Monetary Policy Regimes and Inflation in the New-Keynesian Model

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Abstract

This paper shows that plausible modifications to the Taylor rule for monetary policy can help explain several empirical anomalies to the behavior of inflation in the new-Keynesian general equilibrium model. The key anomalies considered are (1) the persistence of inflation, both in reduced form and after conditioning on inflation's driving processes, (2) the positive correlation between the output gap and the change in the inflation rate, and (3) the apparent bias in survey measures of expected inflation.

The Taylor rule in this model includes the now standard assumption that the central bank smoothes changes to its target interest rate. It also includes Markov switching of a persistent inflation target between a low target rate and a high target rate. The model is calibrated to match Benati's (2008) result that, historically, changes in monetary policy lead to a statistically significant change in the persistence of inflation.

Matching Benati's result requires a reduction in an exogenous, hence structural, source of persistence. However, inflation in the model inherits additional, non-structural, persistence from the process that governs the inflation target. As a result, the model is able to replicate measures of inflation persistence, even after conditioning on inflation's driving processes. Agents with rational expectations and knowledge of the current inflation target will be aware of the possibility of a future target switch, causing their expectations to appear biased in small samples. Finally, with sticky nominal prices a discrete drop to the low-inflation target requires a loss of output while previously-set prices adjust.

Keywords: Monetary Policy, Markov Switching, Inflation Persistence, Expectations