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A Primer on Monetary Policy Part II: Targets and Indicators

The last issue of the *Weekly Letter* (Walsh 1994) discussed the goals of monetary policy and the main instruments actually controlled by the Federal Reserve. It noted that most economists believe monetary policy can have important effects on output and employment only in the short-run; in the longer run, the Fed can affect inflation but not employment. This *Letter* focuses on issues related to the actual implementation of monetary policy.

Channels of monetary policy

Economists disagree about the exact linkages among monetary policy actions, inflation, and economic activity. Most agree that banks play a critical role in the transmission process, although evidence is inconclusive about whether it is through the liability side of banks' balance sheets (deposits and other components of the money supply) or through the asset side (bank loans). In either case, the general view is that monetary policy works by affecting interest rates. Increases in interest rates raise the cost of borrowing and lead to reductions in business investment spending and household purchases of durable goods such as autos and new homes. These declines in spending reduce the aggregate demand for the economy's output, leading firms to cut back on production and employment. Conversely, interest rate declines stimulate aggregate spending and lead to increases in production and employment.

Since the Fed can control the federal funds rate, it would appear to be a simple matter to link policy actions—changes in the funds rate—to real economic activity. Unfortunately, four critical problems arise in implementing monetary policy. First, while the Fed can affect market interest rates, spending decisions and economic activity depend on *real* interest rates, that is, market rates corrected for expected rates of inflation. Second, economic activity is likely to be related to both short-term and long-term real interest rates, while the Fed most directly controls very short-term market rates. Third, the Fed is interested ultimately in measures of economic performance like inflation, real economic growth and employment, yet data on these variables that might be

used to guide policy are not available every day or every week or even every month. And fourth, policy actions taken today will affect the economy only with a significant lag so that policy changes must be made in anticipation of future developments in the economy. Because the first two of these issues have been recently discussed by Trehan (1993) and Cogley (1993), they are touched upon only briefly here.

Real interest rates

Aggregate spending is related not to market interest rates but to the expected real rate of interest. Since it is difficult to measure expected inflation, it is hard to know the current level of real interest rates. And variations in expected inflation can make a big difference. In 1978, the funds rate averaged 7.93 percent, but the rate of inflation was 9.1 percent; if the inflation was fully anticipated, that 7.93 funds rate was equivalent to an expected real rate of negative 1.17 percent. Today the funds rate is 4.25. If the market expects a continuation of the current 3 percent inflation rate, then today's funds rate translates into a positive 1.25 percent expected real rate. So a funds rate of 4.25 percent today may be more restrictive than the 7.93 funds rate was in 1978. With inflation expectations difficult to measure, economists can disagree about the current level of real rates and therefore the stance of monetary policy.

In addition, the Fed can only influence the level of real interest rates in the short-run; it cannot permanently prevent the real rate from returning to its equilibrium level without risking accelerating inflation or deflation. Persistent attempts to keep real rates too low will initially generate an economic expansion that will lead to more rapid inflation. As individuals come to expect higher inflation, real rates will tend to adjust back to their equilibrium level. Further expansionary policy would be needed to keep the real rate down, leading to further increases in inflation.

Most estimates of expected inflation imply that real short-term interest rates earlier this year were very low, too low to be consistent with steady real growth at a sustainable rate. However,

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the real rate of interest consistent with sustained growth varies over time in ways that are difficult to measure or predict. Thus, the benchmark against which any estimate of the current real rate should be compared is itself not directly measured. So economists can disagree about whether current real rates are too high or too low.

Long-term interest rates

Aggregate spending is related both to long-term real interest rates and to the short-term rates the Fed can affect directly. Long-term rates will be equal to the average of the expected future short-term rates plus a risk factor that reflects the premium necessary to induce risk-averse investors to hold long-term bonds. An increase in short-term rates that is viewed to be temporary will have a much smaller impact on long rates than would an increase expected to be relatively persistent.

Long-term interest rates can be expressed as the sum of an expected real return and an adjustment for expected inflation. Long rates have the potential, therefore, to provide information about the market's expectations about inflation. Long rates will tend to rise (fall) if higher (lower) inflation is expected. After the Fed's most recent increase in the funds rate on May 17th, long-term interest rates actually declined. This was interpreted as evidence that financial market participants were confident the Fed had tightened sufficiently to ensure inflation would not increase. Unfortunately, long-term interest rates also vary because of variations in the expected rate of return. Because of the difficulties in predicting these variations, it is not always possible to interpret changes in long-term interest rates as providing information about inflation expectations.

Intermediate targets

Ideally, the Fed would like to be able to monitor continuously its ultimate goals, like the rate of inflation, in order to adjust its policy instruments. Unfortunately, new data on inflation are available only monthly, while data on GDP growth are available only quarterly. Consequently, the Fed must rely on data available more frequently, such as interest rates, which it can observe continuously, or monetary aggregates, which are available weekly, as *intermediate targets* to help guide policy. An intermediate target is a variable that, while not directly under the control of the Fed (that is, it is not an instrument like the federal funds rate), responds fairly quickly to policy actions, is observable frequently, and bears a predictable relationship to the ultimate goals of policy.

To use an intermediate target, the Fed must first determine the value for the intermediate target consistent with the desired goals. The Fed then adjusts its instruments in order to ensure the intermediate target variable takes on the chosen value. That is, policy is conducted as if the intermediate target value were the goal of policy. If new information suggests the intermediate target variable is diverging from the targeted value, policy instruments are adjusted to return it to target.

During the early 1980s, several different measures of the money supply served as intermediate targets; for example, when M2 was growing above its target range, this signaled a need to tighten policy by contracting the growth of bank reserves. Slow M2 growth was a signal to expand reserve growth. However, the relationship between the monetary aggregates and the ultimate goals of monetary policy became increasingly unpredictable, reducing the value of the aggregates as intermediate targets (see Judd-Trehan 1992).

Policy indicators

Currently, the Fed has no single reliable intermediate target that could be used to guide policy; consequently, the Fed must rely on many variables for information to guide policy. These variables are indicators of the current state of the economy or of future developments in the economy.

Indicators of future developments are needed because it takes time for a monetary policy action to affect the economy. Policy actions taken in early 1994 are likely to have their greatest effect on the economy in late 1994 and early 1995. This makes it imperative that policy actions be taken not on the basis of current economic conditions, but on the basis of forecasts of future economic conditions. To wait to shift the Fed's policy stance until inflation actually increases, for example, would mean that inflationary momentum will have already developed, making the task of reducing inflation that much harder and more costly in terms of job losses. In the past, the Fed has been criticized for waiting too long before adjusting its policies.

Basing policy on forecasts creates its own difficulties. Because economic developments are difficult to predict, forecasts often turn out to be wrong. And because forecasters often disagree, there will be corresponding differences over the appropriate stance of policy. The current situation is a case in point. The Fed has tightened policy, not in response to any current rise in inflation, but on the basis of its forecast of rising inflation in the future if it maintained its previous policy

stance. Critics have claimed that future inflation increases are unlikely. Because the debate is over forecasts of what inflation would have done under the Fed's previous policy, they are difficult to resolve.

In the absence of an agreed upon intermediate target to guide policy, the Fed must evaluate a number of variables that may serve to indicate future economic developments in order to determine if policy changes are appropriate. Among the indicators that have been proposed are nominal income growth, real interest rates, commodity prices, exchange rates and the price of gold. For example, the Fed could use nominal income growth as an indicator by comparing the most recent data on nominal growth to the growth rate consistent with sustained real growth and low inflation. Since most estimates of the economy's long-run sustainable growth rate of real income are in the 2 to 2½ percent range, if the inflation target were 1 percent, nominal income growth should be in the 3 to 3½ percent range.

Because no single indicator variable consistently provides accurate information on the future of the economy or the stance of monetary policy, the Fed must rely on a number of indicators; it "looks at everything." In principle, this is just what the Fed should do. Exchange rates, nominal income growth, real interest rates, money supply growth, commodity prices, and so on all provide some information that is useful for conducting policy.

Unfortunately, each indicator also can provide misleading signals about the economy, and often the signals they give are contradictory. During the last two years, for example, while real interest rates were low indicating expansionary monetary policy, the M2 definition of the money supply was growing very slowly, indicating a more contractionary stance of policy.

As an alternative to using forecasts or relying on a number of indicator variables, many economists have proposed simple rules to guide Fed behavior. The most famous was Milton Friedman's rule of maintaining a constant growth rate of the money supply. More recently, rules for the monetary base (currency plus bank reserves), M2, nominal GDP, and the funds rate have been

studied (for example, see Judd and Motley 1991). In general, these alternatives are "feedback rules": The Fed's policy instrument is adjusted on the basis of recent movements in measures of economic activity such as nominal income growth, the unemployment rate, or actual inflation. Such rules can help to reduce the uncertainty associated with monetary policy actions by making policy more predictable.

Conclusions

The conduct of monetary policy often consists of balancing inconsistent goals using sometimes unreliable indicators to manipulate tools whose effects on the economy are uncertain. Despite these uncertainties, the general conduct of monetary policy in recent years has received surprisingly wide approval. The current controversy over interest rate increases is not about the fundamental need to prevent a resurgence of inflation, but instead has centered on the difficulty of forecasting the future course of inflation.

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