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Introduction

INFORUM[1] (Interindustry Forecasting Project at the University of Maryland) is a research project started forty-five years ago by Clopper Almon, now Professor Emeritus at the University. The focus is on the development of dynamic, interindustry, macroeconometric models to forecast the economy behaviour in the long run.

Over the last decades, the INFORUM approach to model building has been shared by economists in many different countries. Researchers have focussed much of their efforts in developing a linked system of international interindustry models with a consistent methodology. A world-wide network of research associates use the same methods and software obtaining comparable results. INFORUM partners have shared their researches in annual conferences since 1993. The XXth INFORUM World Conference was held in Florence in September 2012 and this volume contains a selection of works presented during the sessions. All these contributions share an empirical and pragmatic orientation that is very useful for policymakers, stakeholders, and applied economists. Some papers are devoted to specific topics (total factor productivity, energy issues, external linkages, demographic changes) and some others are oriented to model building and simulations.

A special role in this volume is devoted to a key topic in economics, especially prominent during the recent international crisis, that is strictly interconnected with the economic development in the long run: the analysis of factor productivity. The paper by Meade is aimed at designing a comprehensive and internally consistent modelling framework for 'mul-

[1] www.inforum.umd.edu.

tifactor productivity'. This modelling framework is integrated within the INFORUM model of the U.S. economy which forecasts output, hours worked, investment, capital stocks and intermediate purchases in current and constant prices. The Multi-Factor Productivity model presented is a useful tool for understanding productivity growth of the U.S. economy in a consistent and comprehensive way.

All other contributions are collected into two sections. The first one contains some works focused on new models and software development. As already mentioned, INFORUM models share a common structure and, moreover, a common software, InterDyme, originally developed by Almon. Model builders not only must have a deep knowledge of economic theory but they must also get acquainted with software packages and programming languages. 'PortableDyme' is a development of the original INFORUM software presented by Großmann, Hohmann and Wiebe which is aimed at making the model building process easier, especially for beginners. Tomaszewicz and Trębska build a new dataset for the Polish economy by including the flow of funds accounts into the Social Accounting Matrix and they apply IO techniques to this new set of integrated information. A comparative analysis of results for Poland with other European countries is provided as well. Household consumption is studied by Ghezzi within a new multiregional modelling framework for Italy, the Dante model. The strategy to model private consumption consists into two blocks: the first one, at the aggregate level, is based on the Life Cycle Hypothesis and it is used to obtain the total of resident consumption detailed at the regional level; the second one is a system of equations to produce an estimation of price and income elasticities for many different items at the national level. This system of equation is named PADS (Perhaps Adequate Demand System) and it has been applied by several INFORUM models. A multiregional model for Italy (MRIO) has been developed also in the work by Cherubini and Paniccià, MRIO). Important methodological improvements in this work concern the multiregional trade flows estimate procedure, thanks to the availability of unique survey data produced by Banca d'Italia. The model is used to investigate changes of the Italian economic and productive structure at a sub-national level in the 1995-2006 period, with a special focus on the role of spatial interdependencies among regions in the transmission of shocks. Two specific issues are studied by the remaining papers of this session. Werling and Horst investigate the effects of defense spending cuts on the US economy using the LIFT model. The analysis is conducted to determine the economic and employment impacts of specific alternative scenarios for federal defense spending cuts from 2012 to 2022 considering the effects on the U.S. economy as a whole, on the industrial composition of the country, and the effects on each state. Finally, a medium term forecast of the Russian economy is developed by Baranov, Gilmundinov, Pavlov and

Tagaeva. The authors use a Dynamic input-output model disaggregated for 64 industries and present forecasts for the period 2012-2015.

The second section of the volume is devoted to special issues analyzed using a national perspective. The role of external linkages is very important for a 'small economy' and it is studied in the paper by Josef Richter considering the role of tourism in the Austrian case, while the development of trade patterns is explored by Ozolina and Auzina focusing on the Baltic Republics. These analyses made it very clear that to investigate these issues at the macro level gives a very limited perspective of the overall effects. The implications at the level of industries and product groups are much more relevant and deserve special attention. A role in the long run growth is for demography: two contributions included in the book study in depth the impact of demographic changes for large and rapid-growing economies such as China and Russia. For the first country Li, He and Ni analyze the consequences on consumption patterns given by the changing age structure of the Chinese population. Furthermore, an I/0 model is used to study the impact of demographic structural change on the economic and employment structure with a comparative static perspective. The paper by Vadim Potapenko focuses on the problem of financing the pension system in Russia. A simulation of increasing social security contributions to support the growing pension payments given by population ageing is presented by the author. Another issue we must pay attention in the simulation of the real economy is the evolution of the energy sector. The selection of papers included in this volume contains two works on this subject with different perspectives. The main focus of the paper presented by Mullins, Viljoen and Mosaka is on the analysis and forecasting of the petroleum sector in South-Africa. The The South African Forecasting Inter-Industry Model (SAFRIM) is used to study the evolution of demand for petroleum products and its impact on the rest of the economy. Finally, shale gas resources in Poland are investigated in the work by Plich. Unconventional gas resources may have significant importance for the national balance of energy and open up new opportunities for Poland. Costs and benefits of the exploitation of these new resources are described in the paper.

This collection of works follows several other publications of the INFORUM group in the last decades. It is a further testimony that the project founded in 1967 by Clopper Almon is well and alive, producing new empirical researches and contributing to the debate on several crucial issues for economic systems all over the world.