

# FEDERAL RESERVE BANK OF ST. LOUIS

SEPTEMBER 1973



## CONTENTS

The State of the Monetarist Debate .....	2
Commentary: Lawrence R. Klein and Karl Brunner .....	9
A Value Added Tax and Factors Affecting Its Economic Impact .....	15

# The State of the Monetarist Debate

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*The following paper was presented last spring as part of a series of public lectures held at the following universities: The Ohio State University; University of California at Los Angeles; and University of Southern California.*

*As indicated by the title, the purpose of the paper is to discuss those issues which appear to have divided economists into two camps: monetarist and post-Keynesian. To further this objective, two discussants of opposing viewpoints were invited to comment on the Andersen presentation. Professor Lawrence R. Klein of the Wharton School of Finance, University of Pennsylvania, provides comments from a post-Keynesian point of view. Professor Karl Brunner of the University of Rochester discusses the issues from a monetarist position.*

**F**OR OVER thirty-five years there has been continuing debate between two prominent schools of economic thought. In recent years these two schools have been characterized by the labels "monetarist" and "post-Keynesian" economics. Some major participants on the monetarist side are professors Karl Brunner, Milton Friedman, and Allan Meltzer. The post-Keynesian side is represented by such academic economists as Lawrence Klein, Franco Modigliani, Paul Samuelson, and James Tobin.

The debate has been ongoing since the publication of Keynes' *General Theory* in the mid-1930s. It became particularly heated in the late 1940s, and in the 1950s post-Keynesian views dominated macro-economic theory and economic stabilization policy. The debate was reopened in the late 1950s, and beginning in the mid-1960s the monetarist view began to be recognized as a serious challenge to post-Keynesian economics.

The debate has ranged over three major fields of interest to economists. These are macro-economic theory, economic stabilization policy, and economic research methodology. My remarks today will concentrate primarily on the stabilization aspects of the debate, although I will of necessity bring in some discussion of the other two.

For purposes of this discussion, I will focus on six topics of the economic stabilization aspect of the debate. These are: the impact of monetary actions, the impact of fiscal actions, the trade-off between inflation and unemployment, the factors influencing interest rates, the degree of stability inherent in the economy, and the appropriate time horizon for stabilization policy. In discussing each of these topics, I will first summarize the contending views in the last half of the 1960s. Then, I will summarize the progress

made in reconciling these views up to the present time.

I want to point out that my analysis of these topics is from the point of view of an active participant on the monetarist side of the debate. The analysis reflects my view of the debate and may not agree, in all aspects, with the views of other participants — monetarists or post-Keynesians. In addition, for purposes of this discussion, I will contrast two polar positions. It must be recognized, however, that there are many who consider themselves to be in some middle-of-the-road position on many of the issues.

## THE IMPACT OF MONEY

### A Post-Keynesian View

Let us now examine the first issue — the role of money as an important driving force in the economy. Paul Samuelson, in commenting on the debate, has provided an excellent summary of the post-Keynesian view regarding money.<sup>1</sup>

As a limit upon the stimulus stemming from money creation by orthodox open-market operations, must be reckoned the fact that as the central bank pumps new money into the system, it is in return taking from the system *an almost equal quantum of money substitutes* in the form of government securities.

What needs to be stressed is the fact that one cannot expect money created by this process *alone* . . . to have at all the same functional relationship to the level of the GNP and of the price index as could be the case for money created by gold mining or money created by the printing press of national governments or the Fed and used to finance public expenditures in excess of tax receipts.<sup>2</sup>

<sup>1</sup>Paul A. Samuelson, "Reflections on the Merits and Demerits of Monetarism," in *Issues in Fiscal and Monetary Policy: The Eclectic Economist Views the Controversy*, ed. James J. Diamond (DePaul University, 1971), pp. 7-21.

<sup>2</sup>*Ibid.*, pp. 8-9.

Samuelson continues this analysis by pointing out that money creation in today's economy does not necessarily reflect creation of wealth, and thereby exerts no direct influence on aggregate demand. Creation of money, however, does change interest rates which in turn influence aggregate demand. He then points out that research of the late 1930s and 1940s led economists to reject money because interest rates were found to exert little influence on aggregate demand.

Samuelson then presents his view of recent economic history by stating that Pigou's real balance effect of money on consumption served to reconcile the deep cleavage between neo-classical theory and the Keynesian revolution. He then contends that

... by the 1950's and 1960's an accumulating body of analysis and data had led to a strong belief that open-market and discount operations by the central bank could have *pronounced macroeconomic effects upon investment and consumption spending in the succeeding several months and quarters.*<sup>3</sup>

Despite this strong contention regarding the influence of monetary actions, post-Keynesian analysis, until recently, has persisted in denigrating the influence of money because of the rather weak, or long delayed, response of aggregate demand to changes in interest rates. Econometric models continued to stress the interest rate channel and shied away from incorporating any influence of real money balances. For example, when simulations of the original Klein-Goldberger model of the late 1950s showed that the real balance effect swamped all other influences, the monetary sector was dropped from the model because such a result was deemed "unrealistic" and "implausible."<sup>4</sup>

### A Monetarist View

Now for the other side of this issue. The monetarists contend that changes in money exert a strong force on aggregate demand (measured in nominal terms), the price level, and output. In determining the impact of money, it is further contended that a distinction must be made between nominal and real economic magnitudes and between the short run and the long run.

Changes in the trend growth of money are considered the dominant, not the exclusive, determinant of the trend of nominal GNP and the price level. Long-

run movements in output are little influenced by changes in the growth rate of money. Trend movements in output are essentially determined by the growth of such factors as the labor force, natural resources, capital stock, and technology. In the short run, however, changes in the trend growth of money or pronounced variations around a given trend exert a significant, but temporary, impact on output. The timing and magnitude of such impact depends on initial conditions at the time of a change in money growth. Two major indicators of initial conditions are the level of resource utilization and the expected rate of inflation.

Monetarists do not maintain, as asserted by many post-Keynesians, that money is the only influence on either nominal or real economic magnitudes. Other factors which exert a significant influence are factors which change the demand for money, productivity, and factor endowment. There is even room in this analysis for Keynes' "animal spirits" on the part of businessmen. The key proposition is that changes in money dominate other short-run influences on output and other long-run influences on the price level and nominal aggregate demand. I will have more to say later in this regard.

### Recent Developments in the Debate

An integral part of the debate regarding the influence of money on economic activity is the different views held regarding the economic function of money. Some who denigrate the importance of money point out that it is one asset which carries no monetary yield. Others stress that money in today's economy is not wealth and conclude that changes in money have little direct influence on spending decisions. Some post-Keynesians view money as only one of a virtually continuing spectrum of financial assets and thus believe it to be of only secondary importance.

A further argument advanced about the role of money has been based upon the lack of synchronization between transactors' receipts and expenditures. In such a case, it is desirable for market participants to hold an inventory of money balances. This argument can be used to develop a model which delegates a powerful role for money in influencing economic activity. The post-Keynesians, however, have not produced such a model.

On the other side of the debate, empirical evidence has been presented to support the view that money matters to a considerable degree; but, until recently, little attention has been given to producing a rigorous

<sup>3</sup>Ibid., p. 12.

<sup>4</sup>Arthur S. Goldberger, *Impact Multipliers and Dynamic Properties of the Klein-Goldberger Model* (Amsterdam: North-Holland Publishing Company, 1959), pp. 84-85.

analysis of the role that money plays in a market economy. In recent years, the view has been growing that money does have an extremely important influence because it is the asset used by society which minimizes the economic costs associated with collecting market information and conducting market transactions.

Brunner and Meltzer, using this cost of information and transactions argument, have presented an extended analysis of the emergence of money in a market economy. Their view of the role of money is the following:

Our analysis extends the theory of exchange to include the cost of acquiring information about market arrangements, relative prices, or exchange ratios. Individuals search for those sequences of transactions, called transaction chains, that minimize the cost of acquiring information and transacting. The use of assets with peculiar technical properties and low marginal cost of acquiring information reduces these costs. Money is such an asset, and the private and social productivity of money are a direct consequence of the saving in resources that the use of money permits and of the extension of the market system that occurs because of the reduction in the cost of making exchanges.<sup>5</sup>

Thus, money as a medium of exchange, as a transaction dominating asset, results from the opportunities offered by the distribution of incomplete information and the search by potential transactors to develop transaction chains that save resources.<sup>6</sup>

What has been the outcome of the debate thus far on the issue of the role of money in economic stabilization? There is no doubt that money has been assigned a more prominent role in recent years, but not to the extent advocated by monetarists. Econometric model builders have begun to give greater recognition to money. For example, Lawrence Klein has reported that the Wharton model now has a real money balance effect and that now the model predicts better. Simulations of the MIT-FRB model, which had Franco Modigliani as one of the principal architects, demonstrate the long-run properties of money as stressed by monetarists; namely, changes in money, in the long run, influence mainly the price level.

In recent years, money has also received more attention in the conduct of economic stabilization. For years, post-Keynesians recommended that market interest rates be the strategic variable to be controlled in stabilization efforts. Policymakers tended to follow

this recommendation almost exclusively until late in the 1960s.

Attention has gradually shifted in recent years toward more emphasis on money and less on interest rates. From 1951 to 1966, the Federal Open Market Committee stressed only market interest rates and other measures of money market conditions. From 1966 to 1970, money or other monetary aggregates served as a minor constraint on actions regarding interest rates. In 1971, interest rates were manipulated in an attempt to produce desired movements in money. Finally in 1972, changes in reserves available for private deposits were formally set forth as a means of controlling money. Such actions, however, were constrained to a considerable degree by interest rate considerations. Since 1969 the President's Council of Economic Advisers has recommended changes in money and credit as a better guide for monetary actions than market interest rates.

Although the debate regarding money is less acrimonious today, some important areas of contention remain. A foremost one is in regard to the speed of response of output, prices, and nominal GNP to a change in money. Monetarist theories and empirical studies point to a relatively quick, but short-lived, response of output to a change in money growth, with a longer time period required for prices to respond fully. Post-Keynesian econometric models, on the other hand, produce an impact of money changes only over a much longer period.

Many economists now agree with the proposition of monetarists that the long-run influence of money is only on the price level, with no lasting impact on output. Some, however, have distorted the monetarist view by asserting that monetarists believe that these long-run propositions also hold in the short run. For example, Governor Andrew Brimmer of the Federal Reserve System, in commenting last year on the debate, concluded that "... there really is no difference between modern monetarists and modern Keynesians with respect to the long-run implications of their theory."<sup>7</sup> But, he then asserts, "Monetarists appear to argue that the reactions expected in the long-run can also be expected to hold even in the short-run."<sup>8</sup> This is simply incorrect.

Another major point of contention is the nature of the monetary transmission mechanism. Post-Keyne-

<sup>5</sup>Karl Brunner and Alan H. Meltzer, "The Uses of Money: Money in the Theory of an Exchange Economy," *The American Economic Review* (December 1971), p. 804.

<sup>6</sup>*Ibid.*, p. 793.

<sup>7</sup>Andrew F. Brimmer, "Monetarist Criticism and the Conduct of Flexible Monetary Policy in the United States" (Paper presented at the Institute of Economics and Statistics, Oxford University, Oxford, England, April 24, 1972), p. 8.

<sup>8</sup>*Ibid.*, p. 13.

sians have advanced their views of this mechanism and have built empirical models based on their views. On the other hand, monetarists, until recently, have not developed such empirical models. Brunner and Meltzer have now developed a theoretical model of the transmission mechanism, which is based on relative price theory, and plan to make empirical tests of its implications. At the Federal Reserve Bank of St. Louis, we are in the process of spelling out our theory of the channels by which changes in money influence nominal GNP, the price level, and output. Along with the theoretical work, we are attempting to estimate the parameters of these channels of monetary influence.

### THE IMPACT OF FISCAL ACTIONS

Let us now turn our attention to the second issue — the role of fiscal actions in economic stabilization. The generally accepted view is that changes in Federal Government expenditures and tax rates exert a strong and rapid force on aggregate demand. Most monetarists, but not all, contend that the influence of such actions is transitory.

Post-Keynesians advance three main arguments for the primacy of fiscal actions. Increases in Government spending add directly to aggregate demand, and reductions in tax rates increase disposable income, thereby increasing aggregate demand. Both of these actions are held to have a multiplier effect. Government borrowing adds to wealth which increases spending. With a constant money stock, higher interest rates result which, in turn, reduce the quantity of money demanded. To the extent that the velocity of circulation increases, there is a fiscal impact on aggregate demand.

Monetarists point out empirical evidence that the Government expenditure multiplier, with a constant money stock, is positive for a few quarters, but in the long run it is zero. The argument frequently advanced in support of such a response is the so-called “crowding-out” effect. In the absence of accompanying monetary expansion, Government expenditures must be financed by taxes or borrowing from the public. In either case, command over resources is transferred from the private sector to the Government, with the result that there is no net addition to purchases. Only in the case of a deficit financed by the monetary sector does Government spending exert more than a short-run positive influence on aggregate demand.

Such a response carries an implication opposite to that postulated by Samuelson regarding money. Ac-

cording to Samuelson, money has an important influence only when it is created to finance Government expenditures. Monetarists contend that Government expenditures increase aggregate demand permanently only if they are continually financed by creating money. Monetarists recognize, however, that Government spending financed by borrowing can have an important indirect effect on spending because deficits tend to induce central banks to increase money.

The fiscal aspect of the debate is far from being resolved. The post-Keynesian view has continued to be the dominant one in both macro-economic theory and in stabilization policy. Monetarists, however, have caused both theorists and model builders once again to take specifically into consideration the financing aspects of Government spending. These financing aspects, for the most part, had been dropped from both these endeavors in the early 1950s when the crude fiscal multiplier analysis came into vogue.

The general rejection of the challenging view has been mainly the result of its failure to specify the transmission mechanism whereby crowding-out occurs. Economists such as Brunner and Meltzer and Carl Christ have developed theoretical structures in which the Government's budget constraint plays an important role. Such structures will be useful in identifying the conditions under which crowding-out occurs. Monetarists continue to be skeptical regarding the influence of fiscal actions when such influence is measured without due regard given to financing considerations.

One final point. Just as in the case of the role of money, the debate over fiscal actions may be largely one of timing. Both the MIT-FRB model and the Data Resources model, which are built along post-Keynesian lines, have a zero Government spending multiplier with regard to real output. But this result takes a fairly long period of time to accrue. On the other hand, monetarists generally believe this same result occurs within a much shorter time interval.

### THE INFLATION-UNEMPLOYMENT TRADE-OFF

I am sure you are familiar with the argument that an economy must accept a high unemployment rate in order to have a low rate of inflation, or that a low unemployment rate can only be achieved at the cost of a high rate of inflation. Monetarists, as well as many other economists, reject this argument, contending that in the long run the “normal” or “natural”

unemployment rate will eventually evolve regardless of the rate of inflation.

With regard to this issue, post-Keynesians have generally relied more on empirical evidence, while proponents of the alternative view have relied more on theoretical arguments. This is an interesting reversal of approaches from those used in the two previous issues.

In simple form, most empirical studies of the inflation-unemployment trade-off have proceeded in the following manner. The price level is said to be a markup of labor costs, which depend on wage rates and productivity. Wage rate changes, in turn, are postulated to be negatively related to the degree of slack in the labor market, measured by the unemployment rate. Empirical studies have found it possible to measure such relationships; thus, post-Keynesians conclude that the above mentioned trade-off exists.

Monetarists have developed mostly theoretical arguments in support of the "no trade-off" proposition. It is not denied that a short-run trade-off exists, but it is denied that such a trade-off exists in the long run. The crucial consideration involves the formation of price expectations, a variable generally neglected until recently in post-Keynesian analysis.

I will not go through this very complicated analysis. Instead, I will merely point out the conclusion that when prices rise at a constant rate, and if the expected rate of price change is the same, the unemployment rate will be at its normal rate and will remain there until a shock occurs. This normal unemployment rate is determined by such factors as cost of labor market information, labor mobility, job discrimination, and laws and organizations which impede the free functioning of the labor market.

This trade-off issue is far from being settled. It is quite generally agreed that the crucial consideration is the manner in which price expectations are formed. No trade-off exists unless price expectations are formed in such a manner that in the long run expected price changes fully reflect actual price changes. Empirical evidence presented to date has proven to be inconclusive—there is support for both sides of the debate.

In one respect, some post-Keynesians have moved closer, but not completely, to accepting the no trade-off view. Simulations of several prominent econometric models give results which show a very sharp trade-off relationship (that is, a large change in inflation, but a very small change in the unemployment

rate) instead of the comparatively less sharp trade-off suggested in earlier empirical studies.

Both sides, however, are in quite general agreement regarding the desirability of actions to improve the functioning of our labor and commodity markets. Be there no trade-off, a sharp one, or a relatively mild one, it is agreed that less restricted markets would tend to reduce the rate of unemployment associated with any given rate of inflation.

## FACTORS INFLUENCING MARKET INTEREST RATES

The next issue in the debate which I will discuss is the one regarding the factors influencing market interest rates. This issue has basically revolved around the distinction between real and nominal interest rates. Another important point of difference has been the market in which interest rates are determined.

Post-Keynesians have advanced the view that the short-term interest rate is basically determined by the demand for and the supply of money balances in what they call the "money market." The short-term rate is then postulated to influence the long-term via a term structure relationship. Finally, there is a response of interest-sensitive components of aggregate demand, followed by an aggregate demand feedback on the interest rate.

For years, the price level was held constant in a large body of post-Keynesian analyses, with the result that all variables were in real terms, including interest rates. Monetarists have revived the much earlier view of Irving Fisher regarding interest rates. They focus on the nominal rate of interest, which is determined by factors influencing the real rate of interest, and takes into consideration the expected rate of inflation. According to this analysis, the real interest rate is determined by a multiplicity of factors traditionally summarized in the phrase "productivity and thrift." The nominal interest rate, in equilibrium, is equal to the real interest rate plus the expected rate of inflation.

This analysis has led monetarists to summarize the factors which influence market interest rates as the liquidity or money effect, the output effect, and the expected rate of inflation. An increase in the rate of money growth first decreases market interest rates, but then output rises in response to the faster money growth. This results in an increase in the demand for credit and interest rates rise. Finally, inflation increases, and, to the extent that this is reflected in

expectations of inflation, an inflation premium is incorporated into market interest rates.

Experience with inflation since the mid-1960s has led most economists to incorporate price expectations into their interest rate analysis. Econometric model builders found it necessary to introduce this factor because, prior to doing so, their models had forecast interest rate movements rather badly in the inflationary period of the late 1960s. Outside of this change, however, their interest rate mechanism has remained essentially as outlined earlier.

A sharp controversy has existed regarding the appropriate role of interest rates in monetary policy. The conventional view has stressed interest rates as the key variable to be manipulated by the central bank in seeking to achieve its stabilization goals. High and rising interest rates have been interpreted as indicating monetary restraint. The opposing view insists that the central bank has very imperfect control over market interest rates in any period other than a very short one, and that a prolonged period of high and rising rates indicates monetary ease.

Even though some policy advisers, such as the Council of Economic Advisers and some members of the Federal Open Market Committee, have accepted the view that interest rates contain a price expectations component, interest rates still play an important role in stabilization policy. In addition, there has been almost a complete lack of understanding on the part of Congress in both regarding the modern view of interest rates and in applying this view to stabilization policy prescriptions.

### DEGREE OF INHERENT ECONOMIC STABILITY

I now turn to the next issue — the dispute regarding the monetarist contention that the economy is inherently stable. Post-Keynesians contend otherwise. Samuelson has summarized a few factors which he believes affect money GNP even if money is held constant:

- (1) . . . any significant changes in thriftiness and the propensity to consume . . . . (2) . . . an exogenous burst of investment opportunities or animal spirits. . . .<sup>9</sup>

The alternative view does not deny that such factors exert a significant influence on GNP, output, and the price level. But it does challenge the conventional

view that these factors lead necessarily to recurring fluctuations in output and prices which are of a cyclical nature or that there does not exist a self-correction mechanism. Monetarists contend that our economic system is such that disturbing forces, including even changes in money growth, are rather rapidly absorbed and that output will naturally revert to its long-run growth path following a disturbance.

Little empirical evidence has been produced in support of either view. Post-Keynesians offer simulations of the response of their models to shocks, while the challengers have appealed more to casual empiricism. Moreover, monetarists have not been convinced by post-Keynesian evidence which does not involve holding the growth of money constant.

This issue is also far from being resolved, but one significant step has been taken toward resolution. There is quite general agreement that the role of price expectations is very important. One crucial condition necessary to yield monetarists' results is that the current rate of inflation should respond to the expected rate of inflation, however the expectation is formed, with a coefficient of one.

As in the case of several of the other issues in the debate, the central point of contention of the inherent stability issue appears to be a matter of timing. Several econometric models built along post-Keynesian lines show, by simulation experiments, that shocks are absorbed over a fairly long period of time and do not produce cycles. On the other hand, monetarists postulate a shorter period for adjustment.

### APPROPRIATE TIME HORIZON FOR STABILIZATION POLICY

Let us now turn to the final issue — the appropriate time horizon for stabilization policy. Post-Keynesians, with their view that the economy is basically unstable, have advocated very active stabilization actions in the short run. Even if a disturbance is absorbed, the time interval is considered to be so long that economic welfare will be greatly reduced if short-run stabilization actions are not taken. Some have expressed the belief that the economy can be turned around on a dime; therefore, in the case of high unemployment, stimulus can be applied until inflation rears its ugly head and then restraint can be applied to curb inflation. The term "fine-tuning" has been applied to this view. Since they hold that fiscal actions are powerful and have a relatively quick effect, and that changes in money have a very slow effect, the former tool of economic stabilization is preferred.

<sup>9</sup>Samuelson, "Reflections on the Merits and Demerits of Monetarism," p. 7.

Monetarists, on the other hand, prefer a relatively stable growth of money over fairly long intervals of time. This position is based on the view that changes in money exert a strong, short-run effect on output, but little influence in the longer run. It is also based on the belief that the economy is inherently stable, thereby requiring no off-setting actions. Furthermore, it is contended that short-run stabilization actions have, in the past, been exercised in such a manner as to create economic instability, and thereby have reduced economic welfare.

This issue is far from being resolved, if it ever can be, because it involves one's notion of economic welfare. It will persist even if there is conclusive evidence of a short-run, but short-lived impact of stabilization actions on output and employment and a long-run impact on the price level.

According to Robert Solow, a prominent post-Keynesian,

. . . there is a trade-off between the speed of price increase and the real state of the economy. It is less favorable in the long run than it is at first. It may not be 'permanent'; but it lasts long enough for me.<sup>10</sup>

Monetarists contend, on the other hand, that failure to take into consideration the long-run price level implications of stabilization actions in seeking short-run output and employment objectives seriously threatens economic welfare because the long run may very well be much shorter than usually believed. If such is the case, stabilization actions based on Keynes' dictum, "In the long-run we are all dead," may lead to a serious loss of economic welfare for those living today.

## PRESENT STATE OF THE DEBATE

I will now conclude by summarizing the changes in views regarding economic stabilization that have occurred over recent years. Then, I will present my views regarding some steps which are needed to be taken if the debate is to be resolved.

I believe that most observers will agree that money is now receiving more attention in economic theory, econometric model building, and stabilization policy than it did just five years ago. In addition, greater consideration is given to financing considerations in discussions regarding the influence of fiscal actions.

The influence of price expectations on market interest rates is almost universally accepted, and the primacy of interest rates as a tool of economic stabilization has been seriously challenged. Although the stable monetary growth rule has not been generally accepted, there is a quite general acceptance of the proposition that money growth should be less variable than in the 1950s and 1960s. The proposition that inflation is primarily a monetary phenomenon, however, has not generally been accepted in stabilization policy.

Two main developments are desirable if this debate is to be resolved. The first involves monetarists and the second, post-Keynesians. Monetarists must spell out, in greater detail than up to now, the channels by which money influences nominal GNP, the price level, and output. Lawrence Klein, in commenting on the Wharton model and the academic version of the MIT-FRB model, has laid down this challenge to the monetarists:

Each combines fiscal with monetary analysis; each has the usual kind of fiscal multiplier; each can measure up to any purely monetarist model yet conceived as far as accuracy of performance is concerned; and each is explicit about the channels of monetary influence in a structural way. They stand as challenges to the monetarist points of view.<sup>11</sup>

As I mentioned several times, monetarists are rising to this challenge. However, if the debate is to be resolved, post-Keynesians must be willing to examine a different approach to macro-economics from their own and to consider different types of evidence. Some monetarists have rejected the traditional static IS-LM paradigm as an adequate framework for presenting their views. They are investigating alternatives based on relative price theory. Furthermore, they believe that explicitly dynamic analysis will be more useful than static analysis. Costs of information, adjustment, and transactions play a central role in this theorizing. With regard to evidence, the testing of simple hypotheses is deemed to be more useful than the building of elaborate structural models.

In conclusion, I am heartened that progress has been made in recent years in delineating the main issues of the debate and in resolving some of them. Moreover, the debate is less acrimonious than earlier. It is my expectation that great strides will be made in resolving the remaining issues in the near future.

<sup>10</sup>Robert M. Solow, *Price Expectations and the Behavior of the Price Level* (Manchester, England: Manchester University Press, 1969), p. 17.

<sup>11</sup>Lawrence R. Klein, "Empirical Evidence on Fiscal and Monetary Models," in *Issues in Fiscal and Monetary Policy: The Eclectic Economist Views The Controversy*, p. 49.

# Commentary on

## “The State of the Monetarist Debate”

LAWRENCE R. KLEIN

NOTE: The relevant passage from the Andersen paper appears in italics preceding each of Professor Klein's comments.

Leonall C. Andersen's account of the issues is stated so well that I was immediately drawn into a detailed reading of this fascinating material. Of course, since I stand on the “other side” of the debate, I felt compelled to take issue with specific points although I found the piece, as a whole, very attractive.

*Econometric models continued to stress the interest rate channel and shied away from incorporating any influence of real money balances. For example, when simulations of the original Klein-Goldberger model of the late 1950s showed that the real balance effect swamped all other influences, the monetary sector was dropped from the model because such a result was deemed “unrealistic” and “implausible”. (p. 3, left col., 3rd para.)*

It is true that Arthur Goldberger found that “money market effects swamped all other effects . . . in an implausible way” when he computed dynamic multipliers for the model. It is also the case that results that looked implausible in 1959 may not appear to be so today. This does not mean, however, that the monetary sector was dropped from the model, as Andersen asserts. It merely means that this sector was dropped for Goldberger's method of evaluation of dynamic multipliers from a linear approximation to the model. They were not otherwise dropped.

With today's technology for digital evaluation of multipliers, we do not make linear approximations. Also, we do not necessarily make *ceteris paribus*

(Continued on p. 10)

KARL BRUNNER

Leonall C. Andersen notes correctly that theoretical issues, policy problems, and research strategy have been closely related in recent controversies. This interrelation may be recognized by rearranging the issues covered by Andersen into four broad groups which summarize the central contentions of the controversies. An explicit restatement of the nature of the issues seems useful in order to remove irrelevant contentions or misconceptions concerning the propositions involved. My summary is guided by the four questions entered at the head of each section below.

### (1) How Do Money and Fiscal Policy Influence Economic Activity?

The orthodox Keynesian view contends that all information bearing on the transmission of monetary impulses is contained in the slope properties of the IS-LM diagram. A Pigovian modification includes shifts in the IS curve associated with the real balance effect. The evolution of the neo-Keynesian views flattened the slope of the IS curve. Keynesian analysis thus gradually reassessed the influence of money and monetary policy.

These changes in the perspective concerning the relative strength of monetary impulses did not modify the comparative role of fiscal and monetary policy in a stabilization program. The primary role was still assigned to fiscal policy with monetary policy confined to a “passively permissive” role. This concept of

(Continued on p. 12)

calculations of dynamic multipliers. More often, we make *mutatis mutandis* evaluations of dynamic multipliers; that is, we compute deviations from an "equilibrium" (or "control" or "baseline") dynamic path. Along such a path reserves can grow in an accommodating fashion, and other exogenous variables can also change as they will. In a generalized approach to dynamic multiplier analysis, we would not necessarily find that monetary effects swamp all other effects.

*Changes in the trend growth of money are considered the dominant, not the exclusive, determinant of the trend of nominal GNP and the price level. Long-run movements in output are little influenced by changes in the growth rate of money. Trend movements in output are essentially determined by the growth of such factors as the labor force, natural resources, capital stock, and technology. (p. 3, left col., 5th para.)*

The claim here is that the trend growth of money is the dominant determinant of both nominal GNP and the price level. This is an imputation of remarkable power to money. If the economy is at full capacity or full employment real GNP and if it is asserted that money determines price level, then it is trivial to say that it also determines nominal GNP. If the economy is not necessarily at full equilibrium, then it is remarkable, indeed, that money is such a powerful variable that it is predominant in the determination of both nominal GNP and price level. I don't believe a word of it.

*There is no doubt that money has been assigned a more prominent role in recent years, but not to the extent advocated by monetarists. Econometric model builders have begun to give greater recognition to money. For example, Lawrence Klein has reported that the Wharton model now has a real money balance effect and that now the model predicts better. Simulations of the MIT-FRB model, which had Franco Modigliani as one of the principal architects, demonstrate the long-run properties of money as stressed by monetarists; namely, changes in money, in the long run, influence mainly the price level. (p. 4, left col., 2nd para.)*

It is true that econometric model builders are now giving greater recognition to money, but I don't think the right reasons are conveyed to the reader.

(i) It should be remembered that Tinbergen devoted a great deal of attention to the money market in trying to interpret the 1920s in his celebrated League of Nations study. In my own work, I have studied real balance effects since early model building efforts at the Cowles Commission in the late

1940s (*Economic Fluctuations in the United States, 1921-1941*). I took up the problem again in micro econometric studies of the Surveys of Consumer Finances (*Contributions of Survey Methods to Economics*) and introduced real balance effects in the original formulations of the Klein-Goldberger Model in the early 1950s. There is nothing unusual about the fact that such effects appear again in the new Wharton Model (Mark III). It is just a continuation of research started more than 25 years ago and quite unrelated to today's monetarist debate.

(ii) As early as 1960, when a planning committee was outlining work for the SSRC model project (later the Brookings Model), the executive allocated responsibility to Daniel Brill and associates of the Federal Reserve Board for the development of a monetary sector, on a par with all other sectors. We recognized the importance of monetary factors from the start, but not along the lines now pursued by the monetarist school.

(iii) The reason why more attention is now being paid to monetary aspects in econometric model construction is that present samples of data cover a richer experience that was not previously available. The wartime accumulation of liquid assets first stimulated our curiosity, but it was not until the mid-1950s that interest rates showed appreciable variance. The monetary crises of 1966 and 1969-70 again enriched our data experience. The whole history of macro-econometric model building has been one of expansion through system enlargements, inclusion of more detail, and direction of added attention to specific sectors. It is no surprise that increased attention to the monetary sector should be taken up now, especially as flow-of-funds data become more accessible. In a similar way, increasing attention is being paid to the international sector, as the United States has more trade and payments crises. Gradually, model builders will cover all sectors of contemporary interest.

*Both the MIT-FRB model and the Data Resources model, which are built along post-Keynesian lines, have a zero Government spending multiplier with regard to real output. (p. 5, right col., 3rd para.)*

Most American models, other than the St. Louis model, imply fiscal multipliers that rise fairly quickly to values between 2.0 and 3.0. They fluctuate in a narrow range for a number of years and then decline. This is brought out clearly in the analysis of the NBER/NSF Seminar on Model Comparison [G. Fromm and L. R. Klein, *American Economic*

*Review* (May 1973).] For the only period of policy relevance (before many other changes, besides the original fiscal policy change, have taken place) the fiscal multipliers are estimated to be substantial by a broad consensus. In a practical sense, for purposes of economic policy formulation, the latest results seem to cause no change in the standard analysis of the fiscal school.

*Monetarists have developed mostly theoretical arguments in support of the "no trade-off" [inflation-unemployment] proposition. It is not denied that a short-run trade-off exists, but it is denied that such a trade-off exists in the long run. The crucial consideration involves the formation of price expectations, a variable generally neglected until recently in post-Keynesian analysis.* (p. 6, left col., 3rd para.)

Surely, it is not right to say that the post-Keynesian analysis has neglected, until fairly recently, price expectations. A variable representing such expectations has always been in the theoretical and the associated econometric analyses. I would say that careful analysis of this variable has a thirty-five year history. In some cases price expectations were empirically represented by distributed lags of prices and in other cases by direct measurement in sample surveys. It is a difficult variable to measure properly, and the surrogates have not always been good, but it has never been neglected. One might criticize the simple approximations to anticipated prices that I used in *Economic Fluctuations*, but the recognition of the significance of expectations was quite explicit.

*. . . when prices rise at a constant rate, and if the expected rate of price change is the same, the unemployment rate will be at its normal rate and will remain there until a shock occurs. This normal unemployment rate is determined by such factors as cost of labor market information, labor mobility, job discrimination, and laws and organizations which impede the free functioning of the labor market.* (p. 6, left col., 4th para.)

The concept of a "normal unemployment rate" as it is used in modern macro-analysis does not seem to me to be very useful. To a large extent, it is used euphemistically to cover up real problems in achieving what is easily measurable as a broadly accepted statistical target of full employment at 4.0 percent. For my own tastes, I think that 4.0 percent is a pretty poor performance target for a modern industrial state and would prefer the range of 3.0-3.5 percent. In any event, I think that it would be unfortunate if the monetarist-fiscalist debate got locked into assumed agreement on the so-called "normal unemployment rate" as a target.

*I now turn to the next issue — the dispute regarding the monetarist contention that the economy is inherently stable. Post-Keynesians contend otherwise. Samuelson has summarized a few factors which he believes affect money GNP even if money is held constant:*

*"(1) . . . any significant changes in thriftiness and the propensity to consume . . . (2) . . . an exogenous burst of investment opportunities or animal spirits . . ."* (p. 7, left col., 4th para.)

I don't think that it is correct to say that Post-Keynesians contend that the economy is inherently unstable. They may contend that it is oscillatory or subject to fluctuations and that it has a tendency to move about a position of underemployment equilibrium, but this is far different from saying that the economy is unstable. The quotation cited from Paul Samuelson is one that I would commonly associate with a theory of the business cycle that he taught me three decades ago, with an ancestry related to Spiethoff, Tougan, Baranovsky, Schumpeter, and Hansen. Their views can be superimposed on the Keynesian system, to derive a formally stable cyclical process.

*Little empirical evidence has been produced in support of either view [degree of economic stability]. Post-Keynesians offer simulations of the response of their models to shocks, while the challengers appeal more to casual empiricism.* (p. 7, right col., 1st para.)

The Wharton Model (*Econometric Models of Cyclical Behavior*) and the Klein-Goldberger Model ("The Dynamic Properties of the Klein-Goldberger Model," Adelman and Adelman; "On The Possibility of Another '29") have been shocked in many separate studies. A number of these have been published. They consider both once-and-for-all exogenous and repeated stochastic shocks. A persistent finding is that the models of the underlying dynamic economic system are quite stable. In the case of once-and-for-all shocks, there is a strong tendency for the system to return to a long-run growth path after a severely damped oscillatory movement. In the cases of stochastic shocks, a stable oscillatory movement occurs. A. L. Nagar's stochastic simulations of the Brookings Model (*The Brookings Model: Some Further Results*) appear also to be stable.

*As in the case of several of the other issues in the debate, the central point of contention of the inherent stability issue appears to be a matter of timing. Several econometric models built along post-Keynesian lines show, by simulation experiments, that shocks are absorbed over a fairly long period of time and do not produce cycles. On the other hand, mone-*

*tarists postulate a shorter period for adjustment. (p. 7, right col., 3rd para.)*

As noted in the preceding comment, simulations of econometric models built along post-Keynesian lines do show important business cycle characteristics. It is a strong claim on the part of such model builders that these systems are capable of generating the cycle, as it has been historically measured, when the models are subjected to repeated shocks in stochastic simulations. I regard this as a basic validation feature of contemporary econometric model building research, and this is an integral part of my challenge to the monetarists, to see whether they can do as well in reproducing accepted measures of cyclical characteristics from simulations of their models. I am disappointed in their not following this line of econometric research.

*Let us now turn to the final issue — the appropriate time horizon for stabilization policy. Post-Keynesians, with their view that the economy is basically unstable, have advocated very active stabilization actions in the short run. (p. 7, right col., 4th para.)*

At this point, I repeat earlier comments that post-Keynesians do not hold the "... view that the economy is basically unstable . . . ."

(Section entitled "Present State of the Debate", p. 8)

Andersen sums up the debate nicely in these concluding paragraphs. Without accepting his view about the workings of the economy, I find that I can accept his view of the issues and procedures for continuing research on resolving some of the main issues. Careful statistical study of the evidence following best econometric practice can probably do much to settle some of the debatable issues. It is extremely healthy and welcome to see the debate shift from speculative theorizing, casual empirical referencing, and unsupported asserting, to serious work in applied econometrics. We may not resolve matters, but we shall learn more about the crucial issues and know where each side stands. We shall probably find out what would be needed in order to convince both sides of the correctness or incorrectness of their positions.

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### KARL BRUNNER (continued)

policy is a consequence of the Keynesian interpretation of the transmission mechanism which persists independently of the changes noted above. Apart from a more or less significant real balance effect, monetary impulses are conveyed in the usual Keynesian view by the play of interest rates on financial assets. Thus, the transmission of monetary impulses depends on the responses of the small proportion of expenditure categories with comparatively high borrowing costs. The Keynesian view therefore implies that applications of monetary policy burden a comparatively small sector with the task of swinging the whole economy in the desired direction. This means that this view of the transmission mechanism assigns substantial social costs to the use of monetary policy. In contrast, stabilization programs based on fiscal adjustments apparently impose lower social costs for similar social benefits.

It is commonly known that monetarist analysis rejects the assessment of monetary and fiscal policies offered by the Keynesian view. It is not commonly understood, however, that the conflicting views bearing on policy programs follow from a fundamental difference in the conceptions governing the substitu-

tion relations of money. Keynesians constrain the substitution to money and financial assets of a similar risk class. On the other hand, monetarists postulate that transactions dominating assets (that is, money) substitute in all directions over the whole array of other assets. This difference implies that monetarist analysis rejects the IS-LM framework as an adequate representation of monetary processes.

Also, monetarist analysis does not accept the idea that the slope properties of such diagrams contain all the relevant information pertaining to the transmission of monetary impulses. In contrast, the credit market, usually dismissed or disregarded in Keynesian analysis, emerges with an important function in monetarist analysis. It follows that the impact of monetary actions on interest rates cannot be interpreted simply as a "liquidity effect" resulting from the interaction between money demand and money stock.

Furthermore, the role of the government sector's budget position and its impact on the economy via asset markets are thus accessible to monetarist analysis, but not to Keynesian analysis. Also, the Keynesian distinction between the "direct effects" of fiscal pol-

icy and the "indirect effects" of monetary policy are recognizably conditioned by the peculiarities of the Keynesian transmission mechanism. Once the nature of the contending views is properly understood, we may hopefully move in our empirical research beyond Samuelson's attempt to force the issue into the Keynesian strait jacket by trying to reduce it to conflicting propositions about the interest elasticity of money.

## **(2) Does the Economy Produce Self-sustaining Fluctuations of Major Magnitudes?**

Keynesians usually answer this question in the affirmative. The *General Theory* contains several passages emphasizing the tenuous nature of long-run expectations and the unreliable gyrations of the marginal efficiency of investment. On the other hand, monetarists stress the shock absorbing capacity of the market process and the load factors usually produced by an unstable government and policy process. It is noteworthy that some of the exemplifications offered in Keynes' work, in spite of the general passages mentioned, actually support the monetarist thesis.

The contentions swirling around the stability of the economic process certainly require substantial further examination. Keynesians usually postulate that interaction between economic and political processes stabilize and at least do not destabilize the economy. Monetarists, on the other side, argue that such interaction operates more frequently in a destabilizing and welfare-reducing direction. It should be noted that Keynesians offer little evidence supporting their views. It is particularly noteworthy that all econometric models cast in a Keynesian mold, and examined in detail thus far, imply the monetarist stability thesis and reject the Keynesian thesis of an unstable process generating self-sustaining fluctuations of substantial magnitudes. But the monetarist case is not yet firmly established and the issue will persist.

## **(3) Apart From An Unstable Process, What Forces Produce Economic Fluctuations?**

Fiscalist Keynesians answer with a description of fiscal policy and stress the crucial significance of information about fiscal policy in order to appraise future economic trends. Others emphasize the role of a Wicksell-Keynes process and offer quotes about the autonomous operation of "animal spirits" affecting the anticipated real net yield on real capital. Monetarists, of course, stress the role of monetary impulses approximated by *relative* changes of some measure of

the money stock. These differences in the views about the driving impulse forces should not be misconstrued into absolute categories. They involve statements asserting the *comparative* dominance and persistence of specific impulses. Moreover, the monetarist thesis does not require termination of empirical research with a beautiful time series exhibiting accelerations and decelerations of the money stock. Some monetarists penetrated substantially "behind" this phenomenon to establish a link between a country's financial institutions and the nature of the policy process. It follows, therefore, that the question of exogeneity or endogeneity of the money stock attracts only a mild interest for the resolution of our major issues.

## **(4) Do We Need the Allocative (Sectoral) Details For The Understanding of An Economy's Macro-Behavior?**

Many, but not necessarily all, Keynesians will answer affirmatively. On the other hand, monetarists emphasize the approximate separation of allocative and aggregative processes. They assert that *one* set of forces explains the position of relative price changes under a given distribution of such changes, and an essentially *different* set of forces explains the *position* of the *whole* distribution. They contend, therefore, that a detailed description of *which* relative price changes are located *where* under the distribution, yields no relevant information about the inflationary thrust of an economy. Some aggregative significance is, however, recognized for specific allocative patterns (currency ratio, time deposit ratio, investment ratio for the long-run resource effect but not for the short-run demand effect).

There remains a fundamental conflict on this issue which has molded substantial differences in research strategy. The producers of large scale econometric models are motivated by a denial of the monetarist thesis, and the latter implies a research strategy addressed to small models, partial hypotheses, and a gradual build-up of theories by combining relatively "simple" building blocks. Monetarists would also claim that they are less interested in technical sophistication *per se*, and assign more weight to economic content.

## **Concluding Observations**

Keynesian analysis usually resolves the problem of interpreting monetary trends by relying on interest rates. This decision is justified by references to the central role of interest rates in the transmission mechanism of their models.

Monetarists claim, on the other hand, that Keynesians have adopted, without analytic reasons, the central bank tradition of gauging the tightness or ease of monetary policy by the level of, or movements in, market interest rates. The IS-LM diagram implies that changes in interest rates would serve as a reliable indicator of monetary events if the IS curve is rigidly fixed and money demand is stable (ignoring the effects of changing price expectations on interest rates). Monetarists, however, contend that in a world in which the IS curve is changing and perhaps money demand is shifting, interest rate movements do not give reliable signals as to the tightness or ease of monetary policy. Unfortunately, the nature of the interpretation problem does not seem to be well understood, and an ossified inheritance persists in the literature. On the other hand, some progress can be noted in the determination of suitable policies and policy procedures. Both analytic examinations and simulations of econometric models have opened avenues for exploration to resolve the issues of policy strategy

which should be acceptable to all parties in the controversy. The progress made in the analysis of the determination problem of monetary policy eventually may be matched by similar progress in the interpretation problem.

And so, where do we stand? Surely, the questions and positions have changed over the past twenty years. Beyond the noise of the ongoing debate, the gradual effect of searching examination was bound to modify subtly the views of Keynesians and monetarists. Moreover, the four major issues allow a variety of combinations. Some economists may reject the monetarist impulse hypothesis, but accept the monetarist view of the transmission mechanism. The evolution of such a spectrum with a "middleground" should enrich our future research activities. Such activities should yield substantive results over the years to the extent that economists successfully avoid the "media propensity" of equating all issues with ideological positions.



# A Value Added Tax and Factors Affecting Its Economic Impact\*

by CHARLOTTE E. RUEBLING

A VALUE ADDED TAX (VAT) has at times been mentioned as a substitute for an existing tax or as a source of new revenues in the United States. While a VAT is not currently used in this country, it is employed by many U.S. trading partners in Europe.

One purpose of this article is to provide a general description of a VAT. A second purpose is to point out that some consequences often expected as the result of adopting any tax are conditioned by aspects of the economic environment which can vary from time to time. For example, discussions of a VAT have centered on its possible effects on prices, income distribution, economic growth, and the balance of payments. To evaluate adequately the consequences of a VAT or any other tax, circumstances such as the use of revenues and accompanying monetary developments must be considered.

## FEATURES OF A VAT

### *The Concept of Taxing Value Added*

A tax often takes its name from the base on which it is computed. For example, personal income taxes are levied against a base of personal income, and retail sales taxes are a proportion of final sales. Value added taxes are no exception, being levied, in principle, on the value of newly produced goods and services.

\*The author appreciates helpful comments provided by Professor Charles W. Meyer on an earlier draft of this article.

Table 1

### European Countries Employing a VAT

	Year Introduced
Belgium	1971
Denmark	1967
France	1954-55
Germany	1968
Ireland	1972
Italy	1973
Luxembourg	1970
Netherlands	1969
Norway	1970
Sweden	1969
United Kingdom	1973

Value added for a given period is conceptually equivalent to all income — wages and salaries, rent, interest, and profits — generated in the production of aggregate output. A VAT nevertheless differs from a general tax on incomes in that firms, rather than the individuals who ultimately receive income, are responsible for paying the tax to the government.

A VAT is often considered to be essentially a retail sales tax. However, a VAT differs from a retail sales tax in that it is collected at each stage of the production and distribution process, not solely at the stage where a product is sold to the consumer.

### *Methods of Computing a VAT*

There are three methods for computing an individual firm's VAT. These are the addition, the subtrac-

tion, and the credit or invoice methods. The addition and the subtraction methods involve different approaches to computing the tax base. The credit method calculates the tax liability itself, without requiring explicit measure of a firm's value added. In practice these three computational procedures are only approximately equivalent.<sup>1</sup>

The addition method of computing the VAT base is to sum the firm's payments of wages, salaries, interest, rent, and profits. These payments represent the firm's contribution to the value of the economy's output in the period, or its "value added." This base multiplied by the tax rate indicates the amount owed the government in value added taxes. The subtraction method computes each firm's value added as sales less purchases of material inputs from other businesses. The credit method computes the tax by applying the tax rate to sales and then subtracting taxes paid on purchases of components. Value added taxes in European countries are usually computed by the credit method.

### *The Treatment of Capital*

Three variations of VAT also arise through different treatments of capital goods. The variations described here are in terms of the subtraction method of computing the VAT base. A *gross product type* VAT does not allow purchases of capital goods to be subtracted from a firm's sales to determine its tax base. Any part of the VAT assessed to the capital producer's value added which he is able to pass on as a higher price is not recoverable by the purchaser through a tax base reduction matching the purchase price of the capital.

An *income type* VAT reduces the firm's tax base in each period by the amount of its capital depreciation in that period or by some proportion of the capital purchase price. This type is analogous to net national product, a measure of output which subtracts capital consumed or used-up in producing the gross output or "value added" for the period.

A *consumption type* VAT excludes from the tax base the entire amount of capital expenditures in the tax period.<sup>2</sup> This type is somewhat more favorable, or

less unfavorable, to investment expenditure than the other two.<sup>3</sup> The total dollar amounts of tax base reductions are ultimately the same under both the income and consumption types. However, under the consumption type, the firm purchasing capital obtains a reduction of the base in the period in which the capital is purchased. With the income type, the reduction is spread over the depreciation period. Thus cash available to the firm in the early years of the capital's use is greater than under the income type. In general, European countries have adopted the consumption type.

### *Rate Variations and Exemptions*

Many VAT systems can be described as having a basic rate, special rates for some goods and services, and exemption status for certain economic activities or specific goods and services.<sup>4</sup> These features influence the nation's aggregate effective tax base.

In language used with a VAT, to be "exempt" means that there is no tax payable on sales and that taxes paid on purchases in order to provide a good or service are not recoverable from the government. Various categories of economic activity have been exempted in European countries either to simplify administrative procedures, as when very small businesses are exempted, or to achieve special effects on prices and the distribution of real income in the economy. Banking and financial institutions offer services to which the value-added concept is generally difficult to apply; consequently, these firms and services are commonly exempted from a VAT. Government and educational services, medicine, transportation, and communications products and services are also

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given interest rate, the tax on the goods produced with capital raises the amount of net income firms must derive from a capital asset in order to justify its purchase. In other words, the tax reduces the demand for funds, and other things remaining the same, the interest earned by savers. See Charles E. McLure, Jr., and Norman B. Ture, *Value Added Tax: Two Views* (Washington, D.C.: American Enterprise Institute for Public Policy Research, November 1972), pp. 88-92.

<sup>3</sup>See Carl Shoup, "Theory and Background of the Value Added Tax," *National Tax Association Proceedings of the Forty-Eighth Annual Conference, 1955*, pp. 11-18, for explanation of an "interest-exclusion variant" of the income type which is equivalent to the consumption type. Also displayed is a proof demonstrating that the consumption type does not discriminate in favor of or against capital as opposed to a situation of no tax.

<sup>4</sup>See *Tax Policy* (October-December, 1972) especially the selections: B. Kenneth Sanden, "The Value-Added Tax — What It Is; How It Works — Experience in Foreign Countries," pp. 1-19; John S. Nolan, "How VAT Should Operate in the United States," p. 20-26; William I. Stoddard, "Effect of VAT on Service Industries," pp. 59-65; and Gordon Insley, "The Value-Added Tax and Financial Institutions," pp. 72-78.

<sup>1</sup>See Alan A. Tait, *Value Added Tax* (London: McGraw-Hill, 1972), pp. 1-5.

<sup>2</sup>Norman Ture maintains that this variation has been misnamed. The name promotes the view that it is a tax exclusively on consumption. His analysis develops the proposition that under certain conditions, this type of VAT is a proportional tax on incomes of owners of productive facilities in the forms of both labor and capital. Savers, who directly or indirectly are owners of capital, do not escape the tax, because value added by capital is subject to the tax. For a

often exempted. In some countries these and/or other goods and services, considered "necessities," are instead taxed at a rate lower than the basic rate, while some items, defined as luxury goods, are taxed at rates higher than the basic rate.

If a firm's sales are subject to a "zero" or "nil" rate, then not only are sales free from tax liability, but the firm also is entitled to a refund of taxes listed on the invoices of purchased inputs. Exports are typically subject to a zero rate in VAT laws and proposals. The zero rate means that exporters do not pay tax on their sales abroad and receive refunds for taxes paid on purchases.

### ISSUES CONCERNING THE EFFECTS OF A VAT

The consequences of adoption of a VAT, or any tax change, for inflation, income distribution, resource allocation, economic growth, and a nation's balance of payments depend on the specific form of the tax and the accompanying circumstances. This section of the paper describes possible effects of a VAT, noting some of the specific aspects of the tax and some of the conditions in the economy which must be considered in order to reach valid conclusions about whether those effects will or will not follow the imposition of the tax. The general categories of considerations discussed are relevant for analysis of the effects of any tax change, not merely one involving a VAT.

One inevitable change in circumstances accompanying any tax change and bearing on subsequent economic developments is the possible use of new revenues. New tax revenues may be used by the government: (1) to purchase goods and services; (2) to reduce or replace another tax; (3) to retire outstanding debt; or (4) to hold balances in commercial or central banks.

Monetary conditions also influence the effects sometimes associated with tax policy. Monetary policy and tax policy are often considered separately from each other. Commentators assessing the impact of one or the other often implicitly assume definitions of these terms which keep them distinct. One should keep in mind, however, the following relationships between monetary and tax policy. A decline in money can result from one use of tax revenues — increasing Treasury balances in commercial or Federal Reserve Banks. Also, increases in the money stock can finance government expenditures. Additionally, changes in the money stock have influences over objectives which

tax policy often considers — namely, those relating to inflation, economic growth and stability, income distribution, and the international balance of payments. While monetary policy and the government budget are not the only influences on these matters, both are significant.

### Inflation

The possibility of increases in the average price of goods and services upon enactment of a VAT has been a concern of Europeans, even though for some countries the VAT replaced a similar tax known as a turnover tax. For example, in the past year France reduced its VAT rates, along with other measures, reportedly for the purpose of combatting inflation.

Imposition of a VAT or a change in any tax rate, by itself, cannot be considered inflationary or deflationary. Even if sellers were able to raise prices to cover the tax they pay, this would constitute a one-time increase in their prices, but would not necessarily lead to inflation, which is a continuous increase in the average of prices over time.

Even associating a one-time increase in the level of prices with a tax change would be accurate only under special circumstances. A tax on a single good could often be expected to raise the price of that good and perhaps affect prices of related goods and services.<sup>5</sup> However, a rise in the general price level cannot be maintained unless there is a rise in the dollar amount of goods and services demanded relative to output. Assuming no decline in output, this would require either expansion in the money stock or decline in the public's holdings of real money balances.<sup>6</sup> If there were neither a rise in the money stock nor an increase in the rate of money turnover, buyers would be unable to make all of their previous purchases at higher prices. A result of a widespread attempt to raise prices would be reduction in the real amount of goods and services sold, rollbacks in some prices, and/or adjustments in production and employment. Consequently, if a rise in the price level is sustained with the imposition of a VAT or other tax change, it is largely because of one or more of the following: the tax has induced the monetary authori-

<sup>5</sup>For a formal analysis, see Armen A. Alchian and William R. Allen, *University Economics*, 3rd edition (Belmont, California: Wadsworth Publishing Company, Inc., 1967), pp. 324-328.

<sup>6</sup>In the framework of the quantity equation,  $MV = PT$ , familiar to some readers, the reduction of average cash balances is equivalent to a rise in transactions velocity ( $V$ ) which, in the presence of constant money stock ( $M$ ) and full employment (constant  $T$ ), would produce a rise in prices ( $P$ ).

ties to increase the money stock; the tax has induced the public to attempt to reduce their holdings of money balances; or the tax has acted as a disincentive to production.

### *Income Distribution*

Many believe a VAT to be a regressive tax — one which takes a larger proportion of lower incomes than high ones. An appropriate analysis of the effects of a tax on income distribution requires consideration of the specific form of the tax — including its rates and exemptions — and the use of the revenues. Consideration of how these in turn affect income distribution is rather complex.

To illustrate, Great Britain replaced selective employment and special purchase taxes with a VAT, effective April 1, 1973. This VAT has a basic rate of 10 percent and a zero rate on some items, including food, housing, fuel, power, and passenger transport. Under the special purchase taxes which were replaced, some luxury items were taxed at a rate of 25 percent while many items purchased more universally were taxed at rates lower than 10 percent. The effect of this tax substitution on income distribution is contingent on how prices of commodities respond to the elimination of one tax and the imposition of the other. The substitution would usually be considered regressive if prices of items purchased predominately by lower income households rise relative to prices of purchases made by higher income households. The assumption, often made, that prices respond in direct proportion to the tax change is usually unwarranted.<sup>7</sup>

The income distribution effect of adoption of a consumption type VAT in the U.S. would depend on a number of circumstances including, of course, its rates and exemptions. The use of revenues — for example, whether they were used to reduce or eliminate corporate income taxes, social security taxes, or property taxes, or whether they were used to increase government spending — would help determine the distribution of real income after the tax change. In addition, accompanying monetary conditions would influence the behavior of prices, which, in turn, affects the distribution of real income.

### *Economic Growth*

One objective apparent in discussions concerning taxation is that the tax system encourage or at least not impair the economy's potential for and achievement of economic growth. What, then, are some of

the possible consequences of a VAT on growth? Once again it depends to some extent on the policy actions accompanying the VAT and responses to these actions. In general we need to ask whether the private sector responds to a given tax substitution or increase by: (1) reducing consumption; (2) reducing investment; or (3) increasing the supply of productive resources to the market. Response (3) appears conducive to growth. However, for the growth impact of response (3) to be lasting, there must be balance between demand and the resulting increase in the supplies of goods. Slack in demand resulting in accumulations of unsold goods is a signal for a production cutback (and/or a price decline) in a market economy. In general, policies conducive to growth are those which increase supplies of productive resources and investment and those which foster conditions in which an essential balance between aggregate supplies and demands can be maintained.

The combination of responses (1), (2), and (3) to adoption of a VAT is influenced by how the VAT, the accompanying use of funds, and monetary conditions affect prices of current versus future consumption<sup>8</sup> and the conditions which lead resource owners to hold or release their resources to the market. If monetary conditions (rates of money stock growth and money turnover) do not change, relative prices will reflect the impact on prices of the tax for which the VAT was substituted or the spending undertaken by the government. A lowering of the relative price of future consumption would in many circumstances be conducive to growth of production in the economy.

### *Balance of Payments*

A VAT, as opposed to some other taxes, is considered advantageous to an individual country's balance of trade. Provisions of the General Agreement on Tariffs and Trade (GATT) foster this effect. GATT permits a rebate of indirect taxes, such as a VAT or sales tax, on exports so that the destination price of the export will exclude the tax, but does not permit the effect of direct taxes, such as the corporate income tax, to be excluded from the export price. In addition, GATT allows a border tax on imports equivalent to the importing country's indirect tax. If direct taxes have a positive effect on the prices of commodities, which is reversed with elimination of the tax, the

<sup>7</sup>Alchian and Allen, pp. 324-328.

<sup>8</sup>Future consumption implies saving and buying capital which will yield a larger stock of consumption goods at some time in the future than one is capable of acquiring in the present. Interest rates, influenced by physical productivity of capital and monetary conditions, measure the trade-off between present versus future consumption.

substitution of an indirect tax, such as a VAT, for a direct tax would tend to increase a nation's exports and reduce its imports, given that other factors affecting trade remain substantially the same. This is because the price to foreigners could be more attractive within a framework imposing a VAT than one involving a direct tax.

### SUMMARY

This article has discussed the concept of a value added tax. Its main purpose, however, has been to illustrate some of the necessary, but often overlooked, ingredients for analysis of any tax proposal. To analyze the consequences of any tax change, the accompanying monetary conditions and the change in the

amount of one or more of the possible uses of the revenues must be considered.

Two basic points made in this article are: (1) the consequences for income distribution, economic growth, and the international balance of payments of a VAT substitution in the tax structure depend largely on what happens to prices; (2) the effects on prices of the imposition of a VAT in place of another tax depend to a considerable extent on monetary conditions — the rate of growth of the money supply and the velocity of money — and on the price-impact of an alternative tax or other use of funds. In contrast to some widely alleged consequences of a VAT, it is noted that a VAT need not be followed by inflation or greater inequality of income distribution.

