ECONOMIC COMMENTARY

To regulate the nation's money supply, the Federal Reserve System sets target ranges for three measures of money, which are designated M1, M2, and M3. Although there are three different monetary targets, academic researchers in the late 1970s, because the actual rate of real GNP growth turned out to be lower than the estimated potential rate and inflation. 

Whatever information is used to guide policy, errors will be made and will need to be corrected. If M1 is used as a benchmark, the FOMC risks that policy would be inappropriate whenever the estimates of the trend in potential output are in error. If the trend in potential real GNP is lower (higher) than estimated, a decrease (increase) in the target is needed to achieve long-run price stability. This created a problem in the late 1970s, because the actual rate of real GNP growth turned out to be lower than the estimates of potential rate and inflation. 

Policymakers avoid these corrections because the evidence of a slowdown in economic activity arrives at the same time the FOMC learns that a restrictive correction in policy is needed to maintain price stability.

Conclusion

To what can we attribute the success of our disinflationary policy? Certainly, the Federal Reserve's high priority on ending inflation has played an important role. The mechanism of monetary targeting was also important. Money demand has become less predictable during this period of declining inflation, and the Federal Reserve has operated with considerable judgment in setting the money supply targets. One measure of the success of judgment can be seen in the offsetting relation between surprises in velocity and errors in hitting the M1 target.

Currently, the FOMC has apparently chosen to place more emphasis on indicators of real economic activity rather than on deviations of M1 from target. Thus far, the outcome has justified this approach. However, as long as there is uncertainty about velocity, there is a chance that above-target M1 growth will lead to more inflation. While more uncertainty about velocity naturally leads to a less aggressive reaction to a deviation of M1 from target, the long-run goal of price stability requires some reaction to reduce the probability that more difficult corrections will be needed in the future.

The recent growth of M1 typically indicates a strong economy. The recent growth of M1, however, has been associated with an unusually weak economy and has been marked by a surprising increase in the demand for money. This unusual condition has resulted in speculation about how or if the FOMC will use M1 as a target in the future. Many observers want the Federal Reserve to stop using intermediate monetary targets and focus on normal ranges of measures such as real economic growth and inflation.

The unexpected discrepancy between measured price growth and slow economic growth in the first half of 1985 appears to support this suggestion.

The M1 Target and Disinflation Policy

As we discuss below, however, the risks of error in conducting policy and the costs of correcting these errors are probably greater if the M1 target is ignored. No doubt, it is more difficult to know how much M1 to supply when the economy is much less predictable, but the growth of M1 still might have important implications for future economic activity and inflation.

The erratic behavior of money demand might reflect the deregulation of the banking industry that, in a series of steps, has relaxed restrictions on direct payment of interest on deposits included in M1. However, the widely publicized change in the Federal Reserve's policy, beginning in October 1979, of placing greater emphasis on eliminating inflation may have played a role. In this discussion, we focus on how a successful disinflation policy will affect the public's demand for M1.

Money Demand and Gradual Disinflation

The idea that the Federal Reserve's economic policy should be designed to eliminate inflation gradually is based on the presumption that it would cost more to eliminate inflation last until price stability is achieved. When the transition to price stability is complete, the ratio of real money balances to real income should be higher, but the growth rate of money should be much lower. A gradual policy generally wants the reduction of inflation to be gradual.

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1. The Federal Reserve maintains targets for M1, M2, and M3. See the Federal Reserve Bulletin, any recent issue, for definitions of these measures. Generally, M1 includes balances used in checking transactions, while M2 includes, in addition to M1, institutional savings assets.

2. The term real denotes constant dollar amounts. Real magnitudes are measured in terms of goods and services, while nominal magnitudes are measured in terms of dollars.
The quantity of money demanded (due to the successful application of a disinflation policy) could be to allow a temporary rise in the money growth rate? Failure to allow more rapid money growth under these conditions could result in monetary disequilibrium and inflation than originally planned.

However, the gradual approach to disinflation appears to be the only way to avoid severe short-term volatility in money growth and other variables tends to obscure the gradual changes in the long-run trend for these variables. Previous attempts to eliminate inflation gradually have not been successful. In addition, many makers allowed to reaccelerate for reasons unrelated to the disinflation goal. Consequently, policymakers are now unambiguously in contending to see if the Federal Reserve will once again deviate from its disinflation goal. 

In recent years, money has grown faster than the price level because the quantity of real money balances demanded has grown faster than the price level. Real interest rates may be the highest level of money balances demanded whenever inflation is not growing at a rate of around zero. However, inflation returns, we can expect people to reduce their real money balances. This would be associated with a period in which the price level grew faster than the money stock—a reversal of recent experience.

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Judgment in the Execution of Policy. While there is always a great deal of uncertainty in predicting money demand, this uncertainty increases with the adoption of a disinflation policy. This increased uncertainty is unavoidable. It requires a greater reliance on judgment and increases the number of adjustments that will be made to the monetary target.

The FOMC has been aware of uncertainties surrounding the use of M1 in the beginning of monetary targeting. The use of "... judgment rather than precise rules in the conduct of monetary policy..." has been the norm rather than the exception. This can be seen in the chart (taken from the most recent Economic Report of the President) which shows the annual target range chosen at the beginning of each year and the actual growth of M1 from 1976 through 1984.

In these nine years, M1 grew within the first-announced annual target range only twice—1976 and again in 1980. In 1979 and 1981, the target range only once—in 1981. In the remaining six years, M1 grew above the target range—1982 through 1984. In 1982, M1 was adjusted in a way that offset the inflationary or deflationary effect of unexplained velocity behavior. This has led to the offsetting pattern seen in chart 2.

The problem today is to decide how much of this year's velocity decline could be permanent and the successful disinflation policy of the last five years—and how much could be relatively weak? The FOMC set short-run targets for the interest rate on federal funds and looked at indicators of financial activity, including the monetary aggregates, and indicators of economic activity. Before 1979, this procedure was associated with a rapid acceleration of inflation.

The decision not to keep M1 in its target range in February 1985 could be interpreted as the FOMC's judgment that the rapid M1 growth early in the year was not inflationary. This judgment could have been based on observations that the foreign exchange value of the dollar had appreciated rapidly, that inflation-sensitive prices (commodities, real estate, etc.) were not signaling future inflation, that supply-side cost pressures (wages and energy costs) did not seem to be building. This judgment has been vindicated in subsequent economic reports, which show nominal GDP growing at an annual rate of 5 percent in the first half of 1985, a rate that is 2.7 percentage points below the original projection made when the M1 target range was chosen.

Chart 2 Deviations of M1 and Velocity from Expected Values


7. Note that there is a fundamental difference between targeting nominal GDP and real GDP. When the Federal Reserve targets M1, it is targeting the stock of money. When it targets nominal GDP, it targets the total economic output. Furthermore, because the price level is expected to rise, the FOMC is actually targeting the inflation rate. When it targets real GDP, it is targeting the actual output. This makes the differences between nominal and real GDP less relevant.
In recent years, money has grown faster than the price level because the quantity of real money balances decreased. This led to a higher level of money balances and a lower interest rate. People could afford to hold higher levels of money balances because of relatively lower interest rates. Inflation was considered to be benign at first, but not by a permanently higher level of real money demand. As the public learned about the new policy, inflation relative to income would decrease. The proper response to the public's demand for money would be an increase in the money supply.

To accurately predict future inflation, one must be able to sort out the temporary factors influencing money demand. Hence, the uncertainty about Federal Reserve policy response is increased. For those who monitor incoming information about M1 growth to predict inflation, the uncertainty about the Federal Reserve policy response is increased. On the one hand, a successful disinflation policy that is applied gradually should lead to a permanent upward shift in the public's demand for money relative to income. The proper response to this shift is to accommodate the public's demand for money, thereby keeping money growth faster for a time.

On the other hand, a policy-induced increase in the money supply (attempt to prevent a recession) should cause a temporary rise in demand for money even in the absence of a corresponding increase in the public's demand for money. Therefore, in order to predict the inflationary consequences of an episode of rapid money growth, one must know the FOMC's approach to monetary policy and the inflationary or deflationary effect of that policy. This is demonstrated in an article by Thomas Sargent, "The Ends of Four Big Inflations" in a FOMC report.

In spite of the fact that M1 grew above the target range over this entire period, inflation was much different before October 1979 than afterwards. Inflation (measured by the implicit GNP deflator) rose from 4.7 percent in 1979 to 8.2 percent in 1979. After October 1979, inflation fell from 10.2 percent in 1980 to 3.0 percent in 1981. It is not surprising that the M1 target led to inflation before 1980, but were associated with disinflation afterwards.

Relative success in the use of judgment in a framework of monetary targeting is illustrated in chart 2. This chart displays the deviation of velocity from the expected trend and the deviation of velocity from the midpoint of the target range for the period 1975 through the first half of 1985. Velocity is the ratio of M1 to GNP, and measures the average amount of money spent on each unit of real income during the year. A permanent 1 percent increase in velocity has the same inflationary potential as a 1 percent increase in the money supply.

As chart 2 illustrates, the inflationary effects of changes in velocity have been above the expected trend before 1979 and below the target trend thereafter. Velocity was less predictable in the post-1979 period. The potential inflationary impact of changes in velocity is offset by deviations of M1 from the announced target. This explains the difference. In later periods, M1 Fed's judgment. Targets were missed, and in the first half of 1985, the next year's target was adjusted to actual levels of M1. The FOMC regained control of monetary policy.

The problem today is how much of this year's velocity decline could be permanent and how the successful disinflation policy of the last five years-and how much could be temporary-which may be associated with an economic recovery or the Federal Reserve policy response to the 1984 second-half slowdown in M1 growth. M1 growth accelerated in late 1984 and early 1985. The FOMC made a decision to accommodate M1 growth in February, just before the 1985 velocity decline was observed.

The chart below indicates the importance of real economic activity—growth in the money supply. During 1985, the money supply grew at an annual rate of 4.5 percent. This is consistent with the assumption that the proper response to the public's demand for money would be an increase in the money supply. The proper response to the public's demand for money would be a permanent increase in money supply. This is consistent with the assumption that the proper response to the public's demand for money would be a permanent increase in money supply.
need to be corrected. If MI is used as a benchmark, the FOMC risks that policy would be inappropriate when velocity shifts. If velocity declines (rises) unexpectedly, a corrective increase (decrease) in the MI target would be needed to achieve long-run price stability. The results in chart 2 suggest that judgment can be used effectively to make these corrections.

If real economic activity is used as a benchmark, the FOMC risks that policy would be inappropriate whenever the estimates of the trend in potential output are in error. If the trend in potential real GDP is lower (higher) than estimated, a decrease (increase) in the target is needed to achieve long-run price stability. This created a problem in the late 1970s, because the actual rate of real GDP growth turned out to be lower than the estimates of potential made at that time.

If the FOMC ease policy because it incorrectly views real output as below trend, the risk is that inflation will become evident in reported price indexes. This timing problem might cause policymakers to adopt a targeted inflation policy, which is inherently weaker and to restrain the economy when it is inherently weaker. MI targeting was adopted to reduce both the risk of procyclical policy and the tendency for policymakers to avoid corrections that would prevent inflation.

Policymakers avoid these corrections because the evidence of a slowdown in economic activity arrives at the same time the FOMC learns that a restrictive correction in policy is needed to maintain price stability.

Conclusion
To what can we attribute the success of our disinflationary policy? Certainly, the Federal Reserve’s high priority on ending inflation has played an important role. The mechanism of monetary targeting was also important. Money demand has become less predictable during this period of declining inflation, and the Federal Reserve has operated with considerable judgment in setting the money supply targets. One measure of the success of judgment can be seen in the offsetting relation between surprises in velocity and errors in hitting the MI target.

Currently, the FOMC has apparently chosen to place more emphasis on indicators of real economic activity rather than on deviations of MI from target. Thus far, the outcome has justified this approach. However, as long as there is uncertainty about velocity, there is a chance that above-target MI growth will lead to more inflation. While more uncertainty about velocity naturally leads to a less aggressive reaction to a deviation of MI from target, the long-run goal of price stability requires some reaction to reduce the probability that more difficult corrections will be needed in the future. The rapid growth of MI typically indicates a strong economy. The recent growth of MI, however, has been associated with an unusually weak economy and has been marked by a surprising increase in the demand for money. This unusual condition has resulted in speculation about how or if the FOMC will use MI as a target in the future.

Many observers want the Federal Reserve to stop using intermediate monetary targets, which are based on measures such as real economic growth and inflation. The unexpected discrepancy between real economic growth and slow economic growth in the first half of 1985 appears to support this argument.

8. For a discussion of the quantitative aspects of this tradeoff, see Craig S. Raskko and Byron Big- gin, “Costs and Benefits of Reducing Inflation,” Federal Reserve Bank of Cleveland.


11. Federal Reserve Bank of Cleveland.

12. Federal Reserve Bank of Cleveland research department.

13. A gradual slowing in the money supply would not necessarily be associated with an equally gradual slowing in inflation. A gradual change in money growth, designed to slow and reverse inflation, should be expected to lead to a permanent reduction in the demand for money relative to income. A fundamental change away from a policy of accelerating inflation would produce a long-term increase in interest rates that tended to reduce the demand for money relative to income in the past. Stopping the increase in the interest rate would increase the amount of money that people would be willing to hold for transaction purposes. Furthermore, the goal of the System’s policy is not only to stop the long-term increase of inflation, but also to gradually reduce inflation. A permanently lower expected inflation rate would lead to a one-time decline in the nominal interest rate that would further encourage people to hold larger amounts of money relative to their incomes. This effect on the level of demand for money in our economy is permanent. A departure from gradual inflation may be associated with the transition to a lower expected inflation rate, and could cause the real level of income to be somewhat lower in the future. When the transition to price stability is complete, the ratio of real money balances to real income should be higher, but the growth rate of money relative to income in the long run would be lower.

Assuming that the Federal Reserve wants to follow a policy of gradually eliminating disinflation (as opposed to gradually slowing MI growth), then an appropriate policy response to a rise in