated in the private sector should not obscure the fact that the dominant influence on changes in money is government, not private, policy.[12]

Conclusion

On my interpretation of the evidence for recent and more distant periods, Keynes of the *Treatise* was right. Much of what is commonly regarded as a change in autonomous private expenditure should instead be viewed as the

[11] The regression is reported in my "Controlling Money," *Review*, Federal Reserve Bank of St. Louis, (May, 1969).

[12] For further discussion of the effects of private and public actions on money, see J. Jordan, "Elements of Money Stock Determination," *Review*, Federal Reserve Bank of St. Louis, (October, 1969).

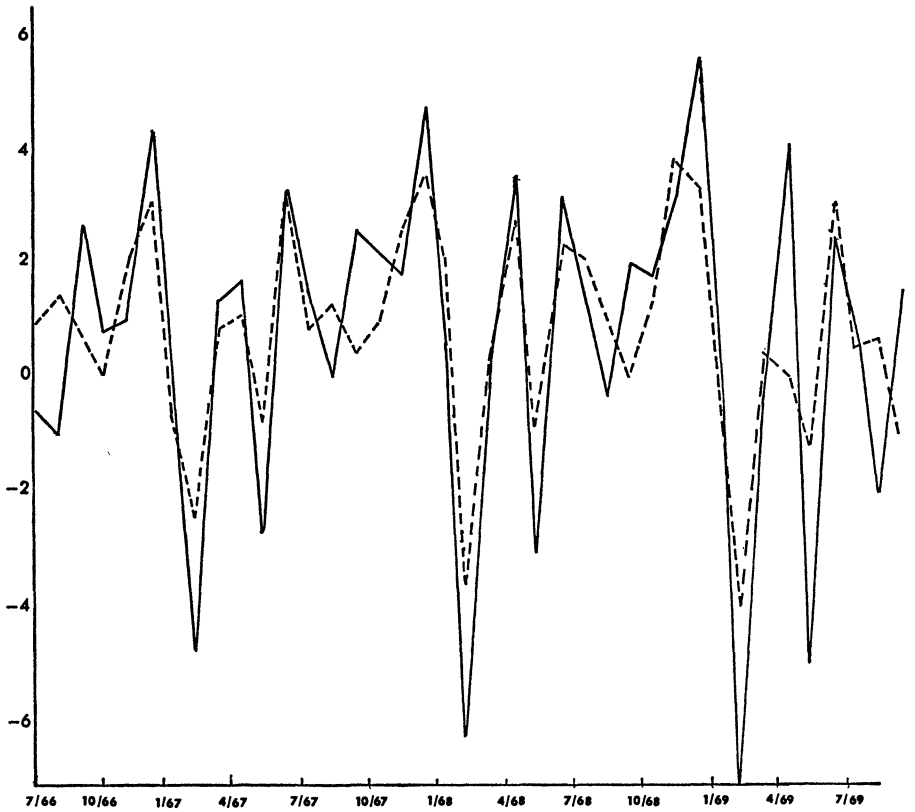

FIG. 1. Predicted and Actual Changes in Money, by Month: July, 1966–September, 1969 (in Billions of Dollars, not Seasonally Adjusted).

delayed result of prior changes in government policy. The evidence produced by the variable policies of the past few years adds important support to the evidence from earlier periods. While statistical evidence from regressions and from predictions made using regression equations cannot be conclusive, evidence supporting the hypothesis that government policies, particularly monetary policies, are a main cause of fluctuations continues to grow.

Most of the critics of the evidence have been content to attack the statistical methods used to analyze the data and to point out sources of potential bias or possible (statistical) inconsistency. These allegations are, frequently, less well supported than the prepositions they seek to reject. No one has yet established that the actual simultaneous equations bias is sufficiently large to reverse the findings obtained from single-equation regressions. Evidence from predictions made for periods outside the samples used in the regressions shows that recent work relating changes in money to economic activity on one side and to monetary policies on the other generates comparatively accurate predictions of money and output.

Any discussion of the variability caused by government policies, and particular monetary policies, raises the specter of some type of monetary rule. While the evidence I have discussed supports the view that government policies are a main source of instability, the findings do not support a monetary rule. Between the extremes of unlimited discretion and no discretion at all lie many viable alternatives.

For stabilization, as for other economic goods, our desires exceed our capacity to produce, but unlike privately produced goods, most of the cost of error is borne by the consumer. I do not believe that public policy has yet demonstrated that large and frequent policy changes provide social benefits that exceed the social costs of variability and error. If the recent record of sustained expansion followed by persistent inflation is the best we can expect to achieve, the case for *less* variability is well supported.