

A Foreword from the Editors

We are extremely pleased to introduce the inaugural issue of the *Journal of Global Economic Analysis*. This new journal provides an open access (free to all readers), peer-reviewed platform for publication and dissemination of innovations in modeling, data, software and teaching for applied general equilibrium (AGE) analysis.

Our Editorial Advisory Board, listed on the masthead, comprises 14 of the world's leading scholars in the field. The Journal is owned and operated by the Center for Global Trade Analysis (GTAP) at Purdue University and its mission is to support the community of scholars, policy analysts and decision makers undertaking quantitative analysis of global economic issues.

The *Journal of Global Economic Analysis* replaces and extends the GTAP Technical Paper Series, which has been published since 1996 and achieved an exceptionally high Researcher Papers in Economics (RePEc)-documented impact factor (12.5 as of 2015). The main reason for this very high citation rate is the fact that the theory, data and software necessary to replicate these studies accompanies each publication. Furthermore, results are independently replicated during the review process. This very high standard is exceptional in the social sciences, but we believe it is absolutely essential if our field is to advance using the proven scientific methodology of replication, critique and extension/revision. We also hope that this standard will increase the profile, credibility and use of AGE modeling in the economics profession.

This first issue of the Journal highlights several of our key objectives. Firstly, much of the research in global AGE analysis does not take advantage of recent theoretical developments in international trade. It is generally a major undertaking to incorporate new theory into an operational model with sufficient detail to be relevant to contemporary policy analysis. The first two papers in this issue demonstrate how Melitz-style, within-sector firm heterogeneity and market-specific fixed costs of entry can be incorporated into operational AGE models. The paper by Peter Dixon, Michael Jerie and Maureen Rimmer carefully lays out a framework which permits ready comparison of results from the Melitz, Krugman and Armington models. Along the way, the authors offer a number of important theoretical and practical insights into these different approaches to CGE modeling.

The second paper, by Zeynep Akgul, Nelson Villoria and Thomas Hertel shows how the Melitz theory can be incorporated into a full-scale, global AGE model, built upon the GTAP Data Base – albeit with some additional parameters. This paper provides members of the research and policy community with a solid platform for undertaking analyses which bring to bear bilateral fixed costs of

market entry, as well as parameterizations of differing firm heterogeneity within industries.

The Journal also seeks to promote the development and dissemination of new data bases and parameters which serve as the underpinning for all AGE analyses. In this issue, we feature two new data bases. The first – by Angel Aguiar, Badri Narayanan and Robert McDougal – is the latest release (version 9) of the GTAP Data Base. This is the most widely used global economic data base for AGE policy analysis and the paper sets out the content, construction process, new features and history of the Data Base. Users of the GTAP Data Base should cite this publication in their future work.

The second paper in the data/parameters section of the Journal documents the GTAP-POWER Data Base developed by Jeffrey Peters. Since its inception, the GTAP Data Base has been rightly criticized for its aggregated treatment of electricity generation, transmission and distribution. With greater emphasis being placed on reducing carbon emissions from the power sector, each individual research group working on climate policy has been forced to engage in the painful and error-prone task of disaggregating the electricity sector in the GTAP Data Base. With this contribution, which disaggregates the electricity sector into 11 sub sectors and transmission and distribution, Peters has not only improved on the state-of-the-art disaggregation of the electricity sector, but by making GTAP-POWER a public good, his contribution will enhance the quality of future analyses.

The sharing of new theory, data and parameters has been a hallmark of the GTAP community since its inception. With the final section of the Journal, we seek to further enhance the productivity of individual researchers through the sharing of useful software innovations. We are fortunate to have, within our community of researchers, some extraordinarily clever and talented software developers. In many cases, due to the absence of a vehicle for dissemination, their innovations are only available to themselves and their close collaborators. With this third section of the Journal, we intend to provide a vehicle for dissemination of these software ‘widgets’, as well as citation by their users. In this issue Dominique van der Mensbrugge shares a tool – written in the popular ‘R’ language – for accessing, manipulating and presenting data from the World Bank’s World Development Indicators data base.

Those of you who have read the Journal’s ‘Focus and Scope’ will note that there is one category of contribution which is not present in this first issue, namely teaching. This is another area where we believe members of the community have a wealth of knowledge which can be fruitfully shared. Therefore, we welcome the

submission of papers which offer new and innovative materials for the effective teaching of Applied General Equilibrium analysis.

In closing, we would like to thank the members of our Editorial Advisory Board for the confidence which they have placed in us and this Journal. We owe a special debt of gratitude for the inaugural authors who stuck with us during the inevitable 'teething pains' associated with launching this first issue. Finally, we would like to encourage readers to use the automated citation tools on the Journal web site. Citations are the 'coin of the realm' in academia and it is critical that we ensure adequate recognition of the valuable contributions by the authors in this inaugural issue of the *Journal of Global Economic Analysis*.

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