

"How to Give Monetarism a Bad Name"¹

by Milton Friedman

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It is widely believed that monetarism was tried in the United States from 1979 to 1984 and that it did not work in practice. That is very far from the truth. In October 1979, the Federal Reserve in desperation adopted monetarist rhetoric. It did not then and has not since adopted a monetarist policy.

If the question, "Are you now or have you ever been a monetarist?" were put to the seven members of the Federal Reserve Board, not a single one would say yes. As George Kaufman commented many years ago in a paper entitled "A Self-Fulfilling Prophecy,"² the Federal Reserve has always opposed the use of monetary targets; it has always claimed that it could not in fact control effectively the quantity of money and it has repeatedly adopted policies that have corresponded to George Kaufman's title.

A monetarist policy consists of two essential items: First, the acceptance of a monetary aggregate by the monetary authorities as their primary target; second, the adoption of policies directed at producing a stable and predictable rate of growth in that monetary aggregate. This general description covers many variants—ranging from an absolutely fixed monetary growth target such as I have favored to the use of monetary growth as a means of fine-tuning the economy. Similarly, different monetarists have concentrated on different monetary aggregates, varying from the monetary base to M1 to M2 to still broader aggregates, and have had different objectives with respect to the desirable rate of monetary growth. But every variety of monetarist, whatever his specific formula, has regarded relatively stable and relatively predictable growth in a specified monetary aggregate as an essential feature of a monetarist policy.

In judging how such a policy would work, it is important to note that monetary growth tends in the first instance to affect the rate of growth of nominal income. An increase in the rate of monetary growth tends to produce after a variable interval an increase in the rate of growth of nominal income, and conversely. How the change in nominal income is divided between inflation on the one hand and real output on the other has become an area of considerable contention in the theoretical literature in recent years, especially since the emergence of the rational expectations doctrine and particularly of its more extreme forms. I do not propose to go into that issue here. I shall bypass it by simply stating the empirical generalizations that seem to me to be justified for the United States and similar countries such as Britain and Japan which have been spared a history of continuously volatile and occasionally extremely rapid inflation.

For such countries, inflation tends to have a great deal of inertia, to change only slowly and gradually. The result is that a change in the rate of nominal income growth tends to show up first in output and only subsequently in inflation. Inflation tends to depend on the average rate of growth of nominal income—and hence of prior monetary growth—over a considerable period. It is much less affected, though it is affected, by the volatility of monetary growth and hence of nominal income. As a result, volatility in nominal income growth is reflected primarily in

volatility in real output, employment, and so on. As to timing, on the average for the United States, Great Britain, and Japan, a change in monetary growth tends to be followed by a change in the growth of nominal income in the same direction after an interval of six to nine months, though during 1979 to 1982, the period of the misleadingly labeled “monetarist experiment,” the lag has been shorter than that in the United States, and by a change in inflation after an interval of something like a year and a half to two and a half years. These time lags are of long standing. With this background, let me turn to a brief capsule history of monetary policy in the United States in the past few years.

1. History

1.1. From 1960 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*.³ 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 decade from 1970 to 1980. Each increase in monetary growth was followed by a rise in 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 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 a 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.

1.2. 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. Under pressure at the IMF meeting in Belgrade, Paul Volcker flew back to the U.S. and on October 6, 1979, 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.

TABLE 1.—THE IMPACT OF CHANGES IN MONETARY GROWTH ON NOMINAL AND REAL GNP AND THE 3-MONTH TREASURY-BILL RATE

[Annual rate of growth]

Period for monetary growth	Number of quarters	M1	M2	GNP		Change in 3-month T-bill rate ¹	Period for GNP and T-bill rate
				In current dollars ¹	In 1972 dollars ¹		
79:4 to 80:2	2	1.3	6.0	5.2	-4.3	-4.2	80:1 to 80:3
80:2 to 81:2	4	10.1	10.5	14.0	+4.0	+5.9	80:3 to 81:3
81:2 to 81:4	2	3.9	9.6	1.1	-5.0	-2.1	81:3 to 82:1
81:4 to 82:1	1	10.7	9.9	4.7	-.8	-.4	82:1 to 82:2
82:1 to 82:3	2	4.2	8.6	3.2	-.2	-4.5	82:2 to 82:4
82:3 to 83:3	4	12.9	12.7	11.3	+7.1	+1.2	82:4 to 84:1
83:3 to 84:3	4	5.8	7.3	² 8.5	² +4.5	-.4	84:1 to ³ 84:4
79:4 to 84:3	19	7.5	9.5	² 8.4	² +2.2	³ -4.6	80:1 to 84:4

¹ One quarter later to 82:3, two quartets later after 82:3.

² To 84:3.

³ Preliminary.

To the best of my knowledge, no earlier three-year period since the Fed was established shows such wide fluctuations in either monetary growth or economic activity as the three years from the fourth quarter of 1979 to the third quarter of 1982.

1.3. Since Summer 1982

Around July 1982, the Federal Reserve again appears to have made a major change in its operating procedures. By contrast with October 1979, it made no public announcement. On the contrary, it stated that it had not changed its procedures, but was giving less attention to M1 simply because institutional changes were introducing erratic disturbances into M1.

To judge from its behavior, the Fed reverted to its pre-October 1979 policy of targeting interest rates and of delaying adjustment to market pressures affecting interest rates. The result, as

earlier, was surrender of control over the monetary aggregates. In the year from the third quarter of 1982 to the third quarter of 1983, M1 rose to close to 13 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, a lag of two quarters rather than one. That change is embodied in the data in Table 1 for the period after 1982.

When account is taken of this reversion of the lag pattern, the consistent relation between the rates of monetary growth and subsequent changes in income and interest rates prevails after 1982 as it did before. Rapid monetary growth from the third quarter of 1982 to the third quarter of 1983 was followed by rapid growth in both nominal and real income and a rise in the interest rate. The subsequent slowdown in monetary growth was followed by a slowdown in both nominal and real income, and also in interest rates.

2. Evaluation

All in all, the period since the change in Federal Reserve policy, like the prior three years and the decades before that, strongly support the conclusion that erratic monetary growth produces erratic economic growth, and that the monetarist prescription of steady monetary growth would mean steadier, albeit not completely steady, economic growth.

2.1. Inflation

As noted earlier, inflation in the United States tends to be a fairly inertial phenomenon that reflects much earlier 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 of the same length beginning two years later.

TABLE 2.—MONETARY GROWTH AND INFLATION

[All growth rates, percent per year]

Monetary growth			Inflation		
Period (year:quarter)	Monetary base	M1	Period (year:quarter)	Consumer price index	Implicit price deflator
73:3 to 76:3	7.8	5.1	75:3 to 78:3	6.7	6.3
76:3 to 79:3	8.6	8.3	78:3 to 81:3	11.8	9.1
79:3 to 82:3	6.9	6.1	81:3 to 84:3	3.9	4.3
82:3 to 84:3	8.9	9.3	84:3		

Whether measured by the monetary base or by M1, 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 M1 both up and down. Partly this is because the consumer price index as it was constructed during most of 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 M1—a 3.2 percentage increase in M1, as 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 M1, to 4.8 percentage point decrease in the rate of growth of the implicit price deflator. I believe that this difference is in considerable measure a consequence of the far higher volatility of both the monetary base and M1 in the third period than in either of the others. This is a point to which I shall return. 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.

2.2. Monetary Volatility

Average is one thing, variability is a very different thing. Table 3 measures the volatility of the monetary base and of M1 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 (year:quarter)	Monetary base	M1	Period (year:quarter)	Nominal GNP	Real GMP	Implicit price deflator
73:3 to 76:3	1.3	1.5	74:1 to 77:1	3.8	5.6	2.7
76:3 to 79:3	.9	1.3	77:1 to 80:1	3.7	3.2	1.6
79:3 to 82:3	2.3	4.7	80:1 to 83:1	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 the appearance is deceptive. 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 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.

3. Implications

It is interesting to speculate on what could reasonably have been expected from monetarism, if a monetarist policy had in fact been followed from the third quarter of 1979 to the third quarter of 1982 not only in the sense that a monetary target was aimed at, but that it was reasonably effectively achieved. In that case, the volatility of money would have been far lower. With respect to the related question whether it would have been feasible for the Fed to have achieved a much steadier rate of growth in the quantity of money, that question has been analyzed exhaustively by myself and others. The general consensus is that it clearly would have been possible if the Fed had been willing to make changes in its operating procedures, in particular, if it had been willing to eliminate lagged reserve requirements, and target total reserves or the monetary base.

Suppose then that monetary volatility had been roughly the same in the third period as it was in the second, which itself is not an exceptionally high standard, since I believe that it would have been possible for the Fed to do considerably better than that.

In making this hypothetical evaluation, one qualification must be introduced. The course of events in 1980 was very much influenced by President Carter's decision to impose credit controls early that year and the subsequent removal of those controls. In judging the effects of a different monetary policy it would perhaps be best to abstract from that disturbance by assuming that no credit controls were imposed. At the same time it should be noted that the volatility resulting from the credit controls should be blamed on President Carter and not the Federal Reserve. However, the Federal Reserve System was responsible for exacerbating the effects of the credit controls by permitting an excessive decline in the money supply in response to the imposition of the credit controls and an excessively rapid growth in the money supply in connection with their elimination.

Let us assume therefore that M1 rose at the rate of about 7.1 percent from the third quarter of 1979 to the third quarter of 1980, 6.1 percent from the third quarter of 1980 to the third quarter of 1981, 5.1 percent from the third quarter of 1981 to the third quarter of 1982, averaging precisely the 6.1 percent that it did average over those three years. What would have been the course of events?

First, the recession that in fact terminated in July 1980 would almost surely have lasted longer but would have been considerably milder. Instead of the abnormally short six-month recession that occurred, the recession might have lasted somewhat longer than the typical twelve-month recession of the postwar period, let us say about 18 months. The recession would then have continued to about July 1981, ending up with a level of employment and output somewhat lower

than was actually reached in mid-1980. However, somewhere around the middle of 1981 a revival would have taken place as declining inflation and the prospects of steady monetary growth worked their effect. There would then have occurred an expansion more nearly in line with other postwar expansions which lasted roughly three years. Unemployment would never have risen as high as it did. Output would never have fallen as low. We would have been spared the absolute decline in per capita real income and real wages that occurred over a period of four or five years. Indeed, real income and wages were lower in mid-1982 than they had been ten years earlier, an almost unprecedented event in the history of the United States.

The steadier monetary policy would have had a double effect on interest rates. On the one hand, a stabler economy would have introduced less disturbance to interest rates than the actual highly unstable economy did. In the second place, the financial markets would have not had to react to sharp ups and downs in rates of monetary growth. On both counts, interest rates would have been less volatile, and in my opinion they would also have been decidedly lower. The unprecedented volatility of the economy that actually occurred produced a series of demands for distress borrowing on the part of business communities. When the recession seemed to have come to an end in July 1980 it was understandable and natural for businessmen to expect that it would be succeeded by a typical postwar expansion lasting something like three years. Instead, the expansion was cut short after one year in the middle of 1981. At this point businessmen were caught with commitments that they had undertaken that it was not feasible for them to terminate. The result was a highly unrealistic demand for credit. At the same time, a lack of confidence in Federal Reserve policy and the failure of actual policy to conform with Fed pronouncements led to great concern about whether inflation was in fact going to be controlled. As a result, long-term interest rates incorporated a sizable inflationary expectation and the long-term market was very thin. Neither borrowers nor lenders wanted to engage in long-term, financial contracts when neither knew whether the inflation rate five years later would be under 5 percent or over 25 percent. The burden of financing was concentrated on the short-term markets and short-term rates alternately zoomed and fell. It is my conjecture that, under the alternative assumed pattern of monetary growth, the average level of short-term rates might well have been something like 3 to 5 percentage points lower than they in fact were.

Lower and less volatile interest rates would have had one byproduct that would have been desirable in the short run but unfortunate in the long run, namely, far less pressure for drastic institutional change and hence for deregulation of banking. Money market mutuals would have continued to grow, but would not have exploded as they did. A slowing of financial innovation would have removed a major excuse that the Fed offered for monetary volatility and later still for asserting that the relation between monetary aggregates and nominal income had become undependable. (Is what actually occurred another example of George Kaufman's self-fulfilling prophecy?)

Lower interest rates and lower unemployment would have meant lower government spending. Higher levels of economic activity would have meant higher revenues. On both scores the deficit would have been lower. The much needed cuts in tax rates would have been able to exert their full supply-side effect and there would have been far less resistance to the further reductions in spending and in tax rates that are so urgently needed.

In particular, the occasion never would have arisen for the introduction of a tax increase bill in 1982. Bad monetary policy does not alter the need to lower tax rates rather than to raise them.

Finally, a price would have been paid for all of those benefits in the form of a somewhat slower decline in inflation. While the high interest rates in and of themselves reduced the demand for money and thus tended to mean an increase in velocity, the high volatility increased the demand for money, as an increase in uncertainty invariably does, and thus tended to make for a decrease in velocity. These effects counterbalanced one another so that the velocity of M1 continued to rise until the fourth quarter of 1981, but from then on the forces making for lower velocity dominated, especially after interest rates fell sharply in the latter part of 1982.

All in all, I believe that the benefits from a stabler economy, a higher level of employment, a lower budget deficit, and less pressure to increase government spending would have vastly outweighed the cost of a somewhat slower decline in inflation. Had inflation declined as much as monetary growth, namely by 2.2 percentage points, the average rate of inflation from the third quarter of 1981 to the third quarter of 1984 would have been 6.9 percent instead of 4.3 percent, but inflation would be continuing to taper off, if we assume continuation of a policy of reducing the rate of monetary growth by 1 percentage point a year. On the other hand, the policy that was actually followed produced a more rapid decline in inflation—thanks not to monetary restraint but to monetary volatility—but only at heavy cost—both that already mentioned and the likelihood that the next several years will see an upsurge in inflation.

From the third quarter of 1982 to the third quarter of 1984 the monetary base grew at the rate of 8.9 percent per year and M1 at 9.3 percent per year, decidedly higher rates than during the prior three years. As a result, inflation probably bottomed out in mid-1983 and will rise—perhaps modestly, perhaps sharply—in the next year or two. However, monetary growth has been zero for the five months from June to November 1984, so we cannot rule out the possibility that the Fed will overreact, as it has so often in the past, and plunge the economy into another recession in 1985. In view of the continuation of highly volatile monetary growth since mid-1982, as documented in Table 1, and even more dramatically by monthly and weekly data, it is impossible to forecast future monetary growth with any confidence. I have repeatedly noted that it is far easier to predict the consequences of the monetary growth produced by the Fed than it is to predict what monetary growth the Fed will produce. The former is a question of economic analysis; the latter often appears to be a question of psychoanalysis.

A major legacy of the non-monetarist policy that the Fed has followed since 1979 has been, as implied at the outset, to discredit a proper monetarist policy, and thereby to have made it far more difficult for such a policy to be adopted. Prophetic self-fulfillment indeed.

Conclusion

Seventy years of Federal Reserve history speaks with a single voice about the unwillingness of the Federal Reserve to adopt any policy which is clearly spelled out and capable of being objectively tracked by persons outside the system. Every bureaucratic organization resists accountability and the Federal Reserve is no exception.

Resistance to the particular policy recommended by most monetarists—a steady pre-committed rate of monetary growth—partly reflects the general resistance to accountability. But the resistance is strongly reinforced by the mechanical character of the recommended policy. Its adoption would appear to—and largely would—reduce the Fed’s operations to routine activities capable of being carried out by pre-programmed computers plus clerks. Its actions would come to be taken for granted—certainly they would not be the subject of daily speculation in the financial press, of regular attention on the daily TV news shows. The head of any agency committed to such a routine quasi-mechanical task would hardly be regarded, as the chairman of the Fed now is, the “second most important person in the country.”

I conclude that it is not, and has not been, in the self-interest of the members of the Federal Reserve Board to adopt a strict monetarist policy. All of us have a strong propensity to persuade ourselves that what is in our self-interest is also in the national interest. In this particular case, that propensity is strongly reinforced by the importance attached by the public to the activities of the Federal Reserve. How could a Board member, or a member of the open-market committee, live with himself if he shared my view that the activities they engage in when they manipulate the monetary instruments do far more harm than good?

I conclude that the likelihood that the Federal Reserve authorities will voluntarily surrender their discretionary powers by adopting a strict monetarist policy is close to zero.

Unfortunately, it is also not likely to be in the self-interest of the Congress to require the Fed to do so. The Fed provides the Congress with a handy whipping boy to blame for anything that goes wrong. It would not do so if the Fed were forced to adopt a strict monetarist policy.

Major reform and improvement in monetary policy will therefore require major institutional reform, which can in turn only come from either outside the Congress and the Fed, for example via constitutional amendment as a result of requests by state legislatures for a constitutional convention, or at a time of real crisis when something drastic has to be done.

The one eventuality is highly unlikely; the second is something all of us hope will not occur. In default, therefore, we shall, to paraphrase Adam Smith, have to accommodate ourselves to “the real mediocrity” of our circumstances, and hope that the continued scrutiny of Federal Reserve performance by monetarists will keep alive knowledge of the level of radical reform required, in case such reform does ever become feasible.

Notes

¹ Adapted from a paper under a different title given at a meeting of the Mont Pelerin Society, Vancouver, Canada, August 29, 1983.

² “Federal Reserve Inability to Control the Money Supply: A Self-Fulfilling Prophecy,” *Financial Analysts Journal* 28 (September-October 1972): 20–23, 26, 57–59.

³ The rates of growth of money in the successive five-year periods from 1950–1955, 1955–1960 to 1965 were 3.2, 1.0, and 2.9 for M1; 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 in the United States and the United Kingdom* (University of Chicago Press, 1982), equivalent to the former Federal Reserve M2; and 5.2, 4.6, and 8.4 for the current Federal Reserve M2 (our M4 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 and roughly the same growth rate as the later one.

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