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ScienceDirect
Journal of Macroeconomics 29 (2007) 959–975
Journal of MACROECONOMICS
www.elsevier.com/locate/jmacro

How large are the gains to commitment policy and optimal delegation for New Zealand?

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Received 3 February 2004; accepted 10 February 2006
Available online 30 March 2007

Abstract

This paper measures the benefits of commitment-based monetary policy over discretion for a small open economy inflation targeting country—New Zealand. Significant gains accrue from commitment policy. If commitment-based policy is unavailable, the government can recoup much of the gains to commitment through optimal delegation, asking the Reserve Bank of New Zealand to care more about inflation stabilisation. The 1999 PTA, the core of the policy contract between the New Zealand government and the Reserve Bank of New Zealand, placed an increased emphasis on stabilisation of output, interest rates and the exchange rate. This is inconsistent with a shift to optimal delegation behaviour and must stem from a changed perception of the welfare costs of macroeconomic stabilization on the part of the Government. This is shown to be true when the definition of inflation is extended to a medium term measure.

JEL classification: E52; E58; E61

Keywords: Commitment; Discretion; Stabilization bias; Optimal delegation

1. Introduction

It is well known that for the closed economy there exist gains to commitment-based monetary relative to the case of discretion (see Rogoff, 1985 for the seminal paper and Dennis and Söderström, 2006 who quantify these gains). Under discretion, the central

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0164-0704/$ - see front matter
doi:10.1016/j.jmacro.2006.02.002

bank cannot act first and help form expectations, but must instead take agents' expectations as given. The magnitude of the gains to commitment for the open economy remain an empirical question. If monetary policy is conducted under discretion, the central bank acts second and agents recognize that the central bank may reoptimize its policy rule at a later date. This hinders the central bank in achieving its objectives because the central bank is limited in its ability to shape expectations in a useful manner.[1]

In addition, the government may unlock some of the benefits of commitment-based policy by acting strategically and delegating to the central bank a loss function different to that of society, thus achieving a second-best outcome (Rogoff, 1985, Walsh, 1995, Svensson, 1997, Nessén and Vestin, 2005, Gaspar and Smets, 2002, Jensen, 2002 and Walsh, 2003 *inter alia*).

The magnitude of the gains to commitment and optimal delegation remain an empirical question for the open economy because the structure of the economy matters. For example, Dennis and Söderström (2006) show that for the closed economy, the degree of forward-looking behaviour and information lags determine the extent of the gains to commitment-based policy.

Measuring the gains to commitment and optimal delegation requires evaluating alternative monetary policy regimes. Hence a structural model of the economy, where the parameters of the model can be considered invariant to changes in policy regime, are required to address the Lucas critique. For this reason, a new-Keynesian, open economy model is estimated using quarterly New Zealand data over the period 1990:1–2002:4.

The paper proceeds as follows. Section 2 discusses the standard linear-quadratic framework for monetary policy, formulates the central bank's problem, formulates the government's problem and considers how recent PTAs (Policy Target Agreements) fit this framework. Section 3 presents the new-Keynesian open economy model and the estimates for the New Zealand dataset. Impulse response functions depict the dynamics of the model. Section 4 presents the results, which assess the magnitude of the gains to commitment-based policy and the magnitude of policy improvement under optimal delegation. The results are checked across three representations of the New Zealand economy and a representation of societal and central bank preferences that contains a medium term measure of inflation. Section 5 concludes.

2. The monetary policy framework

2.1. The central bank's problem

The linear-quadratic (LQ) framework describes a class of macroeconomic models that satisfy a specific set of assumptions. In particular, it is assumed there exists a linear model for the evolution of the economy and a quadratic loss function that the central bank seeks to minimize. These assumptions are useful because they yield models with unique solutions for optimal monetary policy.

Dennis (2007) presents solution algorithms for both backward-looking and forward-looking models encompassed by the equation:

[1] Note that no stabilization bias exists in a purely backward-looking model because there are no expectational variables, which implies the commitment and discretion cases are identical.