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## Performance of monetary policy with internal central bank forecasting

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#### Abstract

Recent models of monetary policy have analyzed the desirability of different optimal and ad hoc interest rules under the restrictive assumption that forecasts of the private sector and the central bank are homogeneous. This paper studies the implications of heterogeneity in forecasting by the central bank and private agents for the performance of interest rules in a framework of econometric learning.

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#### 1. Introduction

The question whether monetary policy should be forward-looking, i.e. based on forecasts of future inflation and other variables, has raised debates in the recent research into monetary policy making. On the one hand, empirical evidence on Germany, Japan and the US since 1979 provided by Clarida et al. (1998) suggests

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that central banks are forward looking in practice. More general discussions also pose the question whether central banks should focus attention to economic fundamentals or 'follow the markets', which 'sometimes stray far from fundamentals', see pp. 60–61 of Blinder (1998). Bank of England Inflation Reports (see Bank of England, 2003) discuss private sector forecasts, while the June and December issues of the monthly bulletin of the European Central Bank (see European Central Bank, 2003) present both internal macroeconomic projections and forecasts by other institutions. However, the precise role of these forecasts in the decision making of these central banks is not revealed.

On the other hand, theoretical studies have shown that the conduct of optimal monetary policy on the part of the bank can lead to a choice of the instrument, the short-term nominal interest rate, which reacts to the next period forecast of inflation and/or output gap, see Clarida et al. (1999) for a survey of the recent literature. This conclusion can nevertheless be problematic as monetary policy rules, both some formulations of optimal setting of the instrument as well as Taylor rules based on forecasts of inflation and/or output gap, are subject to two potentially important difficulties.

First, some interest rate rules lead to indeterminacy of equilibria, see. e.g. Clarida et al. (1999), Bernanke and Woodford (1997), Bullard and Mitra (2002) and Evans and Honkapohja (2003a). Under indeterminacy, the economy has multiple stationary rational expectations equilibria (REE), which can include undesirable outcomes.

Second, the problem of instability under learning can also arise depending on the form of the interest rate rule, see Bullard and Mitra (2002) and Evans and Honkapohja (2003a). If the economy is not stable under learning, small displacements of expectations away from rational expectations (RE) will lead to volatility as the economy does not return to the REE when agents try to correct their forecast functions. Both of these problems can be avoided by careful design of monetary policy, i.e. the interest rate rule.

In the literature just cited, the forecasts refer to those of the private sector, see e.g. Hall and Mankiw (1994) for a discussion of targeting of private forecasts. By considering both determinacy and stability under learning, Evans and Honkapohja (2003a) forcefully make a case for incorporating private forecasts of inflation and output gap into the interest rate rule as the reaction function of the optimal central bank behavior under discretion. Naturally, for such a proposal to make sense it is required that the private sector forecasts are observable. Evans and Honkapohja (2003a) show that small measurement errors would not lead to large deviations from optimality. However, Orphanides (2003) and others have argued that there are large errors in private forecasts. While private forecasts by different institutions are regularly published, it is not self-evident that these published numbers accurately represent the expectations of the private sector that are relevant for the key private economic decisions. Thus, the observability problems might in fact be more serious

<sup>&</sup>lt;sup>1</sup>Evans and Honkapohja (2003b) extend the results of Evans and Honkapohja (2003a) to the case of commitment.

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