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Monetary policy in the New-Keynesian model: An application to the Euro Area

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Abstract

This paper analyzes monetary policy in a stylized New-Keynesian model. A number of issues are focused upon: (i) optimal monetary policy under commitment or discretion versus ad-hoc monetary policy based on simple rules, (ii) the effects of fiscal policies and foreign variables on monetary policy, (iii) the effects of fiscal deficit and interest rate smoothing objectives and the role of forward-backward linkages in the model. The model is estimated for the Euro Area. Using simulations of the estimated model, it is analyzed how these aspects might affect monetary policy of the ECB and macroeconomic fluctuations in the Euro Area.

JEL classification: F31; F41; G15

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1. Introduction

Since its start on January 1, 1999 the design, implementation and transmission of the common monetary policy of the European Central Bank (ECB) has been the subject of close scrutiny. An important question concerns the optimal monetary policy for the Euro Area (EA). Among

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other things, this question also concerns the credibility of the ECB. Some observers have argued that the ECB practically inherited the reputation and commitment towards low inflation of the Bundesbank. Others have assumed that as a complete new institution, the ECB would lack initially such a possibility to commit its policies vis-à-vis the private sector and that it would need time to earn a reputation. In other words, starting from a regime with discretionary policymaking, it may only gradually establish a policy regime with commitment in its policies by establishing a reputation over time. From the academic side, e.g. adopting inflation targeting and the importance of central bank independence, transparency, and accountability have been proposed as means for the ECB to foster its credibility.

Optimal monetary policy under commitment and discretion has indeed received interest in the recent New-Keynesian (NK) literature but most results relate to a closed economy setting and ignore the presence of fiscal policy. Clarida, Gali, and Gertler (1999) and Woodford (2003) demonstrate that in the closed-economy NK model if expectations are entirely forward-looking, the optimal monetary policy is history dependent under commitment and contemporaneous under discretion following a cost-push shock. The history dependency under commitment gives rise to an improved trade-off between output and inflation variability as it enables the monetary authorities to smooth out over time the adjustments resulting from the cost-push shock. Jensen (2002) shows that in a closed-economy setting without fiscal policy, with purely forward-looking output and inflation expectations and a monetary authority that has no interest rate smoothing objective, the distinction between commitment and discretion is essentially only relevant in the presence of cost-push shocks. There, stabilization of output and inflation is subject to such a trade-off between the variability of output and inflation, implying a stabilization bias problem under discretion. Demand and potential output shocks do not pose such dilemmas as monetary policy can then always be set – both under commitment and discretion – to perfectly offset demand shocks and to perfectly accommodate potential output shocks.

It has also been argued from various sides that there may be a need for using simple policy rules rather than an optimal but highly complicated strategy that is difficult to communicate to the public. The presence of initial institutional uncertainties, large uncertainties about the actual workings of the EA economy (model uncertainty), the lack of consistent EA data (data uncertainty) and the possibility of structural breaks (parameter uncertainty) due to establishment of the EA support this view. Following that logic, it has been argued that the ECB would better follow a simple policy rule that emphasizes predictability, transparency and accountability in conducting monetary policy. A large number of empirical studies have estimated Taylor rules for the EA and find that such simple rules are adequate to characterize actual policymaking.

In this paper we analyze the effects of alternative monetary policy regimes using a stylized NK model that is estimated and simulated using EA data. We extend the results in the New-Keynesian literature in three areas, using simulations of an estimated model of the EA. Firstly, we sharpen the notion that both monetary policy itself and the transmission of monetary policy are dependent on the type of monetary policy regime, the type of macroeconomic shocks and the structural characteristics of the economy. Secondly, the presence of an active fiscal policy and an open economy setting may complicate the management of monetary policy. Thirdly, policymakers are typically also concerned about instrument smoothing. In case of instrument smoothing policymakers perceive instrument variability as undesirable/costly and thus prefer lower and more gradual adjustment of the policy instruments. The inclusion of interest rate smoothing generates history dependence in monetary policy even in an otherwise purely forward-looking model. Similarly, deficit smoothing will lead to a fiscal policy that only gradually adjusts,