Learning, uncertainty and central bank activism in an economy with strategic interactions [☆]

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Abstract

In this paper we examine the optimal level of central bank activism in a standard model of monetary policy with uncertainty, learning and strategic interactions. We calibrate the model using G7 data and find that the presence of strategic interactions between the central bank and private agents creates an additional motivation for caution in the optimal monetary policy. An activist policy designed to help learning and reduce future uncertainty creates extra volatility in inflation expectations, which is detrimental to welfare. © 2001 Elsevier Science B.V. All rights reserved.

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1. Introduction

Should a central bank be cautious or activist in its monetary policy? Central bankers think they have the answer to this problem: cautious. As Blinder (1998) puts it, "compute the direction and magnitude of the optimal policy move ... and then do less". Academic economists are not so sure. Brainard (1967) recommends caution if there is uncertainty about the effects of monetary policy whilst Bertocchi and Spagat (1993) suggest policy should be more activist since we learn more about the key parameters of the economy that way. Recent studies by Wieland (1998, 2000b) have revived interest in this debate.

In this paper we agree with central bankers and develop arguments suggesting that caution may indeed be the optimal policy. We argue that an activist policy translates into more volatile inflation expectations, which cause problems for a central bank attempting to keep inflation low and smooth output fluctuations. By being more cautious, the central bank is able to dampen the volatility in inflation expectations and so create a more favourable environment for the conduct of monetary policy. To establish our result we use a standard monetary model, essentially that of Barro and Gordon (1983), in a dynamic setting. Roles for uncertainty and learning are created by assuming persistent but unobservable regimes in which monetary policy has different effects.

Our results depend on the strategic interactions inherent in the model, which create a link between the activism of the central bank and the volatility of inflation expectations. The volatility of expectations reacts to the activism of a central bank because an activist policy produces more information, helping private agents to learn and adjust their expectations faster. Existing frameworks, by not taking strategic interactions into account, do not adequately specify the costs and benefits of an activist policy.

The paper is structured as follows. Our model is described in detail in Section 2 and then calibrated in Section 3 using empirical estimates of asymmetric regimes in the G7 economies. Section 4 solves the model for different assumptions concerning central bank behaviour. We focus on how policies differ depending on how the central bank takes learning issues into account. Section 5 concludes.

2. The model

2.1. Structure of the economy

The economy is characterised by an expectations-augmented Phillips-curve relationship (1) between inflation surprises $\pi_t - \pi_t^e$ and output y_t, defined as deviation from trend. Inflation π_t is assumed to be completely under the