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Monetary Policy Inertia and Recent Fed Actions

In the latest episode of monetary tightening in the United States, the Federal Open Market Committee (FOMC), which sets U.S. monetary policy, raised the target level of its key policy interest rate, the federal funds rate, from 1% in June 2004 to 5¼% in June 2006. This gradual increase was accomplished via a sequence of 17 consecutive 25-basis-point increases at successive FOMC meetings. This slow, steady two-year adjustment of the policy rate can be given two different interpretations. One of these is that the gradual nature of the policy adjustment reflected a slow internal response by the FOMC, which knew where it was going and how fast it wanted to get there and simply took its time in raising the funds rate to the desired level. The other interpretation is that the final level and the speed of adjustment to that level were not known for sure in advance, so the gradual nature of the policy rate adjustment importantly reflected economic developments and data released during the tightening. Based on the research summarized in Rudebusch (2006), this *Economic Letter* describes these two interpretations and assesses their relative importance in accounting for recent monetary policy actions.

Internal and external monetary policy inertia

The funds rate often edges up gradually over the course of a couple of years and then eventually declines in a similar fashion. The source of these persistent movements has been much debated. One school of thought, the partial adjustment view, asserts that the persistence of the funds rate reflects an inertia that is intrinsic or internal to the FOMC. Under this view, the FOMC intentionally conducts a long, drawn-out adjustment of the policy rate in response to economic news, so desired changes in the funds rate are distributed over time. In this way, the persistence exhibited by the funds rate reflects deliberate "interest rate smoothing" or "partial adjustment" or "gradualism" on the part of the FOMC.

At a short horizon—say, a couple of months—the existence of such internal policy inertia is indisputable. Such short-term partial adjustment involves, for example, cutting the policy rate by two 25-basis-point moves in quick succession, rather than reducing the rate just once by 50 basis points. However, this short-term partial adjustment occurs within a quarter and is essentially independent of whether there is internal monetary policy inertia over the course of several quarters, which is the key issue under debate. In particular, many have argued that there is significant partial adjustment of the funds rate at a horizon of several quarters, while others have disagreed, and it is this longer-term quarterly partial adjustment that is the subject of this *Economic Letter*.

The existence of quarterly internal inertia appears to be supported by many estimated monetary policy rules, which are essentially regressions of the funds rate on a set of policy determinants. With quarterly data, these regressions relate the funds rate to a desired level, which depends on, say, output and inflation, and to the lagged funds rate, which captures any partial adjustment toward that desired level. Typically, the estimated adjustment coefficient on the lagged funds rate is very large—on the order of .8—which suggests that if the FOMC knew it wanted to increase the funds rate by a percentage point, it would only raise it by 20 basis points after one quarter and by about 60 basis points after one year. Taken at face value then, the usual policy rule regressions imply a very high degree of internal inertia from quarter to quarter. Unfortunately, such evidence for partial adjustment is unreliable if the policy rule regressions are misspecified and omit important determinants of FOMC behavior. This appears to be the case because monetary policy responds to many more things, for example, financial crises, other than the simple measures of output and inflation included in the policy rule regressions. Therefore, the regression evidence supporting quarterly internal inertia appears to be specious.

This argument also leads naturally to the alternative interpretation of the quarterly persistence of

the funds rate, which is that it largely reflects the response of the FOMC to the slow cyclical fluctuations in the key driving variables of monetary policy. That is, the persistence of the funds rate reflects an inertia that is extrinsic or external to the FOMC. According to this second interpretation, the slow adjustment of the funds rate simply reflects the slow accretion of information relevant to the setting of the policy rate by policymakers, who then completely adjust the policy rate fairly promptly—typically within a few months—when confronted with new information. Under this view, the appropriate empirical specification of the monetary policy rule would include the various persistent external influences on FOMC behavior as well as a serially correlated shock to represent those determinants that cannot be easily measured, and there would be only a minimal role played by any lagged interest rate partial adjustment.

Important support for this second interpretation of the gradual adjustment of monetary policy is provided by a close examination of the ability of multi-period interest rates to predict future policy moves. In brief, the greater the amount of internal policy inertia and delayed adjustment of the policy rate in reaction to current information, then the greater the amount of forecastable future variation in the policy rate. That is, if the funds rate typically is adjusted by just 20% toward its desired target in a given quarter, then the remaining 80% of the adjustment should be expected to occur in future quarters. Assuming that financial markets understand this internal policy inertia, they should anticipate the future partial adjustments of the funds rate and incorporate that trajectory into the pricing of longer-term interest rates. Thus, the ability of financial markets to predict future interest rate movements can be a useful metric to gauge the degree of internal policy inertia. Rudebusch (2006) describes several analyses using various samples of data that conclude the evidence from financial market prediction of future funds rate movements is consistent with external but not internal policy inertia. As described next, the two most recent monetary policy adjustments—the 2004–2006 tightening and the preceding 2001–2003 easing—provide interesting case studies that also illuminate the limited extent of policy partial adjustment.

Two recent episodes of policy adjustment

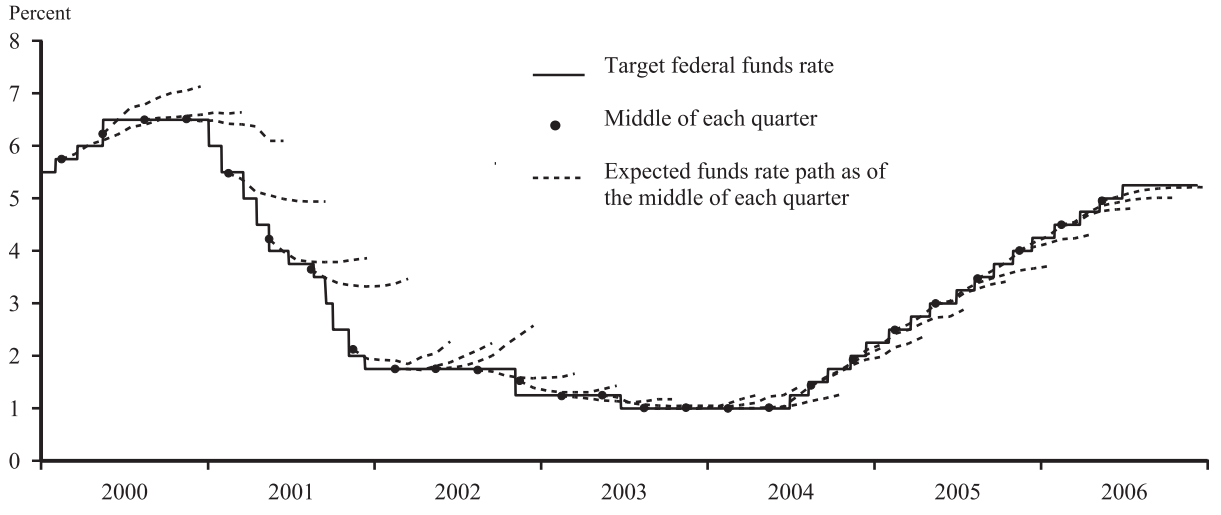
Figure 1 helps characterize the ability of financial markets to predict future monetary policy actions in two recent episodes of policy adjustment. The solid line shows the actual funds rate target from 2000 through 2006, while the dashed lines give the expected funds rate paths at various points in time based on the forward-looking fed funds futures market. The expected paths of the funds rate extend out nine months into the future and are determined on the middle day of each quarter (which is merely a representative date).

Consider the gradual easing of policy from January 2001 through June 2003. Under the quarterly internal policy inertia interpretation, this long sequence of target changes in the same direction would be viewed as a set of gradual partial adjustments to a low desired rate. However, although the funds rate gradually fell, market participants actually anticipated very few of these declines at a 6- to 9-month horizon, as they would have if there had been quarterly policy partial adjustment. Instead, as the dashed lines show, although the markets had some information about future funds rate movements over the next couple of months, as expected under a very short-term internal partial adjustment, beyond that short horizon, the markets assumed at each point in time that the Fed had adjusted the funds rate down to just about where it wanted the funds rate to remain based on current information available. This is consistent with external policy inertia, that is, the long sequence of monetary easings apparently was the result of a series of fairly prompt responses to new information about aggregate economic activity that turned progressively more pessimistic.

The episode of monetary tightening from 2004 through 2006 might seem in Figure 1 to offer more support for internal policy inertia and predictability in interest rates. In this later period, there was certainly more information about future policy adjustments at a short horizon. This is not surprising, because, as described in Rudebusch and Williams (2006), during this episode, the FOMC provided unprecedented signals about future policy rate changes such as "the Committee believes that policy accommodation can be removed at a pace that is likely to be measured." Such verbal signals of future policy intentions seem to have boosted the predictability of interest rates, though largely at short horizons.

During 2004, 2005, and 2006, it is apparent that many of the expected interest rate paths are remarkably well aligned with the actual path for the first three or four months into the future; however, after about four months, financial markets consistently

Figure 1
Actual and expected federal funds rate



underestimated the extent of the future tightening. That is, markets expected an even more gradual pace for the policy tightening than actually occurred. This lack of predictability is not too surprising if FOMC actions depended importantly on how the economic data unfolded in real time, because during much of this episode the economic recovery was not viewed as well established. Therefore, it appears that the recent tightening episode was an example of month-by-month internal policy inertia, but the episode is consistent with the view that policymakers engaged in only a limited amount of quarterly partial adjustment. This interpretation accords with the statements of some FOMC members at the time. As then Federal Reserve Board Vice Chairman noted (Ferguson, 2004): "I believe it to be very important that the FOMC not go on a forced march to some point estimate of the equilibrium real federal funds rate. In my judgment, we should remove the current degree of accommodation at a pace that is importantly determined by incoming data and a changed outlook."

Conclusion

Does the persistence of the short-term policy interest rate reflect deliberate "partial adjustment" or "inertia" on the part of the central bank? As in many other areas of economics, understanding the source of dynamic adjustment is a hard problem. However, in contrast to many other macrodynamic puzzles, interest rates have a rich set of predictive information available in financial markets that can help provide answers. One of the key insights above is that although the short rate is a policy instrument, it is also a fundamental driver of longer yields, so multi-period interest rates can sharpen inference about the monetary policy reaction function. Recent monetary policy episodes, in particular, point to fairly rapid central bank reactions to news and information and little internal policy inertia.

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