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How Sluggish Is the Fed?

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How quickly does the Fed adjust monetary policy in response to developments in the economy? A common view among economists is that the Fed changes the short-term policy interest rate at a very sluggish pace over several quarters. Under this view, if the Fed wanted to increase the policy rate by a percentage point, it would typically change the rate by only about 25 basis points per quarter for the next few quarters. The evidence supporting this “monetary policy inertia” view is found in the many monetary policy rules or reaction functions estimated in the literature with quarterly data. These estimates appear to imply a very slow speed of adjustment of the policy rate to its fundamental determinants. For example, Clarida, Gali, and Gertler (2000, pp. 157-158) describe their empirical estimates of

Fed behavior as "…suggesting considerable interest rate inertia: only between 10% and 30% of a change in the [desired interest rate] is reflected in the Funds rate within the quarter of the change." This conventional wisdom is also adopted in Woodford (1999), Levin, Wieland, and Williams (1999), Amato and Laubach (1999), Sack and Wieland (2000), and many other analyses.

This *Economic Letter*, which summarizes Rudebusch (2001), argues that this widespread view is mistaken and that the Fed actually responds quite promptly within the quarter to economic developments. The evidence against the existence of an inertial policy rule is obtained from the behavior of short-term market interest rates. There appears to be very little information generally available in financial markets regarding future interest rate movements beyond the next one or two months. This absence of interest rate predictability cannot be reconciled with a significant degree of interest rate partial adjustment by the Fed; however, an alternative explanation that stresses the persistence of shocks that the Fed faces is consistent with the evidence.

Policy inertia and interest rate predictability

Recently, there have been many attempts to estimate policy rules or reaction functions that explain Fed behavior. These estimation equations take a general partial adjustment form, where the level of the policy interest rate in a given quarter is set as a weighted average of the current desired level and last quarter's actual interest rate. Based on quarterly data, estimates of this weighted average put about one-fifth of the weight on the desired rate and about four-fifths on the lagged actual rate. Thus, these empirical rules appear to imply a very slow speed of adjustment of the policy rate—about a 20% adjustment each quarter. This gradual adjustment of the short-term rate over several quarters to its desired level is widely interpreted as evidence of an "interest rate smoothing" or "monetary policy inertia" behavior by central banks.

One implication that has been overlooked in the literature is that a significant amount of policy inertia should imply a lot of predictive information in financial markets about the future path of short-term interest rates. Intuitively, if the funds rate is typically adjusted by only 20% toward its desired target in a given quarter,

then the remaining 80% adjustment should be expected to occur in future quarters. (Rudebusch (2001) shows that this link between predictable interest rate variation and monetary inertia ought to hold in a wide variety of settings.)

In a statistical analysis of the data, the sluggish adjustment of interest rates by the Fed means that a regression of actual changes in interest rates on predicted changes should yield a good fit (i.e., a moderately high R^2). In fact, many researchers have estimated such interest rate predictability regressions using postwar data in order to determine how much information financial markets actually have about future interest rate movements (see, for example, Mankiw and Miron 1986 and Rudebusch 1995). These studies typically have found little predictive information. In particular, beyond a horizon of a few months, there appears to be very little ability to forecast changes in short-term interest rates (i.e., a forecast regression R^2 close to zero).

Indeed, the literature on interest rate predictability explicitly rejects any notion of sluggish adjustment by the Fed. Mankiw and Miron (1986, p. 225) note that the postwar data suggest that at a quarterly frequency "…while the Fed might change the short rate in response to new information, it always (rationally) expected to maintain the short rate at its current level." Goodfriend (1991, p. 10) provides an identical random-walk characterization of the policy rate and argues that changes in the rate set by the Fed "…are essentially unpredictable at forecast horizons longer than a month or two." Similarly, Rudebusch (1995, p. 264) characterizes the Fed's behavior as, "…beyond a horizon of about a month, there are no planned movements to react to information already known."

The illusion of monetary policy inertia

Although many policy rule and reaction function estimates appear to provide direct empirical evidence of sluggish adjustment by the Fed, the presence of such quarterly partial adjustment or inertia is contradicted by the lack of interest rate forecastability in financial markets. Thus, the apparent monetary policy inertia is an illusion and must be explained by an alternative interpretation of the Fed's behavior.

As a first step in this explanation, note that there is a large literature that argues that the partial adjustment model widely used to explain the Fed's behavior is very difficult to identify and estimate in the presence of persistent shocks or unobserved omitted variables. In particular, rather than reflecting some form of partial adjustment, the significant lagged funds rate in the estimated policy rule may be evidence of persistent special factors, or shocks, that are not properly accounted for in the rule. Accordingly, it is hard to tell whether the Fed's adjustment was sluggish, or whether the Fed generally followed a rule with no policy inertia but sometimes deviated from this rule for several quarters at a time.

What would cause such persistent deviations from the rule? Recall the original analysis of Taylor (1993), which put forward a description of monetary policy that did not involve partial adjustment. Taylor argued that recent historical monetary policy had followed a rule only as a guide, so occasional deviations from the rule were appropriate responses to special circumstances, not evidence of partial adjustment. This view is illustrated in Figure 1, which displays the historical values of the federal funds rate and the fitted values from an estimated non-inertial Taylor rule, which sets this policy interest rate in response to the output gap and inflation. The large persistent shocks, the deviations between the two lines, appear to correspond to several special circumstances (rather than to sluggish adjustment). Most notably, the deviations in 1992 and 1993 are commonly interpreted as responses to a disruption in the flow of credit. As Fed Chairman Alan Greenspan testified to Congress on June 22, 1994:

Households and businesses became much more reluctant to borrow and spend and lenders to extend credit—a phenomenon often referred to as the "credit crunch." In an endeavor to defuse these financial strains, we moved short-term rates lower in a long series of steps that ended in the late summer of 1992, and we held them at unusually low levels through the end of 1993—both absolutely and, importantly, relative to inflation.

Thus, this episode is better described as a persistent "credit crunch" shock or omitted unobservable variable than as a sluggish partial adjustment to a known desired rate. In terms of the Taylor rule, the disruption of credit supply can be treated as a temporary fall in the equilibrium real rate, which the Fed responds to by lowering the funds rate (relative to readings on output and inflation). Similarly,

a worldwide financial crisis appeared to play a large role in lowering rates in 1998 and 1999, and commodity price scares helped push rates up in 1988-1989 and 1994-1995. Alternatively, Lansing (2000) argues that the Fed may have deviated from the rule because of persistent errors in the real-time measurement of the output gap.

While the rule with partial adjustment and the rule with persistent shocks both appear to fit the data, they have very different economic interpretations. In the former rule, persistent deviations from an output and inflation response occur because policymakers are slow to react. In the latter rule, these deviations reflect the policymaker's response to other influences. The two types of rules can be distinguished, however, because only the rule with persistent shocks is consistent with the historical evidence that short-term interest rates are largely uninformative about the future course of the policy rate.

Should the Fed be sluggish?

Some researchers also have argued that monetary policy inertia may be an optimal behavioral response on the part of central banks. For example, one popular argument contends that policy inertia helps the central bank focus the public's expectations on its stabilization goals and thereby achieve a better outcome (e.g., Levin, Wieland, and Williams, 1999, Woodford, 1999, and Sack and Wieland, 2000). However, central bankers tend to be skeptical of such arguments, especially having been accused of moving too slowly during the run-up in inflation in the 1970s and having had some success with a forward-looking "preemptive" policy more recently. Indeed, the absence of partial adjustment does not mean that central banks are not trying to influence expectations of future short-term interest rates as well as long-term interest rates. In order to influence such rates, central banks only must present a clear future path for the policy rate. The partial adjustment rule provides one such path, but it is not the only one. As noted by Goodfriend (1991) and Rudebusch (1995), the expectation of a constant interest rate path, which is approximately what the non-inertial rules deliver, is another obvious choice to communicate policy intentions.

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