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Term structure views of monetary policy under alternative models of agent expectations☆

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Abstract

Term structure models and many descriptions of the transmission of monetary policy rest on the empirical relevance of the expectations hypothesis. Small differences in the perceived policy reaction function in VAR models of agent expectations strongly influence the relevance in the transmission mechanism of the expected short rate component of bond yields. Mean-reverting or difference-stationary characterizations of interest rates require large and volatile term premiums to match the observable term structure. However, short rate descriptions that capture shifting perceptions of long-horizon inflation evident in survey data support a more substantial term structure role for short rate expectations. © 2001 Elsevier Science B.V. All rights reserved.

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1. Introduction

The term structure of interest rates is often characterized as a crucial transmission channel of monetary policy where accurate market perceptions of policy are required for effective policy execution. This description rests on three propositions: First, a short-term interest rate, such as the overnight federal funds rate, provides an adequate summary of monetary policy actions. Second, long-term bond yields are important determinants of the opportunity cost of investments. Third, under the expectations hypothesis, the anticipated path of the policy short-term rate is the main determinant of the term structure of bond rates. Although the empirical validity of each of these three propositions has been criticized, the accumulation of empirical evidence against the third proposition — the expectations hypothesis — is impressively large.[1] If variations in current bond rates are not well-connected to current and expected movements in the policy-controlled short-term rate, then the conventional description of monetary policy transmission is vacuous.

In no-arbitrage formulations of the term structure, variation in bond rates due to current and expected movements in short rates is determined by the description of short rate dynamics. Under the standard finance assumption that short rates are mean-reverting, the average of expected future short rates is considerably smoother than historical bond rates. Thus, the expectations hypothesis is empirically rejected by tests which assume constant term premiums, and postwar shifts in the term structure are often attributed to sizable movements in 'liquidity' and 'term' premiums. However, postwar data are consistent with descriptions of short rate movements other than mean reversion. This paper shows that small differences in the specification of the stochastic process for the short rate strongly influence the relative importance of short rate expectations and residual term premiums in bond rate movements.

As an alternative to conventional descriptions of short rate dynamics, a simple class of time-varying descriptions of short rate behavior is examined. Given well-documented shifts in postwar monetary policy, it seems highly probable that the short rate expectations of bond traders are heavily influenced by shifting perceptions of monetary policy. Short rate descriptions that capture shifting perceptions of the long-run objective of monetary policy, formulated as

[1] For instance, Campbell and Shiller (1991) compare estimated 'theoretical' spreads to actual spreads and conclude that the spread is too variable to accord with the expectations hypothesis. In addition, in regressions of long-rate changes on spreads, Shiller (1979), Shiller et al. (1983), and Campbell and Shiller (1991) find that coefficient estimates on the spread tend to be significantly different from the hypothesized value of one and frequently negative.