



## CPS Paper

### Policy Applications of Econometric Models

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#### Brief Description

Applications of statistics to real-world problems

#### Abstract

In this paper, we explain how statistics and econometrics can be used to solve problems of designing economic policy problems, especially those of macroeconomic policy. Econometric models are models based on economic theory and estimated with empirical data using statistical methods. We start from the so-called taxonomic approach to the theory of economic policy and discuss the three main approaches of this theory, namely the fixed-targets, the flexible-targets and the simulation approach, and how they are related to the different forms of an econometric model, namely the structural form, the reduced form and the final form. Next, we show by example of applications to an econometric model of Slovenia, called SLOPOL11, how this approach can be used to real-world problems of a specific economy, emphasizing the methodological relations between an optimization and a simulation analysis with an econometric model. Problems of uncertainty are dealt with using results from stochastic control theory. The importance of sensitivity analysis is emphasized in view of the limited information about economic relations available to the policy maker. Some of the politically relevant results are the following: Slovenia as a small open economy with a high share of international trade with the other Euro Area countries and only little idiosyncratic, i.e. country-specific shocks, benefits from the Euro Area membership. Using fiscal policy instruments with both demand-side and supply-side effects such as investment in research and development and in human capital not only increase long-run growth of such an economy but also contribute more than others to the short-run stabilization of the economy in view of external crisis such as a financial crisis or a pandemic crisis such as the one caused by COVID-19. Finally, we discuss some critiques of that approach and arguments dealing with them.