EXAMINING THE MONETARY CAUSES OF THE ECONOMIC SLOWDOWN

MINI BRIEF NUMBER MB82225

AUTHOR:

Hull, Everson

Economics Division

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DATE ORIGINATED 04/05/82
DATE UPDATED 07/20/82

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ISSUE DEFINITION

The economy is currently going through a difficult transition from a period of accelerating inflation to a period of more moderate price increases. Since 1955, there has been a disturbing trend in the U.S. economy, in which inflation has accelerated from a higher base after each recession. Moreover, the underlying rate of inflation has shown a tendency to continue rising through economic expansions as well as contractions. The current downturn marks the sixth recession that the U.S. has experienced since 1955 and the prospects appear good that the economy will emerge with a lower inflation rate than has been the case in these past recessions. Since March of 1980, the rate of inflation has fallen dramatically. In March through June of 1981, the annualized inflation rate as measured by the consumer price index (CPI) was at less than double-digit levels--7.5% at an annual rate- -over this four-month period. The last previous four-month period of single-digit inflation rates was recorded for the period December 1977 to March 1978. In the six-month period through March 1982 the CPI has increased at an annual rate of only 3.2% During March the CPI fell at an annual rate of 3.6%, the first decline in seventeen years. However, the moderation in inflation has been accompanied by high and volatile interest rates and periods of sluggish economic growth.

This issue brief investigates the effects of changes in money supply growth on the current economic conditions. The results presented are based upon a statistical methodology outlined in a CRS report (No.82-43E, March 1982) of the same title. The approach may be distinguished from most previous work along these lines in that it attempts to estimate the statistical significance of the 1979-82 deceleration in monetary growth. The resulting estimates are then employed in analyzing the timing implications of decelerating monetary growth for episodes of high and volatile interest rates, for lower inflation, and for unstable economic growth.

BACKGROUND

The U.S. economy was subjected to severe strains during 1981 with serious consequences for interest-sensitive sectors. Real GNP was virtually flat during the year's middle two quarters followed by a major slump in the fourth quarter. These slack conditions have continued into the first quarter of 1982 with real GNP falling by 3.9%. Industrial production declined at a compound annual rate of 11.3% from July 1981 to April 1982, while civilian employment showed a decline of almost 1.8% over the same nine-month period. Unemployment, by contrast, rose sharply from 7.2% in July 1981 to 9.4% of the civilian labor force in April 1982.

It is important not to lose sight of the reasons for the current slack economic conditions. In light of the dramatic decline in the overall rate of inflation that has occurred in recent months, it is very easy to overlook the potential dangers of a resurgence in high inflation rates. Recession causes tremendous hardship for many. Unlike sustained and accelerating inflation, however, recession is a cyclical phenomenon that need not seriously weaken the potential growth of the economy over the long run. As the focus of national attention shifts from inflation to recession, it is important to understand the links between clear discretionary policies directed at curbing an endemic inflation and the associated side-effects on the economy. A close

look at key developments during 1980 and 1981 points to a few fundamental forces that have been slowing the rate of inflation while at the same time retarding economic growth.

DECELERATING MONEY SUPPLY GROWTH

Most measures of monetary and fiscal action moved in the direction of restriction in 1980 and 1981. In the case of fiscal policy an increse in social security taxes, the introduction of a so-called windfall profits tax on crude oil revenues, and inflation-induced increases in personal taxes have combined to produce a rising tax burden that has helped dampen consumer and investment spending. Meanwhile, on the side of monetary policy, actions have been taken by the Federal Reserve System to dramatize its resolve to slow money growth to help curb the rate of inflation. These actions, first announced on October 6th 1979, have shifted the focus of short-run guidelines for open market operations away from changes in interest rates (the price of money) to changes in the reserve aggregates (the quantity of money).

Since the Federal Reserve's announced change, the growth rates of the monetary aggregates have shown marked month-to-month fluctuations. Nonetheless, there has been a noticeable slowing in the growth of the key variables over the longer term. Long-run growth in M1-B (currency, demand deposits and other checkable deposits), the most closely watched money supply indicator, has slowed substantially. After growing at 8.3% per annum during 1978, growth in M1-B slowed to 7.1% during 1979, to 6.6% during 1980 and to 6.4% during 1981. During the first 3 months of 1982 the growth rate of M1-B averaged 6.5%, but during April there was a resurgence in growth that averaged 8.6%. Beginning with the money supply figures released on Jan. 15, 1982 for the week ending Jan. 6, 1982, the existing M1-B measure has been relabeled M1 and the shift-adjusted M1-B measure together with M1-A (currency and coin plus commercial bank deposits held by the non-bank public) have been dropped. The Federal Reserve has continued to release estimates of M2 (i.e., M1-B plus savings and small time deposits and money market mutual funds) as well as M3 (i.e., M2 plus large time deposits).

The statistical estimates show that on a year-over-year basis the 1979/1981 deceleration in growth rates of the monetary aggregates has been more protracted than that of any other continuous period during the last 20 years. With the exception of M3 the rate of growth of which showed a modest increase during 1981, all of the main monetary growth indicators showed sustained rates of deceleration on a year-over-year basis during the period 1979 to 1981.

Although growth among the monetary indicators (M1-B, M2, and M3) showed marked deceleration over the period 1979 to 1981, the rate of deceleration was neither atypical by historical standards nor significantly different statistically from past experience. Significant rates of deceleration were reflected in the behavior of both M1-A and the monetary base, but these decelerations were less important in terms of financial stringency than in the past because of shifts in the distribution of deposits.

The deceleration in money supply growth has important implications for changes in interest rates in the near term, for changes in real economic growth in the intermediate term and for changes in inflation in the somewhat longer term. An examination of the causal links between changes in the money supply and changes in each of these three key economic indicators offers some insight into the forces that account for the recent volatility in interest rates, the decline in real growth, and the accompanying decline in the rate

of inflation.

VOLATILITY OF SHORT-TERM INTEREST RATES

Several conflicting explanations have been offered for the recent volatile movements in interest rates. What seems clear, however, is that there has been a marked response to changes in market forces that has contributed to fairly typical contracyclical movements in these rates. One frequently heard explanation attributes high interest rates to the apprehension of financial market participants stemming from the large absolute deficits projected under the Economic Recovery Plan. With the economy conspicuously weaker than many forecasters had anticipated, and with tax cuts of unprecedented size forthcoming, the outlook for the deficit has worsened. Yet, despite a widening deficit, interest rates fell with considerable speed through much of the second half of 1981.

For example, from Sept. 4, 1981 to Nov. 27, 1981, the interest rate on three-month treasury bills fell by 5.4 percentage points from 15.6% to 10.2%. Since November of 1981, movements in short- term interest rates have followed a roller-coaster pattern, increasing steadily during the months of December and January and falling during the months of February and April. These spasmodic declines in interest rates raise questions as to whether the expected size of the Federal budget deficit is the key determinant of the recent high short-term interest rates or of their recent volatility.

Moreover, reported projections of the deficit are somewhat tenuous at this time. The concensus (mean) forecast as reflected by leading econometric firms, Data Resources Inc. (DRI) and Chase Econometrics (Chase) together with the Administration, project the deficit at about $122.4 billion during 1982. This estimate comprises 4.1% of an expected Gross National Product of $3,106 billion, and is not out of line with comparable periods of recession in the past. To be sure, during the 1975 recession, the ratio of the deficit to GNP was a somewhat higher 4.5%. As the economy recovers during 1983 and 1984 these forecasters anticipate smaller deficits of $122 and $109 billion for respective shares of nominal GNP of 3.5% and 2.8%.

There is another plausible and basic reason for the high and volatile short-term rates of interest experienced during most of 1980 and 1981. In the absence of institutionally imposed ceilings, the price of any commodity (including money) will increase when there is excess demand for that commodity. To illustrate the relationship between short-term interest rate movements, the supply of money, and the demand for money as reflected in private business loans, the period since March 1980 has been subdivided into five time intervals.

TABLE 1 shows that during the first period, March to June of 1980, M1-B decreased at a compounded annual rate of 1.8%, while private business loans fell by 9.3%. At the same time, interest rates on 4-month comercial paper fell by 8.6 percentage points from 16.8% in March of 1980 to 8.2% in June. The latter half of 1980 was characterized by sharp increases in both the money supply M1B and business loans with the growth rate for loans outpacing that of the money supply. Concurrently, there was almost a doubling of the commercial paper rate from 8.2% to 15.1%. While money supply growth decelerated sharply during most of 1981, continued strong business loan expansion through the first three quarters of the year helped sustain the commercial paper rate at high levels. However, as business loan growth fell during October and November there an accompanying sizable decline in interest rates. The most recently available data for the months of November thru

April show a dramatic surge in the demand for private business loans despite the weak economic conditions. During the months of November thru April business loans expanded at 21.0% while the money supply increased at 9.7%. At the same time, there was an associated rise in the commercial paper rate to 14.0%.

Another explanation for the most recent episode of high interest rates is offered by Professor David I. Meiselman. His explanation, which appears in Tax Review, Vol. XLII, No. 6, attributes the recent episode of high rates not to the expected size of the Federal budget deficit under the Economic Recovery Plan nor to any lack of confidence in the plan by financial institutions. Meiselman places the "blame" squarely on the Federal Reserve's execution of monetary policy. He argues that interest rates, after falling throughout most of the first quarter of 1981, began an upward trend in the second quarter in direct response to excessively rapid growth of money in March and April. During these months M1-B increased at compound annual rates of 13.9% and 24.7%, respectively, greatly exceeding the Federal Reserve's targets.

This development, Professor Meiselman argues, occurred after some noticeable progress had been made in restraining the growth of money. For example, for the year ending February of 1981, M1-B grew at a compound annual rate of 6.1%, showing a decline from the 8.5% per annum rate of the prior year. Meiselman argues that the volatile movements in money supply growth during this period raised serious concern among financial institutions about the Fed's willingness and/or ability to meet its own targets for money growth.

Meiselman's observation that a short-run excess supply of money leads to a surge in interest rates may appear to be counter- intuitive and may be considered the opposite of the results predicted by the demand-supply approach discussed above. One way of reconciling these differences is to recognize that in an environment in which inflation is not fully anticipated an increase in money supply growth leads at least to a transitory reduction in interest rates as excess money supply is injected into the market. However, when inflation is anticipated perverse developments may occur.

For example, Meiselman points out that the increased money supply may renew expectations of inflation. If financial institutions are unconvinced that inflation will be controlled, an inflation premium will be added to the real rate of interest that has the effect of raising nominal rates of interest. This important distinction between the nominal and real rates of inflation was developed by Irving Fisher in the 1890s. Fisher's theory relating monetary growth, price expectations and nominal interest rates is presented in his book titled, The Theory of Interest. His theory helps to rationalize the puzzling, though well-documented empirical association between high interest rates and high inflation.

SLOWING INFLATION

The level of interest rates hinges closely on the outlook for inflation. A decelerating rate of inflation has been an important objective of monetary policy. Inflation as measured by the CPI was at an average annual rate of 6.6% over the last 12-month period compared to 10.0% in the preceding 12-month period. The major cost of implementing a monetary policy of this kind is the increase in unemployment that ensues. The magnitude of the unemployment as well as its time path depend critically on whether the inflation rate is reduced rapidly or gradually. A monetary policy that

reduces the rate of inflation rapidly will likely result in higher short-term unemployment than would a less rapid approach.

A reduced rate of money supply growth imposes on economic agents the need for making painful, though economic choices between alternatives. In a restrictive money environment, as interest rates rise in the short-run, there is a reduction in demand for interest-sensitive commodities (e.g., housing and autos). With the decline in demand for these commodities, there is a corresponding reduction in price that helps moderate the general rate of inflation.

A reduction in the money supply growth may also slow inflation through its effects on real wealth and consumer spending. Higher rates of interest that stem from slower money supply growth imply higher discount rates in determining the present value of an expected stream of income. These higher capitalization rates reduce the current market value of real wealth. Of course, for a given supply, a reduction in real wealth reduces spending and inflation.

Over the long-run, the prospective increase in relative values of financial assets that occurs as inflation subsides and interest rates fall, induces a substitution away from real or physical assets towards financial assets. This effect reinforces the reduction in the demand for real assets and helps further to moderate their rise in price or actually to bring prices down. The net effect is that a non-accommodating monetary regime generates reinforcing events that moderate or place downward pressure on prices of physical assets and thereby on the general rate of inflation.

A review of the relevant data reveals certain recurring and systematic tendencies in the behavior of money growth and inflation that deserve attention. The data reveal that an increase in money supply growth tends, on balance, to occur about two years before a corresponding rise in the general rate of inflation. The degree of association is striking. When the monetary aggregates have been increasing at an increasing rate, there is a tendency for inflation to accelerate about two years later. Conversely, periods for which the rates of inflation are moderating tend to be preceded two years earlier by decelerating growth in the money supply.

Although the timing evidence presented here is not empirical proof of an independent influence of changes in money growth on inflation, such evidence is highly suggestive. To examine this relationship further, analysts have applied somewhat more robust techniques. For example, Michael Bazdarich of the Federal Reserve Bank of San Francisco applies tests of causality to quarterly data over the period of 1957's first quarter to 1979's second quarter. He finds that all four key monetary indicators tested have significant causal effects on the consumer price index (CPI), the producer price index (PPI), the GNP deflator and the consumer expenditures deflator.These four monetary variables are M1 (currency plus demand deposits), M2 (currency plus all bank deposits except large time certificates), the source base (sources of the monetary base as defined by the Federal Reserve Board of Governors) and the St. Louis Base (the monetary base adjusted for reserve requirement changes, as defined by the Federal Reserve Bank of St. Louis).

SLUGGISH ECONOMIC GROWTH

Most theories that attempt to explain aggregate demand relationships recognize the importance of changes in the money supply. According to these

theories, a reduction in money supply growth creates excess demand in money and credit markets that pushes up interest rates. As firms find it more expensive to borrow to finance investment projects, investment falls, contributing to a loss in real output. Housing construction and consumer purchases of durable goods also are interest-sensitive. The ultimate effects on real GNP depend on both the sharpness and duration of the decline.

There is a striking degree of uniformity in the historical relationship between accelerating and decelerating growth in the monetary indicators and growth in real GNP one year later. Sustained periods of declining or slow growth in real economic activity, such as occurred during the periods, 1969:4thQ to 1970:4thQ, 1973:4thQ to 1975:1stQ, and 1978:1stQ to 1980:1stQ, tend to be preceded one year earlier by fairly sharp deceleration in money supply growth. Conversely, periods of sustained growth such as occurred during the periods 1970:4thQ to 1973:4thQ, 1975:1stQ to 1978:1stQ and 1980:1stQ to 1981:3rdQ, tend to be preceded one year earlier by a fairly sharp acceleration in money supply growth.

Many economists have challenged the view that changes in money supply tend to lead (precede) changes in economic activity. They argue essentially that the Federal Reserve should respond to the "needs of trade." If an insufficient supply of money pushes up interest rates, according to this view, the monetary authority attempts to limit this increase by providing bank reserves as necessary to accommodate the fluctuating demand of their borrowing customers.

Using fairly robust econometric techniques, researchers have attempted to examine the independence of Federal Reserve behavior to assess the extent to which the Central Bank accommodates the "needs of trade" or alternatively pursues an independent predetermined money growth policy. Michael Bazdarich, of the San Francisco Federal Reserve for examplem seeks to determine whether the Federal Reserve expands the supply of money and credit in response to large cost increases in specific industries to avoid the temporary output losses and increases in unemployment that might otherwise ensue. Of course, the effect of this policy action would be to avert or mitigate a slump in economic growth initially but at the cost of higher long-term inflation and a serious slump later.

Bazdarich applies econometric tests of causality to more than 17 indicators that reflect cost-push pressures for the period 1959 to 1979 in search of evidence of monetary accommodation. His results do not lend support to the view that the Federal Reserve responds to "the needs of trade." For most cases, Bazdarich's results indicate significant and widespread one-way causality emanating from the money supply aggregates to respective cost or price indexes. At the same time, there was no evidence of the reverse effect that showed systematic and significant evidence of monetary accommodation.

TABLE 1. Growth Rates of M1 and Business Loans

Period	M1 a/	Business Loans	4-month Commercial Paper Rate b/
Mar.80 to June 80	-1.8	-9.3	8.17
June 80 to Nov.80	15.3	20.3	15.09
Nov.80 to Sept.81	3.6	13.8	16.16
Sept.81 to Nov.81	4.5	8.1	12.18
Nov.81 to Apr.82	9.7	21.0	13.96

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_/ M1=currency plus demand deposits
_/ Rates as of last month in period.

SUMMARY

The restrained monetary growth of the past three years has contributed to turning inflation down more rapidly than many analysts expected. As inflation moderated, however, and as interest rates pursued an unsteady decline, there was no firm discretionary fiscal policy in place to help offset the adverse effects on employment, product and real incomes.

The Administration has stated that the success or failure of its economic recovery plan hinges heavily on the accompanying posture of monetary policy. The Federal Reserve may continue its focus on restricting monetary growth in the fight against inflation. If the path of monetary deceleration continues to be as unstable as has been the case over the last three years, however there could be a re-occurrence of volatile and high interest rates with periods of sharp decline in real economic activity. Any such volatility, however, does not preclude even lower rates of inflation than already observed, at least through the year 1983. Because of an apparent two-year lag between changes in money supply growth and changes in the rate of inflation, it is highly probable that the deceleration in money growth that has already occurred for the period 1980 to 1981 will lead to further declines in the rate of inflation.

Also, if the Federal Reserve is successful in decelerating and holding monetary growth to a more stable path, there is, in addition, a greater probability of lower interest rates with less volatility than has been the case during the past two years. If inflation continues to noticeably abate, the stage will be set for a renewal of economic activity with sustained growth in productivity.