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Monetary policy rules for an open economy

Nicoletta Batini^{a,*}, Richard Harrison^b, Stephen P. Millard^c

^a MPC Unit, Bank of England, Threadneedle Street, London EC2R 8AH, UK

^b Conjectural Assessment and Projection Division, Bank of England, Threadneedle Street, London EC2R 8AH, UK

^c Monetary Instruments and Markets Division, Bank of England, Threadneedle Street, London EC2R 8AH, UK

Abstract

The popular Taylor rule is meant to inform monetary policy in economies that are closed. Its main open-economy alternative, i.e., Ball's (In: J.B. Taylor (Ed.), *Monetary Policy Rules*, University of Chicago Press, Chicago) rule based on a Monetary Conditions Index, cannot offer guidance for the day-to-day conduct of monetary policy because it may perform poorly in the face of specific exchange rate shocks. In this paper we examine the performance of various monetary policy rules suitable for small open economies vis-à-vis existing rules. This entails comparing the asymptotic properties of a two-sector open-economy dynamic stochastic general equilibrium model calibrated on UK data under different rules. We find that an inflation-forecast-based rule is a good rule in this respect, one that also proves robust to different shocks. Adding a separate response to the level of the real exchange rate improves stabilisation only marginally.

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1. Introduction

The literature on simple rules for monetary policy is vast.¹ It contains theoretical research comparing rules that respond to alternative intermediate and final targets, backward- and forward-looking rules, and rules which include or exclude interest rate

* Corresponding author. Tel.: +44-20-7601-43-54; fax: +44-20-7601-35-50.

E-mail addresses: nicoletta.batini@bankofengland.co.uk (N. Batini), richard.harrison@bankofengland.co.uk (R. Harrison), stephen.millard@bankofengland.co.uk (S.P. Millard).

¹ See Bryant et al. (1993) and Taylor (1999).

smoothing terms.² It also contains work on historical estimates of monetary policy rules for various countries.

However, the literature does not contain a thorough normative analysis of simple rules for open economies, i.e., for economies where the exchange rate plays an important role in the transmission of monetary policy impulses.³ The most popular simple rule for the interest rate—due to Taylor (1993a)—for example, was designed for the United States and, thus, on the assumption that the economy is closed.⁴ And the main open economy alternatives (for example, the rule proposed by Ball (1999) based on a Monetary Conditions Index (MCI)) may perform poorly in the face of specific types of exchange rate shocks and thus cannot offer guidance for the day-to-day conduct of monetary policy.⁵

In this paper we specify and evaluate a family of simple monetary policy rules that may stabilise inflation and output in small open economies at a lower social cost than existing rules. These rules parsimoniously modify alternative closed- or open-economy rules to analyse different ways of explicitly accounting for the fact that the economy is open. We compare the performance of these rules to that of a battery of existing rules when the model economy is buffeted by various shocks. The existing rules include the Taylor closed-economy rule, naïve MCI-based rules as well as Ball's MCI-based rule, and inflation-forecast-based rules. Some of the rules in the family that we consider appear to be robust across a set of different shocks, including shocks from the rest of the world. This is in contrast to rival closed-economy simple rules, which ignore the fact that the economy is open, and MCI-based rules, the performance of which can be highly shock-specific.

To test the rules, we stylise the economy—that we calibrate to UK data—as a two-sector open-economy dynamic stochastic general equilibrium model. The export/non-traded sector split is important because it allows us to discern different impacts of the same shock on output and inflation in the two sectors. Identification of sectoral inflation and output dynamics is a key element on which to base the design of efficient policy rules. More generally, it also makes it possible for the monetary authority to consider the costs of price stabilisation on each sector of the economy.

² Some of this literature also examines the consequence of output gap uncertainty when policymakers follow rules that explicitly respond to the output gap. (See Orphanides (1998) for the US and Nelson and Nikolov (2001) for the UK.) We do not investigate this issue here.

³ Clarida et al. (1998, 2000) offer a wealth of empirical international evidence on monetary policy rules. Clarida (2000) employs the empirical framework of Clarida et al. (1998, 2000) to explore the performance of historical monetary policy rules in open economies. More recently, Clarida et al. (2001) also compared optimal monetary policy in open versus closed economies. Using a structural, small open-economy model they show that 'under certain standard conditions, the (optimal) monetary policy design problem for the small open economy is isomorphic to the problem of the closed economy [...] considered earlier' (Clarida et al. (2001), p. 1, text in brackets added).

⁴ For simplicity, in what follows we refer to rules devised for economies that are closed as 'closed-economy' rules and to rules devised for economies that are open as 'open-economy' rules. By this we do not necessarily imply, however, that closed-economy rules are intrinsically unsuited as demand stabilising tools in economies that are open. See Taylor (2001) for a discussion of this terminology.

⁵ See King (1997) and Batini and Turnbull (2002) on the potential flaws of MCI-based rules.

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