Berichte aus der Volkswirtschaft

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Optimum Currency Area Theory Revisited – New Insights From Stochastic Dynamics

D 38 (Diss. Universität Köln)

Shaker Verlag
Aachen 2008

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at http://dnb.d-nb.de.

Zugl.: Köln, Univ., Diss., 2008

Printed in Germany.

ISBN 978-3-8322-7806-9
ISSN 0945-1048

Shaker Verlag GmbH • P.O. BOX 101818 • D-52018 Aachen
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Optimum Currency Area Theory Revisited – New Insights From Stochastic Dynamics

The analysis of economic integration and the implications of the formation of a currency union has long been a focal point of international economic research. The present study extends this strand of the literature by employing modern DSGE techniques in the tradition of the New Open Economy Macroeconomics (NOEM) to reassess the major aspects of the long-standing debate on the costs and benefits of monetary integration.

Fichtner highlights two particular motivations. *First*, the study aims to fill a gap in the existing international macroeconomic literature: While the empirical application of the Optimum Currency Area (OCA) approach has attracted a wide range of research in recent years, theoretical progress in the field has been quite slow. In particular, there still remains doubt about the relative importance of costs and benefits of monetary integration. Due to the lack of a unifying framework of the traditional, criteria-based, OCA approach, different – and possibly inconsistent – criteria cannot be evaluated and ranked against each other. The *second* aim of the study is to apply the developed models to extend the available knowledge about the welfare effects of monetary integration and the implications of the formation of a currency union. Since models allowing a rigorous and consistent evaluation of the costs and benefits of monetary integration are so far not available, a quantitative assessment of the net welfare effects of monetary integration under different economic circumstances has not been presented before. The study takes a first step in this direction and provides important insights into these aspects.

Based on an extensive review of the literature on monetary integration, Fichtner compiles a catalog of costs and benefits related to the formation of a currency union. In this context, the study reviews and critically discusses the literature that emerged in the aftermath of Mundell's seminal paper on the Theory of Optimum Currency Areas and the literature on costs and benefits of monetary integration. Driven by the finding that the previous literature failed to provide conclusive results with respect to the net welfare effects of monetary integration, Fichtner develops a multi-country modeling framework suitable for a consistent analysis of the formation of a regional currency union.

The model incorporates the majority of the compiled costs and benefits in a Dynamic Stochastic General Equilibrium (DSGE) framework. The setup is easily motivated: Clearly, *dynamic* aspects such as intertemporal optimization of agents and (international) saving decisions are crucial aspects in the context of current account dynamics and the choice of exchange rate regimes. An explicitly *stochastic* setup provides the possibility to account for the effects of uncertainty on agents' decisions and on the welfare levels achieved by (risk-averse) households. The use of a *general equilibrium* framework allows the concurrent implementation of different aspects related to the formation of a currency union, thereby admitting a consistent evaluation of the net welfare effects of monetary integration.

The results presented in this study suggest that the relevance of currency exchange costs and transaction costs of different currencies is severely underestimated in the previous literature. Due to the distortive effect on international trade, the actual costs of different currencies are considerably higher than they appear at first sight. Compared to the impact of exchange rate uncertainty and the costs related to the loss of monetary autonomy, these currency exchange costs are found to be of crucial importance for the welfare effects of monetary integration. Interestingly, the results are robust with respect to the international correlation of supply and demand shocks, shedding considerable doubt on the use of the international cohesion of shocks as a "meta-criterion" for the empirical evaluation of the potential cost of monetary integration.