



The expectations theory works for monetary policy shocks[☆]

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Abstract

In practice, the expectations theory of the term structure is employed extensively in monetary policy analysis despite its empirical failure. This paper performs a conditional test of the theory that is directly relevant to monetary theory and policy. It finds that the theory holds quite well conditional on identified monetary policy shocks, but fails conditional on aggregate supply shocks that prompt an immediate jump in prices. It also finds that policy responses to movements in the term structure play an important role in uncovering evidence for the theory as predicted by McCallum [1994. Monetary policy and the term structure of interest rates. NBER Working Paper Series, no. 4938]. Published by Elsevier B.V.

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1. Introduction

In remarks to the Japan Society, on October 7, 2004, soon to be Federal Reserve Chairman Ben Bernanke noted that long term interest rates matter in the transmission of monetary policy because

Although people often speak of the Federal Reserve as controlling interest rates, in fact... most private-sector borrowing and investment decisions depend not on the funds rate but on longer-term yields.

Perhaps for this reason, most central banks use the expectations theory of the term structure as a direct building block in their economic forecasting and financial models. They do so in the face of abundant evidence from the macroeconomics and finance literature that finds empirical deviations from the theory to be large and time varying (Campbell and Shiller, 1991; Bekaert and Hodrick, 2001, among numerous others).

This paper performs a conditional test of the expectations theory that is directly relevant to monetary theory and policy. It finds that, in response to an identified monetary policy shock, the theory holds quite well. Thus despite its general failure, the theory is useful to central bankers in predicting the effects of their own actions on the term structure and the macro economy. For theorists, there is also an implied lesson in this finding: structural identification matters in determining the link between short and long term interest rates, and in the interpretation of movements in term premia.

Of course structural identification adds complication. There are many alternative structural interpretations of the data that are observationally equivalent, and the poor choice of one “bad” identification could lead to inappropriate rejection of the theory. In this paper, a search is performed over a set of models that obtain a canonical pattern of variable responses to a monetary policy shock. Consistently, the theory is found to hold for at least one member of this set. This means that if one agrees that the canonical model is a useful prediction of the effects of a monetary policy shock, then one can also feel comfortable assuming that the expectations theory is a good description of the response of long rates to a monetary policy shock.

Importantly, the same approach applied to aggregate supply shocks is unsuccessful. In that setting, there is no member of the chosen set that delivers an aggregate supply shock leading to small variation in the term premium. Money demand shocks are found to fit the theory only slightly less well than monetary policy shocks. These additional findings demonstrate that the methodology is capable of rejecting the expectations theory.

At least since McCallum (1994) we have understood that tests of the expectations theory of the term structure can produce econometric rejections because monetary policy responds to the bond market. In these cases, simultaneities between long and short term interest rates contaminate coefficient estimates in single equation regression tests made standard by Campbell and Shiller (1991). The last section of the paper shows that simultaneity also plays a role in evidence for the conditional theory. It compares two models, one which allows for simultaneity between monetary policy and the term structure and one that does not, and finds that the model with simultaneity predicts consistently smaller term premia deviations.

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