

The value of central bank transparency when agents are learning

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Abstract

We examine the role of central bank transparency when the private sector is modeled as adaptive learners. In our model, transparent policies enable the private sector to adopt correctly specified models of inflation and output while intransparent policies do not. In the former case, the private sector learns the rational expectations equilibrium while in the latter case it learns a restricted perceptions equilibrium. These possibilities arise regardless of whether the central bank operates under commitment or discretion. We provide conditions under which the policy loss from transparency is lower (higher) than under intransparency, allowing us to assess the value of transparency when agents are learning.

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1. Introduction

The aim of central bank transparency is to lessen or eliminate informational asymmetries between central bank decision-makers and the private sector. Transparency of central bank decision-making has increased rapidly in recent years beginning with the adoption of inflation targeting by the central banks of New Zealand, Canada, the U.K. and Sweden in the early 1990s.¹ Over the same period, economists have made substantial progress in modeling the adaptive process by which learning agents form and update their expectations with the aim of assessing

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¹ See, e.g., Geraats (2002) for a survey of the recent theoretical and empirical literature on central bank transparency.

whether rational expectations equilibria can be learned or not.² However, as Svensson (2003) points out, the connection between central bank transparency and the stability of equilibria under adaptive learning has been largely neglected. Presumably, the benefits of central bank transparency lie in more accurate expectation formation by the private sector, and in improved policy outcomes for central bankers.

Nevertheless, a recent literature on the stability of monetary policy rules when the private sector is learning largely ignores the role played by central bank transparency.³ In this literature, the stability of rational expectations equilibria in the benchmark New Keynesian, sticky-price model is assessed under a variety of central bank rules for the interest rate target. The aim is to consider restrictions on the class of policy rules or on policy weighting parameters that ensure stability of rational expectations equilibrium under private sector adaptive learning. The private sector agents in these models are engaged in the process of forming expectations of future inflation and output without regard to the transparency of central bank policy. Consequently, there really is no possibility of assessing the role played by greater transparency on private sector learning behavior and the achievement of central bank objectives.

In this paper, we reconsider private sector learning in the context of the New Keynesian model with the aim of understanding the value of central bank transparency. Specifically, we first examine the consequences, for equilibrium stability under learning, of whether or not the central bank reveals its inflation and output targets or that it has committed itself to following a policy rule. Revelation of this information impacts on the specification of the perceived law of motion that agents use to form forecasts of future inflation and output.

In the intransparent⁴ case, where targets are not revealed and/or the private sector is uninformed of the central bank's commitment to a policy rule, the equilibrium is a "restricted perceptions" equilibrium (RPE). In such an equilibrium, agents use a misspecified, *underparameterized* forecast model of inflation and output but, in equilibrium, they are unable to detect that their model is misspecified.⁵ If agents instead used an *overparameterized* forecast model, they could always learn that the extraneous coefficients in their model should be set to zero and thereby learn to form forecasts consistent with the REE.⁶ However, with an underparameterized model that possibility is ruled out; for this reason the underparameterized misspecification and the stability of the resulting RPE is the more interesting case to consider and is the focus of our paper.

In the transparent regime, the central bank reveals its policy targets and/or its commitment to a policy rule and, as a consequence, the private sector adopts the correct forecast model. The resulting equilibrium is the standard rational expectations equilibrium.

We show that restricted perceptions and rational expectations equilibria are both stable under adaptive learning behavior on the part of the private sector, regardless of whether the central bank operates under a discretionary or a commitment regime. Given this finding, we move on to a comparison of the central bank's policy losses under the two policy regimes. In the discretionary regime, we provide conditions on inflation and output targets under which the policy loss under transparency is lower or higher than under intransparency. Thus under discretion, the case for central bank transparency is mixed. This finding also has implications for the literature on

² See, e.g., Evans and Honkapohja (2001).

³ See, e.g., Bullard and Mitra (2002), Evans and Honkapohja (2003a,b, 2006) and Bullard (2006) surveys the literature.

⁴ The *Oxford English Dictionary* defines *intransparent* as: "not transparent; incapable of being seen through."

⁵ See Evans and Honkapohja (2001) and Branch (2006) for definitions and a survey of the restricted perceptions equilibrium concept.

⁶ Evans and Honkapohja (2001) use the term "strong E-stability" to refer to REE that are stable under learning when agents use overparameterized forecast models.

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