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Forecast rationality and monetary policy frameworks: Evidence from UK interest rate forecasts

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ABSTRACT

We find evidence of heterogeneity and irrationality among professional forecasts for three-month inter-bank rates and ten-year gilt yields at both short and long forecast horizons over the period 1989–2006. The majority of biased forecasts overestimate the future spot rate, consistent with slow adjustment to the declining trend in inflation and interest rates. Furthermore, we produce evidence indicating that both monetary policy actions and elements of communication policy have information content regarding the rationality of forecasts. Changes in official bank rates and disagreement among the Monetary Policy Committee influence the rationality of forecasts. The publication of inflation reports has no effect.

1. Introduction

The typical assumption permeating financial economics is that market participants form their expectations rationally. Indeed, this assumption is founded on solid theoretical considerations and a powerful rationale. Nevertheless, the rational expectations hypothesis (REH) has been challenged both on theoretical grounds and in terms of its empirical validity. In this paper we contribute to this

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literature by examining a panel of interest rate forecasts for the UK during a period in which the monetary policy framework was reformed with greater transparency of decision making coming to the fore. We provide evidence of systematic biases that increase with interest rate maturity and forecast horizon. Moreover, we demonstrate that increased transparency of policy decisions has brought with it reductions in forecast biases, but in surprising ways.

Most existing survey-based studies test the REH with reference to an aggregate prediction, usually a consensus forecast as measured either by the mean or median forecast.[1] This approach, however, has a number of weaknesses. As Bonham and Cohen (2001) demonstrate, unless individual forecasters are homogeneous, the use of a consensus measure introduces an aggregation bias that conceals the heterogeneous behaviour of forecasters and can result in misleading inferences when testing the REH. Therefore a heterogeneity test constitutes a crucial pre-test to indicate whether the rationality should be tested by consensus or individual forecasts. Existing evidence relating to the heterogeneity of expectations is restricted to a small number of studies using foreign exchange rate data (see, for example, Ito, 1990; MacDonald and Marsh, 1996; Elliott and Ito, 1999; Bonham et al., 2006 and Dreger and Stadtmann, 2008). To our knowledge, the current study is the first attempt to test for heterogeneity of interest rate expectations.

Previous studies focusing on interest rates have applied a bivariate regression to test the REH. Holden and Peel (1990) and Bonham et al. (2006), however, demonstrate that the joint hypothesis from a bivariate regression provides a sufficient, but not necessary, condition for unbiasedness, thereby resulting in the over-rejection of the null hypothesis of unbiasedness. For this reason we follow Holden and Peel (1990) and Bonham et al. (2006) by using a univariate test of biasedness since it tests for both necessary and sufficient conditions.

The ability of forecasters to minimize systematic mistakes depends in part on the available information and the costs of processing it. In recent years there has been an increasing awareness among both academics and policymakers of the importance of managing expectations. This has led central banks to increase the transparency and openness of their policy decisions with the implicit objective to raise the signal-to-noise ratio of policy decisions (Blinder, 2004; Blinder et al., 2008). We consider explicitly the role of alternative monetary policy frameworks on the pervasiveness of interest rate forecast rationality. During the period under consideration the UK experienced three distinct monetary policy regimes along with the introduction and refinement of new channels of communication. For example, the Monetary Policy Committee (MPC) framework adopted in 1997 established the quarterly inflation report and the practice of publishing MPC minutes, thereby enhancing the transparency of UK monetary policy and giving rise to a more open central bank communication policy.

In summary, our work contributes to the limited literature on the heterogeneity and rationality of interest rate forecasts in at least four important ways. First, we consider a relatively lengthy sample period that allows us to account for differences in the monetary policy framework and test whether the institutional design of monetary policy has affected the performance of forecasters. Second, we conduct tests of rationality for both short and long maturities at both short and long forecast horizons, accounting for the possibility that forecasters may form their expectations differently depending on the maturity of interest rates and the length of the forecast horizon. Third, to our knowledge this paper is the first to apply a test of heterogeneity as a pre-test of the REH for interest rate forecasts and test the REH of interest rate forecasts by using the univariate specification for which both necessary and sufficient conditions are tested. Finally, we test both the unbiasedness and orthogonality conditions of the REH using a variety of information sets for the latter test.

The remainder of this paper is divided into five sections. Section 2 presents the analytical framework and methodology and Section 3 gives a description of the data set. Section 4 reports the empirical results of heterogeneity and rationality of forecasts. Section 5 examines the rationality of forecasts under different institutional frameworks of monetary policy. Finally, Section 6 summarises the results.

[1] Throughout this paper we follow the convention of using professional forecasts as a proxy for market expectations. As such, the two terms are used interchangeably.