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Targeting inflation by forecast feedback rules in small open economies

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Abstract

We argue that in practice, the inflation-targeting strategy can be approximated by the interest rate responding to the unchanged-interest-rate forecast of inflation. A method is developed to derive unchanged-interest-rate forecasts in forward-looking models and evaluate the performance of the policy rule in an optimizing New Keynesian model due to Monacelli (European Central Bank, Working Paper Series: 227), estimated on UK data. We find that the policy rule is less prone to generate a determinate rational expectations equilibrium if based on an unchanged interest rate, compared to the rule-consistent forecast. Both rules approximate the optimal commitment policy if the central bank attaches sufficient weight to inflation as opposed to output gap stabilization. The optimal forecast-feedback horizon is close to a year and a half and is largely independent of how much the central bank prefers inflation to output gap stability.

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1. Introduction

The arguably poor performance and robustness of fixed exchange rate systems and monetary targeting have resurrected a belief in more activist policy throughout the 1990s. Such activism is normally associated with the central bank's discretionary use of the interest rate in order to directly steer policy toward price stability, in the sense of low and stable inflation. Such a framework is often referred to as *inflation targeting*. Inflation targeting has been formally introduced in several countries, e.g., New Zealand, Canada, Sweden, the United Kingdom, Australia, Norway and Iceland, where the central banks have been given explicit targets for inflation and instrument independence to set the interest rate so as to achieve the inflation target.

We interpret inflation targeting as adherence to a forecast feedback rule for the interest rate where the deviations of the forecast of inflation from the target level are the prominent indicator. If the inflation forecast is above (below) the inflation target, the central bank sets a contractionary (expansionary) monetary policy stance, i.e., by setting the interest rate above (below) its natural rate or moving the interest rate in steps towards this target rate. This interpretation is in line with the interpretations made by Batini and Haldane (1999), Batini and Nelson (2001), Levin et al. (2003) and others.¹ Several central banks state the use of such a procedure to guide policy. Sveriges Riksbank (1999) *Inflation Report* 3/99, p. 58 states:

Monetary policy is sometimes described with a simple rule of thumb: if the overall picture of inflation prospects (*based on an unchanged repo rate*) indicates that in twelve to twenty-four months' time inflation will deviate from the target, then the repo rate should normally be adjusted accordingly. (My italics)

Jansson and Vredin (2003) interpret the procedure of monetary policymaking at Sveriges Riksbank as the use of forecasts feedback rules.

Svein Gjedrem, the Governor of the Central Bank of Norway, states

The key rate is set on the basis of an overall assessment of the inflation outlook 2 years ahead. If it appears that inflation will be higher than 2 per cent with *unchanged interest rates*, the interest rate will be increased. If it appears that inflation will be lower than 2 per cent with unchanged interest rates, the interest rate will be reduced. (Gjedrem, 2002) (My italics)

A representation of such a forecast feedback rule is given by

$$r_t = \rho_r r_{t-1} + (1 - \rho_r) \beta_\pi [\hat{\pi}_{t+H} - \bar{\pi}^*], \quad (1)$$

where r is the policy interest rate, $\bar{\pi}^*$ the annual inflation target and $\hat{\pi}_{t+H}$ the H -period-ahead forecast of the annual inflation rate. H is the *forecast-feedback horizon*, which is distinguished from the policy target horizon, i.e., the expected time before

¹An alternative interpretation is offered by Leitemo (2006), where I study the effects of setting the interest rate so as to have the constant-interest-rate forecast of inflation equal to the target at some given horizon.

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