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Monetary policy surprises and interest rates: Evidence from the Fed funds futures market ☆

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Abstract

This paper estimates the impact of monetary policy actions on bill, note, and bond yields, using data from the futures market for Federal funds to separate changes in the target funds rate into anticipated and unanticipated components. Interest rates' response to anticipated target rate changes is small, while their response to unanticipated changes is large and highly significant. These responses are generally consistent with the expectations hypothesis of the term structure. Surprise target rate changes have little effect on expectations of future actions, however, which helps to explain the lack of empirical support for the expectations hypothesis at the short end of the yield curve. © 2001 Published by Elsevier Science B.V.

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1. Introduction

How market interest rates respond to Federal Reserve actions is a topic of great interest to financial market participants and policymakers alike. Bondholders, naturally, are concerned with the effects of Fed policy on bond prices. Since the first link in the transmission of Federal Reserve policy is from the Fed funds target to other interest rates, the issue is an important one for assessing the likely effectiveness of monetary policy.

Conventional wisdom is that an increase in the target Fed funds rate leads to an immediate increase in market interest rates, and a fall in bond prices; yet evidence for this view is elusive. Cook and Hahn (1989) documented a strong response in the 1970s, but regressions using data from the 1980s and 1990s show little, if any, impact of Fed policy on interest rates. Roley and Sellon (1995), for example, conclude that "although casual observation suggests a close connection ... , the relationship between Fed actions and long-term interest rates appears much looser and more variable". These studies did not distinguish between anticipated and unanticipated actions, however, and it turns out that the failure to do so accounts for the apparent lack of a close link.

Using Fed funds futures rates to disentangle expected from unexpected policy actions, this paper shows that interest rates' response to the "surprise" component of Fed policy is significantly stronger than the response to the change in the target itself; in fact, rates' response to the anticipated component of policy actions is minimal, and consistent with the expectations hypothesis of the term structure. The response of Fed funds futures rates themselves to unexpected policy actions is fairly uniform across the one- to five-month horizon, supporting the view that the short end of the yield curve contains little information about future movements in short-term rates.

2. A review of earlier studies

The first paper to assess markets' reaction to monetary policy actions is Cook and Hahn (1989), who examined the one-day response of bond rates to changes in the target Fed funds rate from 1974 through 1979. Their procedure was to regress the change in the bill, note and bond rates (denoted as R) on the change in the target Fed funds rate (denoted as $\tilde{r}$),

$$\Delta R_t = \alpha + \beta \Delta \tilde{r}_t + \varepsilon_t, \tag{1}$$

for a sample consisting of 75 days on which the Fed changed the funds rate target.

The response to target rate increases was positive and significant at all maturities, but smaller at the long end of the yield curve: a one percentage point increase in the Fed funds target led to an increase of 55 basis points in the