October 1976

The Contributions and Limitations of "Monetary" Analysis

By PAUL A. VOLCKER
President, Federal Reserve Bank of New York

Remarks before the American Economic Association and the American Finance Association in Atlantic City, New Jersey, on Thursday, September 16, 1976

The invitation to address this annual joint luncheon of the American Economic and Finance Associations is a special honor. But for one engaged in policymaking it also presents a special challenge. He may like to think of himself as a practical man but certainly not, as Keynes once put it, the "slave of some defunct economist". At the same time, he can hardly regard himself as "quite exempt from intellectual influences".

In that spirit, I would like to take this opportunity to consider some of the approaches and practices of central banking in the light of modern economic analysis.

Now, I fully realize that neither central banks as a genus nor the species Federal Reserve—nor even that special variety known as the Federal Reserve Bank of New York—have had a reputation of moving in the vanguard of professional opinion. Nor would I apologize for a certain intellectual conservatism. What we do must take account of human attitudes and institutional settings that necessarily change slowly. Sorting out what is true and valid from what is fashionable is never easy, and we have no laboratory apart from the American economy itself.

Yet, as one who spent almost twenty years outside the Federal Reserve before returning last year, I can testify directly about how much has changed over that period.

I learned my economics and my central banking in the first full flush of the *General Theory*. Perhaps symbolic of that influence, in the mid-1950's it was still something of a challenge to calculate a meaningful money supply series from the mass of statistics issued by the Federal Reserve, while markets hung on the latest release of data on free reserves or bank loans. Today, the situation is almost reversed. Our computers spew out "M's" in seemingly infinite variety and with great rapidity. Meanwhile, analysis of the asset side of financial balance sheets seems relegated pretty much to a few specialists—or to bank examiners and the SEC.

We need not look to "defunct economists" to help explain the change, but to a school of thought that is very much alive and well!

I know one always treads on dangerous ground in using a shorthand label to describe any school of economic thought. I will therefore run a risk of oversimplification and even injustice in characterizing some of the views of the monetarists today—assessing the contributions and limitations of that analysis. But I do not think there can be much doubt that that school, for all the differences within it, has helped bring a distinctly different flavor to much macroeconomic policymaking and analysis in recent years.

Certainly, it has helped bring a new focus on the relevance of monetary policy: the proposition that the stock of money does matter. To be sure, relatively few economists—and almost no central bankers—have ever openly argued the opposite proposition. But implicitly or explicitly, there was a rather common assumption two or three decades ago that, while the money supply did have an effect on credit markets and interest rates, the induced effects on the economy were not terribly powerful in most situations. Changes in the supply of money moved us along a rather elastic liquidity preference schedule, and the investment demand function was thought to be relatively insensitive to interest rates. We therefore need to look at fiscal actions and to other exogenous forces as the main determinants of economic activity.

As I shall suggest later, the idea that, at least in the short run, the supply of money and interest rates are

Digitized for FRASER
http://fraser.stlouisfed.org/
Federal Reserve Bank of St. Louis

October 1976

related still seems relevant today. But the monetarists have usefully emphasized the danger of confusion between nominal and real rates and the role of price expectations. They have forcefully made the case for the view that in the long run velocity is not related to the stock of money and that, in the same long run, an excess supply of money contributes not to real income or wealth but simply to inflation.

That latter point is, of course, one of the oldest propositions in the history of economic thought. But there is no doubt that too often we have lost sight of it amid the urgent search for solutions to immediate policy problems.

The further extensions of the idea—that the rate of monetary expansion can have relatively little effect on the real rate of interest over time and hence on the mix of consumption and investment—are controversial in their more extreme form. But certainly there is more awareness today of the real limitations on the possibilities for manipulating the mix of fiscal and monetary policies to achieve our objectives.

More generally, while the insight is hardly confined to monetarists, modern analysis has typically emphasized the length and probable variability in the lags between policy action and the effect on the economy. As a result, there is less faith in our ability to make short-term adjustments—to "fine tune" the economy.

These lessons have not been lost on central banks in the United States or elsewhere. In shaping their policies and policy pronouncements, monetary officials have provided tangible evidence of the new emphasis in the greater prominence given the behavior of broad monetary aggregates.

At the same time, central banks have long shared an understandable human interest in wanting to hedge against an uncertain future. They want to retain the ability to respond flexibly to emerging developments, to probe experimentally with new policy measures, to test market reactions, and to learn from those reactions before fully committing themselves to new directions. Indeed, this flexibility to act and react has long been considered a great strength of monetary policy. Concern that a needed degree of flexibility might be impaired accounted, I believe, for some initial reluctance by the Federal Reserve in adopting the practice of publicly specifying explicit goals or targets for monetary aggregates for any substantial period of time ahead.

More than a year ago, however, responding to Congressional intent, the practice of each quarter announcing such targets a year ahead was adopted, always retaining the right to change the targets in the light of emerging developments.

From my viewpoint, this experiment in "practical monetarism" has proved useful. It has assisted in communicating our intentions both to the political authorities and to the marketplace. I suspect it has provided a focus for more informed and constructive public debate. Indeed, I am hopeful that, by clarifying the nature of the policy choices and dilemmas and by more clearly relating today's decisions to a longer term horizon, the temptation to engage in more purely political debate about policy choices has been moderated.

But most important, I think, is the discipline it provides for our own debate within the Federal Reserve. In my experience, each of our short-term decisions has needed to be justified and rationalized in our own minds against our earlier and broader judgment about what growth in money seems appropriate over a longer period. The pressure to react, and the temptation to overreact, to each new piece of information must be filtered through that earlier judgment and longer perspective.

The Federal Reserve is not alone among central banks in adopting that sort of approach. In that sense, we have all been influenced by the monetarist debate. But a consensus on the usefulness of that approach does not, of course, imply consensus on the substance of policy: just where the targets should be set, the circumstances under which they might be changed or temporarily set aside, and the degree of importance accorded other variables including interest rates. Moreover, there is no general agreement on which monetary aggregate is most relevant —a matter of some importance since both the trend and short-term fluctuations frequently diverge.

Policy is made up of a succession of short-run decisions. In making those decisions we face the simple fact that, whatever the stability in the relationship between money and nominal income in the longer run, there is considerable instability in the relationship over time horizons relevant to policymakers. Certainly the relationships between money, interest rates, and nominal income have been unusual over the year or so since I rejoined the Federal Reserve. Specifically, over the first year of an economic recovery that has proved very close to the average of postwar recoveries, the velocity of M_1 grew substantially more rapidly than history or most econometric analysis would have suggested, taking account of the stability of interest rates. Indeed, the phenomenon of stable or even declining interest rates alone is highly unusual during the first year of recovery.

Suppose an approach had been followed since the spring of 1975 that sought to set aside judgment in favor of the statistical rule book. Presumably a monetary target would have been set significantly higher than the roughly

Digitized for FRASER
http://fraser.stlouisfed.org/
Federal Reserve Bank of St. Louis

October 1976

5 percent growth that actually occurred in M_1, assuming of course a desire to achieve a similar pattern of growth. Those who, in contrast to the monetary school, emphasized last year the desirability of roughly stable interest rates to promote vigorous recovery have seen that objective materialize. But members of this group typically grossly overestimated the monetary growth that would prove consistent with that scenario. I can only conclude that, in periods such as that we have just been through, we need to be alert to possible shifts in the demand for money. Movements in interest rates are an essential source of information about those shifts in money demand and other relevant developments. At times, they remain a useful, if not uniquely useful, guide to appropriate policy.

Recognition of the broad relevance and desirability of longer term monetary targets also has left unresolved important tactical issues as to just how these targets should be achieved. This is a matter vigorously debated by monetary economists out of concern that the choice of technique biases the result. I reveal no secret when I say that the subject returns again and again in the discussions of the Federal Open Market Committee (FOMC) and is a major preoccupation of the work of the supporting staffs at the Board and the Reserve Banks.

The Committee's record of policy actions, now released about a month after each FOMC meeting, reflects the results of discussion of the appropriate tactical approach adopted by the Committee at each meeting. (I might note in passing that the amount of information provided in these records probably sets a standard among the major central banks of the world, and represents a degree of openness entirely unknown to a central banker of an earlier generation.)

These policy records show that, while the precise approach varies with circumstances, recent practice typically involves numerical "tolerance" ranges for key monetary aggregates for the period immediately ahead. While influenced by the immediate economic circumstance, these ranges are designed to be generally consistent with the one-year targets, allowing for the short-term volatility of the numbers and expectations about their near-term behavior. A range is also established for the Federal funds rate, taking into account the evidence we have about the interest rate-money supply relationship. Then the Open Market Account Manager has the job of providing reserves on a week-by-week basis at a rate that is expected to produce a Federal funds rate (and related money market conditions) within the given range, typically moving higher or lower within that range as the aggregates appear to be relatively strong or relatively weak in terms of the objectives for those magnitudes.

I have not found anyone in the Federal Reserve who is wholly satisfied with this technique. To me, one problem is that it has encouraged a high degree of sensitivity throughout financial markets to even relatively small and potentially transient movements in the Federal funds rate, because this rate is felt by the market to reflect so heavily official intentions. But the relevant question, as always, is not whether the present technique is problem free, but whether more satisfactory approaches can be devised. No doubt, improvements are possible and will come. But no one should be under the illusion that any tactical change will end controversy that, in the last analysis, stems more from different judgments about relevant policy variables than about operating techniques.

The proposal is frequently made that the Federal Reserve would be more successful in achieving desired aggregates within relatively short periods if it simply adopted a target path for bank reserves, the monetary base, or some variant thereof. These reserve magnitudes (at least those exclusive of member bank borrowings) are more or less directly under our control, and they can be related to the money supply by projections of the "money multiplier". Usually, the concept is that these targets would then be adhered to, almost regardless of short-term money market implications.

One technical question arises immediately. While I do not pretend to econometric expertise, I do know that a massive amount of research has been conducted in this area. The apparent result is that the relationship between money and reserve aggregates, particularly in the short run, appears no more reliable than the relationship between interest rates and money. In either case—whether one uses money market conditions or reserve measures as the immediate tactical targets—one comes up against two hard facts: first, the monetary aggregates are going to be subject to considerable short-run uncertainty and, second, changes in the week-to-week tactical targets will have their impact on monetary aggregates only with a significant (and uncertain) lag.

Let me be more explicit. When short-term tactical objectives are couched in terms of money market conditions, it is necessary to forecast what the demands for the various categories of bank deposits and currency are likely to be under given money market conditions. Alternatively, if the short-term tactical procedures are couched in terms of some reserve aggregate, such as nonborrowed reserves, it is necessary to forecast the reserve-deposit multipliers for the various monetary aggregates—and of course one must also successfully forecast and offset market factors affecting reserves in order to hit the reserve target.

Digitized for FRASER
http://fraser.stlouisfed.org/
Federal Reserve Bank of St. Louis

October 1976

We have techniques to make the needed forecasts with both the interest rate and reserve approaches. The trouble is the forecast errors are large no matter what procedure is used, particularly over periods of one to three months. Indeed, unimpressive as they are, I am told some of the correlations observed in historical data between reserve measures and monetary measures would prove to be spurious under a regime of rigid reserve targeting.

These uncertainties are likely to make precise monetary control elusive under any set of procedures. A common characteristic of the two approaches is that the effect of changes in either operating target—interest rates or reserves—on the various monetary aggregates takes time to have its full impact, and the largest impact is not the closest time horizon.

The relevancy of these twin problems of forecasting errors and lags—whatever the tactical approach—is that we must constantly balance the danger of *under*reacting to deviations of the aggregates from target paths against the danger of *over*reacting. Clearly, there are risks in not responding to bulges or shortfalls in the money supply relative to objectives. For example, if growth in the monetary aggregates falls short of objectives, but the shortfall is treated as a momentary aberration and no action is taken, a cumulative shortfall may develop, making it harder to retrace our steps. At times, the bulges or shortfalls may reflect important underlying developments, such as an unforeseen change in business activity that we would ignore at our peril.

But the danger of overreacting to deviations in the aggregates from targets is just as real. Statistically, there is a high probability that any deviation from target—even of considerable size—will prove temporary. Attempts to respond immediately by shifting reserve availability and allowing the money market abruptly to tighten or ease could therefore easily result in whipsawing of the market. More confusion than light might be thrown on our intentions as short-term gyrations in open market operations obscure any more sustained strategy.

The problem is not a negligible one if one thinks in terms of a really substantial month-to-month smoothing. Since only a relatively small fraction of the impact of a given move in reserve availability or money market conditions is reflected in the behavior of the monetary aggregates in the short run, very large movements in reserves and money market conditions might be needed to correct short-term aberrations. Worse, the lagged effect of these moves might then have to be offset by even larger movements in the opposite direction in the subsequent period—a process that could easily lead to a serious disruption of the whole mechanism.

To take a recent example, it is not easy to contemplate what degree of money market tightness might have been needed to prevent the 15 percent rate of M_1 growth that emerged this past April—or the implication of that degree of tightness for growth in subsequent months as lagged effects continued to be felt. Similarly, one wonders if the outright declines in M_1 that have occurred in some individual months could have been prevented consistent with *any* positive Federal funds rate or, alternatively, through *any* feasible injection of nonborrowed reserves within that month.

I recognize that few, if any, still seriously push the need or practicality of keeping monetary growth rates on track month by month. The significance of these response lags comes in a somewhat longer run context. But the general proposition remains: there are risks in quickly adjusting our tactical sights, and risks in delay, when the aggregates move off course.

I know of no purely mechanical procedure to avoid these risks—to ensure just the right degree of responsiveness to deviations from targets. Whether and how much to respond will, I think, always be a difficult matter of judgment and will not be helped much by choice of tactical approach.

Obviously, the search for improved tactical techniques will and should go on. Perhaps the continuing effort to achieve better econometric models of the markets through which open market policy operates will help, although I must say frankly that the experience we have had does not encourage me to expect any startling breakthroughs. There may be alternative ways of formulating and presenting longer term targets that would improve upon present procedures. Even on the basis of what we know now, we need to consider carefully ways in which reserve targets could be more extensively used as part of our tactical procedures; indeed, the FOMC has done extensive work on this issue in recent years.

As we immerse ourselves in these tactical questions, however, we need to realize the larger question is not tactical but substantive—how much weight to put on the monetary aggregates as opposed to other considerations. Concentration on the problems of chasing aggregate targets should not cause us to neglect their limitations.

I have already suggested that the normal relationships between the aggregates and the economy can break down over time horizons long enough to be highly significant for policy formulation. There are also times when market conditions may deserve attention in their own right. One thinks immediately of those occasions when markets are unusually disturbed to the point that a potential impact on business sentiment and financial availabilities cannot

Digitized for FRASER
http://fraser.stlouisfed.org/
Federal Reserve Bank of St. Louis

October 1976

be ignored. At other times, relatively small changes in the apparent posture of the Federal Reserve may trigger undesired expectations in the market out of proportion to any presumed gain in tracking monetary targets. I think, too, we have seen plenty of evidence of the potential sensitivity of international financial markets to interest rate differentials—that floating exchange rates cannot by themselves eliminate that dimension of policy concern.

More broadly, I think the intellectual emphasis on monetary aggregates that developed through the 1960's threatened and, on some occasions, did go too far in implying that credit markets, broadly defined, "don't count"—that they are never or seldom a source of disturbance in the economy or a legitimate concern of policy. Indeed, I suspect the relatively little attention directed toward serious and systematic analysis of the role of credit markets, toward the financial complexities of the economy generally, and toward their disruptive potential is a common failing of most modern theorizing, regardless of the intellectual starting point.

We have had many occasions in the 1970's to pay the closest possible attention to particular financial problems and to the potential vulnerability of various credit markets. I would remind you of the recurrent concerns about thrift institutions and the mortgage market, Penn Central and commercial paper, Herstatt and the Euro-dollar market, New York City and the municipal bond market, and the rising level of commercial bank loan losses a year ago. Some of these situations had in them the potential for grave problems. Happily, they have been contained and dealt with through a variety of techniques, more or less of an *ad hoc* nature.

But is it sheer coincidence that so many of these problems have arisen in so short a period? And what is the present significance of such phenomena as the shifting proportions of debt and equity for the nature and strength of our recovery, for the vulnerability of the economy to inflation or to new shocks at home or abroad, and therefore for monetary and fiscal policy?

Perhaps answers to questions like these can be traced back in some ultimate sense to the behavior of money. But I doubt it. The explanation is much more likely to be found in other phenomena, including changes in social and economic attitudes stimulated by the earlier period of relatively stable prosperity.

I would go further and raise a question about the practical policy implications of the central policy theme of monetarism: that "inflation is always and everywhere a purely monetary phenomena".

I do not want to be misunderstood. Central bankers, as custodians of a nation's money, commonly share the observation and intuition that pressures to increase the money supply to serve some presumed short-term objective are a basic source of inflationary pressure. Certainly, excessive monetary expansion is a sufficient condition for inflation and, in the longer run, it is equally clear that no important inflation can be sustained without money rising substantially faster than real income (taking into account trend velocity). There is always some rate of monetary growth (perhaps zero) that will in principle achieve price stability. But, in the world in which we live, I do not think we can draw much comfort from those principles as a full explanation of where we are and a guide as to how to proceed.

Take, for instance, the period since inflation began to accelerate after the mid-1960's, with the rate reaching a peak during 1974 unprecedented for peacetime. Do we really have an adequate explanation of this development in terms of an acceleration in the rate of monetary expansion alone?

To be sure, there was in that period a faster rate of money growth. The two events were not unrelated. But, as a technical matter, it is also true that as we got into the 1970's the money relationships were not stable, so that monetarists did not succeed better than others in anticipating the full force of double-digit inflation.

Plainly, even over a period of years, the relationship between money and inflation is complex and the statistical association rather loose. We do not need to look far to find other, and supplementary, explanations of price developments in the 1970's—the oil situation, some crop failures, the spread of unions into some new areas, and shortages in particular industries that ran up against capacity pressures before the economy as a whole reached full employment.

We can theorize that such developments affect only relative prices and need have no effect on the general price level if monetary growth is held steady. But the argument rests on the assumption of a highly flexible and quickly reacting price system. If, to the contrary, relative price adjustments in circumstances like these are typically slow in coming and resisted, economists would agree that monetary growth at a noninflationary rate would depress the level of real activity. The question is which view better fits observations of reality, and there seems to me a lot of evidence that it is the latter.

More generally, we cannot avoid asking ourselves about the nature of the economic, social, and political forces and attitudes that seem to have aggravated the difficulties of reconciling full employment with price stability.

It is hardly a satisfactory answer to say that central banks in principle can always resist inflationary pressures

Digitized for FRASER
http://fraser.stlouisfed.org/
Federal Reserve Bank of St. Louis

October 1976

by simply refusing to provide enough money to finance them. Set against persistent expansionary pressures, aggressive wage demands, monopolistic or regulatory patterns that resist downward price adjustments, and other factors affecting cost levels, such an approach would threaten chronic conflict with goals of growth and employment that must rank among the most important national objectives. In a democracy, the risk would not be just to the political life of a particular government, but to our way of government itself.

In this larger social and political setting, we should perhaps think of central banks themselves as "endogenous" to the system. A theory of chronic inflation that points only to the money supply is not going to prove adequate to understand—or deal with—inflation in today's world. The danger is that it may discourage the search for particular remedies for particular problems.

There is no doubt in my mind that we must persist in finding an answer to our inflationary problems. We can take satisfaction in the progress of the past year. The current underlying rate of 6 percent or so is half that of 1974, and it has been maintained in a period of rather vigorous recovery. It feels better, and it is better.

But perhaps the greater test lies ahead. I hear from many directions the argument that individuals and institutions have pretty well adjusted to the current rate of inflation. Further progress, it is said, may be difficult without an unduly depressed economy. Perhaps, the argument goes, the better part of wisdom would be to live with the current rate rather than to try to reduce it further, aiming ultimately at the restoration of price stability.

Now, I recognize that it is possible to conceptualize about fully anticipated inflation being equivalent in its real effects to confidence in price stability. But I also question whether our institutions or individuals are in fact fully adjusted, or really can be expected to adjust, to the current rate of price increases or to any sizable rate of inflation. In any case, such an adjustment, once initially made, would not help us to deal with those forces that upset price equilibrium in the past. Indeed, I suspect the job of dealing with these forces would be much more difficult. The difference between a goal of, say, living with 6 percent or a goal of evolving toward stability seems to me profound from a psychological point of view. Willingness to settle for just so much inflation, but no more, would simply lack creditability with the public at large, or indeed, with policymakers themselves. Resistance to increases in the name of short-term advantages could only be weakened, and we would be off again. And I think we have learned enough to see that, in those circumstances, even our employment goals will fall by the wayside.

My theme today is simple. As we look back over the evolution of thinking about monetary policy and macroeconomic policy generally over the postwar years, we can see the dangers of overly simple and overly confident views of the way the economic world works. Eventually, simple doctrine comes up against complex and harsh reality.

Back in the days when I was learning economics and central banking, the *General Theory* had cast fresh light on old problems. The intellectual contributions were immense. But popularized, bowdlerized, and pressed to extremes, it lost fashion for good reason.

The monetarists, emphasizing old truths in modern clothing, have provided a large service in redressing the balance. It is in pressing the point to an extreme that the danger lies—the impression that only money matters and that a fixed rate of reserve expansion can answer most of the complicated problems of economic policy.

In a way, I suppose full confidence in a simple, unified view of economic policy is a comforting thing, a kind of security blanket in an uncertain world. But Alfred North Whitehead, in a different context, once pointed to the danger: "There are no whole truths; all truths are half truths. It is trying to treat them as whole truths that plays the devil."

He overstated the case. The practical man cut adrift from any sense of what is the greater truth—distinguishing, if you will, the one-eighth truth from the seven-eighth truth—will soon lose his way. But, in assessing those truths, he can never afford to lose sight of the messy reality of the world in which we live.

Digitized for FRASER
http://fraser.stlouisfed.org/
Federal Reserve Bank of St. Louis