

[Monetary policy surprises and their transmission through term premia and expected interest rates](#)

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The transmission mechanism of monetary policy in standard New Keynesian models is based on the expectations hypothesis. Long term interest rates reflect current and future expected short term rates. By changing short term rates, monetary policy can influence the entire yield curve.

From an empirical perspective, evidence for this channel of transmission of policy shocks to the yield curve is scarce. Recent papers report that the impact of monetary policy shocks on long term interest rates is almost exclusively through shifts in term premia, i.e. changes in the risk compensation for holding long-term bonds. The estimated role of interest rate expectations is found to be negligible.

This decomposition of interest rates into expectations and term premia is typically based on vector autoregressions (VARs) or using affine term structure models (ATSM) that explicitly incorporate no arbitrage restrictions into the model. However, as expected interest rates are generated by using the time-series dynamics of these models, the decomposition is vulnerable to small sample bias. As interest rates are slow-moving, mean reversion of interest rates are not frequent enough in the data to estimate the parameters of the dynamic process well. As a result, the importance attached to interest rates expectations in the decomposition is under-stated.

In a departure from the previous literature, we use ATSMs that explicitly account for small sample bias, via additional restrictions or by employing bias corrected estimates. The parameter estimates from these ATSMs are used to decompose movements in the yield curve into expectations and term premia in a tight window around FOMC meetings. This decomposition suggests an important role for expected interest rates in driving yield curve changes -- In all ATSM specifications that are estimated subject to restrictions, expected interest rates at the ten-year horizon are twice as volatile as what a VAR analysis would suggest.

We find that almost all of the reaction of expected interest rates to FOMC announcements is summarised by two principal components, whereas only one principal component is sufficient to capture the bulk of the reaction of term premia. These principal components are then used as instruments to identify three types of monetary policy disturbances in a local projection model of selected macroeconomic variables. The first principal component of the change in expected interest rates identifies a monetary policy shock that fits the predictions of models with a role for housing finance. This shock is associated with a persistent increase in the price level, expected interest rates and the 30-year mortgage rate and a decline in housing market activity and output. The shock identified using the first principal component of high-frequency movements in term premia leads to

a fall in output and the price level and a sharp rise in credit spreads, suggesting a financial accelerator type effect. The second principal component of expected interest rates identifies a shock that has similar effects on output and the price level as the shock identified by the term premium component, but appears to be transmitted differently, fitting the standard narrative of New-Keynesian models.