WHAT TYPE OF MONETARY RULE?

Robert E. Weintraub

Wage-Price Flexibility and Monetary Discipline

Nearly 50 years ago, in 1936, Henry Simons, in his landmark essay, "Rules Versus Authorities In Monetary Policy," wrote that "With adequate price flexibility, we could get along under almost any financial [*sic, monetary*] *system.*" At the same time, Simons warned that, "with extreme rigidities (reflecting widespread partial monopoly), the most drastic monetary and financial reform, even an ideal financial structure, could not protect us from serious disturbances of production and employment" (1948, p. 170).

To me, what Simons said in 1936 holds today. It is a truth for all times. Given price and wage flexibility, perverse changes in money growth and the rate of rise of its velocity, that is, changes whose sum differs from potential real GNP growth, are rendered relatively harmless. Whether anticipated or unanticipated, they tend to be matched and absorbed by changes in the rate of inflation. Real GNP growth is unaffected by monetary changes and events. It is invariant with respect to money supply and demand.

Such changes in real GNP growth as occur under flexible wages and prices reflect exogenous real supply shocks—increases in labor force growth and technological advances on the bright side, decreases in those things plus events such as crop failures, shifting ocean currents and actions by foreign cartels on the gloomy side. These changes in real GNP growth tend to be equilibrated by opposite percentage changes in the rate of inflation.

Thus, *given price and wage flexibility*, there is no need to worry about unemployment. Monetary policy can be used to promote price level stability fearlessly and relentlessly.

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However, if a number of important labor and product markets are dominated by price and wage regulations or other rigidities, or there exist strong, aggressive unions and business cartels, there will be hard choices to make even under the best monetary policy. There frequently will be a need to choose between accepting production cuts and employment decreases in unionized, cartelized and regulated industries and sectors, or accepting economywide inflation increases, no matter how perfect monetary policy is. Kenneth Boulding (in Wright 1966, p. 79) put it this way in a 1950 symposium:

> "We all (or nearly all) consent
> If wages rise by ten per cent
> It puts a choice before the nation
> Of unemployment or inflation."

If the key to economic stability is price and wage flexibility, what purpose would be served by a monetary policy rule? The answer is to increase price and wage flexibility and assure moderation in bargaining and pricing. Wage and price flexibility, or at least moderation in wage bargaining and price setting, require that those with power to affect particular wages and prices understand that they cannot raise them with impunity. Such understanding, in turn, requires constant monetary discipline; behavior by the monetary authorities that is definite and which implies production and employment cuts in industries and sectors where monopoly power to set wages and prices exists and is used.

Recent history shows why such discipline will work and is needed. Unions stopped bargaining for annual wage increases large enough to force us to choose between unemployment and inflation after 1948 and remained moderate in their demands until the late 1960s. They did so because during this period it was clear that the Federal Reserve would not underwrite the inflation that was needed to prevent unemployment from increasing as a result of excessive wage increases. And during this period, business cartels such as may have existed were essentially inactive. However, the green light for increasing wage demands and pricing more aggressively was given to unions and business cartels by the Johnson administration in the late 1960s. The Johnson administration abandoned monetary discipline in 1968 in favor of seeking to hold down interest rates. As President Johnson saw it: "The cost of monetary restraint is high and unfair, imposed on a single industry—homebuilding" (*Economic Report* 1968, p. 10).

Whether to help housing or for other reasons, monetary policy focused on trying to keep interest rates down from 1968 to late 1979, except for Nixon's first and last years in office and Ford's brief time

as President. As a result, money growth (M1 basis) was accelerated sharply after 1968 and averaged more than four percentage points faster per year in the 1968 to 1979 period than in the 1956 to 1967 period. In association, after 1968, unions and cartels became increasingly aggressive and both inflation and unemployment increased secularly. Ironically, except to monetarists, interest rates also increased after 1968.

Reinstatement of monetary discipline in late 1979 brought sharp decreases in wage demands and price boosts beginning late in 1981 and continuing until now. Price and wage flexibility have returned in major measure. This development assures the ultimate restoration of normal real GNP growth and full employment, provided however that we have the patience and courage to endure. However, lately there have been signs that monetary policy is again focusing on interest rates. This, in my opinion, bodes badly for wage and price flexibility and economic stability in the future. Beginning at the end of 1984, or early in 1985, inflation will be high enough for most to understand it was rekindled. And sometime around 1986 or 1987, we will again have to choose between galloping inflation and another recession.

In short, institutions with power to set wages and prices benefit from loose, undisciplined, easy money policies. However, their powers erode, and wage and price flexibility increase with monetary discipline. That is the lesson of history. It also is good economics. Strong, aggressive unions and cartels cannot thrive or even long survive in the presence of sustained monetary discipline. Consumption and investment patterns shift against unionized and cartelized industries in economies characterized by strong, aggressive unions and cartels under disciplined monetary policy regimes. Those who run unions and manage cartels know this, or learn it quickly, and they adjust their wage demands and pricing behavior accordingly.

Selecting a Monetary Rule

My task is to discuss "What Type of Monetary Rule?" What rule is best? The choice cannot be divorced from one's belief about our broad economic goals. I believe these goals are stable prices, competition (price and wage flexibility) and full employment. Few would disagree. Disagreement arises when the goals are perceived to be, temporarily at least, in conflict. In the long view, however, there is no conflict among these goals. Stable prices are consistent with competition and full employment. Indeed, achievement of the third rests on achieving the second and that depends strategically on achieving

the first. Thus, in my opinion, the sole goal of monetary policy, always, should be to promote price level stability.

In addition to being crucial for the achievement of price and wage flexibility and promotion of full employment, price level stability is conducive, if not essential, to sound business decisions. Lloyd Mints recognized this latter point in 1950 when he wrote in *Monetary Policy for a Competitive Society*:

> Stability in the level of prices is clearly the one objective, susceptible of attainment by monetary measures, which is of the most immediate and direct concern to the business community. We should not unnecessarily add the risks of unpredictable and devastating waves of inflation and deflation to those of changing demand, of the development of substitute products, of technological advances by competitors, and of a host of other risks that businessmen are heir to. (p. 126)

In the remainder of this paper, I will first discuss price and quantity monetary policy rules for achieving and maintaining reasonable price level stability, and then interest rate and employment rules.

Price and Quantity Rules

Given that price level stability is the proper goal of monetary policy, the question is how the tools of monetary power can best be used to promote price level stability. There are two approaches. One is to require the monetary authorities to take actions that are expected to increase the price level when it falls below a predetermined lower bound or trigger point for a given time period, and vice versa, to require that actions be taken that are expected to decrease the price level when it rises above the predetermined upper bound or trigger point for a certain time period. The second approach is to require the authorities to fix the quantity of money or its growth rate so as to achieve price level stability. There are difficulties of implementation with both approaches.

Price Rules

The major difficulty with implementing a policy that reacts to movements in the price level outside some predetermined band is that "the" price level is an abstract term. We don't know for sure what it is. The monetary authorities would have to use a proxy for it, or be assigned one by the Congress.

There are a number of possible proxies and no right one. At one extreme, some suggest stabilizing the price of gold or some other commodity or an index of a few sensitive commodity prices. The monetary authorities would be required to make open market pur-

chases (sales) and add (reduce) reserves and base money when the selected price or index has fallen below (risen above) the trigger level for the specified time period, and to continue to do so until it rose above (fell below) that level also for a specified time period.

Focusing on a particular commodity's price, or index of a few sensitive commodity prices, provides several advantages. Most important, it provides timely information to the monetary authorities about their target and assures that the target will respond quickly to their actions. However, there are disadvantages too. Most notably, the selected price or index will be subject to its own special supply and demand shocks, including shocks that originate abroad, and therefore it can behave erratically. If the monetary authorities try to counteract *all* movements in the price or index being used as the proxy for the economy's price level, economic instability could increase.

For example, in the event of a buying spree in the gold market which is induced by fear of confiscation of financial assets and real property in foreign countries, if our monetary authorities try to stabilize the price of gold they will make open market sales and reduce the input of reserves and base money. That will put downward pressure on the prices of other goods and services and, absent wage and price flexibility in other home markets, production would have to be cut and unemployment will increase.

The list of possible exogenous events that can change the prices of basic commodities such as gold, copper, and other metals, or grains, meats and other foods, or fats, woods, etc. is endless. It seems dangerous to me to legislate a rule that would bind U.S. monetary policy to these events.

It might be argued that own-market supply and demand shocks can be ignored by the monetary authorities in their pursuit of stabilizing the price of gold or some narrow commodity price index. However, if the authorities are given power to distinguish among price changes they might just as well have unlimited discretion.

It also might be argued that own-market shocks would not occur if buyers and sellers knew that the monetary authorities were targeting gold or other commodity price or prices. This is a speculation. Those who favor fixing the quantity of money or its growth can make one like it, to wit, that velocity would be well behaved if money demanders knew for sure that money growth would be well behaved. These speculations might be true but it would be heroic to assume they were in selecting a monetary policy rule. Such discussions must admit to difficulties of implementation for all rules under consideration.

Still another reason for not focusing on a specific commodity's price or an index of a few sensitive commodity prices is that technological innovations could affect these prices differently than they affect prices in general. If, as seems perfectly plausible in a heavily service economy, technological innovations operate to reduce basic commodity prices faster than other prices, a rule requiring the monetary authorities to stabilize an index of the prices of one or a few basic commodities would lead to endless inflation.

On the whole, the case for stabilizing the price of gold or an index of a few sensitive commodity prices is not convincing.

A Broad Price Index. At the other extreme, it is suggested that the monetary authorities stabilize some broad price index such as the CPI or the GNP implicit price deflator. Doing this would avoid the problems that focusing on some specific commodity's price or an index of a few commodity prices entails. However, this rule also involves disadvantages. The broader price indexes do not provide up-to-the-moment information. Second, there are long lags between monetary policy actions and changes in rates of rise of the broad price indexes. As David Fand pointed out in a recent Joint Economic Committee Compendium:

> Because of the long and variable lags in monetary policy [sic, between monetary policy actions and changes in rates of rise of the broad price indexes], an attempt to stabilize prices may very well lead to greater instability. The attempts by the monetary authority to counteract these disturbances, given the long and variable lags in monetary actions, produce even greater disturbances than it was trying to correct. (1982, p. 68)

Given the length of the lag between monetary policy actions and changes in the broad price indexes, it would be foolish to tie monetary policy to changes in the broad price indexes. The monetary authorities would always be fighting the last battle under this rule. Further, unless the authorities could distinguish between permanent and temporary changes in the broad price indexes, they could also be fighting the wrong war.

The Exchange Rate. Finally, some monetary reformers advocate focusing on the value of the dollar on foreign exchange markets. They would have the monetary authorities make open-market purchases (sales) and add (reduce) reserves and base money when the dollar rises (falls) on foreign exchange markets. Definitely this rule would prevent our monetary authorities from permanently pursuing inflationary policies. That certainly is a plus. However, this rule also could prevent the Federal Reserve from pursuing a disinflationary

policy for very long. That would be the case if, as seems likely, the *initial* effect of the disinflationary policy were to raise interest rates and increase the demand for dollars on foreign exchange markets. To prevent the increased demand from raising the value of the dollar on foreign exchange markets, our monetary authorities would have to increase the supply of dollars and, thus, terminate the disinflationary policy.

A second problem with this strategy or rule is that it would require our monetary authorities to make the same mistakes as foreign central bankers make. If they inflate, the demand for dollars will rise triggering accommodative purchases and input of reserves and base money by U.S. monetary authorities.

In summary, implementing a rule that links Federal Reserve operations to changes in the exchange rate or changes in some price or price index would involve difficulties. *If there were no better rule,* I would favor linking our monetary actions to some price index. It would seem best to employ an index computed with a large number of prices of competitively traded, primarily domestic goods and services whose quality changes little over time. At the moment, we do not have such an index. Conceivably, one could be constructed, but it might not be feasible. Fortunately, there is a better rule.

A Quantity or Money Growth Rule

Simons and Mints preferred a rule that aimed at stabilizing some index of prices to one that fixed the quantity of some measure of money or its growth rate. However, they viewed a quantity rule as worthy of consideration. Simons, in fact, thought it "definitely merits consideration as a perhaps preferable solution in the more distant future" (1948, p. 183). Perhaps Simons' future is now.

The major objection that Simons and Mints had to a quantity rule was that there could be sharp changes in velocity and its rate of growth. That is a very serious objection. No one can advocate a quantity rule without dealing with it.

Like the price level, money has no precise empirical counterpart. Conceptually, money is best defined as the public's transactions balances. Operationally, it should measure all transactions balances and only transactions balances. However, that is easier said than done. The line between transactions balances and other financial assets is not clear and the assets that serve as transactions balances change over time. There is no "model" money. Where there are no prototypes, we must draw lines and classify. We do it for cats; we can do it for transactions balances.

My preference is to define transactions balances generically, as

publicly held coin, currency, and non-bank travelers checks plus deposits in depository institutions that are fully checkable. Defined this way, ATS and NOW accounts and credit union share drafts are money and would have been counted as money as soon as they came into existence, but Money Market Mutual Funds are not money. Even MMMFs in depository institutions are not to be counted as money. They are not fully checkable.

The measure of money I have defined is, of course, M1. Its usefulness as a monetary policy target depends crucially on the stability of the rate of rise of its velocity.

Many, including Boston Federal Reserve Bank President Frank Morris, assert that because of the many recent innovations in banking, M1 is no longer a reliable indicator of the thrust of monetary policy and should not be used as its target. However, it is premature to accept this conclusion. From 1972 to 1982, the yearly rate of rise of M1 velocity averaged only slightly higher than in the 1956 to 1971 period and almost exactly what it did in the 1956 to 1967 period. It averaged 3.6 percent in the 1972 to 1981 period, and in both the 1977 to 1981 and 1972 to 1976 subperiods. It averaged 3.0 percent in the 1956 to 1971 period and 3.6 percent in the 1956 to 1967 subperiod. Moreover, whether measured from one year to the next, or between the same quarters from one year to the next, the rate of rise of M1 velocity per year varied less in the 1972 to 1981 period than it did in the late 1950s and early 1960s. History clearly does not support the Morris thesis.

However, last year, 1982, M1 velocity declined more than 2 percent. Last year's decline may mark the beginning of a period of low or even negative M1 velocity growth as a result of paying interest on some fully checkable deposits in depository institutions. It may have resulted from a one-time increase in money demand. It may have been a normal cyclical phenomenon, plus a temporary disequilibrium condition resulting from delay in the adjustment of spending to the surge in money growth that began in August 1982. We don't know now which of these explanations is correct and cannot know for at least a year. If the first explanation turns out to be correct, an M1 growth rule would be unreliable. At any point in time the average rate of rise of velocity could shift three to five or even more percentage points from its previous trend. Such a shift would make the chosen rule for M1 growth wrong by three to five or even more percentage points. That is too much. If it happens, I would stop advocating an M1 growth rule and explore the feasibility of targeting the monetary base, a broader M, or some credit measure. But unless such a shift occurs, I see no reason to consider targeting these quan-

tities. Growth rates of the broader Ms do not track nominal GNP growth as well as M1 growth, or are harder to control. Growth of the base is easier to control, but does not track nominal GNP growth as well, due primarily to changes in the currency-demand deposit ratio.

Although we do not know for sure why M1 velocity fell last year, my feeling, and certainly my hope, is that it was largely a combination of the surge in money growth that began last August and the recession. In this latter regard, M1 velocity fell two percent between the third quarters of 1953 and 1954 and nearly one percent between the second quarters of 1957 and 1958, both recession periods. In each case, there was a sharp rebound the following four quarters. M1 velocity increased 6.9 percent between the third quarters of 1954 and 1955, and more than 7.0 percent between the second quarters of 1958 and 1959. Full-year changes in velocity in those years were minus 1.4 percent in 1954, 5.7 percent in 1955, zero in 1958, and 6.4 percent in 1959.

Based on the past, a snapback in the rate of rise in M1 velocity can be expected sometime in 1983. If it does not occur, especially if money growth is reduced from the 14 percent rate to which it was increased in the fourth quarter of 1982, the case for a quantity rule based on M1 growth would be seriously weakened. If it does occur, the case will remain a strong one. The case can be summarized in two simple empirical relationships.

1. The relationship of yearly nominal GNP growth to yearly M1 growth in the 1956 to 1981 period was one-to-one. In this regard, in the 1956 to 1981 period, full year-to-year nominal GNP percentage growth =

   3.31 + 1.02 × (yearly percentage M1 growth)
   (5.22) (8.32)
   Adjusted R2 = .73
   Standard error = 1.50
   Durbin-Watson = 2.35

The constant term estimates the average rate of rise of M1 velocity in the 1956 to 1981 period. Numbers in parentheses are t values. This regression captures the total effect of money growth on nominal GNP growth. Conceivably, the coefficient on money growth would be significantly different from one in a multiple regression that used other determinants of nominal GNP growth as independent variables. Michael Hamburger (1977), however, did not find that to be the case using fiscal variables (among others) as independent regressors along with M1 growth, and the fiscal variables he used were significant in his regressions.

2. The relationship of yearly percentage changes in the GNP price

deflator to yearly M1 growth lagged two years also was one-to-one in the 1956 to 1981 period. In the 1956 to 1981 period, full year-to-year percentage changes in the price deflator =

.34 + .996 × (the percentage change in M1 at t-2)
(.73) (10.32)
Adjusted R2 = .81
Standard Error = 1.18
Durbin-Watson = 1.65

These statistics suggest that controlling M1 growth will assure the winding down of inflation and commensurate reduction of interest rates. For 1983, M1 growth of six percent was appropriate when the year began. However, the Federal Reserve has allowed much faster growth in the first quarter. Hence, it now seems appropriate to aim at seven percent growth for the year. Beginning in 1984, M1 growth should be reduced by .25 percentage points quarterly or one percentage point annually until it reaches two percent a year. Once the two percent growth rate has been established, it should be maintained unless the rate of increase in M1 velocity falls below one percent per year or rises above five per cent per year for two consecutive years. In the event that velocity falls below the threshold, M1 growth above two percent per year would be in order until the four-quarter velocity increase returned to the acceptable range for two four-quarter periods. If velocity increased too rapidly, M1 growth should be reduced below zero until the four-quarter velocity increase fell back below five percent for a four-quarter period.

This is the rule I favor. It is definite, clear and, given the will, easy to administer. Based on history, it would provide for price level stability; prices would rise, on average, by about two percent a year. If that proved too high, M1 growth could be gradually reduced to zero and maintained there. As Gottfried Haberler put it in the Joint Economic Committee Compendium to which I referred earlier: "In a broad sense the quantity theory is one of the best established generalizations in economics. There has never been a significant inflation, a rise in the price level of, say, four percent or more for longer than, say, two years, without a significant rise in the quantity of money" (1982, p. 83).

The achievement of price level stability will promote price and wage flexibility and thereby lay the foundation for the achievement of full employment. However, given existing wage-price rigidities and a current inflation of about five percent a year—which may prove much too optimistic if the recent surge in money growth continues and we wait until 1985 or 1986—achieving price level stability (zero to two percent a year) will require more unemployment at first. Again,

as Haberler observed: "An ongoing inflation cannot be brought down without a reduction in monetary growth. It stands to reason, however, that with inflationary expectations entrenched as they are after 15 years of continuous high inflation, and money wages and many prices as rigid as they are, disinflation through monetary restraint will cause transitional unemployment" (1982, p. 83). Legislating a rule that required reducing M1 growth to two percent a year over time would increase the chances of our staying the disinflationary course.

One final remark is in order on the subject of "Price and Quantity Rules." They can be combined. Robert Genetski is among those who have suggested adopting a combined rule. In the 1930s, several combined rules were debated by the Congress. One, the Patman Bonus Bill, actually passed both the House and Senate but was vetoed by President Roosevelt, and the Senate failed to override. A combined rule in that tradition would give the Federal Reserve discretion to increase (decrease) M1 growth faster (slower) than prescribed by the rule if the GNP deflator fell below a legislated lower limit (or rose above a legislated upper limit), and remained below (or above) for specified periods of time. Under this rule, large enduring changes in the GNP deflator are used as the system's safety valve. Under my preferred rule, large enduring changes in the rate of rise of M1 velocity play this role. But let me make clear that I do not have strong feelings about using changes in the rate of rise of velocity versus using changes in the GNP deflator as the safety valve.

Some legislated safety valve would be constructive. The reason is that a sitting Congress can repeal any rule that it, or a previous Congress, has legislated. Congress is the "last-resort" safety valve. The purpose of attaching a definite legislated safety valve to the rule is to decrease the odds that initiatives to repeal or amend the rule will be passed without due debate.

Interest Rate and Employment Rules

Interest rate and employment rules are very different from price and quantity rules. The latter hold in common that the way to full employment and low, moderate or reasonable interest rates begins with the establishment of enduring price level stability. Interest rate and employment rules aim to achieve low interest rates and full employment directly. I do not think that they can succeed.

Attempts to decrease interest rates and unemployment by adding to bank reserves and base money and accelerating M1 growth will fail because, in time, the incremental money growth will be fully dissipated in faster inflation—neither real GNP growth nor the unem-

ployment rate will be changed and the higher inflation will bring higher, not lower, nominal interest rates.

Some who favor focusing on interest rates propose instead that the monetary authorities be instructed to keep "the" real short-term interest rate between one and four percent. Such a rule, however, could require pro-cyclical monetary actions. If the difference between the 90-day Treasury bill rate and the latest GNP inflation rate were used to measure "the" real short-term interest rate, and that is surely a plausible measurement procedure, the Federal Reserve could be required under this rule to take actions to reduce M1 growth in recession periods, and increase it in inflation periods. For example, for long periods in the 1973 to 1975 recession and again in the 1980 recession, the difference between the bill rate and the inflation rate was negative; hence, the Federal Reserve would have been required to contract reserves and base money and slow money growth at times during those recessions. A rule that would invite such behavior must be rejected out of hand.

Conclusion

History suggests that discretionary monetary powers will often be misused. Lloyd Mints put it this way in 1950: "About all that can be said in defense of the [Federal Reserve] Board is that any other group of men clothed with discretionary monetary powers might have done as badly" (p. 132). That observation also holds for the period from 1950 to the present.

We should accept, at long last, that in monetary policy "Rules" are preferable to "Authorities." And at this time, the preferred rule would appear to be one that fixes the growth of M1 so as to rid our economy of inflation permanently. And doing that will promote price and wage flexibility and the return to full employment all of us desire.

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MONETARY RULES, DISCRETION, AND THE CONSTITUTION

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I have no substantial disagreements with Bob Weintraub's arguments for a monetary rule that controls the growth of M1 to achieve price level stability. Nor do I disagree with his dismissal of monetary policy rules that seek to target prices, interest rates, or employment. Instead, I shall take this opportunity to embellish some of Weintraub's arguments.

While the literature on monetary rules has a long history, I think it is significant that the October 1979 change in the Federal Reserve's operating procedures has produced a spate of articles, both scholarly and not-so-scholarly, proposing a variety of alternative monetary rules. The reason for this proliferation of articles, I think, is not hard to explain. Monetary policy in the past four years has been extraordinarily volatile and has produced a roughly parallel volatility in the course of economic activity. However, if the Fed had been successful in maintaining a stable path for M1, and the economy still had demonstrated a great deal of volatility, the search for another monetary rule, other than targeting monetary growth, would have had some legitimacy.

The Federal Reserve has had great difficulty in achieving greater economic stability by attempting to control M1 through an intermediary target of nonborrowed reserves. Thus I find it hard to understand why it would be any more successful in hitting a commodity price target, whether it be gold or some predetermined price index of commodities. It seems to me that there is ample room for improvement under the present monetary system. I do not think that the Fed has exhausted all of the possibilities for achieving current monetary growth targets.

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Weintraub discusses the lack of price flexibility in the labor and product markets. Of course, the government intervenes very significantly in these markets. Some of my associates have suggested that all businessmen, all union members, and all consumers study the monetary aggregates on a weekly basis, forming inflationary expectations from changes in those aggregates. Of course, nothing of the sort takes place. The inflationary expectations that individuals hold ultimately flow from the kind of monetary rule and the kind of monetary policies that are implemented. Neither businessmen, members of organized labor, consumers, or investors have to know very much about the actual conduct of monetary policy; all they need is sufficient experience to know that once we get into a recession, it will take two or three years to return to full employment, and another dose of accelerating inflation. Even though the current recession has been unusually long, and relatively severe, I doubt there is any reason to believe that people have basically altered their belief that sometime after the recovery has begun inflation will worsen again.

In the United States organized labor can shift the responsibility for pricing its members out of the labor market to the federal government. Since the Employment Act of 1946, the U.S. government has assumed responsibility for the unemployed and has created jobs for people who are laid off as a result of excessive wage demands. The government's "full employment" policy has also fueled expectations that wage flexibility need not be exercised to bring about an improvement in employment; government simply will accommodate union wage increases and prevent large-scale unemployment by running the printing presses. Of course, such a policy is ultimately self-defeating: It will accelerate inflation and not alter the "natural rate" of unemployment, which is dependent on nonmonetary forces.

There have been a number of recommendations in recent years for improving the steering mechanism of monetary policy. The monetary authorities, however, have not moved with the greatest sense of urgency to develop a more stable path for money growth, i.e., a better rate of growth of M1 and, hence, nominal GNP growth. There even has been reluctance to undertake such relatively modest changes as a return to contemporaneous reserve adjustment, setting the discount rate equal to the market rate, or establishing uniform reserve requirements. In light of this inertia, I strongly doubt that the authorities would readily undertake such a radical and futile policy change as targeting the price of gold on a commodity price index.

When one raises the question, "What is money?" or argues that M1 or M2 has become overly contaminated by financial innovations, I am inclined to agree with Weintraub: It is far too early to abandon

or even to set aside such targets, particularly M1, which has in fact been an accurate indicator of changes in nominal GNP. Although velocity is now a problem, changes in velocity are themselves lagged responses to the volatility in monetary policy. Henry Wallich has pointed out that "during 1982, a pronounced precautionary demand for money developed, which was indicated by the sharp fall in velocity." He suggested that this "may have been motivated . . . by falling inflation."[1] The decrease in inflationary expectations, however, was occasioned by the *prior monetary restraint* that produced the recession.

Weintraub alludes to the riskiness of undertaking compensatory swings in the monetary aggregates; again, I concur. Such risks would be even greater if erratic targets like commodity price indexes were used as the basis for efforts to achieve greater economic stability.

Opponents of a constant, noninflationary, money-growth rule rest their case on the following argument: There is no close and reliable link between the rate of growth of money and changes in GNP. Such things as exogenous shocks and sudden, unexpected swings in the demand for money can not be readily predicted; for these reasons, so the critics say, the Federal Reserve should not attempt to achieve the stable growth of money supply that is advocated.

There is agreement among both theorists and empirical researchers that the lags between changes in money growth and nominal GNP growth are highly variable. But that is all the more reason why U.S. monetary authorities should not attempt to make wide compensatory changes in monetary growth. It demands a forecasting capability that the monetary authorities are quick to deny they possess, and that the public record confirms they have not been able to demonstrate.

In dealing with the exchange rate, Weintraub overlooks one particular episode that occurred in 1980. In the second half of that year, the Fed abruptly reversed policy and pursued a rather expansionary monetary policy for some months. As the money supply grew rapidly, interest rates, both short and long term, climbed spectacularly between June and mid-December—in spite of the fact that there was some excess capacity in the economy. Although theory might lead us to expect that the dollar would decline in the exchange markets as a consequence of the Fed's expansionary monetary policy, it actually strengthened as real and nominal interest rates soared, creating a strong demand for dollar assets. As a result, foreign central banks, especially in Germany and Japan, applied monetary restraint tem-

[1]Henry Wallich, "Changes in Monetary Policy and the Fight Against Inflation," *Cato Journal* 3 (Spring 1983): 148.

porarily increasing their interest rates to levels that slowed the rising demand for the dollar. Subsequently the Fed moved to monetary restraint in 1981 to compensate for its excessive expansion in the second half of 1980. This restraint overlapped with that taking place in other industrial countries, bringing on a worldwide recession in 1981 and 1982. As Weintraub correctly points out, an exchange rate target tends to create the sort of market intervention that brings about perverse results.

Weintraub also notes that conceptually money is best defined as the public's transactions balances. I find it useful to define money as that monetary aggregate which best "explains" changes in nominal GNP. We at Citibank have, in fact, linked changes in money to changes in nominal GNP for more than 15 years. We have used a model for forecasting nominal GNP on a quarterly basis, as well as annually, for some time, and if it had not proved superior to all other methods we would have long since abandoned it.

I find it curious that those who resist most strongly the changes needed to achieve a tighter link between bank reserves and money also are the first to argue that we should drop M1 as a target for monetary policy. They claim on the basis of very short-term data that M1 is no longer a reliable indicator. While it is true that velocity had a significant decline in 1982, I doubt that there will be grounds for abandoning the link between money and nominal income or the stabilization policies that rest on it. In the months ahead, I believe we will learn a great deal more about last year's velocity decline and the secular trend of velocity.

In conclusion, it is very important to remember that the political ethos of the country has much to do with shaping and adhering to whatever monetary rule is imposed. I have not favored or supported a gold rule or a return to a gold standard in the past. However, I have told others, particularly those in Congress, that they should listen to those who favor a commodity money standard, particularly as their view gains greater adherence. The extent of popular support for gold, of course, is a measure of the degree to which the central bank is losing its credibility. Another round of double-digit inflation will heat up the debate once more, and I am sure that debate will include the demand to remove all the discretionary powers of the monetary authorities. Indeed, we may well see more and more support for some type of constitutional change in the monetary regime.[2]

[2]See James M. Buchanan, "Monetary Research, Monetary Rules, and Monetary Regimes," *Cato Journal* 3 (Spring 1983): 143–146.