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# Monetarism in Rhetoric and in Practice

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To judge from the financial and popular press, monetarism has been tried in the past ten years in the United States and Great Britain and has been found wanting. This judgment confuses monetarist theory with monetarist policy and central bank rhetoric with central bank practice. Far from discrediting the implications of monetarist theory, the events of the past few years simply add another dollop of confirmation to the overwhelming mass of prior evidence. The rhetoric of the monetary authorities has indeed been monetarist, but their policies have not been—or, to be generous, have been only partly so. The deviations in practice from monetarist policies have had the adverse consequences predicted by monetarist theory. Far from weakening the case for a monetarist policy, these consequences reinforce the case.

In developing these ideas, I shall summarize briefly what I take to be monetarist theory and monetarist policy, and then examine recent experience in the U.S.

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## I. Monetarist Theory

Personally, I dislike the term "monetarist." The theory that now goes by that label has a perfectly respectable ancient name, namely the quantity theory of money. However, the usage has become established so I shall simply conform.

The essence of the quantity theory of money is the distinction between the nominal quantity of money and the real quantity of money. The theory, as elaborated by many theorists and given content by many empirical studies, regards the nominal quantity of money as determined by conditions of supply, the real quantity of money, by conditions of demand. While the variables affecting supply and the variables affecting demand are interrelated, they are also largely independent of one another. That is particularly true currently since the monetary authorities almost everywhere determine the nominal quantity of money.

The demand for money is best expressed as a demand for a given amount of purchasing power, that is for real money balances. The chief variables determining the quantity demanded are some measure of real wealth or real income as a scale variable, the costs of holding money which include the returns on money and on alternative assets, and taste variables, one of which is specially relevant for our present purpose, namely, the degree of instability anticipated in the economy.

The real return on that component of money which does not bear interest is the negative of the rate of change of prices, which is why inflation and inflationary expectations play such an important role in monetarist analysis.

Monetarist analysis goes on to say that any changes in the nominal quantity of money that are anticipated in advance will be fully embedded in inflationary and other expectations, but that unanticipated changes in the quantity of money will not be. An unanticipated increase or decrease in the quantity of money tends to affect total nominal spending some six to nine months later in countries like the United States, Japan, and Great Britain. The initial effect is primarily on output rather than on prices. Prices tend to be affected only some 18 months to two years later. This does not mean that there is no further effect on real quantities. On the contrary, the delayed impact on prices means an overshooting of output—up or down depending on the initial stimulus—which will then require an overshooting in the opposite direction to allow the price level to reach its appropriate level. As a result the cyclical reaction pattern in both output and prices tends to last for a considerable period—years, not months. That is precisely why monetary instability is so destructive of economic stability.

These generalizations are for countries such as the United States, Japan, and Great Britain which have not experienced long periods of highly erratic and very volatile inflation. For countries that have, like some of the South American countries

or Israel, these lags are not relevant. In such countries, unanticipated changes in money tend to affect prices much more promptly, and the whole reaction process is much shortened. However, for the first set of countries, inflation tends to be rather inertial and to be determined by a fairly long-term average rate of monetary growth. As a result, short-term fluctuations in monetary growth are reflected primarily in real output.

The monetarist analysis also views the effect of changes in the nominal quantity of money on interest rates as complex, being at first in one direction and then later in the opposite. An unanticipated acceleration in monetary growth tends at first to lower interest rates, through a liquidity effect. Subsequently, however, as the higher rate of monetary growth produces an increase in nominal spending, the demand for loans rises and interest rates reverse course, starting to rise. Later still, the actual and anticipated rates of inflation go up, at which point the Fisher price anticipation effect comes into play and interest rates rise beyond their initial level.

Empirically, the liquidity effect—again for countries like the United States, the United Kingdom, and Japan—has lasted about six months, the subsequent income effect about 12 months, before the price anticipation effect starts to be important and interest rates rise above their initial level. However, these lags are less well documented, and I believe less consistent, than those between monetary growth, and nominal income growth and inflation. For example, in the U.S., from October 1979 to July 1982, the liquidity effect appears to have lasted only two or three months, after which interest rates moved in the same direction as monetary growth.

As to the Fisher price anticipation effect, Anna Schwartz and I found no evidence that it was significant in either the U.S. or the U.K. before the 1960s. Prior to that time, interest rates behaved as if prices were expected to remain stable. Since then inflation has had a very clear and very prompt impact on interest rates.<sup>1</sup>

## II. Monetarist Policy

The policy implications that monetarists like myself have drawn from this analysis is that the primary task of the monetary authorities should be to avoid introducing uncertainty in the economy, that their primary task should be to produce a predictable pattern of monetary growth, preferably a steady one. The idea that monetary growth should be steady and predictable is the core of the monetarist policy view. All monetarists, I believe, favor steadiness. However, they differ considerably with respect to what monetary aggregate or aggregates should be targeted, what the numeri-

1. See Milton Friedman and Anna J. Schwartz, *Monetary Trends in the United States and the United Kingdom* (University of Chicago Press, 1982), esp. pp. 538-546.

cal rate of growth of the selected aggregate or aggregates should be, and how it should be determined.

The desirable rate of growth depends on objectives. If the objective is to have zero inflation, that calls for a rate of monetary growth equal to the sum of the anticipated rate of real growth plus the anticipated rate of change of velocity. The precise number will depend on the country and the circumstances. For example, in the 1960s when Japan was growing at an annual rate of close to 10 percent a year and when the money economy was still spreading so that velocity was declining, I estimated that a rate of monetary growth for an aggregate such as  $M_2$  of about 15 percent per year would be consistent with zero inflation. As the economic growth of Japan has decelerated and the economy has become increasingly monetized, the situation had changed. No doubt a decidedly slower rate of monetary growth is called for now. For the United States I have long believed that the appropriate rate of growth consistent with zero inflation is somewhere between about 2 to 5 percent per year for a definition of money comparable to the present  $M_1$  (that definition, it should be noted is closer to the concept that I have typically used in my research and which the Fed earlier designated  $M_2$  than to the concept which the Fed earlier designated  $M_1$ ).

As these comments imply, steadiness and predictability do not necessarily mean constancy. Personally, I have favored constancy, partly because I believe we do not in fact know enough to specify a dependable and reproducible rule for varying the rate, partly because I believe it is easier to get public support and understanding for a constant rate than for a sophisticated rule for altering the rate. However, some monetarists favor varying the rate of growth in accordance with one or another rule. The common element is that all want to minimize the erratic and unpredictable element in monetary change.

Political considerations enter strongly into the choice of the particular rule for monetary growth, in two very different ways. First, it may be necessary to have legislation passed to change institutions or to institute or implement a specific rule. As economists, I believe that we should not be deterred by that necessity from considering what rule would be best. We are very poor predictors of political feasibility in that sense, and should stick to our last.

Political considerations also enter in in a very different way that I believe we must take into account. Given the institutional structure and a particular rule, how will political pressures and public reactions affect how it performs? We have had a tendency to treat monetary policy as if it could and would be conducted by a pure and disinterested technical economist completely isolated from political pressure, and taking account only of technical knowledge and information about monetary arrangements. That is far from the fact. In practice, any rule will be operated in a political environment subject to pressures that experience tells us will produce results very different from those dictated by purely economic considerations. This consideration

has become a major argument, in my mind, for a simple mechanical rule, such as steady growth in a specified aggregate. It must be mechanical to be predictable; it must be simple to have wide public backing and understanding.

Given a situation in which policy has not conformed to a desirable policy, the further question arises of the transition to such a policy. In most cases that question has arisen when monetary growth has been abnormally high and inflation has been the major problem. Under those circumstances two different views have been held by people who are generally monetarist: first, that the desirable course of events is a shock treatment which reduces the rate of growth to the final level abruptly; second, that the desirable course is a policy of gradual reduction. The shock policy has been supported by two groups: first, believers in an extreme form of rational expectations who argue that a pre-announced shock treatment would in fact lead to a rapid adjustment of prices with very little disturbance of real income. The second group has had a very different view. It has favored shock treatment for political reasons, believing that a government will not in fact be able to maintain a gradual policy.

The believers in a gradual approach, of whom I have always been one, have argued primarily on economic grounds that many arrangements have expectations of inflation built into them that, if suddenly disrupted, would cause serious economic disturbance. We have felt that it is best to move gradually in order to give people time to adjust to the new circumstances, to unwind the contracts that were entered into under earlier circumstances.

This issue has by no means been resolved. Experience clearly contradicts the more extreme rational expectations models predicting extremely rapid adjustment to changes in monetary growth. Nonetheless, the balance of recent evidence, I must confess, is rather on the side of those who favor a shock treatment. The case of Japan in 1973 is a dramatic example. Monetary growth was brought down abruptly from around 25 percent per year to around 10 to 15 percent and then held there, being reduced still further some years later. Inflation followed suit about 18 months later, along with a resumption of economic growth. Even more persuasive has been the failure of countries like the United States to stick to a gradual program even though that is its announced policy.

It should be noted that neither an abrupt nor a gradual reduction to a final level would be the ideal policy, given accurate information on money demand and both the technical and political possibility of finetuning a disinflationary process. If a reduction in monetary growth leads to a decline in inflation, and that decline is embedded in anticipated inflation, the resulting lower cost of holding money will produce an increase in the quantity of real balances demanded. Velocity, which rises because of the reverse effect when inflation accelerates, and stabilizes when inflation stabilizes, will tend to decline when inflation declines. An ideal policy would therefore involve an initial decline in monetary growth, a subsequent rise when declining inflation reduces

velocity, and a final decline to the desired long-run level when velocity stabilizes.<sup>2</sup>

Such a policy, while ideal in a world of perfect information and control, seems to me undesirable in actual practice. First, authorities never have the information required to approximate the correct pattern, except perhaps in cases of hyperinflation. Second, the authorities tend to be deceived by the decline in velocity when it comes, regarding it as more than a one-shot affair, and hence run the danger—which has been realized more than once—of reigniting inflation and having to start all over.

### III. Monetarist Rhetoric

As inflation accelerated during the 1970s, it became increasingly clear that excessive monetary growth was a major culprit. In reaction, central bankers in country after country began to use monetarist rhetoric in describing their policy. Essentially every country in the world came to accept the announcement of targets for monetary growth as part of its standard procedure. The most dramatic episode occurred on October 6, 1979 when Paul Volcker, after pressure at an IMF meeting in Belgrade, flew back to the United States and announced a major change in monetary policy. In commenting on this announcement at the time, I wrote:

The Fed's targets for monetary growth have become a laughingstock, as it has become clear that any relation between the targets and actual monetary growth is purely coincidental. For more than a decade there has been increasing pressure on the Fed—from academic students of money, the staffs of various regional reserve banks, the staff of the board itself and, more recently, from Congress—to change the operating procedure by substituting the monetary base (currency plus deposits at Federal Reserve banks) for the Federal funds rate as the primary instrument for controlling monetary growth.

Has the Fed finally gotten that message? The Fed's release sounds like it: "This action involves placing greater emphasis in day-to-day operations on the supply of bank reserves and less emphasis on confining short-term fluctuations in the Federal funds rate." However, those of us who have long favored such a change have repeatedly licked our wounds when we mistakenly interpreted earlier Fed statements as portending a change in operating procedures. I hope that this time will be different—but remain skeptical until performance matches pronouncements.<sup>3</sup>

2. I am deliberately oversimplifying by describing the "ideal policy" as a three-step policy. In principle, it would be far more complex.
3. "Has the Fed Changed Course?" *Newsweek*, October 22, 1979, p. 39.

Unfortunately, my skepticism was amply justified as the following brief sketch of monetary policy in the United States from 1960 to date demonstrates. Incidentally, in judging what actually happened, it is not irrelevant that, if asked “Are you now or have you ever been a monetarist,” not a single member of the Board of Governors of the Federal Reserve System would answer “yes.”

## A. The United States

### 1) From 1969 to October 1979

Monetary restraint, encouraged by President Eisenhower’s willingness to suffer two recessions within four years (1957-58 and 1960-61) in order to bring down inflation, eliminated inflation by 1960. The end of inflationary expectations laid the groundwork for a long sustained expansion from 1961 to 1966—the postwar “high-tide” of the Federal Reserve System comparable to the 1923-28 period that Anna Schwartz and I designated the “high-tide” of the Federal Reserve System in our *Monetary History*.<sup>4</sup> As in the 1920s, this proved to be a passing phase, though the immediate aftermath was inflation rather than depression. The rate of monetary growth roughly doubled after 1960. At first, the effect was rapid economic growth but then inflation started to gain ground, leading to a brief period of monetary restraint and a mini-recession from 1966 to 1967.

This episode was the beginning of a roller coaster of monetary growth, inflation, and unemployment that dominated the two decades from 1960 to 1980. Each increase in monetary growth was followed by a rise inflation, which led the authorities to reduce monetary growth sharply, which in turn produced economic recession. The political pressures created by rising unemployment led the Fed to reverse course at the first sign that inflation was tapering off. The Fed took its foot, as it were, off the brake and stepped on the gas. After an interval of about six months, the acceleration in monetary growth was followed by economic recovery, then a decline in unemployment, and, after another year or so, by accelerated inflation.

This roller coaster was superimposed on a rising trend. Each peak in monetary

4. The rates of growth of money in the successive five-year periods from 1950-1955, 1955-1960, and 1960 to 1965 were 3.2, 1.0, and 2.9 for  $M_1$ ; 4.0, 3.0, and 6.4 for the monetary aggregate we used in *Monetary History of the United States, 1867-1960* (Princeton University Press, 1963) and *Monetary Trends*, equivalent to the former Federal Reserve  $M_2$ ; and 5.2, 4.6, and 8.4 for the current Federal Reserve  $M_2$  (our  $M_4$  in our *Monetary Statistics of the United States* [Columbia University Press, 1970]). It is interesting to compare these numbers with those in the earlier periods. The rates of growth of the monetary aggregate we used in *Monetary History* from 1918-1920, 1920-1922, and 1922-1927 were 14.1, -1.6, and +5.8. The periods preceding the “high-tide” were shorter and more extreme, but the earlier “high-tide” period itself had roughly the same growth rate as the later one.

growth was higher than the preceding peak; each trough in monetary growth higher than the preceding trough. Each inflation peak was higher than the preceding peak; each inflation trough, higher than the preceding trough. Similarly, at each peak in the economy, unemployment was higher than at the preceding peak, and at each trough in the economy, unemployment was higher than at the preceding trough.

Monetary growth during the decade of the 1960s, while high enough to rekindle inflation, was nonetheless relatively stable, which explains why there was only a mini-recession during the decade. But then it became decidedly more erratic, with sharp ups and downs. The result was a more erratic economy as well.

Rising concern about inflation, and growing recognition of the role played by monetary growth in producing inflation, led the Congress in 1975 to require the Federal Reserve to specify targets for monetary growth. However, the Federal Reserve, which had opposed the congressional action, succeeded in rendering the requirement largely meaningless by (1) introducing a multiplicity of monetary aggregate measures; (2) specifying targets in terms of a range of growth rates, rather than dollar levels; and (3) shifting the base to which it applied its growth rates every quarter.

In practice, the Fed continued to target interest rates, specifically the Federal funds rate, rather than monetary aggregates, and continued to adjust its interest rate targets only slowly and belatedly to changing market pressure. The result was that the monetary aggregates tended on the average to rise excessively, contributing to inflation. However, from time to time, the Fed was too slow in lowering, rather than in raising the Federal funds rate. The result was sharp deceleration in the monetary aggregates, and an economic recession. The time duration of these swings was relatively long—short gyrations lasting about six months, longer waves about two to three years up, one year or less down. Changes in rates of monetary growth were followed by changes in the same direction in both interest rates and economic activity after about six months, and by changes in the same direction in inflation after about two years.

## 2) October 1979 to Summer 1982

By 1979, inflation and interest rates had both reached double digits, and a flight from the dollar, which had begun in 1978, accelerated. On October 6, 1979, the Federal Reserve announced a major change in monetary policy “to support the objective of containing growth in the monetary aggregates . . . by placing greater emphasis on the supply of bank reserves and less emphasis on confining short-term fluctuations in the Federal funds rate.”

The change was intended to produce lower and steadier monetary growth, at the cost, it was believed, of more variable short-term interest rates.

Unfortunately, while the objective was excellent, the execution was not. The Fed



tried to achieve its new objectives by modifying its earlier procedures and without changing its regulations. In particular, lagged reserve requirements, which had hindered the achievement of the earlier objectives to a minor extent, proved an extremely serious hindrance for the new objectives.

As a result, while average monetary growth was lower after the change than before—which accounts for the subsequent decline in inflation—monetary growth became much more variable after the change rather than steadier. The period of the gyrations also shortened. The short gyrations lasted about one quarter, the longer waves about one year or less.

Interest rates and economic activity followed suit, fluctuating more violently and over shorter periods than earlier. In addition, the lag between changes in monetary growth and subsequent changes in interest rates, economic activity, and inflation shortened: from six months to about three months for interest rates and economic activity; from two years to a little more than one year for inflation.

Table 1, based on quarterly data, summarizes the experience since the change in monetary policy.

To the best of my knowledge, no earlier three-year period since the Fed was

**Table 1:**

**The Impact of Changes in Monetary Growth on Nominal and Real GNP and the Three-Month Treasury-Bill Rate**

Period for Monetary Growth	No. of Quarters	Annual Rate of Growth					Change in 3-Month T-Bill Rate	Period for GNP and T-Bill Rate
		M <sub>1</sub>	M <sub>2</sub>	GNP				
				In Current Dollars	In 1972 Dollars			
		One Quarter Later						
79:4 to 80:2	2	1.8	6.5	5.3	-4.1	-4.2	80:1 to 80:3	
80:2 to 81:2	4	10.1	10.5	12.8	+3.2	+5.9	80:3 to 81:3	
81:2 to 81:4	2	3.0	8.9	2.9	-5.2	-2.1	81:3 to 82:1	
81:4 to 82:1	1	10.9	10.1	6.8	+2.1	-0.4	82:1 to 82:2	
82:1 to 82:3	2	3.4	9.9	4.2	-0.2	-4.5	82:2 to 82:4	
82:3 to 83:2	3	13.8	13.9	10.9	+5.4	+0.3	82:4 to 83:2	
79:4 to 83:2	14	7.9	10.2	7.7	+0.4	-5.0	80:1 to 83:2	

established shows such wide fluctuations in either monetary growth or economic activity.

### 3) Since Summer 1982

Around July 1982, the Federal Reserve again appears to have made a major change in its operating procedures. To judge from its behavior, the Fed reverted to its pre-October 1979 policy of targeting interest rates and of delayed adjustment to market pressures affecting interest rates. The result, as earlier, was surrender of control over the monetary aggregates. In the eleven months from July 1982 to June 1983,  $M_1$  rose at close to 14 percent per year.

The shift to the earlier policy appears to have been accompanied by a return to the earlier relation between monetary growth and interest rates and economic activity.

Money growth accelerated in July 1982. On the 1979-82 pattern, interest rates might have been expected to decline for about one to three months thereafter and then start rising. On the pre-1979 pattern, the lag was about six months. After money growth accelerated in July 1982, interest rates did decline sharply for about two months. But then they were relatively stable for some months and began to rise in late 1982 or early 1983.

Similarly, on the 1979-82 pattern, the economy might have been expected to begin recovering about three months after money accelerated or in October 1982; in the pre-1979 pattern, not until six months later, or January 1983. The economy apparently reached its trough and started recovering in November 1982, or four months after the acceleration in monetary growth—moving toward the earlier pattern, though closer to the later one.

The Fed has justified the monetary explosion since July 1982 on two main grounds. At first, it asserted that institutional changes were rendering changes in  $M_1$  difficult to interpret, and hence made it necessary to depart temporarily from putting major stress on  $M_1$ . As the explosion continued, it added the excuse that there had been unexpected and unusual shifts in the demand for money—its standard excuse throughout the decades whenever it has been subjected to criticism. The basis for the claim was the sharp drop in  $M_1$  velocity from mid-1981 to early 1983, and especially in the fourth quarter of 1982. This decline in velocity was entirely consistent with an unchanged demand for money. It was, in part, the standard cyclical pattern of a decline in velocity during recession, in part, a reflection of the lag in the effect of monetary change, so that contemporaneous velocity always tends to fall in the early stages of a monetary explosion, in part, a reaction to the sharp decline in inflation which lowered the cost of holding money, and in part, a reaction to the increased volatility of monetary growth, which also tends to increase the quantity of money demanded.

As to the excuse in terms of institutional change, the major changes were not

introduced until December 1982 and January 1983 and hence cannot explain the monetary explosion from July 1982 to December 1982. Both excuses are, I believe, ex post rationalizations.

The money explosion puts the economy in a no-win position. Continued monetary growth at anything like recent rates would mean an upsurge in inflation in 1984 or 1985 at the very latest and higher long-term interest rates much sooner, as more and more participants in the financial market came to anticipate the rise in inflation. Already, the rapid monetary growth has produced the early symptoms of an over-heated economy.

A drastic reversal that produced low or negative monetary growth—something that the Fed has often done in the past—would produce a sharp temporary increase in short-term interest rates, abort the economic expansion now in process and lead to a renewal of recession by early 1984.

Even the least harmful course—prompt reduction in monetary growth to the Fed's own target limits (4 to 8 percent for  $M_1$ ) will, unless we are very lucky indeed, mean a rise in short-term rates, a slowdown in the expansion and a moderate increase in inflation.

## B. Monetary Growth and Inflation in the U.S.

As noted earlier, inflation in the United States tends to be a fairly inertial phenomenon that is affected long after the event by monetary growth. This is clearly shown in Table 2 which shows monetary growth for successive three-year periods beginning in the third quarter of 1973 and inflation in periods two years later, the first two periods being a full three years, the last period being until the first quarter of 1983 or a year and a half.

Table 2:

**Monetary Growth and Inflation**  
(All growth rates, percent per year)

Monetary Growth			Inflation		
Period (Quarter/Year)	Monetary Base	$M_1$	Period (Quarter/Year)	Consumer Price Index	Implicit Price Deflator
3/73 to 3/76	7.8	5.1	3/75 to 3/78	6.7	6.3
3/76 to 3/79	8.6	8.3	3/78 to 3/81	11.8	9.1
3/79 to 3/82	6.9	6.1	3/81 to 2/83	3.1	5.2

Whether measured by the monetary base or by  $M_1$ , the rate of monetary growth speeded up significantly from the first period to the second period and then fell significantly in the third period. The movements in the consumer price index are much sharper than those in either the monetary base or in  $M_1$ , both up and down. Partly this is because the consumer price index as it was constructed during this period gave undue weight to housing costs and hence to the interest rate, which was particularly volatile during these years. From this point of view the implicit price deflator is a better measure. The rise in the rate of inflation as shown by the implicit price deflator from the first period to the second is roughly the same as in  $M_1$ —a 3.2 percentage increase in  $M_1$ , a 2.8 percentage increase in the rate of growth of the implicit price deflator. On the other hand, the tapering off of inflation is much sharper—a 2.2 percentage point decline in  $M_1$ , a 3.9 percentage point decrease in the rate of growth of the implicit price deflator. I believe that this difference is in considerable measure to be explained by the far higher volatility of both the monetary base and  $M_1$  in the third period than in either of the others. This is a point that I shall return to later. The main point is simply that the recent decline in inflation is to be attributed to the slower average rate of growth in money over the three-year period from the third quarter of 1979 to the third quarter of 1982 than in the prior three-year period.

### C. Monetary Volatility

Average is one thing, variability is a very different thing. Table 3 measures the volatility of the monetary base and of  $M_1$  in the same three-year periods used in Table 2. It measures the volatility of the nominal GNP, of real GNP, and of the implicit price deflator in three-year periods just six months rather than two years later than the periods for money, since changes in money tend to affect nominal income after a lag of about two quarters. The shorter lag between monetary change and nominal income change on the one hand than between monetary change and inflation is a major reason why monetary volatility is so disturbing for real income.

**Table 3:**

**Variability of Monetary and Economic Growth: Standard Deviations  
of Quarter-to-Quarter Annualized Rates of Change (continuously compounded)**

Money			Economy			
Period (Quarter/Year)	Monetary Base	$M_1$	Period (Quarter/Year)	Nominal GNP	Real GNP	Implicit Price Deflator
3/73 to 3/76	1.3	1.5	1/74 to 1/77	3.8	5.6	2.7
3/76 to 3/79	0.9	1.3	1/77 to 1/80	3.7	3.2	1.6
3/79 to 3/82	2.3	4.7	1/80 to 1/83	5.7	4.8	2.5

After declining somewhat from the first to the second period, monetary volatility rose drastically from the second to the third. The third period is the period of the so-called "monetarist" policy of the Federal Reserve. Nominal GNP shows precisely the same pattern. This is a relationship that Anna Schwartz and I investigated for a period of close to a hundred years in an article published some two decades ago. I have subsequently extended that analysis. It demonstrates that so far as the United States is concerned there is a close relationship between the volatility of money on the one hand and the volatility of nominal income and real income on the other. The results for real GNP in Table 3 may appear to contradict this conclusion but they really do not. Real GNP is more volatile in the third period than in the second, but it is even more volatile in the first. The reason is that the first period reflects the aftermath of the price controls imposed by President Nixon in August 1971. Their release produced a rapid acceleration in recorded inflation which was accompanied by a decline in real income. As a result, there is a negative correlation between the changes in real income and in the implicit price deflator during the three years from the first quarter of 1974 to the first quarter of 1977 while for the other two periods there is a very mild positive correlation. That is why there is higher volatility for both real income and the implicit price deflator in the first period than in either of the others.

The third period shows the increase in volatility from the second that is already recorded in a different way in Table 1.

#### **D. Great Britain and Japan**

I am not as knowledgeable about the details of monetary policy and performance in Great Britain and Japan. However, my impression is that Japan illustrates a policy that is less monetarist in rhetoric than the policies followed by the United States and Great Britain but is far more monetarist in practice. In any event, since the change in policy in 1973 when inflation reached 25 percent and monetary growth was over 25 percent, Japan has followed a fairly consistent policy of holding down the rate of monetary growth and of keeping it relatively steady. The rate of monetary growth has come down from the neighborhood of 12 or 13 percent at that time to something like 8 or 9 percent today. It has shown a good deal of variability from month to month but relatively little variability from year to year. It has been highly stable and highly dependable, and the result has been that Japan has been less affected by economic instability than the other two countries.

So far as Great Britain is concerned, my impression is that its experience was very similar to that of the United States, a very erratic monetary policy along with a decline in the average rate of growth. The result, I believe, has been again considerable economic instability along with a sharp decline in the rate of inflation.

#### **IV. Conclusion**

The basic conclusion from this survey is straightforward: slower average monetary growth has tamed inflation in the U.S. and the U.K. Under the best of circumstances, that would have involved a transitional period of recession and slow growth—perhaps 18 months in duration, to judge from Japan's experience. In practice, excessive volatility of monetary growth introduced severe instability in both countries and made the cost of taming inflation unnecessarily high. Moreover, it has left both countries, but perhaps the U.S. even more than Britain, without a credible, dependable monetary policy that can justify firm expectations that inflation will stay tamed.

A major cost of the volatile policy followed in the U.S. is the discrediting of a proper monetarist policy. As a result, we are back in a situation in which the monetary authorities are operating in a purely discretionary fashion, subject to no meaningful standards of accountability. Their policy over the past few years would not have been different if they had deliberately set out to give monetarism a bad name.