How Largely Can Commitment Beat Policy-makers’ Misperception?

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Extended Abstract
This paper investigates the assumption that policy-makers commit to a Taylor rule, using an inflation-unemployment dynamic model for the US economy. Our approach differs from previous work as we model policymakers’ belief as a latent variable rather than as represented by observed nominal interest rate. Our paper is based on the conjecture that policy-maker’s misperception originates from unobserved deviations of unemployment from its natural rate. We propose five processes for policy-makers’ belief under commitment to inflation and unemployment and compare them with a baseline autoregressive process without commitment. The models are: a) a time-invariant Taylor rule in which policy-makers can only observe previous inflation and unemployment; b) a time-varying Taylor rule in which policy-makers adjust their commitment each period according to available information; c) a Taylor rule in which commitment switches between high and low inflation and unemployment phases, following a Markov switching process; d) a Taylor rule in which commitment is changed as a response to different regimes in unemployment only; e) a Taylor rule with commitment adjusted according to low or high inflation regimes only. We specify a loss function derived from a constrained minimization of the divergence in inflation divergence.

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and unemployment that also penalizes shifts in the policy variables.

The models are estimated using Bayesian techniques. We find that our estimated belief performs the role of real interest rate. Our empirical results are as follows. First, policy-makers’ belief is very persistent even when it commits to a Taylor-type policy rule. Second, the run-up of U.S. inflation around 1980 is mostly attributed to policy-makers’ misperception while the peak in the end of 1974 is possibly a result from large non-policy shocks. Third, models with commitment dominate models without commitment, especially in periods of large oscillations in inflation. When policy-makers are committed to respond to a Taylor-type policy rule, the average loss function is efficiently reduced over the time, thus effectively lessening their misperception.

The results obtained from the proposed specifications illustrate the extent to which different commitments mitigate policy-makers’ misperceptions given the loss function. The results have important policy implications as they indicate how and when it is appropriate for policy-makers to choose a commitment in their reaction to inflation and unemployment. In particular, the models indicate that a flexible or more activist policy is more appropriate in reacting to inflation when there is high unemployment target, whereas a policy that is consistent over time is more suitable under low unemployment target. Moreover, our results shed light on the source of the two large rises in inflation during “the Great Inflation” period and the prevalence of low inflation during the early 1980s.

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