

World Bank Report to the Advisory Board: 2007-8

Work using GTAP at the World Bank involves several units, particularly the Projections Group (DECPG); the Research Group (DECRG) and the Poverty Reduction and Economic Management Network (PREM).

DECPG has started a major new initiative on the economics of climate change. The unit's LINKAGE model has morphed into the ENVISAGE model that is more focused on energy and emissions and also includes a climate module. The work is intended to fill gaps in the existing field of the economics of climate change, notably the lack of more regional disaggregation--particularly of developing countries. Preliminary results will be presented at the GEA11 conference, including a linkage of the GE results to DECPG's GIDD model of income distribution.

DECPG continues to be heavily involved in trade work. It has worked on two main studies in the past year. Dominique van der Mensbrugghe has been involved with Will Martin and David Laborde in assessing the economic impacts of various potential Doha scenarios linked directly to proposals being discussed in Geneva and based on detailed tariff line analysis with MacMaps. DECPG has also been involved with Kym Anderson's project on quantifying agricultural support in developing countries. Both of these studies have been using the soon-to-be-released GTAP version 7.

DECPG's GIDD, the first global CGE-Microsimulation system, has been used in the analysis of pivotal topics in the World Bank's research agenda. The GIDD allows us to project the emergence of a global middle class by 2030 and the role played by China and India in this process. Our income distribution model has also been used to measure the poverty effects of the complete removal of agricultural distortions taking into account the impact in 73 countries covering 90 percent of the population in the developing world. In recent months the GIDD has been used to assess the distributional/poverty effects of climate change and the increase in food prices.

Analysis of scenarios under the Doha Agenda has been undertaken by DECPG and DECRG. This work has involved a strong focus on the specific proposals emerging from the negotiating processes on agricultural and on non-agricultural market access. In this work, we have benefited enormously from collaboration with David Laborde of IFPRI and Sebastien Jean of INRA. A paper by David Laborde, Will Martin and Dominique van der Mensbrugge will be presented at this year's GEA meeting.

A key area of work involving DECRG and PREM has been analysis of the impacts of growth in China and India on other developing countries. This work developed from a World Bank study on the global implications, and has been extended to address in more detail the implications for particular countries and regions, including the Middle East and North Africa; Malaysia, Europe and Russia.

The implications for the poor of the recent surge in food prices have been analyzed within DECRG using primarily partial equilibrium techniques that allow detailed data on household incomes to be used to assess the effects of changes in specific commodity prices on members of poor households. In this work, single-country versions of the GTAP model have been used to assess the impacts for wage rates that are needed to assess these implications.

A new area of research in DECRG is the implications of energy consumption subsidies in the Middle East and North Africa region. These have been examined using a version of the GTAP model adapted to allow for substitution between energy and other inputs. Surprising features of this analysis have included relatively small effects on sectoral outputs, and the importance of effects through the terms of trade and the importance of the approach used by OPEC to deal with changes in the market for petroleum.

One other area of GTAP-based research in DECRG has included analysis of the impacts of Value-Added-Tax (VAT) exceptions for trade policy. While a complete VAT system should be trade-neutral, real-world VAT systems involve exceptions for small firms and for particular sectors such as agriculture that can create substantial trade distortions.

Initial work this year considered a case involving apparent violations of the national treatment principle in Armenia and began the process of developing a framework for analysis of the resulting trade distortions.

Selected Publications and Papers

Journal Articles

- Anderson, K. and Martin, W. (2008), 'Agricultural trade reform under the Doha Agenda: some key issues' *Australian Journal of Agricultural Economics* 52(1): 1-16
- Dimaranan, B., Ianchovichina, E. and Martin, W. (2008), How Will the Growth of China and India Affect the World Economy? *Review of World Economics* accepted March 28, 2008.
- Martin, W., Ianchovichina, E. and Dimaranan, B. (2008), 'Economic Development in Emerging Asian Markets: Implications for Europe' *European Review of Agricultural Economics* forthcoming.
- Martin, W. and Anderson, K. (2008), 'The Doha agenda and agricultural trade reform: the role of economic analysis' in Otsuka, K. and Kalirajan, K. eds. *Contributions of Agricultural Economics to Critical Policy Issues*. Proceedings of the Twenty-Sixth International Conference of Agricultural Economists, Gold Coast, July 2006. Blackwell, Malden, MA.

Chapters in books

- Bussolo M., R. De Hoyos, D. Medvedev, and D. van der Mensbrugghe (2008), "Global Growth and Distribution: Asia and Its Progression to Developed Status", in Zhai Fan (ed.), *From Growth to Convergence: Asia's Next Two Decades*, Asian Development Bank, forthcoming.
- Bussolo M., R. De Hoyos, D. Medvedev (2008), "World Poverty and Global Income Distribution in the Absence of Agricultural Distortions", in Kym Anderson (ed.), "Distortions to Agricultural Incentives: Global Perspective", forthcoming.
- Bussolo, M., De Hoyos, R. and Medvedev, D. (2008) "The Future of Global Income Inequality", in Estache, A and Leipziger, D. (editors) "The Global Middle Class", forthcoming.

Working papers:

- Bussolo, M., De Hoyos, R., Medvedev, D., and van der Mensbrugghe, D. (2007) "Global Growth and Distribution: Are China and India Reshaping the World?", World Bank Policy Research Working Paper, 4392, Washington, DC

** Paper to be cited in a National Geographic article on global middle class.

Ivanic, M. and Martin, W. (2008), Implications of higher global food prices for poverty in low-income countries, Policy Research Working Paper 4594, World Bank, Washington DC.

Work in progress:

Bussolo, M., De Hoyos, R., Medvedev, D. (2008) "Demographic Transitions, Economic Growth and Income Distribution: An Empirical Analysis Using Ex-Ante Microsimulations", Paper to be presented in the Review of Income and Wealth Annual conference, Slovenia, 2008.

De Hoyos, R. (2008) "Poverty Effects of Higher Food Prices: A Global Perspective" , background paper of the forthcoming Global Economic Prospects, The World Bank

Martin, W. (2007), Armenia: impacts of abolishing VAT exemptions for agriculture, Report prepared for the ECA region, October.

Dimaranan, B., Ianchovichina, I. and Martin, W. (2007), 'China, India and the Future of the World economy: fierce competition or shared growth?' Paper presented to the 10th Conference on Global Economic Analysis, Purdue University, June 7-9, .
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