Journal of International Money and Finance 29 (2010) 819–839

Contents lists available at ScienceDirect

Journal of International Money and Finance

journal homepage: www.elsevier.com/locate/jimf

A happy "half way-house"? Medium term inflation targeting in New Zealand

Kirdan Lees [a,*], Sam Warburton [b]

[a] Reserve Bank of New Zealand, Economics, 2 the Terrace, PO Box 2498, Wellington, New Zealand
[b] Ministry of Agriculture and Fisheries, Biosecurity, 25 the Terrace, PO Box 2526, Wellington, New Zealand.

JELclassification:
C51
E52
F41

Keywords:
Medium-term
Inflation targeting
Monetary policy
DSGE

A B S T R A C T

The 2002 Policy Targets Agreement (PTA) between the government and central bank of New Zealand asks the central bank to target inflation "over the medium term" rather than over an annual target. Delegating such a medium term objective to the central bank shifts inflation targeting towards a "halfway-house" between inflation targeting and price level targeting. We show empirically that this helps time consistent policy approximate the first-best commitment policy even when the government asks the central bank to weight output stabilisation differently to society. We estimate the New Zealand economy with a small open economy DSGE model and show that the happiest halfway house is located around a two year averaging horizon at most, which leads to mild improvements in monetary policy efficiency.

1. Introduction

Many central banks target inflation, seeking stability and low volatility in the rate of change in the price level. Most inflation targeting central banks aim to stabilize inflation around a low (0–3 percent) annual rate.

Svensson (1999a) and Svensson (2000) state that inflation targeting can be interpreted as the specification and minimisation of a specific loss function over a particular set of macroeconomic variables and it is common to approximate a summary of social welfare via a quadratic loss function that penalizes deviations of inflation from target and output from trend or potential.

* Corresponding author. Tel.: +64 4 4713666.
E-mail addresses: kirdan.lees@rbnz.govt.nz (K. Lees), sam.warburton@maf.govt.nz (S. Warburton).

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doi:10.1016/j.jimonfin.2010.03.013

While for some problems, it is natural to compute the first-best Ramsey policy for the central bank that maximises agents' welfare subject to the constraint that is the dynamics model of the evolution of the economy (see Benigno and Benigno, 2003; Faia and Monacelli, 2008; Woodford, 2003). Dennis and Söderström (2006) show there exists a temptation for the central bank to renege on the commitment policy. If the central bank cannot implement the commitment technology, there may be gains from delegating to the central bank a loss function that is different to that of society (see Rogoff, 1985, for example).

If the central bank cannot implement the first-best commitment policy, price level targeting can produce better macroeconomic outcomes than inflation targeting. Svensson (1999b) shows that if the government delegates a price level target, this results in lower short-run inflation volatility compared to inflation targeting. Vestin (2006) shows that under discretion, price level targeting delivers superior outcomes to inflation targeting by introducing history dependence.[1] Under price level targeting, periods of positive inflation must be followed by periods of deflation to maintain stability in the price level whereas inflation targeting does not require offsetting bygone shocks to the price level.

The legislative framework at the core of New Zealand's inflation targeting regime establishes instrument but not goal independence for the central bank. This implies a principal-agent problem where the government delegates the optimal set of objectives—encapsulated in the PTA—that the RBNZ is required by law to achieve.[2] These objectives for the central bank are to minimise the volatility of specific macroeconomic variables and have not been derived as optimal policy from the perspective of an explicit macroeconomic model.

However, the choice of regime is not binary. The government could delegate to the central bank a target that is a medium term average of inflation over several quarters. Under medium term inflation targeting, periods of above target inflation must be followed by periods of below target inflation, if the medium term inflation target is to be maintained. Medium term inflation targeting represents a middle ground between price and inflation targeting. Indeed, strict inflation targeting approaches price level targeting, if the central bank targets inflation averaged over a large number of periods.

The objective of this paper is to identify the optimal averaging horizon for a small open economy inflation targeter, and to quantify the benefits of pursuing medium term inflation targeting. However, the gains from optimal delegation are a function of the underlying model of the economy and in particular, the role for forward-looking agents (see Dennis and Söderström, 2006; Nessén and Vestin, 2005). Thus how long the medium term should be is an empirical question.

To this end, we estimate a small open economy DSGE model, based on a variant of Monacelli (2005), that allows for incomplete exchange rate pass-through. We extend the model to allow for deviations from UIP based on the presence of agents that we refer to as chartists, who form expectations of the long run nominal exchange rate based on last period's observation.

Recently, the Bank of Canada set out a research agenda focussed on price level targeting (see Côté, 2007). However, the model is applied to New Zealand, which proves a pertinent case for several reasons. First, New Zealand's legislative framework prescribes instrument but not goal independence to the central bank, closely matching the notion of optimal delegation within the literature. The 2002 Policy Targets Agreement (PTA) between the Reserve Bank of New Zealand (RBNZ) and the government, asks the central bank to target inflation "over the medium term" – precisely the policy we examine in this paper. Finally, New Zealand adopted explicit inflation targeting in February 1990 and thus also offers the longest running example of an explicit inflation targeter.

The remainder of the paper is organised as follows. Section 2 details New Zealand's monetary policy framework. Section 3 details the model while Section 4 presents the results of optimal delegation experiments. Concluding comments are provided in Section 5.

[1] Minford and Peel (2003) argue price level targeting improves output stability without the assumption that monetary policy is conducted under discretion.

[2] The Governor can be fired if these objectives are not met.