

The GTAP Advisory Board Meeting, April 2000  
**Economic Research Service of the United States Department of Agriculture (ERS/USDA)**

**GTAP related activities of Economic Research Service: 1999-2000**

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**

Mark Gehlhar continues to contribute the bilateral trade and transport database for GTAP. Agapi Somwaru is providing the social accounting matrix of the U.S. for version 5 of the GTAP database. Roy Darwin, Kevin Ingram, John Sullivan, Wesley Nimon, and Vince Breneman are revising 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 versions 4E and 5 of the GTAP database. The revised database will be completed by the end of the calendar year.

**Research Topics**

ERS utilizes GTAP products to conduct research in three broad areas--world food security, agricultural trade agreements, and global change.

***World Food Security***

ERS is using GTAP to analyze the agricultural impacts of the recent increase in oil prices. Articles are expected before the end of the year. ERS is also investigating how technological advances in agriculture affect land use. This analysis is being conducted with a dynamic version of FARM constructed by Elena Ianchovichina. An article will be completed by the end of the year.

***Agricultural Trade Agreements***

ERS continues to evaluate the effects of trade liberalization on U.S. and world agriculture. A general assessment of international trade policies based in part on the GTAP database and model is currently under way. A publication will be forthcoming by the end of the year. Also, a new research project, Agricultural Trade and the Environment, has just been initiated. It will analyze how trade liberalization agreements affect the environment, how domestic environmental policies affect trade flows, and how international environmental agreements can mitigate trade-induced reductions in global environmental quality. ERS plans to conduct an initial evaluation of the potential environmental impacts of the Free Trade Agreement of the Americas with revised versions of the FARM model by the end of the year.

***Global Change***

ERS has completed an analysis with FARM of how greenhouse gas emissions might affect U.S. agriculture in 2050. A report will be published that combines these results with the results of a recent analysis of how climate change mitigation policies might affect U.S. agriculture in the future.

## **Recent Publications**

### **1. Monographs**

Noland, Marcus, Sherman Robinson, and Zhi Wang. 1999. *Global Economic Effects of the Asian Currency Devaluations*, Updated edition, Institute of International Economics, Washington DC.

### **2. Articles**

Chow, Peter, Zhi Wang, and Francis Tuan. 2000. "The Impact of WTO Membership on Economic / Trade Relations Among the Three Chinese Economies - China, Hong Kong and Taiwan," *Pacific Economic Review*, forthcoming.

Darwin, R. F. 2000. "Process-Based Impact Models: Now and in the Future; An Editorial Comment." *Climatic Change* 45(3/4):

Darwin, R. F. 1999. "A FARMer's View of the Ricardian Approach to Measuring Effects of Climatic Change on Agriculture." *Climatic Change* 41(3-4):371-411.

Lewandrowski, J., R. F. Darwin, M. Tsigas, and A. Raneses. 1999. "Estimating Costs of Protecting Global Ecosystem Diversity," *Ecological Economics* 29(1):111-125.

Noland, Marcus, Sherman Robinson, and Zhi Wang. 1999. "The Continuing Asia Financial Crisis - Global Adjustment and Trade," *The Japanese Economy*, 25(5): 70-95.

Wang, Zhi. 1999. "Impact of China's WTO Entry on Labor Intensive Export Market—A Recursive Dynamic CGE Analysis." *The World Economy Volume* 22(3):379-405.

Wang, Zhi and G. Edward Schuh. 2000. "The Impact of Economic Integration Among Taiwan, Hong Kong and China -- a Computable General Equilibrium Analysis," *Pacific Economic Review Special Issue on Hong Kong Reversion to China* 5(2):229-262.

### **3. Chapters in Edited Monographs**

Jones, Jackie and ZhiWang. 1999. "Impact on the United States from Eliminating Quotas on Textiles and Apparel relative to China's WTO Accession," Chapter 8 of USITC investigation (No. 332-403) *Assessment of the Economic Effects on the United States of China's Accession to the WTO*, Washington, DC.

### **4. Unpublished Conference Papers**

Darwin, R. F. 2000. "Estimating Environmental Effects of Trade Liberalization with FARM," presented at a meeting of USDA Trade and Environment Ad Hoc Group, April 5, Washington, DC.

Darwin, R. F. 2000. "Research of Global Sustainable Development Issues Using the FARM Modeling Framework," presented at the Global Modelling Forum, February 2-4, New York City, NY.

Darwin, R. F. 1999. "Climate Change and Land Use in the Americas," presented at a Partners in Flight Meeting, February 17, Crystal City, VA.

Darwin, R. F. 1999. "Process-Based Integrated Assessment Models: Now and in the Future." Energy Modeling Forum Workshop on Climate Change Impacts and Integrated Assessment, July 26-August 5, Snowmass, CO.

Robinson, Sherman, Will Martin, and Zhi Wang. 1999. "Capturing the Implications of Services Trade Liberalization." Invited paper at Second Annual Conference on Global Economics Analysis, June 22, Denmark.

Wang, Zhi and Dian Qing Xu. 2000. "The Road to Economic Recover in East Asia Economies: A Computable General Equilibrium Analysis." Paper presented at AEA-CES joint session on The Global Financial Crisis and Implications for China at ASSA annual conference, January 9, Boston, MA.

## **5. Manuscripts and Working Papers**

Coyle, William, Warwick McKibbin, and Zhi Wang. 1999. "The Asia Financial Crisis and Global Adjustment: Implications for U.S. Agriculture." Submitted to *Japanese Economic Review*.

Darwin, R. F. and D. Kennedy. 2000. "Economic Effects of CO<sub>2</sub> Fertilization of Crops: Transforming Changes in Yield into Changes in Supply." Working paper resubmitted to *Environmental Modeling and Assessment*.

Darwin, R. F. and R. S. J. Tol. 1999. "Estimates of the Economic Effects of Sea Level Rise." Working paper resubmitted to *Environmental and Resource Economics*

Wei, Shag-Jin Wei, Ligang Liu, Wing Woo, and Zhi Wang. 1999. "The China Money Puzzle: Will Devaluation of the Yuan Hurt Hong Kong Dollar?" Submitted to *Contemporary Economic Policy*.