FRBSF Weekly Letter

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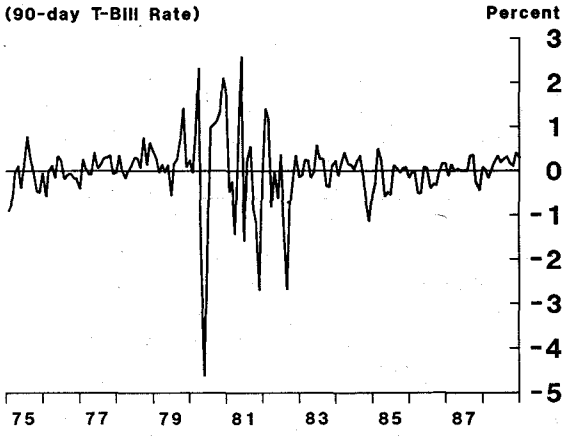
Interest Rate Smoothing

Since late 1982, the Federal Reserve has implemented monetary policy through its control over the level of borrowed reserves. While not identical, this approach is analytically similar to the federal funds rate operating procedure the Fed used in the 1970s. (The fed funds rate is the interest rate on reserves banks lend each other overnight.) Both approaches have had the effect of smoothing out fluctuations in short-term market interest rates, as the chart shows. They also are in sharp contrast to the approach used during the period from late 1979 through late 1982, when large movements in market interest rates were allowed.

Monthly Fluctuations in Short-term Interest Rates
(90-day T-Bill Rate)



The Fed was widely criticized in the 1970s for not paying enough attention to the longer-run inflationary consequences of its policy. In view of the similarities between the fed funds rate procedure followed in the seventies and the current approach, a number of economists have voiced concerns that the Fed is again stabilizing short-term interest rates to the detriment of long-run price stability. Such an approach to policy, they argue, is inappropriate because there is an inevitable trade-off between the goals of short-run interest rate stability and long-run price stability. This *Letter* reviews recent research on the effects of interest rate smoothing and concludes that smoothing short-term interest rate fluctuations can be consistent with achieving long-run price stability.

Policy in the 1970s

Most economists share the view that the appropriate ultimate goal of monetary policy is price stability (that is, zero inflation), or perhaps stable inflation at some low rate. Under the federal funds rate procedure it used in the 1970s, the Fed adjusted its funds rate target only gradually. As spiraling inflation expectations pushed up market interest rates in the 1970s, this delayed adjustment in the target produced rapid money growth and fueled inflation. Based on this experience, it has become clear that a policy aimed at smoothing short-run interest rate movements is not consistent with long-run price stability unless the Fed is willing to quickly adjust its interest rate target in response to changing economic conditions.

Base drift

Recently, a number of economists have argued that price stability *inevitably* will be sacrificed if the Federal Reserve gives *any* weight in the conduct of monetary policy to the objective of smoothing interest rates. For example, Marvin Goodfriend of the Federal Reserve Bank of Richmond, suggests that to the extent the Fed seeks to dampen short-run fluctuations in interest rates, such a policy will preclude it from offsetting deviations in the level of the money supply from its long-run target.

If the money supply is above its long-run target, the goal of price stability requires the Fed to force the level of the money stock back down. However, any attempt to do so requires interest rate adjustments which contravene the goal of short-run interest-rate smoothing. Thus, if the Fed is concerned at all about smoothing interest rates, its response to the above-target money stock will be muted. As a consequence, Goodfriend argues, the price level will not be stable, but will, instead, drift with no tendency to return to its initial level.

This failure to fully offset past deviations from target is reflected in the Fed's decision to use the actual level of the money supply as the base when establishing new target growth paths each year. This decision results in what has been called "base drift." With base drift, the Fed starts each year "on target," no matter how large the deviation from target might have been in the prior year. Base drift, according to Goodfriend, is an inevitable outcome of a rate smoothing policy since a return to the original base requires interest rate adjustments that are not consistent with rate smoothing. Such an approach tends to compound past deviations from target and compromises the goal of price stability.

Are all smoothing policies equal?

The possibility of a tradeoff between short-term interest rate stability and long-term price stability certainly is cause for concern, particularly since the Fed's current operating procedures tend to diminish short-run fluctuations in market interest rates. But do all policies that have the *effect* of smoothing interest rates involve such a tradeoff? And is base drift necessarily inconsistent with the goal of long-term price stability? The answer to both questions is no.

Whenever the Fed acts to reduce fluctuations in market interest rates, it is pursuing a rate-smoothing policy. But it is the underlying motivation for the rate-smoothing policy that determines, in part, whether that particular policy is in conflict with long-term price stability. In general, one of two concerns tends to motivate rate-smoothing policies. First, policy makers may view movements in interest rates as signalling disturbances in the economy that require adjustments in the direction of monetary policy in order to maintain such ultimate goals as low inflation and unemployment. Thus, a rise in interest rates due to an increase in money demand, for example, would induce the Fed to expand the money supply sufficiently to offset the rise in market rates.

In this case, interest rate stability implies complete accommodation of seasonal and temporary fluctuations in money demand and supply. Accommodating such fluctuations can be interpreted as fulfilling the Fed's mandate to provide liquidity to the economy, and in so doing, serves to insulate the real economy from financial disturbances. In this way, such a policy promotes price stability.

In this framework, moreover, base drift will not necessarily be inconsistent with long-run price stability. If, for example, financial innovation leads to a permanent shift in the demand for money, a similar permanent shift in the money supply is necessary to maintain price stability.

However, to the extent that movements in interest rates do not always signal financial disturbances, rate smoothing will interfere with the goal of price stability. For example, a rise in interest rates associated with a disturbance in the real economy such as a spurt in investment demand should not be offset. Similarly, the appropriate response to a rise in interest rates caused by expectations of higher future inflation would be to *tighten* policy, and that might lead to an even *larger* rise in short-term interest rates. Moreover, to the extent that these disturbances are transitory, an automatic policy of always allowing complete base drift in setting monetary targets is unlikely to be consistent with price stability.

A second motivation for rate smoothing is a concern that rate volatility itself may be destabilizing. Specifically, some argue that rate movements generate risk to the financial sector in the form of potential capital losses in the portfolios of financial institutions. To minimize this risk, they argue, the Fed should act to offset rate movements even if doing so caused it to sacrifice some of its other goals. For example, the Fed might ease policy in an attempt to minimize a rise in market rates even if the initial rise were the result of expectations of higher inflation. Obviously, such a policy is at odds with the goal of long-run price stability.

But it also may be at odds with short-run price stability. Consider the following: Assuming that assets with longer maturities embody expectations concerning the level of short-term interest rates in the future, investors should be able to eliminate risk associated with forecastable changes in interest rates by arbitraging across assets of different maturities. Thus, the risk associated with rate changes should arise only from changes that cannot be foreseen. This consideration suggests that a more appropriate measure of risk would be the size of interest rate forecast errors, not the magnitude of the fluctuations themselves.

However, a policy that seeks to minimize the forecast errors may do little about interest rate fluctuations caused by other types of disturbances most economists think the Fed should offset. Such a policy, for example, would not require the elimination of movements in interest rates such as might be caused by (forecastable) seasonal fluctuations in money demand. This would seem to violate the Fed's responsibility to provide liquidity and could reduce short-term price stability.

Prohibit rate smoothing?

It appears that both types of rate-smoothing policies can pose problems for long-run price stability. Mistakes in interpreting interest rate movements tend to contravene the price stability goal under a policy that treats interest rates as a signal of macroeconomic developments. And a policy that has as its objective the reduction of interest rate volatility, on its face, contradicts the goal of price stability. However, whether rate smoothing is desirable depends upon the type of price objectives the Fed should pursue. A simple example will show that there is a trade off between long-run price *level* stability and inflation stability. If the latter is an appropriate goal, then interest rate smoothing may be desirable. Because the Fed exercises only imperfect control over the money supply, monetary control errors can occur. An above-target deviation of money from its target for instance, would tend to lower market interest rates. To maintain a constant long-run price level under a non-smoothing approach, the Fed would need to lower its future target growth path in order to return the money stock back to its original targeted level.

However, such a zero-base-drift policy will not prevent the economy from expanding in response to the initial decline in interest rates. In addition, the price level initially will tend to rise as a result of this monetary control error. Slower money growth eventually will cause the economy to contract, and the price level will fall. Ultimately, prices will return to their original level, but only after inflation has fallen below the long-run inflation goal of the Federal Reserve. This inflation adjustment process is needed to bring the price level back on track and generally will take 18 months to two years, given the lags between monetary policy and its impact on the economy. Thus, it appears that while a zero-base-drift policy can maintain long-run price stability, it can do so only at the cost of short-run instability in inflation.

This example suggests that the question whether rate smoothing is desirable cannot be divorced from a consideration of the price objectives that the Fed should pursue. If reducing short-run inflation fluctuations, or maintaining a low *average* rate of inflation, are appropriate objectives of monetary policy, then drift in the level of money and prices is of no consequence. If, instead, macroeconomic stability requires that the Fed should stabilize the long-run price level, then the Fed should not give independent weight to rate smoothing objectives, and base drift will be unacceptable, except in the case that there are persistent shifts in the demand for money.

Summing up

An interest rate smoothing policy that prevents seasonal and temporary fluctuations in the demand for money and instability in financial markets from affecting the real side of the economy can be consistent with the stabilization goals implicit in the Fed's mandate. However, frequent adjustments in the level around which rates are stabilized generally would be required to take account of other types of disturbances that ought not to be offset.

A monetary policy designed to smooth interest rate movements sometimes will lead to price level disturbances that are not reversed, however. On the other hand, the absence of rate smoothing is not sufficient to insure price stability, either.

In the final analysis, economists need to provide policy makers with a better understanding of the relative costs of inflation versus achieving price stability. Without such an understanding, one cannot draw normative conclusions about the impact of policies designed to smooth interest rates. Criticism of rate smoothing seems misplaced without clear guidance on the nature of the price objectives the Fed should pursue.

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