

A Neo-Keynesian View of Monetary Policy

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Those of us who take an essentially Keynesian view in macroeconomics are often accused, somewhat unjustly, I believe, of minimizing the importance of monetary forces. That contention was probably true 20 years ago for a variety of historical and institutional reasons. But much water has passed over the dam since that time, and I believe it would now be difficult to find an example of the popular stereotype of the Keynesian economist who thinks fiscal policy is all-important and monetary policy is of no consequence. After all, in Keynesian analysis the power of monetary policy depends on the values of certain parameters, and if one is open-minded, he must be prepared to alter his views as empirical evidence accumulates. In some respects, this process has already proceeded quite far—some of the simulations performed with the FRB-MIT model, which is decidedly Keynesian in spirit, show monetary policy having very powerful effects indeed, albeit operating with somewhat disconcerting lags.

Thus, there is nothing inherent in the Keynesian view of the world that commits its adherents to the belief that monetary policy is weak. What is, it seems to me, distinctive about Keynesianism is the view that fiscal policy is capable of exerting very significant independent effects—that there are, broadly speaking, two instruments of stabilization policy, fiscal policy and monetary policy, and that the mix of the two is important. Indeed, I suppose most Keynesians would assign primacy to fiscal policy, although even this need not inevitably be the case. But in a certain fundamental sense, I believe the issue separating the Keynesians and the so-called Monetarist School relates more to fiscal than to monetary policy, since some Monetarists seem to deny that fiscal policy is capable of exerting any significant independent effects. In addition, the neo-Keynesian view seems to differ significantly from that of the Monetarists with respect to the role played by the stock of money in the process by which monetary policy affects the economy.

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In this paper, I shall attempt to sketch what I would describe as a neo-Keynesian view of the process by which monetary and fiscal policy produce their effects on the economy and to evaluate some aspects of the recent controversy regarding stabilization policy in the context of this view. I shall then advance some suggestions concerning the conduct of monetary policy.

I. *The Transmission Mechanism of Monetary Policy*

There appear to be several elements involved in the mechanism by which the effects of changes in monetary policy are transmitted to income, employment, and prices.

Portfolio Adjustments

The major advance in monetary theory in recent years has been the development of a systematic theory of portfolio adjustments involving financial and physical assets. This theory of portfolio adjustments fits very comfortably within a Keynesian framework and indeed greatly enriches Keynesian analysis and increases its explanatory power. The *General Theory*, itself, embodied a rudimentary theory of portfolio adjustments: the way in which the public divided its financial wealth between bonds and speculative cash balances depended on "the" rate of interest. The interest rate then affected investment expenditure, but Keynes failed to incorporate the stock of real capital into his analysis and relate it to the flow of investment spending. Indeed, many of the undoubted shortcomings of the *General Theory* stem from the failure to take account of capital accumulation.

The way in which monetary policy induces portfolio adjustments which will, in due course, affect income and employment may be described briefly as follows: A purchase of, say, Treasury bills by the Federal Reserve will directly lower the yield on bills and, by a process of arbitrage involving a chain of portfolio substitutions, will exert downward pressure on interest rates on financial assets generally. Moreover—and more important—the expansion of bank reserves will enable the banking system to expand its assets. If the discount rate is unchanged, the banks can be expected to use some portion of the addition to their reserves to strengthen their free reserve position by repaying borrowings at the Federal Reserve and perhaps by adding to their excess reserves. But the bulk of the addition to reserves will ordinarily be used to make loan accommodation available on more

favorable terms, and to buy securities, thereby exerting a further downward effect on security yields.

With the expected yield on a unit of real capital initially unchanged, the decline in the yields on financial assets, and the more favorable terms on which new debt can be issued, the balance sheets of households and businesses will be thrown out of equilibrium. The adjustment toward a new equilibrium will take the form of a sale of existing financial assets and the issuance of new debt to acquire real capital and claims thereto. This will raise the price of existing units of real capital—or equity claims against these units—relative to the (initially unchanged) cost of producing new units, thereby opening up a gap between desired and actual stocks of capital, a gap that will gradually be closed by the production of new capital goods. This stock adjustment approach is readily applicable, with some variations to suit the circumstances, to the demands for a wide variety of both business and consumer capital—including plant and equipment, inventories, residential construction, and consumer durable goods.

Wealth Effects

Since monetary policy operates entirely through voluntary transactions involving swaps of one financial asset for another, it does not add to wealth by creating assets to which there are no corresponding liabilities. Nevertheless, monetary policy does have wealth effects, which may be of considerable importance. An expansionary monetary policy lowers the capitalization rates employed in valuing expected income streams, thereby raising the market value of outstanding bonds as well as real wealth and equity claims thereto. In part, this strengthens the impact on economic activity of the portfolio adjustments, already referred to, by increasing the size of the net portfolios available for allocation. In addition, the increase in household wealth may significantly stimulate consumption. Indeed, in a recent version of the FRB-MIT model, the effect on consumption resulting from the induced change in the value of common stock equities held by households accounts for 35 to 45 percent of the initial impact of monetary policy in some simulations.

Credit Availability Effects

The portfolio and wealth effects appear to constitute the basic channels through which monetary policy has its initial impact on economic activity. In addition, however, the institutional arrange-

ments for providing financing to certain sectors of the economy may be such as to give monetary policy a special leverage over the availability of credit to these sectors, thereby affecting their ability to spend. It is perhaps most illuminating to discuss changes in credit availability in the context of a restrictive monetary policy.

No doubt changes in credit availability affect many categories of expenditures to some degree. But the sector in which they are most clearly of major importance is homebuilding. Even in the absence of the rather unique institutional arrangements for its financing, housing demand might be significantly affected by monetary policy as changes in mortgage interest rates altered the desired housing stock. But as postwar experience has repeatedly shown, most dramatically in the "credit crunch" of 1966, changes in mortgage credit availability may greatly strengthen the impact of restrictive monetary policy on homebuilding and cause the effects to occur much more rapidly than the stock-adjustment mechanism would imply. There are three different ways in which mortgage credit availability may be affected by a restrictive monetary policy.

First, commercial banks may raise interest rates on consumer-type time deposits to attract funds to meet the demands of their customers. If savings and loan associations do not raise the rates paid to their depositors or raise them less than the banks raise their rates, households may rechannel their saving flows away from the savings and loan associations and toward the banks—or may even withdraw existing savings from savings and loan associations and shift them to banks. Even if, as has recently been the case, the Regulation Q ceilings are used to prevent the banks from attracting household saving away from savings and loan associations, a rise in short- and intermediate-term open-market interest rates may set in motion a process of "disintermediation," with savers channelling their funds away from fixed-value redeemable claims generally and directly into the securities markets. Either of these processes which cut down the flows of funds to savings and loan associations can have, of course, a powerful effect on housing activity. With frozen portfolios of older mortgages made at lower interest rates than currently prevail, these institutions may find it difficult to pay substantially higher interest rates to attract or hold funds even if the Home Loan Bank Board will allow them to.

Second, when commercial banks feel the effects of credit restraint, they normally reduce their mortgage lending in order to be able to accommodate the needs of their business borrowers.

Third, as interest rates rise, yields on corporate bonds typically rise relative to mortgage interest rates, and some institutional investors, such as life insurance companies, shift the composition of their investment flows away from mortgages and toward corporate bonds, which, in any case, have investment properties which make them more attractive than mortgages at equivalent yields. This tendency may be exacerbated by unrealistically low interest rate ceilings on FHA and VA mortgages and by State usury laws applicable to conventional mortgages.

The way in which mortgage credit availability impinges on homebuilding has changed with the passage of time. In the 1950's, when FHA and VA financing was more important than it has been recently and when the FHA and VA interest rate ceilings were more rigid than they are now, restrictive monetary policy affected housing mainly by diverting the flows of funds coming from investors having diversified portfolios away from mortgages and toward corporate securities. That is, the third effect listed above was the most important. In 1966, when homebuilding was drastically curtailed by monetary restraint, all of the effects were operating, but the first—the drain of funds away from savings and loan associations—was by far the most important. In 1968 and 1969, interest rates have risen sufficiently to arouse concern about a repetition of the 1966 experience. But while housing seems currently to be feeling the effects of tight money, it has proved to be much less vulnerable than was generally expected. There are several reasons for this, but the one most worthy of mention is the adoption by the Federal Reserve and the various Federal housing agencies of a number of measures designed to cushion or offset the effects of high interest rates on housing activity.

Secondary Effects

Working through portfolio effects, wealth effects, and credit availability effects, the initial impacts of monetary policy will generate additional income, and this will further increase the demand for consumer nondurable goods and services. It will also expand the demand for the services of durable goods, thereby giving a further boost to the desired stocks of these goods. Thus, the familiar magnification of demand through multiplier and accelerator effects comes into play. It is often overlooked that the sharp reduction in the multiplier since the 1930's as a result of the greatly increased income-sensitivity of the tax-transfer system has presumably had

important effects on the working of monetary as well as fiscal policy. Indeed, I would judge this increase in "built-in stability" through the fiscal system to be a major factor making monetary policy less potent today than in earlier times.

A further chain of secondary effects is set in motion as the rise in income increases demands for demand deposits and currency for transactions purposes, thereby reversing the initial decline in interest rates. This induced rise in interest rates will exert a dampening effect on the expansion by a partial reversal of the forces that initially triggered the rise in income. Whether or not this secondary effect will carry interest rates all the way back to their initial level (or higher) is an open question, concerning which I shall have some comments later on in this paper.

Effects on Real Output vs. Prices

I think almost all economists of a Keynesian persuasion would accept the proposition that the way in which the effect of an increase in demand is divided between output response and price-level response depends on the way it impinges on productive capacity. Thus, expansion caused by monetary policy is generally no more or no less inflationary than expansion caused by fiscal policy (or, for that matter, by an autonomous increase in private demand). This statement needs to be qualified in a couple of minor respects. First, monetary expansion might be less inflationary than an equivalent amount of fiscal expansion over the longer run if it resulted in more investment, thereby causing labor productivity to increase more rapidly. Second, the impacts of monetary policy are distributed among sectors in a different way from those of fiscal policy; and, with less than perfect mobility of resources, the inflationary effect might depend to some degree on this distribution.

II. Some Controversial Issues

I would now like to discuss several of the issues that seem to be at the heart of the recent controversy regarding monetary and fiscal policy.

The Effectiveness of Fiscal Policy

For the purpose of isolating the effects of fiscal policy from those of monetary policy, I believe a "pure" fiscal policy action should be defined as a change in government expenditures or a change in tax rates without any accompanying change in the instruments of monetary policy. Under our present institutional set-up, the instruments of monetary policy are open-market operations, changes in reserve requirements, and changes in the Federal Reserve discount rate. Open-market operations may be viewed as governing unborrowed reserves plus currency, with defensive operations offsetting undesired changes in this total that would result from erratic variations in float, gold stock, etc.

An increase in government purchases of goods and services, with tax rates constant, would affect the economy by three different routes. First, there would be a direct expansionary *income effect* resulting from the purchase of output by the government. Second, there would be an expansionary *wealth effect* as the private sector, experiencing an increment to its wealth entirely in the form of net claims against the government, increased its demand for real capital in an effort to diversify its portfolios.¹ These income and wealth effects would set off a multiplier-accelerator process of economic expansion. This expansion, in turn, would activate a partially offsetting monetary effect as the rise in income increased the demand for money. If the dial settings of the monetary instruments remained unchanged, this would drive up interest rates. The rise in interest rates would cause some reductions in those types of expenditures that were sensitive to interest rates through portfolio, wealth, and availability effects.

The wealth effect of fiscal policy may be quite powerful, particularly because it is cumulative—that is, it continues to operate until the budget has been brought back into balance, thereby shutting off the increase in net claims against the government. But, unfortunately, no effort that I know of has been made to incorporate it in an empirical model; consequently there is no way to formulate even a crude estimate of its importance.

If we neglect the wealth effect simply because we do not know how much weight to give it, we are left with the income effect and

¹For an extensive theoretical treatment of the wealth effect, see James Tobin, "An Essay on the Principles of Debt Management," in *Fiscal and Debt Management Policies* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1963), pp. 142-218.

the offsetting monetary effect. The monetary effect will be greater (a) the greater the proportion of expenditures in GNP that are affected by interest rates, (b) the greater (in absolute value) is the average interest elasticity of these expenditures, (c) the greater is the income elasticity of demand for money, (d) the smaller (in absolute value) is the interest elasticity of demand for money and (e) the smaller is the interest elasticity of the supply of money.²

Only if the interest elasticities of both the demand for and supply of money are zero will the monetary effect completely cancel out the income effect.³ That is, there will be some leeway for fiscal policy to increase income if a rise in interest rates either induces economization in the use of demand deposits and currency or causes the supply of such monetary assets to expand (for example, by inducing banks to increase their borrowings at the Federal Reserve). Since the empirical evidence is overwhelming that both money demand and money supply possess some degree of interest elasticity, it seems clear that fiscal policy is capable of exerting an independent effect on income. This conclusion is heavily supported by evidence derived from large structural models of the U.S. economy. For example, while there is no unique multiplier for fiscal policy in the FRB-MIT model, a number of simulations with that model show fiscal policy to have very substantial independent effects on economic activity.

²It is possible to derive a more elaborate version of the static Keynesian multiplier incorporating the monetary effect. The following is such a multiplier equation.

$$\frac{dY}{dG} = \frac{1}{1 - e + \frac{\frac{I}{Y} \eta_{Ir} \eta_{LY}}{\eta_{Lr} - \eta_{Mr}}}$$

Here Y is GNP; G is government purchases; e is the marginal propensity to spend out of GNP; I/Y is the proportion of GNP that is sensitive to interest rates; η_{Ir} (< 0) is the average interest elasticity of interest-sensitive expenditures; η_{Lr} (< 0) is the interest elasticity of demand for money; η_{Mr} (> 0) is the interest elasticity of supply of money; and η_{LY} (> 0) is the income elasticity of demand for money. The usual simple Keynesian multiplier without allowance for monetary effect is $1/(1 - e)$. The monetary effect is incorporated in the third term (taking the form of a fraction) in the denominator of the equation above. Since this term is positive, its presence reduces the size of the multiplier. The statement in the text above regarding the factors determining the size of the monetary effect is based on this expression.

³In this case, the supply of money may be regarded as exogenously determined. If the demand for money depends only on income, income will have to change sufficiently to eliminate any discrepancies that arise between the demand for and supply of money. Thus, money controls income, and fiscal policy is incapable of affecting it. The reader will note that if both η_{Mr} and η_{Lr} are zero, the multiplier for fiscal policy given in footnote 2 above becomes zero.

It is often pointed out, especially by those who emphasize the role of money in the economy, that the effect produced by a stimulative fiscal action is dependent on the way in which the resulting deficit is financed. This is in a sense true, but this way of putting it is somewhat misleading. For example, it is sometimes stated that, in order to achieve the full Keynesian multiplier effect, the entire deficit must be financed by creating money—some statements even say high-powered money. What is necessary to achieve this result is to create enough money to satisfy the demand for money at the new higher level of income and the initial level of interest rates.

Ordinarily, the required increase in the supply of money will be only a fraction of the deficit, and the required increase in high-powered money will be an even smaller fraction. Moreover, there is a serious stock-flow problem. When income reaches its new equilibrium in a stable economy, the increased deficit (a flow) will be financed out of the excess of saving over investment generated by the rise in income. Additional demand deposits and currency are needed to meet the increased transaction demand at the higher income level, but this requires only a single increase in the money stock. In reality, there may be further complexities that require a modification of this principle—for example, if the demand for money depends on wealth as well as income or if the price level is determined by a Phillips Curve mechanism so that prices are not merely higher but are increasing more rapidly at higher levels of income.

Nevertheless, the principle is, I believe, basically correct. Rather than saying that the multiplier depends on how the deficit is financed, I think it is more accurate to say that it depends on the kind of monetary policy that accompanies the fiscal action. If monetary policy is such as to hold interest rates approximately constant, something analogous to the full Keynesian multiplier (with no monetary feedback) will be realized; if it allows interest rates to rise, the multiplier will be somewhat smaller; if it causes interest rates to fall, the multiplier will be somewhat greater.⁴

⁴If fiscal policy has a wealth effect working through changes in the public's holdings of net claims against the government, it seems quite likely that the magnitude of this effect will depend on the form taken by the change in net claims. For example, a change in public holdings of short-term debt may have a larger effect on aggregate demand than an equal change in holdings of long-term debt. To the extent that this is the case, debt management policies which change the maturity composition of the public's holdings of government debt may have important economic effects. But there is no reason to focus special attention on the composition of increments to the debt resulting from deficits, since the increment to the debt in any year is only a tiny fraction of the total debt to be managed. In any case, as indicated earlier, we are entirely neglecting the wealth effect because in the present state of knowledge there is no way of forming a judgment concerning its importance.

The Role of Money

Although I have used the term "money" in my discussion above, I am not sure the term is a very useful or meaningful one. Money (in the sense of means of payment) has two components, demand deposits and currency. Those two components are not, however, perfect substitutes—they are held, by and large, by different kinds of spending units; demand for them responds in different ways to different stimuli; and, because they are subject to markedly different reserve requirements, shifts between them alter the total amount of credit that can be supplied by the financial system. They are best regarded as two different financial assets and treated as such.

Moreover, there is no apparent reason why "money"—whether in the form of currency or demand deposits—is more or less important than any of the myriad other financial assets that exist. It is now generally agreed that the demands for demand deposits and currency depend on the yields available on alternative assets and on income or related measures (and possibly, but by no means certainly, on wealth). Thus, the quantities of currency and demand deposits held by the public are generally agreed to be endogenous variables determined in a general equilibrium setting along with the prices and quantities of other financial and real assets.

Nor is there any appreciable evidence that money—whether in the form of demand deposits or currency—affects peoples' spending on goods and services directly. Such empirical evidence as there is suggests that people change their expenditures on goods and services because (a) their income changes; (b) their wealth changes; (c) their portfolios are thrown out of equilibrium by changes in relative yields on real and financial assets by actions taken by the monetary or fiscal authorities; (d) credit availability changes for institutional reasons altering in one direction or the other their ability to finance expenditures they want to make; or (e) their propensities to spend or their preferences for different kinds of assets change for essentially exogenous reasons, such as changes in tastes, changes in technology, and so on. That changes in the stock of money *per se* would affect spending seems to me highly improbable.

Of course, if changes in stocks of demand deposits and currency—or the combination of the two—were tightly linked to those changes in yields, in wealth, and in credit availability through which monetary policy operates, changes in the stocks of these monetary

assets might be highly useful measures of the thrust of policy even though they played no part in the causal nexus. But this, too, I think is unlikely. In a highly sophisticated financial system such as ours, in which new financial instruments and practices are constantly being introduced, it seems highly improbable that the demands for monetary assets are simple and stable functions of a few unchanging variables.

The many empirical studies of the demand for money that have been made in recent years have generally proved incapable of differentiating among alternative hypotheses. Consequently, one is free to choose among a variety of possible theories of the demand for money. The one that appeals to me is the hypothesis that money (i.e., demand deposits and currency) is dominated by time deposits and very short-dated securities, with the result that it is not a significant portion of permanent portfolios. This leaves the demand for monetary assets as an interest-elastic transactions demand along the lines postulated by Baumol and by Tobin.⁵

Such an explanation, however, makes sense only for relatively large business firms and wealthy individuals. It does not seem applicable to smaller units. Among such units, I suspect that the general rise in interest rates that has been going on for the past two decades has pushed these rates successively above the thresholds of awareness of different groups of people, causing them to abandon their careless habit of foregoing income by holding excessive cash balances. If I am right, this behavior is probably not readily reversible if interest rates should fall. It seems to me that there is still a substantial element of mystery about the demand for monetary assets—mystery that will probably be resolved, if at all, only on the basis of extensive study of the behavior of the cash-holdings of micro-units.

Relationship Between Changes in Money and Changes in Income

None of the above should be taken to mean that there is no relation between changes in demand deposits and currency and changes in income. Indeed, I believe there are three such relationships, which are very difficult to disentangle.

First, an expansionary monetary policy that stimulated increased spending and income through portfolio effects, wealth effects, and

⁵See W. J. Baumol, "The Transactions Demand for Cash: An Inventory Theoretic Approach," *Quarterly Journal of Economics*, LXVI, November 1952, pp. 545-56; James Tobin, "The Interest Elasticity of the Transactions Demand for Cash," *Review of Economics and Statistics*, XXXVIII, August 1956, pp. 241-47.

credit availability effects would bring in its wake an increase in supplies of demand deposits and currency. This would be a sideshow rather than the main event, but it would nevertheless occur. But the size of the increase associated with a given stimulus might vary considerably from one situation to another.

Second, a rise in income caused by fiscal policy or by an autonomous shift of private demand, with the monetary dials unchanged, would react back on the money supply in three different ways.⁶ (1) The rise in interest rates caused by the rise in income would cause the banks to increase their borrowings from the Federal Reserve and perhaps to economize on excess reserves. (2) The rise in market interest rates would cause investors to shift funds from time deposits and similar claims into securities if, as is likely, the interest rates on these claims did not rise fully in pace with market rates. This would cause the quantity of demand deposits to increase as investors withdrew funds from time accounts and paid them over to sellers of securities for deposit in demand accounts. (3) If banks and related institutions raised rates on time-deposit type claims, some holders of noninterest-bearing demand deposits would be induced to shift funds to time accounts. To the extent that issuers of these claims held cash reserves against them, the amount of reserves available to support demand deposits would be reduced, requiring a contraction in these deposits. Effects (1) and (2) would cause the money supply to increase, while effect (3) would cause it to fall. It seems likely that (1) and (2) would outweigh (3), leading to an increase in the supply of monetary assets. The probability of this outcome would be increased if the Federal Reserve was laggard in adjusting Regulation Q ceilings. Indeed, a rigid Regulation Q ceiling would completely immobilize effect (3) while maximizing the size of effect (2).

Third, under the rubric of "meeting the needs of trade" or "leaning against the wind," the Federal Reserve has, at times, adjusted the supply of reserves to accommodate, or partially accommodate, changes in the demand for money brought about by changes in income, thereby creating a third chain of causation running from income to money supply.

With perhaps three relations between money and income present at the same time—one running from money to income and two

⁶This discussion is based on an analysis developed in W. L. Smith, "Time Deposits, Free Reserves, and Monetary Policy," in Giulio Pontecoroo, R. P. Shay, and A. G. Hart (eds.), *Issues in Banking and Monetary Analysis* (New York: Holt, Rinehart and Winston, Inc., 1967), pp. 79-113.

running from income to money—it is likely to be almost impossible to tell what is going on by direct observation. And, as Tobin has shown, in such a complex dynamic situation, it is almost impossible to infer anything conclusive about causation by studying the lags.⁷

Does Easy Money Cause Interest Rates to Rise?

One of the supposedly startling propositions that has been advanced recently is the notion that an easing of monetary policy—commonly measured in terms of the rate of increase in the money stock—will cause interest rates to rise and, conversely, that a tightening of monetary policy will cause interest rates to fall. To be sure, if the rate of growth of the money stock is accelerated, interest rates will decline at first. But before long, money income will begin to grow so rapidly that the resulting increase in the demand for money will, it is contended, pull interest rates back up above the level from which they originally started.

In the first place, this possibility has long been recognized in Keynesian economics. In a static Keynesian model it is possible for the IS curve to have a positive slope, with stability conditions requiring only that this slope be less than that of the LM curve. This could happen, for example, if income had a strong effect on investment.⁸ In such a situation, a shift to the right of the LM curve, which might be caused by an increase in the money stock, would cause the equilibrium interest rate to rise. A more realistic possibility is that the economy contains endogenous cycle-generators of the accelerator or stock-adjustment type, which cause income to respond so vigorously to a stimulative monetary policy that interest rates rise above their original level at an ensuing cyclical peak.

There is another chain of causation, working through the effects of inflation on nominal interest rates, which might cause a decline in real interest rates to be associated with a rise in nominal interest

⁷James Tobin, "Money and Income: Post Hoc Propter Hoc?" (mimeographed); also W. C. Brainard and James Tobin, "Pitfalls in Financial Model Building," *American Economic Review*, LVIII, May 1968, pp. 99-122.

⁸The actual condition required is that the sum of the marginal propensities to consume and invest must exceed one, but (as a condition for stability) be less than one plus a term measuring the size of the monetary feedback. (Even if the two propensities totaled less than unity, the IS curve could slope upward if a rise in interest rates caused total spending to rise. But this could occur only on the remote chance that the income effect dominated the substitution effect in saving behavior so powerfully that a rise in interest rates caused consumption to increase by more than it caused investment to decline.)

rates. This possibility has generally been neglected by Keynesians, but it is in no way inconsistent with Keynesian analysis. An expansionary monetary policy, which lowers nominal interest rates (and real interest rates) initially, will push the economy up the Phillips Curve, thus causing prices to rise more rapidly. As the increase in the actual rate of inflation generates a rise in the anticipated future rate of inflation, an inflation premium may get built into interest rates, causing nominal interest rates to rise. It seems possible that nominal interest rates could be pushed above their original level even though real interest rates remain below this level. This outcome would be more likely (a) the greater the expansionary effect of a given fall in the real rate of interest on real income, (b) the greater the decline in unemployment caused by a given increase in real income, (c) the greater the increase in the rate of inflation caused by a given decline in unemployment, and (d) the more sensitive the response of the anticipated rate of inflation to a change in the actual rate of inflation.⁹ The probability that nominal interest rates would be pushed above their initial level by this mechanism is very difficult to evaluate, however, primarily because we know very little about the extent to which, and the speed with which, an increase in the actual rate of inflation gets translated into an increase in the anticipated rate of inflation.

Thus, the notion that an expansionary monetary policy would ultimately cause nominal interest rates to rise above their initial level is in no way inconsistent with Keynesian views. Whether such a phenomenon actually occurs is a different matter. With fiscal policy changing and with the strength of private demand changing, it is not safe to conclude that, because an easing of monetary policy was

⁹Beginning with the equation $r = r' + p_e$, which expresses the relation between the nominal interest rate (r), the real interest rate (r') and the anticipated rate of inflation (p_e), the following expression can be rather easily derived.

$$\frac{dr}{dr'} = 1 + m \frac{dI}{dr'} \frac{du}{dY} \frac{dp}{du} \frac{dp_e}{dp}$$

Here m is the multiplier; dI/dr' is the response of interest-sensitive expenditures to a change in the real rate of interest; du/dY is the response of the unemployment rate to a change in real GNP; dp/du is the response of the rate of inflation to a change in the unemployment rate (i.e., the slope of the Phillips Curve); and dp_e/dp is the response of the anticipated rate of inflation to a change in the actual rate of inflation. Since three of the components of the second term on the right-hand side of the equation (dI/dr' , du/dY , and dp/du) take on negative values, the second term as a whole is negative. Whether a fall in the real rate of interest will cause the nominal rate of interest to rise or fall depends on whether the second term on the right is larger or smaller than unity.

followed at some later time by a rise of interest rates above their initial level, the easing of monetary policy *caused* the rise in interest rates. The best evidence I have seen is from simulations with the FRB-MIT model which show that an injection of bank reserves causes interest rates to fall sharply at first and then rise gradually but only part of the way back to their original level. But, of course, simulations starting from a different initial position might show different results. In all probability, the phenomenon in question occurs under some conditions but not under others.

III. *Suggestions Regarding Policy*

At the very beginning of this discussion of the conduct of monetary policy, let me make clear that I am not talking about the issue of rules versus discretion. That is a different subject, which I will discuss briefly at the conclusion of my paper. Assuming that the Federal Reserve will continue to conduct a discretionary policy, let us consider what is the best way to proceed with that task.

It seems to me that much of the recent literature on monetary policy has been obsessed with a search for a magic touchstone—some measure of the impact of monetary forces that can be used as the sole guide in the conduct of policy. Unfortunately, I don't believe there is such a touchstone—the world is too complicated and we know too little about it for that. There is a second related obsession with the problem of characterizing monetary policy. Is it “tight” or “easy”? Is it “tighter” or “easier” today than it was, say, six months

The first of these questions is clearly a matter of judgment and opinion. The second, comparative form of the question sounds more capable of a scientific answer, but in fact I think it is equally unanswerable. Does it mean, “Is monetary policy contributing more to aggregate demand today than it was six months ago?” If it does mean that—and I can think of no other interpretation—I wouldn't have the faintest idea how to go about answering it. The problem facing the Federal Reserve, however, is not how to characterize monetary policy but how to carry it out, and this puts things in a somewhat different light.

Since monetary policy affects economic activity with substantial lags, policy must clearly be based on forecasts of future economic

conditions. While our knowledge has improved considerably, we still cannot be very sure about the lags, which undoubtedly depend upon underlying conditions. Moreover, the lags vary from sector to sector. It seems quite clear that monetary policy can affect homebuilding quite rapidly, at least under some conditions, if the dials of policy are adjusted in the right way. The lags in the effects on the other sectors appear to be considerably longer. Forecasting is also a difficult task, but there is no way to escape the need for it. Not the least of the difficulties of monetary policy, as has been demonstrated several times in the last three years or so, is the forecasting of fiscal policy.

While the ultimate goals of policy are high employment, price stability, the rate of growth of output, and so on, these cannot be used as immediate guides to policy, because it takes so long for policy measures to affect them. The authorities must choose as guides to policy some more immediate and more specifically monetary variables that appear to be related to the goals they are trying to achieve.

There are a number of monetary aggregates that the Federal Reserve can control with varying degrees of precision if it chooses to do so. It can obviously control its portfolio of securities exactly, and it can control unborrowed reserves plus currency outside member banks quite closely by employing defensive open-market operations to offset changes in uncontrollable factors affecting reserves, such as float, gold stock, Treasury deposits at Federal Reserve banks, etc. It can probably control total reserves plus currency (the monetary base) fairly accurately either by using open-market operations to offset changes in member bank borrowing or by changing the administration of discount policy to reduce the fluctuations in borrowing. The stock of demand deposits and currency would be more difficult to control, but I suspect that its average value over a quarter's time could be controlled fairly satisfactorily.

Alternatively, policy could be directed at regulating interest rates, although some interest rates would be easier to control than others. The Treasury bill rate could be controlled with any desired degree of accuracy under present operating procedures, because the Federal Reserve deals directly in the Treasury bill market. By a shift in its operating procedures, the Federal Reserve could control the yield on some other maturity of Federal debt. I believe it could, instead, maintain fairly close control of a variety of alternative interest rates on private debt—such as the Aaa corporate bond yield—although it

would have to influence such rates indirectly unless it were to deal in private debt.

The basic issue of monetary policy is: Should the Federal Reserve focus primarily on controlling some monetary aggregate or should it focus on controlling interest rates? I believe there is a very strong *prima facie* case for a policy that is oriented toward interest rates. The reason is that the portfolio effects, wealth effects, and credit availability effects through which the impacts of monetary policy are transmitted to the economy are better measured by changes in interest rates than by changes in monetary aggregates. The vast bulk of the empirical evidence supports this view, indicating that it is through interest rates that monetary policy affects expenditures on goods and services. Indeed, I know of no evidence that any monetary aggregate that the Federal Reserve could control has an effect on expenditures.

Of course, if there were tight and well understood linkages between some monetary aggregate—say, the stock of demand deposits and currency—and interest rates, it would matter little which the Federal Reserve attempted to control, because a money target would imply an interest rate target. There are indeed linkages between monetary aggregates and interest rates—these linkages are, in my judgment, sufficient to prevent the Federal Reserve from controlling both monetary aggregates and interest rates except to a very limited extent. But the linkages are not well understood and are subject to change as a result of financial innovations and changes in patterns of financial behavior. Consequently, it does make a difference whether the Federal Reserve selects a monetary aggregate or an interest rate as a guide to policy.

Advantages of Treasury Bill Rate as a Guide to Policy

My specific suggestion is that the Federal Reserve focus on the Treasury bill rate as its basic guide for monetary policy. There are several advantages in this approach. First, the Federal Reserve can, without any basic change in its operating procedures, control the Treasury bill rate with virtually any degree of accuracy it desires. Second, there are many occasions on which the bill rate must be a focus of attention anyway, because it is the key short-term rate affecting international capital flows. Third, the bill rate is closely related to market interest rates on those forms of short- and intermediate-term debt that compete with fixed-value redeemable

claims and are therefore of critical importance for the availability of mortgage funds. Fourth, there is considerable evidence that the bill rate works through an expectational mechanism to affect those long-term rates that are important in determining the cost of capital to business firms, State and local governments, and home buyers. Moreover, the wealth effect of monetary policy works through capitalization rates that would be indirectly affected by a policy aimed in the first instance at the Treasury bill rate.

Of course, the bill rate target would have to be selected on the basis of a forecast of economic activity several quarters ahead, including a forecast of fiscal policy. One could, for example, use a model such as the FRB-MIT model to estimate a pattern of behavior of the bill rate that could be expected to achieve the desired performance of the economy over the next three or four quarters, given the anticipated fiscal policy. This target could then be adjusted on the basis of special factors or judgmental considerations. I would not propose to peg the bill rate exactly but to establish a range of, say, 20 basis points within which it would be permitted to fluctuate. The bill rate target would, of course, be reexamined at each meeting of the FOMC on the basis of the latest forecast of the economic outlook.

I would not, however, adhere dogmatically to such a "bills-only" policy. If long-term interest rates should fail to respond in the anticipated way to a change in the bill rate target, I would not hesitate to nudge them along by open-market operations in long-term Treasury securities. Nor would I entirely neglect monetary aggregates. I would want to supplement the bill rate target with some kind of quantitative guideline to prevent gross mistakes in policy. In the case of a non-growing economy, using the stock of demand deposits and currency as the quantitative guideline, the matter is relatively simple—one should be sure that this stock increases when the economy is below full employment and declines when it is above full employment. The problem here is one of distinguishing between automatic and discretionary elements of policy—similar to the problem in fiscal policy that gave rise to the full-employment surplus concept. When the economy is weak, for example, interest rates decline automatically even if the monetary authorities do nothing, and it is desirable to be sure that the authorities are reinforcing this tendency by discretionary measures rather than offsetting it as they sometimes appear to have done in the past.

The problem of developing a suitable monetary guideline is considerably more complicated in the case of a growing economy. My procedure would be to begin by estimating a "normal" rate of monetary growth. For example, if the target point on the Phillips Curve is 4 percent unemployment which is judged to be associated with 2 percent inflation, if the rate of growth of productive capacity under full employment conditions is estimated to be 4 percent per year, and if the income elasticity of demand for monetary assets is judged to be unity, the "normal" rate of monetary growth would be estimated at 6 percent per year. At any particular time, if the objective of policy was to restrain the economy, growth should be less than 6 percent; if the objective was to stimulate the economy, growth should be more than 6 percent.

There is a problem of deciding what aggregate to use as an index of monetary growth. Should it be the monetary base as calculated by the Federal Reserve Bank of St. Louis, the money supply, total bank credit, or some other aggregate? Unfortunately, the significance of a change in the rate of growth of any of the commonly used aggregates depends upon the public's preferences for different categories of financial assets, including currency, demand deposits, time deposits, and securities. Since these preferences appear to change for reasons that we do not yet fully understand, problems of interpretation are bound to arise. My quite tentative suggestion would be to use the monetary base as the index of monetary growth. But I would also monitor the behavior of the other aggregates closely. If the selected bill rate target resulted in growth of the base inconsistent with the guideline for several weeks and if the behavior of the other aggregates seemed to support the conclusion that monetary growth was too slow or too fast, the whole situation, including the bill rate target, should be carefully reexamined.

Other Dimensions to be Considered

I think an approach along the lines developed above would make sense in providing an overall rationale for monetary policy. But there are important dimensions that are omitted in the above discussion. It has long been my contention that those responsible for the conduct of monetary policy must pay close attention to its impacts on particular sectors of the economy, especially when a restrictive policy is being followed. An example of this dimension of monetary policy is the variety of measures that have been taken by

the Federal Reserve and a number of other Federal Government agencies during the past year to cushion the impact of high interest rates on homebuilding.

The Federal Reserve has attempted to shield the savings and loan associations from bank competition by maintaining low ceiling rates on savings deposits and those forms of time deposits that compete most directly with savings and loan shares. The Federal Home Loan Bank Board has acted to encourage continued mortgage lending by savings and loan associations by reducing the liquidity requirement applicable to the associations and by making advances available to them. In addition, the Home Loan Banks have attempted to manage their own borrowings in the capital market in such a way as to minimize the possible impact on deposit flows. The Federal National Mortgage Association increased its mortgage holdings by \$1.6 billion in 1968, and increased the scope and flexibility of its stabilizing activities in the mortgage market by introducing a new program of weekly auctions of mortgage commitments, beginning in May 1968. The ceiling rate applicable to FHA and VA mortgages was raised from 6 percent to 6¾ percent in May and was raised further to 7½ percent in January 1969. Finally, in its general conduct of monetary policy, the Federal Reserve has kept its eye on the flows of funds to savings and loan associations with a view to avoiding, if possible, a rise in short- and intermediate-term interest rates sufficient to set off a "disintermediation crises" of the type that occurred in 1966.

The impact of monetary policy on the economy would, I believe, have been substantially different in 1968, and thus far in 1969, in the absence of these precautionary actions by the Federal Reserve and by the various agencies with responsibilities in the housing field. In all probability, we would long since have experienced a sharp decline in housing starts and residential construction expenditures similar to that which occurred in 1966. There are a number of reforms which might be adopted to increase the efficiency and flexibility of the mortgage market and to reduce the excessive impact that monetary policy now tends to have on homebuilding. Unless and until such reforms are implemented, however, I believe it is appropriate for the monetary authorities to concern themselves specifically with the effects of their policies on the housing sector. Indeed, I believe structural measures of the kind employed in 1968-69 should be thought of as part of monetary policy and should be applied as the situation seems to warrant on the basis of close cooperation between the Federal Reserve and the other agencies involved.

No matter how skillfully monetary policy is conducted, things are bound to go wrong from time to time. The underlying strength of private demand will sometimes prove to be stronger or weaker than was anticipated; fiscal policy will depart from its expected path; and the timing and magnitude of the economy's response to monetary actions will seldom be exactly as anticipated. I do not count myself among the group of economists who believe the business cycle is dead. If we seriously attempt to keep the economy moving along a selected high-employment growth path, resisting departures from that path in either direction, I believe we can still expect some economic fluctuations. The hope is that we can keep these fluctuations mild. But our success in that respect is much more critically dependent on improving the performance of fiscal policy than it is on changing the techniques of monetary management. Improved fiscal policy would relieve the Federal Reserve of its recent impossible task of offsetting the effects of profoundly destabilizing movements of the Federal budget. Even operating within the framework established by a reasonably well-designed fiscal policy, the Federal Reserve is bound to make occasional mistakes, but it should be able to make an effective contribution to economic stabilization and do so without the sharp gyrations in monetary variables that we have witnessed recently.

IV. *Rules versus Authorities*

There is no reason, in principle, why one holding Keynesian views must necessarily favor discretion over a monetary rule. One could believe that our knowledge of the responses and the lags in the system is so poor that efforts to conduct a discretionary policy add to instability rather than subtract from it. I think discretion conducted on the basis of the best information available can do a better job than a rule, but I find the question a very complex one, and I do not see how anyone can be sure of the answer.

Before a rule involving steady growth of some aggregate such as the monetary base could be seriously considered, however, it seems to me there would have to be procedural or institutional changes in three areas.

First, there would have to be some assurance of better fiscal policy than we have had recently. Our problems of the last three years are

primarily the result of inaction and inordinate delay in fiscal policy, and discretionary monetary policy has helped by either taking the place of needed fiscal restraint or supplementing it when it was too-long delayed.

Second, if monetary policy is to disregard interest rates entirely, I believe we need an overhaul of the arrangement for financing housing.

And, third, interest rates cannot be disregarded until the international monetary system has been reformed in some way to remove the balance-of-payments constraint on domestic interest rates.

Having said all of this, let me add that I believe the discussion of monetary rules is largely academic anyway. Even assuming that a rule were adopted, I feel certain that there would be overwhelming pressure to abandon it the first time it appeared that discretion would enable us to achieve a better performance—and that, I believe, would occur quite soon after the rule was adopted.

DISCUSSION

HENRY C. WALLICH

I am struck by the state of the debate between the Monetarists and the Keynesians as it comes out, explicitly and implicitly, in Warren Smith's paper. Here we are five years since the first acid test of the new economics—the tax cut of 1964—and Warren Smith says such things as, "It can be shown that there is an independent fiscal policy effect." It is not what he says that is striking, but that he thinks it is necessary to say that at this time. His assessment of the climate of opinion is what strikes me. Here is fiscal policy apparently with its back to the wall, fighting for its analytical life. You see a similar development in England. The Radcliffe Report, which was regarded as merely odd when it first came out, is now regarded as definitely wrong.

What is the cause of all this? Clearly, we are moving more deeply into a quantity theory world—some like to call this a classical world. Whatever it is, the slack has gone out of the banking system, out of cash balances of firms and households, and we are on a very tight monetary rein. This was not, I think, inconceivable at the time the Keynesian doctrines were formulated, but we have to recognize they were formulated in a totally different environment. Analytically, the problem that we now encounter was taken care of, in a sense, very adequately. We had L_1 and L_2 , if you remember, L_1 being active balances; L_2 , idle balances. You did not need new money creation by the central bank because the government stimulated the economy by deficit spending. All that needed to happen was a transfer of balances from L_2 to L_1 . This would raise the interest rate slightly, but not enough to affect investment significantly. That was the framework in which fiscal policy clearly was very powerful. You do not have to assume a liquidity trap in order to make that framework effective.

"No Change in Policy" Policy

Now, L_2 is exhausted, we have run through the slack and a situation that was not foreseen is upon us. Warren Smith discusses the effectiveness of fiscal policy in a framework of no change in monetary policy. This is intriguing because it bears on how the Federal Reserve and central banks generally view their activity. What is a "no change in policy" policy? Warren says it is essentially no

change in the dial setting of discount rate, open market operations, and reserve requirements. There is room in his framework, however, for defensive operations, so that essentially "no change in policy" comes out as "hold the base constant." That still allows for some flexibility, then, with respect to money because excess reserves may be used more aggressively by banks as interest rates rise. It is even conceivable that consumers will deposit currency in banks as interest rates rise, and those would supply additional reserves. So, if we say that no monetary policy change means constant base, we still allow some monetary flexibility that can be used by fiscal policy.

Warren Smith gives an alternative definition, and that is "keep interest rates constant." If one uses that as a criterion of "no change in monetary policy," one opens the doors wide to unlimited money creation that could, and, in fact, may have to take place as the economy is expanded by fiscal policy. We have here two quite different criteria of what "no change in policy" means.

Federal Reserve Targets and Responsibilities

This gets me to Warren Smith's comments on Federal Reserve targets and responsibilities. One's judgment of the achievements of the Federal Reserve depends very heavily on what one thinks the Fed is responsible for. If you assume, as I think Warren does, that it is responsible for improving conditions a little beyond what they would be in an automatic system, then most of the time one will find that it does pretty well. This involves one in specifying what an automatic system would be. Would it be a rather flexible one with gold imports from abroad, as under the old gold standard, or would it be a closed system with little flexibility for raising the money supply? But whatever standard one takes, one could say, "Does monetary policy improve on what would happen under that system?"

The alternative way of looking at it is to say: monetary policy could get the economy to full employment. That is what the quantity theory says. Monetary policy really has the economy on the leash and can control it. In that case, any falling short of perfection becomes the fault of the central bank. The central bank then will deserve to be criticized almost incessantly. My own inclination is to go the first route. I would guess the Federal Reserve's inclination has been the same, that is, to argue they are responsible for improving things beyond what would happen automatically. For instance, many years ago, the Fed explicitly rejected responsibility for the price level. I think they would now reject responsibility for maintaining

full employment in the face of inadequate fiscal policy, and I think that would be sensible. If we cast the Fed in the role of a policymaker of last resort, who is responsible for making up for all the defects of all other policies, we are likely, first, to get very disturbing action from time to time and, second, to hand out a great deal of unfair criticism.

The Correct Target

Turning to Warren Smith's targets, I note his ringing declaration that he prefers interest rates to money supply. I find myself of two minds, although I think I can sort out these two minds. The argument that interest rates are the right target to look at because that is how the transmission mechanism works is not compelling. If interest rates are highly endogenous, if money is less endogenous, then money may be the better target. At first sight, one would think that interest rates are extremely endogenous, money less so. This is not quite certain, however. If the Federal Reserve can be expected to respond as a policymaker to conditions in the economy, then everything the Fed does becomes endogenous. Neither money, nor the base, nor any version of reserves can then be treated as truly exogenous. Hence, I do not think that the choice between money and interest rates can be made on grounds of how endogenous the instrument is. I would argue, as Alan Holmes did, that we have to take a practical operating view. If we were to take a money target and try to hit it every hour on the hour, interest rates would become extremely disturbed. Speculation or wise management of cash positions by banks and others would scarcely even things out. Probably the strain on the monetary mechanism, the institutions, would become very great, as Alan says.

I would argue that, in the short run, an interest rate target makes a lot of sense, simply in terms of keeping the market going on an even keel. There are also international repercussions to be taken into account that would follow from extreme interest rate instability. In the longer run, however, there is a good deal to be said for a money supply target, on the grounds that to make a mistake about interest rates is much worse than to make a mistake about money. If you peg the wrong rate or stick to the wrong rate too long, the results could be explosive. Although I have seen work that seems to show that this depends on the parameters of the system, by and large, it seems pretty plausible that pegging interest rates is likely to be explosive. Pegging the money supply at the wrong growth rate simply leads to mild inflation or mild deflation. The damage from error is less.

I would argue, therefore, that one should have a short-run interest rate target, for a few weeks or months perhaps, and a money supply target over a longer period. Over time one should allow interest rates to vary sufficiently to achieve that money supply target. Of what that period of time is, I do not feel very certain. I hear by word of mouth that, in the money supply series, the cyclical trend begins to dominate the random elements only after 7 months. That would seem to say that for 7 months you cannot really tell what the "true" money supply is, or what a given goal means. All one can do is to take a seven-months' moving average, then one knows what the money supply was 3-1/2 months ago. It would seem then that one has to have a money supply target pretty far in the future.

Wealth Effects

I would like to make two concluding points. Warren Smith discusses the transmission mechanism. He talks about wealth effects. He discusses the effect of an increase, say in bond prices, and even more so, an increase in stock prices. I have great doubts about these wealth effects operating very strongly on consumption—and I realize there is conflicting evidence on it. First of all, those bonds for the most part are not owned by households to begin with, nor by non-financial firms. To the extent that bonds are owned, however, a rise in bond prices says to the holder that, while he has a capital gain now, when the bond matures, he will have to refund at a less favorable interest rate if interest rates do not change. So while he has a gain now, at some time in the future he will have a reduction in income. It depends on his time horizon to which fact he gives the greater weight.

Something very similar happens with stocks. It is true that a rise in stock prices, reflecting simply a change in capitalization rates, gives the holder a capital gain which he may want to spread over his life and spend. At the same time, if this holder is still a saver and accumulator, he knows that he must buy stocks hereafter at a higher cost per dollar of return. That ought to make him save more rather than less. To which of the two factors he gives greater weight seems to me indeterminate.

Finally, Warren Smith addresses himself to the problem of the direct effect of cash balances. Here we come to the core of the quantity theory discussion. Is there a direct effect running from money holdings to consumption? Do people who have more money just go out and spend it? Are things really that simple?

I would argue that the household makes two sequential decisions. The first decision is the savings-expenditures decision. At that point he decides on nondurable consumption and I think, realistically, also on durable consumption. Thereafter, he has the savings left which temporarily increase his cash balance. He now has to make a second decision, a portfolio decision. It seems to me unlikely that in making that second decision he should go back on the first and decide to consume part of the money he has just decided to save. All he can do, therefore, is allocate it to assets, and having excluded durable consumer goods from his choice, as I think one probably ought to do, he can choose financial assets or housing, essentially.

The area for the direct effect is very small in the case of the household. In the case of a firm, it is different because a firm saves and allocates its savings to all sorts of assets, principally capital goods. There I could visualize such a direct effect. Now, if one concludes that the direct effect is small on the side of the consumer, there is only one way out, and Jim Meigs pointed to it. One has to discover a way by which larger holdings of money influence all consumption directly. If one can show that that happens, then proof has been produced of a direct effect on a sufficiently broad front to make a difference. I have always heard that there is no demonstrable effect of interest rates on savings, but that is surely implied here. This is the missing link that otherwise remains in the quantity theory approach.