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OPTIMAL ECONOMIC POLICIES FOR SLOVENIA WITH DIFFERENT SETS OF POLICY INSTRUMENTS

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Abstract. This paper presents an application of optimum control theory to economic policy design. For this purpose, the OPTCON algorithm is applied to determine solutions for optimum control problems with a quadratic objective function and the nonlinear dynamic model SLOPOL3, a macroeconometric model for Slovenia. Several optimization experiments under different assumptions about the set of economic policy instruments available under a fixed exchange rate, a flexible exchange rate, and a crawling peg regime are carried out. If the average tax rate on labor is available as an active policy instrument, the optimization results do not differ significantly between the exchange rate regimes. If, on the other hand, the labor tax rate is held constant over the optimization horizon, the nature of the exchange rate system is of crucial importance for the policy design and outcomes.
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1 Introduction

Slovenia has applied for membership of the European Union and was designated by the EU as one of the candidates eligible to the first eastern enlargement round. This leads to the question whether it is desirable for Slovenia to take part in the exchange rate mechanism of the European Monetary System EMS-II or even to become a member of the Euro System, provided that it fulfills the Maastricht convergence criteria. In the Euro System, monetary policy is conducted by the European Central Bank (ECB) and is therefore no longer available for internal stabilization purposes of its member countries. As a consequence, other economic policy instruments may become more important than hitherto [1]. It is therefore of interest whether important macroeconomic policy goals such as a high GDP growth rate, low inflation and unemployment as well as external equilibrium and a balanced budget can be achieved by means of fiscal policy only.

In this paper, several optimization experiments are conducted which differ with respect to the set of economic policy instruments at hand. First,