



## The Federal Funds and Long-Term Rates

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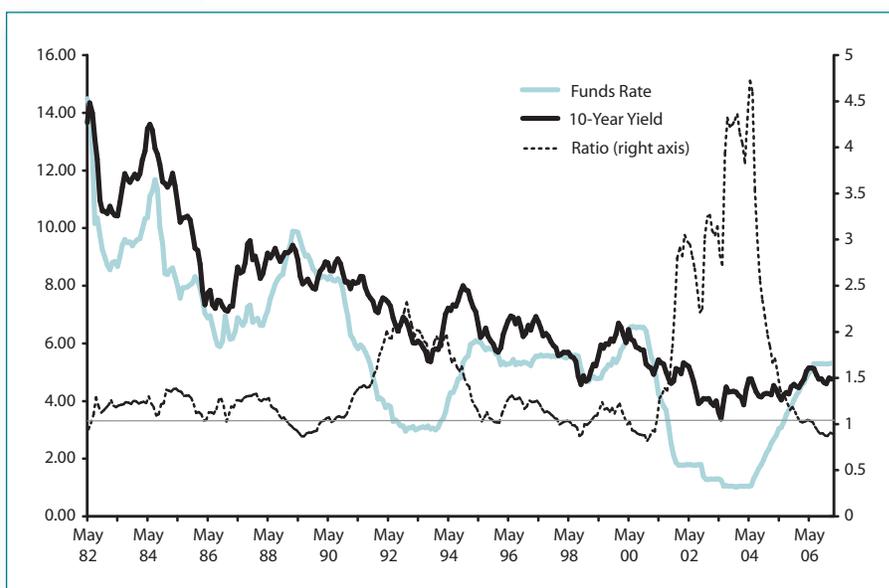
The Federal Open Market Committee (FOMC) increased its target for the federal funds rate from 1.0 percent in late June 2004 to 5.25 percent (as of February 2007) in a series of 17 consecutive 25-basis-point adjustments. But this rise in the funds rate is not reflected in long-term yields: The 10-year Treasury yield averaged 4.73 percent in June 2004 and 4.72 percent in February 2007. It is widely accepted that the absence of a change in long-term yields alongside a large change in the funds rate marks a break in the historical relationship between these rates and has been referred to as a “conundrum.” I argue that the break in this relationship between long-term and short-term rates may have occurred in the early 1990s.

It is well known that over sufficiently long periods of time long-term and short-term rates move together. The attached chart shows this by plotting the effective federal funds rate, the 10-year Treasury yield, and the ratio of the 10-year yield to the federal funds rate from May 1982 to February 2007. The ratio is close to 1.0 at the beginning and end of the period, after both rates had declined by about 900 basis points. From May 1982 to late 1990 the funds rate and the 10-year yield moved relatively closely together, and the ratio deviated relatively little from 1.0 despite relatively large swings in rates. As rates continued to fall in the early 1990s (the funds rate declined more than the 10-year yield), the ratio increased to a peak of nearly 2.32 in December 1992. Moreover, the deviation of the ratio from 1.0 was very persistent, with the ratio remaining above the previous peak from the May 1991–January 1995 sample period. The ratio began increasing dramatically in early 2001, reaching a peak of 4.59 by June 2004 before falling back to 1.0; during this time, the FOMC was increasing its target federal funds rate relative to an essentially unchanged 10-year yield.

Larger and more persistent departures of the ratio from 1.0 since the early 1990s, despite the less-variable long-term yield, suggest that the recent conundrum may be a dramatic example of a fundamental change in the rela-

tionship between the federal funds rate and the 10-year yield that occurred in the early 1990s.

This interpretation is supported by regressing monthly changes in the 10-year yield on monthly changes in the funds rate. When the equation is estimated using monthly data over the May 1982–December 1990 period, the estimated slope coefficient is 0.41 (indicating that, on average, a 100-basis-point change in the funds rate would be associated with a 41-basis-point change in the 10-year yield) and is highly statistically significant, with a t-statistic of 5.46. Moreover, the adjusted R-squared ( $\bar{R}^2$ ) is 22 percent, indicating that 22 percent of the monthly variation in the 10-year yield is accounted for by the funds rate. However, when estimated over the January 1991–June 2004 period, the estimated slope coefficient declines to 0.14 and is not statistically significant. Indeed, the estimated  $\bar{R}^2$  indicates that the funds rate accounts for less than 1 percent of the monthly variation in the 10-year yield over this period. The results are not appreciably different when the equation is estimated over the July 2004–February 2007 period. Furthermore, the results are qualitatively the same if quarterly data are used. The reason for this marked change in the behavior of these rates is a topic for further research. ■



Views expressed do not necessarily reflect official positions of the Federal Reserve System.