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Source: *Journal of Political Economy*, Sep. - Oct., 1972, Vol. 80, No. 5 (Sep. - Oct., 1972), pp. 837-851

Published by: The University of Chicago Press

Stable URL: <https://www.jstor.org/stable/1830414>

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Friedman's Monetary Theory

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Friedman's many contributions to monetary theory did much to renew interest in monetary theory and policy. Heretofore, there has been no statement of the underlying theory that guides his work and generates policy implications. Two recent papers attempt to fill the gap. We have four main criticisms of Friedman's theory. We regard as most important that the theories do not generate principal monetarist conclusions about the role of money and the variability of monetary policy. Friedman's static frameworks leave the relative potency of fiscal and monetary policies dependent on the slopes of the *IS* and *LM* curve. This is unsatisfactory.

None of the participants in the current discussion of monetary or macro-theory has contributed more than Milton Friedman to the revival of monetary theory and its development as a lively, perhaps the liveliest, area of active research in economics. Evidence of the revived interest is the much greater attention now given by economists, politicians, speculators, and even journalists to changes in the stock of money and its growth rate. A cross section of the views that Friedman and others have espoused constitutes the core of "monetarism," a set of propositions that has been called the "central issue that is debated these days in connection with macro-economics" (Samuelson 1969, p. 7). We, therefore, welcome the opportunity provided by this symposium to discuss some of the issues in Friedman's two recent papers (1970, 1971) that, we take it, summarize and synthesize his current views on the role of money in monetary theory.

We gratefully acknowledge the financial support of the National Science Foundation.

Crosscurrents, ambiguities, and differences frequently arise in a field developing as rapidly as monetary theory, so we welcome, also, the opportunity to compare our view of monetary theory with his.

No serious scholar can fail to be influenced and stimulated by the many contributions that Friedman has made, alone and in collaboration with Mrs. Schwartz. The very quantity, quality, and importance of their work stimulated us (Meltzer 1965; Brunner 1968) and others (Andersen and Carlson 1970) to attempt either to state a theory that provided some analytic underpinning for Friedman's brand of monetarism or to develop alternative "monetarist" theories. For us, and perhaps for many others, the absence of an explicitly stated theory capable of generating the propositions that have been supported by empirical investigation has impeded the further development of monetary theory. The very success of Friedman's insightful comments and conjectures when tested against alternative conjectures increases the benefits that we expected to obtain from the development of an explicit theory capable of generating the empirical regularities that support "monetarism."¹

Neither of Friedman's two recent statements of monetary theory (1970, 1971) seems to us an adequate underpinning for monetary theory or a particularly useful basis for empirical work. In the following section we discuss six of the points at which we differ. Because we believe the issues are important and resolvable, we present an alternative framework elsewhere in this issue. The alternative framework generates the principal conjectures that distinguish our version of monetarism from Friedman's and from the standard paradigm.

The Missing Equations and Variables

One difficulty in interpreting some of Friedman's statements arises because he tells us very little about timing and speed of adjustment or the length of run to which his models apply. If Friedman's assumption of fixed real output is replaced by a linear homogeneous production function as a better statement of the constraint on real resources, we can accept one version of the framework he presents as a restatement of the *IS-LM* model found in textbooks such as Bailey (1962) or Patinkin (1965). The problem is that the analysis in Bailey or Patinkin is a comparative statics equilibrium analysis while Friedman suggests at several points that he is concerned with

¹ A prevalent view among economists is that hypotheses involving empirical regularities must be "supported" by a higher-level theory from which the lower-level proposition can be derived. We do not share this view; in fact, we dissent strongly and so does the modern literature of the philosophy of science. However, if theories generate useful empirical conjectures—such as the empirical work on the demand for money and the relation of money to income (Andersen and Jordan 1968; Keran 1969)—the expected gain from more discriminating tests derived from more fully developed hypotheses increases.

questions of timing and adjustment. For example, he points out that differences between observed and expected speeds of adjustment of prices and output were the principal reasons that economists rejected pre-Keynesian monetary theory and accepted the Keynesian framework (1970, pp. 207–12). He then notes that “the relative speed of adjustment of price and quantity is still the key to the difference in approach and analysis between those economists who regard themselves as Keynesians and those who do not” (p. 210).² There is no mention of Fisher’s “transition periods” that were expected to last as long as ten years (Fisher 1920, p. 70) and no reference to his earlier conclusion that the lag of output behind money is “long and variable.” The only explicit statement about timing mentions a six- to nine-month lag in the adjustment of interest rates at turning points (1971, pp. 335–36). The impression he conveys is that he expects his theory or theories to predict adequately except at the turning points of business cycles.

We can *more readily* accept Friedman’s statements of monetary theory and his version of the “common framework” as a theory of price fluctuation around the long-run position of an economy that has constant output, $y = y_0$, than as a short-run theory.³ A short-run theory with $y = y_0$ and real rates of return held constant has limited applicability and holds little interest. With $p = p_0$, the framework is unacceptable as either a long- or a short-run theory, since it cannot explain long-run persistent inflation or the frequently observed short-run combination of inflation and unemployed resources.

Our disagreements with Friedman’s analysis of the short run are partly, but only partly, disagreements about research strategy and particularly about the possibility of developing an empirically verifiable “common framework” applicable to both short- and long-run processes and capable of generating testable implications for short- and long-run positions of aggregate variables. We believe it is undesirable and unnecessary to divide macroeconomic problems into two sets—unemployment in which prices are

² In his earlier paper (Friedman 1970) either $p = p_0$ or $y = y_0$ characterizes a short-period equilibrium. We have difficulty relating these restrictions to the separate adjustment hypothesis introduced later in the paper. The adjustment hypothesis bears no clear relation to the static framework. In his later paper (1971, p. 334, n. 6) Friedman explicitly rejects the attempt to characterize the framework underlying his work with Mrs. Schwartz as a “long-run theory of nominal income” and describes as “ad hoc” the way in which one of us (Meltzer 1965) introduced income and changes in income into a statement of his framework. Yet his adjustment equations (1970, pp. 225–29) explain the deviation of actual from expected or permanent income in a way that seems no less “ad hoc” and no more useful than the one attributed to them.

³ One item missing from “the common model” as presented (1970, pp. 217–21) is the distinction between market rates and real rates. Friedman partly removes this gap (1971) by introducing the rate of price change, but, as he notes, he holds the growth rate of output and the real rate of interest constant throughout.

fixed *or* inflation in which output is fixed. Further, we believe it is ambiguous and misleading to characterize the problem of underutilized resources as “Keynesian” and inflation as “non-Keynesian.” An economist as astute and knowledgeable as Harry Johnson (Johnson 1971) is led by arguments such as Friedman’s to conclude that monetarist analysis applies only to inflation, and that “Keynesian problems” must be analyzed with Keynesian theory and treated with Keynesian remedies. Such conclusions, and the arguments that suggest them, obscure the issue that we regard as Keynes’s main challenge to economics and economists.

Keynes clearly recognized that the price theory of his day did not, and could not, explain unemployment. Two alternatives were available: one a reformulation of price theory, the other a framework that separated macro- and microtheory. Keynes chose the latter, not completely and not without qualification. Careful readers from Hicks (1937) to Leijonhufvud (1968) have been able to find substantial portions of price theory remaining in the *General Theory*. Despite the attempts by early Keynesians to obliterate these elements—to make the “Keynesian special case” into the general case—some price-theoretic elements survived. The “new price theory” (Phelps et al. 1970) develops the alternative that Keynes neglected. Friedman does not discuss these developments or their relevance to the missing equations in his or Keynes’s theory.⁴

The reformulated price theory—incorporating costs of search, adjustment, and the acquisition of information—has developed out of attention to the problem posed by inflation and unemployment. The implication of these studies is that macrotheories that seek to explain underutilization of resources must take account of changes in relative prices, including but not limited to changes in interest rates. Of the six points discussed in the remainder of this paper, five involve variables which cannot be incorporated without extending the “common framework” to analyze relative price changes. On our reading of the evidence, the five missing variables and equations must be part of any hypothesis seeking to explain short-run changes in output, employment, and the price level. Including these variables and equations, however, takes us beyond the “common framework” discussed by Friedman.

The Quantity Theory or Theories

The opening theme is familiar to Friedman’s readers. The quantity theory is presented as the theory of the demand for money, just as in his earlier work (Friedman 1956), and the demand for money is assumed to depend

⁴ Friedman’s discussion (1970, pp. 208–11) makes clear that we hold a similar interpretation of Keynes’s problem and the reasoning that led Keynes to regard price theory as irrelevant for the analysis of unemployment.

on asset prices or relative returns and wealth or income. For Friedman, the problem is one of showing how a theory of the (stable) demand for money can become a theory of prices and output.

Friedman resolves the problem by postulation. The "key insight of the quantity-theory approach is that . . . a discrepancy [between the nominal quantity of money demanded and the nominal quantity supplied] will be manifested primarily in attempted spending, thence in the rate of change of nominal income" (1970, p. 225). Since the demand for money is a stable function of a few key variables, the quantity demanded changes in response to changes in the determinants. It follows that "substantial [sic] changes in prices or nominal income are almost invariably the result of changes in the nominal supply of money" (1970, p. 195).

In the monetary theories of Keynes (1936) and Patinkin (1965) and in Metzler's classic article (1951), "the quantity theory" is a proposition about the effects of a change in money in a fully employed economy where capital stock, real output, and employment remain unchanged. Metzler's article makes clear that the effect on prices is not invariant to the way in which the stock of money is changed. Different types of changes produce different permanent responses in interest rates, in monetary velocity, and in real cash balances.

The issues raised in Metzler's analysis involve the roles of debt or real capital and money and the effect of changes in money on relative prices. A main point of the analysis is to show that open-market operations and fiat changes in the stock of money have different consequences for relative prices. The existence of a stable demand for money does not discriminate between alternative monetary theories that assign more rather than less importance to the effect on interest rates and other relative prices of changes in the public's real stock of interest-bearing government debt, or more rather than less importance to the relative price changes expected to result from open-market operations. Friedman does not show how the existence of a stable demand for money settles these issues or discriminates between "quantity theories" and nonquantity theories. The aura of quaint and rather irrelevant memories surrounding the term "quantity theory" obstructs the useful application of this term to current issues. We see no reason to resurrect "the quantity theory" but much usefulness in building on the ideas and conjectures of Thornton, Wicksell, Fisher, Keynes, and Friedman and attempting to combine major portions of their analysis in an analytical framework that also exploits the developments in economic theory during the past decade.

An additional objection to Friedman's "quantity theory" is that he bypasses a question of central importance and one on which there has been considerable discussion: Why (or how) do changes in the nominal stock of money induce households or firms to purchase more goods and services?

Friedman assigns limited importance to the real balance effect in the short run, and his differential equations describing the adjustment of output contain neither real balances nor relative prices (including interest rates). The way to repair this deficiency, we believe, is to expand the analysis to include some of the variables and equations that Friedman neglects. Doing so forces the development of an alternative theory in which the adjustment of relative prices becomes a key element in the adjustment of output and the price level.

Fiscal Policy

One of the more striking features of Friedman's analysis is that in fifty-five pages of text, much of it devoted to short-run or short-term adjustments, the fiscal role of government is mentioned only once and only to be dismissed (1970, p. 217). Changes in government expenditure and taxes, apparently, have so little effect that they can be ignored entirely.

We know of no evidence to support this conclusion. The empirical work done by Friedman and Meiselman (1963), Keran (1969), Andersen and Jordan (1968), and others frequently identified as "monetarists" provides no evidence that changes in the government expenditure and taxation have no effect on output. On the contrary, many of their regression equations show that tax changes have a larger effect on GNP than government expenditure, contrary to the implication of the standard Keynesian model, contrary also to the implications of Friedman's model.⁵ These findings are supported in the retests by DeLeeuw and Kalchbrenner (1969) and in other studies. We see no way to get from the proposition that an equal change in government expenditure and taxation has a negative effect on GNP, found in these studies, to the proposition that the government's budget has no systematic effect.

One result of neglecting fiscal policy is that Friedman is able to neglect the effect of fiscal variables on interest rates and of interest rates on velocity and the demand for money during cycles. He does not fail to mention some of these effects; on the contrary, he refers to the effect of interest rates on the demand for money several times (1970, pp. 203, 204, 211, 213–15, 220), but neither interest rates nor other relative prices appear in his adjustment equations, and he never mentions any effect of fiscal variables on real rates. Instead, he assumes that real rates are constant and that market rates adjust rapidly to changes in anticipations (1970, p. 227; 1971, pp. 326, 336). We know of no empirical evidence

⁵ Friedman never explicitly states that fiscal policy variables have no effect on output, prices, or other variables. His formal analysis implies that these variables either have no effect in the short run or cannot be separated reliably from other random factors.

supporting these propositions for the short periods, National Bureau half-cycles or cycles, to which Friedman elsewhere applies his analysis.

To bring out the problem, suppose that a war such as World War II, the Korean, or even the Vietnam War has been financed entirely by taxes instead of partly by issuing debt and money. Would there have been no short- or long-term effects on the economy? Would the real rates of return—anticipated and realized—during and immediately after each of the wars have been the same if each of the wars had been financed entirely by taxes? Would not interest rates, other relative prices, the distribution of expenditure, and even the appropriate rate of monetary growth have differed if war expenditures had been tax financed? We believe that, in each case, the answer is yes, and that this is one essential difference between our version of monetarism, Friedman's, and the standard Keynesian theory.

In Keynesian theory, fiscal policies change income flows and induce reliable, predictable responses in real variables via the multiplier-accelerator mechanism. Relative price changes have limited, and often zero, effect on the outcome. Interest rates enter only, if at all, as the costs of borrowing, and as such have minimal effect because spending is said to be relatively insensitive to changes in market interest rates, that is, borrowing costs (Smith 1970). Many, and probably most investigations of the process set off by changes in fiscal (or monetary) policy are conditioned by this view. The clear conclusion is that even if fiscal policy affects interest rates, the effect of interest rates on aggregate expenditure is small, so that the effect of fiscal changes on expenditure is diminished only slightly by a change in interest rates. The evidence to support this conclusion is usually a recitation of the effect on various expenditure categories of changes in borrowing costs. The role of interest rates as the relative price of future consumption is neglected.

By dismissing fiscal policy and ignoring the effects of tax changes on interest rates, relative prices, and output, Friedman avoids developing an alternative to the Keynesian analysis of the "transmission mechanism" with its emphasis on borrowing costs. Equally important and related, neglecting fiscal variables is one of several ways in which Friedman avoids any explicit role for relative price changes and the application of price theory to aggregative analysis.

Government Debt

Analysis of the aggregate effect of fiscal policy involves more than the usual Keynesian treatment of government expenditure and taxation. Changes in taxes on income from labor services relative to the taxes on income from capital affect resource allocation by changing relative prices

and relative rates of return. These, in turn, change short-run expenditures. In a multiple tax system, the real value of the outstanding stock of publicly held government securities is not equal, in general, to the discounted present value of future tax liabilities. Changes in debt induce changes in interest rates, in expenditure, and in desired borrowing or lending. Evidence has now been presented showing that changes in the stock of government debt have more than a negligible effect on market interest rates (Brunner and Meltzer 1968; Eckstein and Feldstein 1970; Zwick 1971).

In Friedman's framework as in the Keynesian framework, there is no market in which the outstanding stock of government securities is bought and sold, no market in which owners of existing securities can attempt to unload or increase their liabilities, and no way in which changes in the outstanding stock of government securities can affect relative prices, interest rates, velocity, and the rate of spending. For the nonbank public, selling outstanding government securities to banks is an alternative to borrowing from banks; for banks, acquiring outstanding government securities is a principal alternative to lending. In the process of redistributing the outstanding stock of securities, the banks and the public (proximately) determine the level of market interest rates. For the aggregate nonbank public, purchasing or selling government securities is part of the process of adjusting to current and anticipated changes in prices, output, and rates of return.

Friedman hints at some of these points in his discussion of the demands for money by households and business (1970, pp. 204–5). He asserts that household demand depends on expected income or wealth; business demand does not, at least not to the same extent. Businesses seek to maximize returns, and they “can acquire additional capital through the capital market” (p. 205). A more complete analysis would note that households maximize utility subject to a constraint that includes the returns from holding securities. Although households do not enjoy perpetual life and do not generally sell equities, they can borrow from banks or lend to the government. By borrowing or lending, and buying or selling securities, a household can change its debtor-creditor position; by saving, a household can change its net wealth. Households, like businesses, must adjust their balance sheets as part of the process of obtaining an optimum. For both households and businesses, the choice of an optimum balance sheet position is a consequence of maximizing behavior—utility maximizing in one case, maximizing present value in the other.

If Friedman had pursued his analysis of the demand for money we believe he would have been led to distinguish between money and bank credit. Making the latter distinction forces an analysis of the public's desired indebtedness, the market processes distributing the stock of gov-

ernment debt and determining the equilibrium stocks of money and bank credit. Including the market for bank credit in his analysis of the markets for money and output would have taken Friedman beyond the *IS-LM* framework and the Keynesian paradigm.

Keynes avoided discussion of the bank credit market by identifying "bonds" and "debt" with real capital and by treating the Walrasian money market as a market for both "credit" and real capital. Given the stock of money, the quantity of money demanded determined (proximately) the interest rate on financial assets and the price of real capital. This interpretation of Keynes receives its clearest formulation in Metzler (1951) and in several of Tobin's papers, most recently in Tobin (1969a). The Keynesians substantially changed Keynes's analysis by treating interest rates as borrowing costs. On their interpretation, a constant, maintained deficit financed by increasing government securities has no effect on interest rates via the credit market. Increases or decreases in the stock of securities raise or lower interest rates only by changing wealth and thereby raising or lowering desired money balances and real consumption. Many and perhaps most Keynesians deny any effect of this kind by denying any effect of wealth on the demand for money, by identifying the effect of wealth on consumption with the "real-balance" effect, and by minimizing the empirical significance of the real-balance effect.

The evidence showing that the stock of securities affects interest rates poses a problem for Friedman, Keynes, and the Keynesians. Each dismisses (or minimizes) the role of existing securities. Several of Tobin's portfolio models separate debt and money and analyze the effects on real rates and relative prices. But so far as we know, no one has extended these results by analyzing the effect of relative prices on current output and expenditure.

The Money-Supply

Friedman also ignores any effect of prices, output, or interest rates on the stock of money. The money stock is treated as autonomous. At one point, the justification for doing so is that "the supply function has varied greatly from time to time" (1970, p. 227). At another, the supply depends on interest rates, but the point is dismissed as of no importance for his analysis (1970, pp. 218–19), and the money stock is said to be "independent of changes in demand" (pp. 195, 225).

We believe that the first argument is incorrect, the second largely correct but misleading. There is now considerable evidence showing that the stock of money can be expressed as a function of a few variables. The evidence for such money-supply functions is no worse than the evidence

in support of demand functions for money.⁶ We conclude from the available empirical evidence that the first argument must be rejected.

However, despite numerous plausible arguments to the contrary, there is very little evidence that, with the monetary base given, current or recent income or current interest rates have any sizable effect on money. Nor is there evidence of any substantial effect of current income on the base. If Friedman's second argument means that the "feedback" from current market interest rates, wealth, or income to money is small relative to the effect of interest rates and income or wealth on the demand for money, we concur.⁷ The part of his argument that we find misleading is the stress he places on the independence of monetary changes. Friedman's argument suggests that strict independence is a necessary condition for "monetarism" (Tobin 1969*b*). The two issues are separate. The conclusion that monetary impulses are relatively important for the determination of aggregate income does not require that the stock of money be independent of income or interest rates. The monetarist hypothesis should not be presented in the way that permits the hypothesis to be rejected for irrelevant reasons.

The Transmission Mechanism

In the *IS-LM* framework, the effect of monetary policy on income depends on the slope or elasticity of the *IS* curve. The more interest elastic the *IS* curve, the larger the effect of a given dollar or a given percentage change in money or income. With real resources fixed, prices eventually rise or fall until equilibrium is restored at a higher or lower price level, unchanged stock or real money balances, and unchanged interest rate. Friedman's acceptance of the *IS-LM* framework and this view of the transmission mechanism (1970, pp. 216–17) brings him into general agreement with the neo-Keynesians about the transmission of monetary policy (Bailey 1962; Samuelson 1969; Goodhart 1970).

We regard Friedman's discussion as either misleading or a complete reversal of his often stated position. In the *IS-LM* analysis, interest rates are generally taken as measures of borrowing costs. There is no distinction between market and real rates in the usual statement or in Friedman's restatement. No mention is made of interest rates as a proxy for relative prices of assets and output as in Hicks's (1937) paper formulating the

⁶ Several of these items are cited in Brunner (1968, p. 12, n. 9) and in Brunner and Meltzer (1968). The evidence to the contrary is based on National Bureau methods (Cagan 1965) and not on multivariate analysis.

⁷ If the monetary authority follows a "money market" strategy, a rise in market interest rates leads to an increase in the base. If the monetary authority follows a rainy day strategy, changes in weather cause changes in the base. In both cases, the central bank controls the base in the short run, and the consequences of its actions are important for macrotheory, the reasons for choosing particular strategies much less so.

IS-LM model. There is nothing in the model as presented (Friedman 1970) capable of explaining the fact—driven home for all of us in recent years by Friedman—that market interest rates generally rise during periods of economic expansion and fall during contractions. There is nothing in his statement of the *IS-LM* model capable of raising expenditure or interest rates above their initial equilibrium positions following a monetary expansion or pushing them below the initial equilibrium following a contraction. The reason is that there is no variable capable of shifting the *IS* curve in the short run and no reason for the *LM* curve to overshoot the initial equilibrium.

We do not know of any evidence showing that the *IS* curve remains fixed in the short run.⁸ By keeping real rates constant, ignoring fiscal variables, and relative prices, Friedman's "common model" neglects the variables that, we believe, explain many of the short-run changes in expenditure and market interest rates.

Friedman recognizes that the short-run explanation of income and interest rates, obtained from the "common model," is incomplete. He resolves the problems in two different ways. In both, real rates are assumed constant, as discussed earlier. Changes in nominal income, or in real income and prices, are made dependent in one case (1970, pp. 223–26) on the difference between actual and expected income and prices and ultimately on (1) the expected rate of change of nominal income, (2) the deviation of desired from actual money balances, and (3) the difference between the growth rates of actual and desired money balances. In a later alternative (1971, pp. 331–32), the deviation of nominal income from its growth path depends only on the difference between the rates of change of money and nominal income. All other factors have been impounded in (constant?) coefficients. In the later version, interest rates rise in periods of expansion and fall in contraction if changes in the rate of inflation are anticipated by speculators (1971, p. 333).

Friedman's first approach to short-run adjustment has no clear connection to the "common model." The level of income is determined by one process, the rate of income change by another.⁹ No doubt a set of

⁸ Like Friedman (1970, pp. 206–7) we believe that the real-balance effect is one of several explanations of long-run changes in the *IS* curve. We agree, also, that the short-run importance of the real-balance effect is small enough to neglect in most developed economies where real balances are a small part of wealth. In our analysis the size of the traditional real-balance effect depends on the proportion of money to total nonhuman wealth, a factor that is less than .05 for the United States.

⁹ The differential equations expressing the adjustment are of interest for several reasons, not the least of which is the implied modification of a position—the Friedman rule—that has long been identified with the Simons-Friedman tradition. The rate of change of nominal income depends on both the level and the rate of change of the nominal stock of money. Hence, the rate of growth of income is not independent of initial conditions, represented by the existing nominal stock, and the appropriate rate of growth of money is no longer a constant but a variable dependent on past monetary policy.

postulates can be introduced to reconcile the two, but only at the cost of eliminating interest rates and the negatively sloped *IS* curve from the “common model” or including interest rates in the adjustment equation. If the *IS* curve has a negative slope, interest rates change with changes in income and money, and these changes must be explainable by the same process explaining changes in income. Friedman is unprepared to make the required assumptions but unable to “express this case in any simple fashion” (1970, p. 226).

The adjustment equations that Friedman uses express many of the conjectures about the role of money that one of us has called the “strong monetarist hypothesis” (Brunner 1968). Many of these conjectures are familiar to Friedman’s readers. The solution equations that express the conjectures can be derived, however, only by introducing postulates that eliminate any effect of changes in the composition of wealth, in taxes, or in other variables that change the relative prices of assets and output.

Inflation or Real Output

Friedman offers “common models” that determine real income, or the price level, or nominal income, but not all three. To get the time rates of change of income and the price level, he does not differentiate the equations of one or another of the models. He either introduces some new equations that have no clearly specified relation to the “common model” or disregards the division between prices and income and concentrates on nominal income. In these ways Friedman attempts to overcome the inconvenience of having a theory from which (at least) one equation is “missing.”

We believe that more than one equation is missing. Relative prices, real rates of return, the outstanding stock of government debt, and the government budget are additional “missing” variables. Without better evidence for the model than has been provided, we do not accept the framework as a useful statement of short-run macrotheory. Too many familiar features of cycles are omitted or ignored.

Conclusion

Friedman’s unpublished critiques of standard macroeconomic analysis developed over two decades with substantial benefit to monetary and economic theory. Until recently, however, his many contributions did not include a detailed analytic statement of the framework guiding his research, connecting his empirical findings, or providing a foundation for the policies he advocated. Without such a statement, it was often impossible to separate valid implications of an empirically tested framework from less well-supported conjectures. Frequently, his work left unclear

the extent to which he accepted the *IS-LM* paradigm as a short-run framework and rejected only the particular version known as the Keynesian special case, or accepted only that part of the framework called the "classical" special case or the strong monetarist position. Friedman's two recent papers help to make his position clear. In principle, he accepts the *IS-LM* common framework as a short-run theory; however, to explain observed short-run changes in prices or output, he offers a theory that eliminated any effect of changes in relative prices, interest rates, government expenditure, tax rates, or the stock of securities.

We offer four types of criticisms of Friedman's approach. (1) The restrictions that he imposes on the standard theory to remove any short-term effect of changes in interest rates, fiscal variables, and the stock of securities are not well supported by evidence. (2) The framework does not imply some of the main propositions that have been developed in recent years as a result of the empirical work done by Friedman and others. For example, there is no mention of the variability of the lag in monetary policy. The gradual adjustment of the price level following the adjustment of real output is either assumed (1970) or is not obtained at all. (3) The framework ignores some main developments in economic theory during the past ten years that have important bearing on the issues discussed. Keynes's observations during the twenties and thirties suggested to him that the long recession and most of the observed unemployment could not be explained by standard price theory. Cost of acquiring information, cost of search, and adjustment have been introduced to remove some of the main problems that led Keynes to this conclusion. None of Friedman's hypotheses builds on these new developments toward a theory of prices and output that removes the deficiency noted by Keynes. (4) The explanation of fluctuations in prices and output has very little relation to the static theory of prices and output.

Our criticisms of Friedman's monetary theory lose much of their force if his "common framework" represents the best that economists can do. We believe that our criticisms obligate us to state an alternative framework that is richer in implications and one that captures some main developments in the economic theory of the past ten years, developments stimulated and in some cases carried forward by the important contributions of Milton Friedman. Elsewhere in this issue, we attempt to sketch such a theory and to develop a few of its implications for cycles and for theories of cycles.

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