

Klaus Adam - Nuffield Professor of Economics



To:

Stepan Jurajda
Professor of Economics
CERGE-EI, Prague

31 October 2018

RE: Habilitation evaluation letter for Sergey Slobodyan, CERGE-EI

Dear Dr. Jurajda,

It is my pleasure to provide you with an evaluation letter for Sergey Slobodyan's habilitation. I know Sergey's academic work well from conferences, personal interactions and from reading his publications. I have also seen Sergey's work generating quite some impact on the field over the years.

I declare that I have not conflicts of interest with regard to providing you with this evaluation letter.

The habilitation consists of three chapters, all of which are of very high quality from an international standpoint. Each of the chapters makes important contributions to the literature on learning in dynamic macroeconomic settings and each of them is at the forefront of international research efforts in this area. This manifests itself in the fact that all chapters are published in very good economic journals: chapters 1 and 2 are published in the Journal of Economic Dynamics and Control, which is one of the two internationally leading economic journals in the area of economic dynamics; chapter 3 is published in the American Economic Journal - Macroeconomics, which is the top field journal in the area of macroeconomics.

Chapter 1, titled "Escape Dynamics: A Continuous Time Approximation", is joint work with B. Kolyushnov and A. Bogomolva. It makes an important methodological contribution by

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developing a simple but powerful method that allows us to understand the large deviation behaviour of stochastic dynamic models. Understanding the large deviation behaviour is of interest because it allows assessing the factors contributing to economic instability in dynamic economies. Assessing such economic instabilities has received renewed interest following the experiences in the Great Recession. The method offered in this paper relies on a continuous time approximation of the discrete stochastic recursive difference equation system. It is shown how it improves upon earlier methods proposed by Cho, Williams, and Sargent (2002), both in terms of simplicity of use and in terms of its accuracy in terms of capturing the behavior of the underlying discrete time system. I think it is fair to say that this chapter sets the new standard for studying large deviation behavior in this literature.

Chapter 2, titled “Learning in an Estimated Medium-Scale DSGE Model”, is jointly written with Raf Wouters. The paper introduces learning into the medium-scale dynamic stochastic general equilibrium model of the business cycle of Christiano, Eichenbaum and Evans/ Smets and Wouters. It is the first paper studying learning dynamics in such a medium-scale setup and provides two important findings: (1) if the information set on which learning agents base their forecasts is equal to the information set available to agents in the full-information rational expectations equilibrium, then learning does not add much in terms model fit and the predicted responses of the economy to fundamental disturbances; (2) if – to the contrary - agents condition forecasts only on a smaller set of observable variables, then model fit can improve dramatically and learning adds to the internal propagation properties of the model by increasing the persistence of the impulse responses. This allows bringing the model impulse responses closer to the responses obtained from structural VARs. Overall, this paper points towards the importance of the information assumptions entertained in setting up the learning problem. It also provides quite a different message than earlier results from small-scale model (e.g., Milani (2007)) and has led to a relative reassessment of relevance of these earlier findings.

Chapter 3, titled “Learning in a Medium-Scale DSGE Model with Expectations Based on Small Forecasting Models”, is joint work with Raf Wouters. This paper builds on the previous chapter and is the benchmark paper in macroeconomics on learning in DSGE models. The first contribution of the paper is to construct a flexible yet parsimonious set of small-scale

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forecasting models - based on Kalman filtering - that can produce out-of-sample forecast errors that are no different than the ones obtained from estimating RE-consistent forecast functions. Importantly, the authors show that the inflation forecasts implied by these parsimonious models capture well the behavior of survey forecasts of inflation and match the survey forecast better than the expectations implied by the model estimated under the rational expectations hypothesis. In this sense, the paper provides evidence that the small forecast model assumption is empirically plausible. The second contribution is to show that introducing these small-scale forecasting models can explain the rise and fall of inflation over the 1970's and 1980's in the United States, as well as the rise and fall of inflation volatility of the same period. Interestingly, this is achieved in a model in which the monetary policy rule remains constant over time. Instead of being due to policy changes, the changes in the mean and volatility of inflation are solely due to a change in agents' beliefs about the long-run inflation target pursued by the monetary authority and due to evolving beliefs about the persistence of the inflation process. In this sense, the paper offers an alternative account of the US postwar inflation history, rivaling the one provided in Cogley, Primiceri and Sargent (2010). In my view, the important economic message of the paper is that anchoring long-run inflation expectations at the inflation target and anchoring perceived inflation persistence at a low level should both be of utmost importance to monetary policymakers, in order to avoid a repeat of the adverse inflation experience of the 1970's.

In sum, all three chapters are at forefront of international research efforts. They make important additions to the literature and compete with contributions made by leading international scholars. In my view, it is beyond doubt that the habilitation submitted by Sergey Slobodyan meets the standards for award of the docent title.

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