

GTAP Related Activities: 2001-2002

The Economic Research Service (ERS) of the U.S. Department of Agriculture has contributed to and utilized the products of the Global Trade Analysis Project since its inception. This provides a short summary of recent and forthcoming activities.

Contributions to GTAP Products

Trade data. Mark Gehlhar continues to make progress on commodity-level trade and transport database for future releases. Trade data is being prepared for year 2000. Some good news on this front is that all countries belonging to the South African Customs Union are now available. Estimates were made in version 5 but will no longer be necessary. Additional FSU Republics will be available to year 2000 including Kazakhstan, Kyrgyzstan, and Tajikistan. Luxembourg's trade statistics are now reported independently from Belgium.

Evaluation of tariff data in V5. Mark Gehlhar and John Wainio have successfully reconstructed tariffs for all food processing sectors of the GTAP database. This was done by adopting an alternative weighting scheme that takes into account exporter's product trade at a detailed level (HS 6-digit). Preliminary results from a simulation exercise revealed biases in using the simple average approach. As examples, because the U.S. faces a higher tariff on beef exports using the trade weighted average, results from a tariff cut are under-stated using the simple average in the current version of the GTAP database. Impacts on U.S. vegetable oils are over-stated with the simple tariff since soybean products have the lowest tariffs within the vegetable oil sector and large in U.S. exports. Alternative tariffs will have implications for individual EU members in terms of welfare gains and trade pattern changes for scenarios involving processed food tariff cuts. Mark and John plan to extend the coverage other sectors other including the vegetable, fruit and nut sector which is also susceptible to tariff biases.

Agricultural protection data for GTAP database version 5. A team at Market and Trade Economics Division (MTED) contributed the agricultural protection data on the three disciplines: market access, export subsidies, and domestic support. The team obtained detailed information allowing for further reclassification of the producer support estimates as measured by the OECD. Another dimension of this disaggregation was based on WTO notifications of specific programs, where minimally distorting payments (green) were separated from trade distorting-type of support payments (amber).

Export subsidy data. Aziz Elbehri developed the methodology and calculated ad valorem exported subsidy equivalents for V5. The data is documented in, "Elbehri, A. "Agricultural Export Subsidies," chapter 16.D In: GTAP Database Version 5 Documentation. [On-line: <http://www.gtap.org>]"

Land and water resources database. Roy Darwin, Kevin Ingram, John Sullivan, and Vince Breneman continue to revise the land and water resources database used by the Future Agricultural Resources Model (FARM), a modified version of the first GTAP database and model, to be compatible with version 5 of the GTAP database. Work on this database proceeds slowly due to intermittent suspensions to devote resources to research on the environmental

impacts of trade agreements, the agricultural impacts of greenhouse gas emissions, and other ERS research. A beta version of the land and water resources database will be available sometime prior to a Workshop on the Incorporation of Land Use and Greenhouse Gas Emissions into the Global Trade Analysis Project (GTAP) Data Base, currently scheduled for September 5 and 6, 2002. We are using resources immediately available to ERS. Once completed, other consortium members will be asked for help in upgrading the database through one or another mechanism (e.g., the project entitled “Toward an Integrated Data Base for Assessing the Potential for Greenhouse Gas Mitigation” funded by the U.S. Environmental Protection Agency).

1996 US-IO. Ken Hanson and Agapi Somwaru contributed the United States (US) Input-Output (I/O) accounts for the GTAP version 5 database. The US IO was derived from the 1992 benchmark Input-Output accounts published in 1997 by the US Department of Commerce, Bureau of Economic Analysis (Survey of Current Business, November 1997). For modeling projects at USDA-ERS, the detailed 1992 I/O accounts have been updated to 1996. For the GTAP project, they have aggregated the 1996 I/O accounts to the GTAP database version 5 sectors.

The US I/O accounts, consists of about 500 commodities and industries, classified according to the 4-digit standard industry classification (SIC) codes, except for agriculture. The 17 agricultural sectors are aggregated according to a commodity grouping. Three sectors in the US I/O accounts had to be further disaggregated to accommodate the sectoral detail of the GTAP database.

1997 China IO. Zhi Wang contributed the China’s 1997 IO table to v5 GTAP Data Base.

Publications

1. Articles

Chow, Peter, Francis Tuan and Zhi Wang “The Impact of WTO Membership on Economic / Trade Relations Among the Three Chinese Economies -- China, Hong Kong and Taiwan.” *Pacific Economic Review*, Vol. 6(3): 419-444, October 2001.

Diao, Xinshen, Terry Roe, and Agapi Somwaru, 2000. “Developing Country Interests in Agricultural Reforms Under the World Trade Organization” *American Journal of Agricultural Economics*, (forthcoming, August, 2002).

Elbehri, A., T.W. Hertel, and W. Martin. “Estimating the Impact of WTO and Domestic Reforms on the Indian Cotton and Textile Sectors: A General Equilibrium Approach” *Review of Development Economics* (In press).

McKibbin, Warwick, Zhi Wang and William Coyle, “The Asia Financial Crisis and Global Adjustment: Implications for U.S. Agriculture” *Japanese Economic Review*, Vol. 52(4): 472-491, December 2001.

Robinson, Sherman, Zhi Wang and Will Martin “Capturing the Implications of Services Trade Liberalization.” *Economic System Research*, 14(1), March 2002.

Wang, Zhi and Jun Ma. "Winners and Losers of China's WTO Entry" *The China Business Review*, 28(2):22-25, March-April 2001.

Wang, Zhi and William Coyle. "APEC Open Food System: the Opportunity for US Agriculture" *Agricultural Outlook*, pp. 18-20, October 2001.

Wang, Zhi "The Impact of China's WTO Accession on Trade and Economic Relations Cross the Taiwan Strait" *The Economics of Transition*. Vol. 9(3): 743-785, November 2001.

Wang, Zhi and Bill Coyle "APEC Open Regionalism and its Impact on U.S. and World Economy." *The World Economy*, 25(4): 563-589, April 2002.

Wang, Zhi and G. Edward Schuh "The Emergence of a 'Greater China' and its Impact on World Trade – A Computable General Equilibrium Analysis." *Journal of Comparative Economics*, forthcoming, 2002.

2. Manuscripts and Working Papers

Darwin, R.F. "Effects of Greenhouse Gas Emissions on World Agriculture, Food Consumption, and Economic Welfare." Resubmitted to *Climatic Change*.

Wang, Zhi. "Impact of China's WTO Accession on the patterns of World Trade." Submitted to *Journal of Policy Modeling* for publication consideration.

3. Other Publications

Wang, Zhi. "Impact on the U.S. and Other Economies" Chapter 10 in Shang-Jin WEI, James G. WEN, and Huizhong ZHOU eds. *Globalization of the Chinese Economy* Edward Elgar Publishing, 2002.

Elbehri, A., M. Ingco, T. W. Hertel, and K.R. Pearson. "Liberalizing TRQs: Quantifying the Effects of Enhancing Market Access," Chapter 10 In: *Agriculture and the New Trade Agenda from a Development Perspective: Interests and Options in the WTO 2000*, Cambridge University Press (forthcoming).

4. Unpublished Conference Presentations and Invited Speeches

Darwin, R. 2001. "Including Health in the Future Agricultural Resources Model." Seventh Workshop on Climate Change Impacts and Integrated Assessment, Snowmass Village, CO, July 30 - August 10.

Darwin, R. 2001. "Integrated Assessment at the Economic Research Service of USDA." Seventh Workshop on Climate Change Impacts and Integrated Assessment, Snowmass Village, CO, July 30 - August 10.

Diao Xishen, A. Somwaru, and T. Roe. "Do Developed Countries Agricultural Policies Slow The Economic Growth of Developing Countries? A Dynamic General Equilibrium Approach," *Fifth Annual Conference on Global Economic Analysis*, Taipei, Taiwan, June 5-7, 2002.

Elbehri, Aziz and Susan Leetmaa. "How significant are export subsidies to agricultural trade? Trade and welfare implications of global reforms," *paper presented at the 5th Annual Conference on Global Economic Analysis*, June 4-7, Taipei, Taiwan.

Gehlhar M. and J. Wainio, "A Re-evaluation of tariffs facing exporters of processed food: Implications for Trade Liberalization" at *Fifth Annual Conference on Global Economic Analysis*, June 3-7, 2002.

MacDonald, Stephen, A. Somwaru, X. Diao, and L. Meyer. "The Agreement on Textiles and Clothing: Impact on U.S. Cotton Industries in an Intertemporal Global General Equilibrium Framework," *paper presented at the AAEA Annual Meetings*, August 5-8, 2001, Chicago, Illinois.

Trueblood, Michael and Agapi Somwaru. "Trade Liberalization and the Least Developed Countries: Modeling the EU's Everything But Arms Initiative" *Fifth Annual Conference on Global Economic Analysis*, Taipei, Taiwan, June 5-7, 2002.

Trueblood, Michael and Agapi Somwaru. "Modeling the EU's Everything But Arms Initiative for the Least Developed Countries," *American Agricultural Economics Association Annual Meeting*, Long-Beach, California, July 28-31, 2002.

Wang, Zhi. "What are the Anticipate Impact of WTO Membership on Trade between PRC and Taiwan, and with Rest of the World " *Paper presented at the 30th Annual Sino-American Conference Cross-Strait Relation after WTO in University of California at San Diego*, La Jolla, California, May 4-5, 2001.

Wang, Zhi. "The Impact of China's WTO Accession on World Economy". *Paper presented at the International Agricultural Trade Research Consortium*, May 18-20, 2001 Washington, DC.

Wang, Zhi. "The Impact of China's WTO Accession on Trade and Economic Relations across the Taiwan Strait" *Invited lecture in Shanghai Academy of Social Sciences*, Zhejiang University and Xiamen University, China June 2001.

Wang, Zhi. "The Impact of China's WTO Accession on Patterns of World Trade." *Paper presented at the 2002 ASSA Annual Meeting*, Atlanta, January 3-5, 2002.