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Optimal horizons for inflation targeting^{\ddagger}

Nicoletta Batini^a, Edward Nelson^{b,*}

^aMonetary Policy Committee Unit, Bank of England, Threadneedle Street, London EC2R 8AH, UK ^bMonetary Assessment and Strategy Division, Monetary Analysis, Bank of England, Threadneedle Street, London EC2R 8AH, UK

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Abstract

In this paper we investigate the problem of selecting an optimal horizon for inflation targeting in the United Kingdom. Since there are two key ways of thinking about an optimal horizon, we look at optimal horizons for both of these interpretations. In addition, to see whether our results are robust in the face of model uncertainty, we compute optimal horizons for two different models with divergent structural and dynamic characteristics. © 2001 Elsevier Science B.V. All rights reserved.

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^{*} Corresponding author. Tel.: + 44-20-7601-5692.

E-mail addresses: nicoletta.batini@bankofengland.co.uk (N. Batini), edward.nelson@ btinternet. com (E. Nelson).

1. Introduction

Many central banks, including those of Australia, Canada, the Eurosystem, Israel, New Zealand, Sweden, and the United Kingdom, pursue an inflation target. In practice, this usually involves 'targeting' the conditional forecast of inflation — the inflation rate expected to prevail in the future given presently available information — rather than current inflation.

A crucial issue is how to choose the horizon, i.e. the appropriate value of k when the operational target is expected inflation k periods ahead. There are two key ways of thinking about an optimal horizon for inflation targeting, depending on the way that inflation targeting is modelled.

If policy is represented, for instance, by a simple feedback rule on expected future inflation, one way is to think of it as the best horizon for which the authorities should form a forecast for inflation to use in the rule. If, instead, policy is represented by an optimal rule for the instrument, the optimal horizon can be thought of as the time at which inflation should be on target in the future when the authorities aim at minimizing their loss function, and a shock occurs today. In what follows, we refer to the first kind of horizon as the 'optimal feedback horizon' and to the second kind as the 'optimal policy horizon'.

This paper calculates optimal horizons for inflation targeting, using each of the two definitions described above. Since the results may well hinge on the features of the model used for the calculations, the paper derives parallel results for two models: a vector autoregression (VAR) estimated on quarterly U.K. data; and a small-scale structural open-economy model based on Ball (1999), Batini and Haldane (1999), and McCallum and Nelson (1999a). A key difference between the two models is the importance that the second model assigns to forward-looking behavior in spending and pricing decisions.

The paper is organized as follows. In Section 2 we discuss alternative definitions of horizons for inflation targeting. In Section 3 we describe the policymakers' objective function and the macroeconomic models that we employ. In Section 4 we compute optimal policy horizons for each model, and discuss the results. In Section 5 we consider optimal feedback horizons, and Section 6 provides a brief exploration of sensitivity of the results to parameter uncertainty. Concluding remarks follow in Section 7.

2. Optimal horizons for inflation targeting: Two definitions

Frequently, in those countries which pursue inflation targets, the formal wording of the mandate for the central bank provides that the inflation target be

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