

AGRICULTURAL TRADE POLICY MODELING WORKSHOP

November 4-5, 2004

Economic Research Service, USDA

Workshop Summary

An Agricultural Trade Policy Modeling Workshop was held at the Economic Research Service (ERS) of USDA in Washington, DC on November 4-5, 2004. The workshop brought together researchers from organizations around that world that have a common interest in supporting economic models for analysis of agricultural trade policy issues. The workshop was designed to be a first step toward establishing a consortium of partial equilibrium agricultural trade and policy modelers.

Session 1: Putting Together a Consortium

Moderator: Neil Conklin (ERS)

Discussion Openers: Tom Hertel (Purdue University/World Bank)

Paul Gibson (ERS)

Tom Hertel emphasized in his opening remarks that any consortium should focus on the policy issues to be addressed, and that this was the most important focus of GTAP board meetings. Policy objectives will dictate data and modeling needs. He also emphasized that a consortium needs both public agencies and academics. Both agency-based and academia-based projects have limitations. GTAP is a publicly-funded consortium based in academia.

Hertel discussed GTAP's core funding, which is approximately 60% from consortium fees, 25% from sales of the GTAP database, and 15% from course revenue. GTAP also receives supplementary funding from special projects. He indicated that data work is expensive, requiring multi-year funding and substantial in-kind commitments from participating agencies and researchers. Hertel stated that the GTAP network is a great asset, and that contributions from network members were critical in permitting the GTAP database to expand from 13 regions in version 1 to 87 regions in version 6.

Hertel envisioned several potential data-related complementarities between GTAP and the proposed agricultural trade policy modeling consortium, including supply and utilization data, disaggregated trade and protection data, and data on land use by agroecological zone.

Paul Gibson described in his opening remarks some operating principles for AMAD that have been essential to its success. These include having a defined scope for the project, participation by everyone in the AMAD group, good communication among group members, management support at each participating agency, and resource commitments by all participating agencies. OECD serves as the principal coordinating agency for AMAD, while ERS serves as the lead technical agency.

The discussion during this session brought out several other examples of economic data and modeling consortia that may be relevant. AG-MEMOD, a project in the EU that links econometric models of agriculture in member states for projection purposes, was mentioned. FAPRI was mentioned as a consortium of modelers, although it was noted that FAPRI utilizes a common model and that it can be difficult to impose a model on researchers. Project LINK, a cooperative venture among government agencies and academics to link national and regional macroeconomic models for global short-term forecasting, was also mentioned. IATRC was mentioned as another model of a consortium, although it was stated that our goal here is to build a different type of consortium. A fifth example mentioned was the World Outlook Conference.

The discussion also addressed the issue of coordination among public institutions that may not always be on the same wavelength. It was stated that informal cooperation is often necessary beyond what different agencies can agree to on paper.

The discussion touched upon the issue of resources to fund a consortium. It was noted that resources are necessary to maintain a database, as illustrated by the GTAP experience, and that having resources allocated to a consortium on a recurring basis would be essential to its success.

Session 2: Market Data

Moderator: David Blandford (Penn State University)

Discussion Openers: David Hallam (FAO)
Randy Zeitner (FAS)

In his opening remarks, David Hallam described recent modeling work within FAO and agricultural databases at FAO. FAO maintains a number of individual commodity models and is also developing a new multi-commodity, multi-region policy model (Cosimo) in collaboration with OECD. Hallam indicated that the basic framework for the Cosimo database is FAOSTAT, and that many other modelers also use FAOSTAT. He noted that FAOSTAT was not originally designed for use in modeling and that it has gaps and inconsistencies when used in this context. Gaps include data problems for individual countries (e.g., China) and limited price data at the producer level and other stages of the value chain. Inconsistencies between supply and utilization data were noted, although Hallam indicated that efforts were underway to deal with these issues.

Hallam emphasized that a consortium-type database involves more than merely pooling data from different sources because of consistency and definitional issues across sources. He felt that FAO could serve as an institutional home for a data-focused consortium because of its global coverage and because providing information is one of its mandates.

Hallam noted that international commodity organizations were not represented at this workshop, and that they have a significant amount of data to offer.

Randy Zeitner in his opening remarks discussed the PS&D database. He noted that PS&D has strong coverage of grains and livestock in most countries of the world, but that some commodities and some developing countries are not covered. He stated that PS&D is primarily

focused on bulk commodities and coverage of processed products is thin, but that FAS recently created an advisory committee for processed products. He also stated that FAS is increasingly being asked to break out certain types of commodities (e.g., biotech crops) from bulk commodity categories.

Zeitner noted that the PS&D database is generally targeted toward forecasting and that all figures in the database must balance. FAS tries to align PS&D data with official government figures from countries around the world once those figures become available, but FAS is often asked for data before official government figures are ready.

Zeitner indicated that FAS also has a U.S. trade database provided by the U.S. Customs Service, and an SPS database. For bilateral trade flows FAS typically relies on data from other agencies and institutions.

The discussion during this session focused in part on whether the bulk commodity focus of existing databases will be appropriate five or ten years from now. It was stated that increasing product differentiation is particularly challenging for the collection of price data because there is no longer a single price for each commodity.

The discussion also focused on whether a single database could be used for both GTAP and partial equilibrium models of agricultural trade and policy. Related to this, there was discussion of whether partial equilibrium modelers could form a subgroup of GTAP or whether a separate consortium was necessary. It was noted that there could be economies of scale in working with a single database as part of GTAP. On the other hand, it was noted that the time lag involved in the release of updated versions of the GTAP database is too long for many of the issues that partial equilibrium modelers are called upon to address, where timeliness is crucial. It was also noted that partial equilibrium models often need to include much more detailed policy representations than general equilibrium models.

There was discussion of whether an agricultural trade policy modeling consortium should be housed at an international organization such as FAO. It was stated that international organizations can have constraints on their activities that hinder their ability to administer a consortium.

Session 3: Policy Data

Moderator: Hans van Meijl (LEI)

Discussion Openers: Loek Boonekamp (OECD)

Willi Meyers (University of Missouri/FAPRI)

In his opening remarks, Loek Boonekamp discussed the collection of agricultural policy data at OECD. He indicated that OECD relies primarily on questionnaires sent to member governments, and that the responses of member governments can vary significantly in terms of quality. The information collected is available online and updated annually. Funding limitations prevent the updating of policy data for non-OECD countries. Boonekamp stated that OECD is currently working with FAO to conduct agricultural policy reviews of Brazil, China, India, and

South Africa, in cooperation with the statistical offices of the countries involved. This effort is part of a wider agricultural policy indicators project involving FAO and IFPRI.

Boonekamp stated that OECD participates in AMAD, but that preferential trade agreements are not currently included in AMAD. He also stated that OECD is working on a project to evaluate existing PTAs and the impacts of multilateral trade agreements on PTAs. He indicated that there have been difficulties in obtaining information on PTAs from the EU.

Boonekamp felt that there are large productivity gains to be had from inter-agency cooperation in data collection, regardless of who takes the lead. With respect to modeling, he cautioned that finding common approaches to modeling can be very difficult in practice. He noted that academic forums already exist in which to discuss common modeling approaches.

Willi Meyers in his opening remarks discussed what policy makers want in agricultural trade and policy models, the data needs of modelers, existing sources of policy data, and possibilities for collaboration in the collection of policy data. He stated that modelers need up-to-date market and policy data, and detailed information on policies in major trading countries. He noted that modeling partially decoupled payments presents significant challenges. Meyers also noted that measuring and modeling non-tariff measures present major challenges, particularly since the impacts of these measures on trade are likely to grow as tariffs are reduced.

Meyers stated that one possible area for collaboration involves data on domestic policy instruments, which are less readily available than data on trade policies. He stated that possible areas for collaboration also include historical series on policy instruments and measurement of non-tariff measures.

The discussion during this session focused on the availability of data on export competition policies – export subsidies, export credits, food aid, and single-desk sellers. It was noted that food aid data are available from the World Food Programme, but that data on export credits are often treated as confidential and are therefore difficult to obtain. Similarly, it was noted that single-desk sellers typically treat their sales and pricing data as confidential.

The discussion also focused on whether a database of publications on policy operations and impacts would be desirable. It was noted that, while there are existing databases such as AgEcon Search, there could be value in having a clearinghouse for this information.

Another item of discussion was whether a consortium should sponsor its own electronic journal or working paper series. It was stated that most academic journals are unwilling to publish applied trade and policy modeling research. On the other hand, it was stated that there are existing working paper series that can serve as research outlets.

Session 4: Parameters

Moderator: Thomas Heckelei (University of Bonn)

Discussion Openers: Jim Hansen (ERS)

John Beghin (Iowa State University/FAPRI)

In his opening remarks, Jim Hansen described two interactive websites under development at ERS to provide access to elasticity databases. One site contains a searchable database of elasticities from a literature review of empirical studies, while the other site contains a searchable database of elasticities used in commodity models at ERS and other institutions. Hansen's presentation included a demonstration of the literature review site.

For the literature review site, Hansen indicated that a four-step process is being used. The first step involves a review of the literature for relevant studies. The second step is development of the database, which includes not only estimated elasticities but also information about each study's data and methodology. The third step is to web-enable the database so that it can be queried online. The final step is to develop a format for researchers to provide elasticities from their own research for incorporation into the database. For the commodity model elasticities site, Hansen indicated that ERS is starting with their own models and then plans to include models at other institutions.

John Beghin in his opening remarks discussed what should be included in a web-accessible elasticity database. He indicated that the database should contain supply, demand, price transmission, and possibly other elasticities. He indicated that it should also include information on the data and methodology (country, time period, method of estimation, theoretical underpinnings, etc.) employed by each study. He suggested that an elasticity website could also generate estimates of cross-price effects by calibration so as to fill in values of elasticities not directly available from the literature.

Beghin noted that elasticity reviews were once carried out by the World Outlook Conference but that this is no longer being done. In regard to the generation of new elasticity estimates, Beghin stated that the "translog" dissertation days are over and that the professional payoff to generating new estimates is low. Beghin also discussed the FAPRI searchable elasticity database, an online tool that permits users to display, download and graph supply and demand elasticities from the FAPRI model.

Discussion during this session included the products and countries to be included in an elasticity database. It was noted that scanner data studies, which are currently popular, are one source of new elasticity estimates. A question was raised about the coverage of developing countries in the elasticity literature review website under development at ERS. It was noted that there is a demand for studies of developing countries at international organizations such as FAO and UNCTAD, and that the Doha Round of WTO negotiations is creating additional demand for such studies. However, it was also noted that, at least for Africa, there are not likely to be many existing studies that could be included in an elasticity database. A suggestion was made to create institutional arrangements with AgEcon Search and academic journals to provide notice when new studies reporting elasticities become available.

Discussion during this session also focused on quality control for an elasticity database. It was stated that critical judgment may be necessary in the case of studies not published in peer-reviewed journals to ensure that methodologically flawed studies are kept out of the database. It was also stated that quality control is important to avoid erroneous database entries.

Session 5: Model and Data Inadequacies

Moderator: Fran Freeman (Australian Embassy)

Discussion Openers: Tassos Haniotis (European Commission)

Cathy Jabara (U.S. International Trade Commission)

Tassos Haniotis in his opening remarks emphasized that forming a consortium is not an objective in and of itself. Rather, he stated that the objective should be the creation of “public comfort” for “private” use by different agencies and organizations. He stated that modelers are increasingly torn between a squeeze for fast results and a squeeze for rigor in the face of a new set of agricultural trade policy modeling problems.

Haniotis also emphasized that models should represent actual policies and commodity markets because agricultural trade realities are policy- and commodity-driven. He stated that it is increasingly the responsibility of modelers to achieve results that approximate reality, and that model results failing to do this are ignored. He also stated that modelers should accept the fact that there are asymmetries in the impacts of different policies, commodities and players, and construct their models accordingly.

Haniotis indicated that one difference between partial and general equilibrium approaches in practice is that partial equilibrium modelers tend to use several models to answer the same question, whereas general equilibrium modelers typically use a single model to answer many questions. He felt that the general equilibrium approach was questionable because someone can always find something wrong with any given model, and that the partial equilibrium approach had the advantage in this regard.

Cathy Jabara in her opening remarks stated that USITC uses general equilibrium models for estimates of the overall impact of a trade agreement, which is of interest to Congressional committees. She stated that they use partial equilibrium models – principally the COMPAS model – to analyze impacts on specific sectors. For this modeling their needs include reliable data and documented parameter values, particularly Armington elasticities.

Jabara noted that the USITC website contains an interactive tariff and trade database, which provides online access to U.S. international trade statistics, tariffs, and tariff preferences. She stated that it would very helpful to have access to this information for other countries, especially the EU.

Jabara also noted that USITC utilizes a significant amount of confidential data from trade associations. She stated that agricultural trade modelers should work with trade associations to develop new sources of more widely accessible data.

The discussion during this session focused on changes in the structure of the global food and agricultural sector and their implications for modeling. It was noted that structural changes have increased the importance for producers of being able to supply the volume required by distributors and retailers, and that modelers run the risk of mistakenly attributing low or zero trade flows to trade policies in cases where the real cause is an inability to supply the necessary volume. It was also noted that product standards are often being imposed by manufacturers that are much more stringent than public standards.

The discussion during this session revisited the issue of access to EU data on trade preferences. It was stated that the EU is facing legal constraints that hamper its ability to release this data, but that there is some potential for these constraints to be resolved.

Session 6: Leveraging Technology

Moderator: Martin Banse (University of Goettingen)

Discussion Openers: Karl Gudmunds (ERS)

Ralf Peters (UNCTAD)

Karl Gudmunds in his opening remarks discussed options for leveraging information technology (IT) to facilitate the work of a consortium. He discussed the advantages and disadvantages of five approaches to information sharing using IT – exchanging messages (email, listservs, newsgroups, blogs, etc.), accessing common files (email, FTP, extranets), remote software (e.g., Remote Desktop), sharing computers (e.g., NetMeeting), and audio/videoconferencing (via the web or traditional technologies). He suggested that email is sometimes used in cases where other information sharing technologies would be more appropriate.

Ralf Peters in his opening remarks discussed the World Integrated Trade Solution (WITS), which is software created jointly by UNCTAD and the World Bank to integrate several trade-related databases and facilitate access to them. One of the databases operated by WITS is UNCTAD's Trade Analysis and Information System (TRAINS). The other databases operated by WITS are the UN Statistics Division's Commodity Trade Statistics Database (COMTRADE), the WTO's Integrated Database (IDB), the WTO's Consolidated Tariff Schedule (CTS), and AMAD. Peters also discussed the Common Analytical Market Access Database (CAMAD), which is currently under development. He indicated that CAMAD will combine the best of data available from IDB, CTS, and TRAINS.

Peters described how to perform queries using WITS. He noted that users can select individual countries or user-defined groups of countries, individual products or user-defined groups of products, and MFN tariff rates or applied rates. He noted that WITS can do some aggregation across commodities, AMAD cannot do aggregation, and FAOSTAT has limited aggregation capabilities.

Peters discussed the need to ensure that data from different sources are consistent, for example in the product classification system employed. He noted that GTAP's success has been due in part to the fact that it combines data from many different sources and individuals into a single, consistent database.

Discussion during this session focused on making models available on the web to run online or download and run locally. It was noted that large models generally take too long to run online while a user waits for results, but that it is possible to configure a web-based model so that the user is asked to check back later for results after submitting a job.

Examples were provided during the discussion of using technology to share information. Researchers at the University of Bonn are using FTP to share information within their group. They also have results of model runs available online in XML format.

Session 7: Where Do We Go From Here?

Rapporteur: Dave Abler (Penn State University)

Moderator: Neil Conklin (ERS)

Dave Abler provided a summary of the main points discussed during the workshop. He stated that there appears to be significant scope for a consortium built around sharing market data, policy data, and parameters. He indicated that there is already formal and informal cooperation among institutions in these areas but it does not rise to the level needed to address the challenges that partial equilibrium modelers are facing. Abler noted that no single partial equilibrium modeling approach appears feasible or desirable, but that information sharing among modelers is valuable.

Abler suggested that market and policy data sharing possibilities fall into three categories. The first category involves data that are available but those outside of the institution collecting the data may not be aware of its existence. The second category is data that cannot currently be accessed by outsiders due to administrative, legal, or confidentiality issues. Based on discussion during the workshop, Abler suggested that there may be scope for addressing these issues. The final category is data that could be assembled but are not currently available. Metadata issues yet to be resolved fall into this category.

Abler indicated four reasons why a new partial equilibrium consortium could offer value added beyond the gains already realized through GTAP: providing greater policy and commodity detail; timeliness in supplying market and policy data; baseline projections, which are an important use of partial equilibrium models but not general equilibrium models; and the fact that partial equilibrium modelers tend to use several models to answer the same question, so that policy makers do not need to rely upon a single model.

Discussion during this session focused mainly on whether existing institutional structures could be used to facilitate cooperation or whether a new institutional structure would be necessary. Existing structures suggested included IATRC and the World Outlook Conference. It was noted that the IATRC itself is currently examining alternative visions for its own future. With respect to the World Outlook Conference, it was pointed out that this conference has been a low cost activity for participating agencies in terms of resources and time, and that to achieve more would require more from participants.

Discussion during this session also focused on the issue of resources. It was stated that any new initiative would require a commitment from participating institutions in terms of basic resources. It was noted that even if a subgroup of IATRC were formed, IATRC's funding is for core activities and that a subgroup would need to obtain its own funding.

Several participants indicated that they needed time to digest and assimilate the information and options discussed at the workshop.

Neil Conklin indicated that the next step would be the establishment of a small working group to draft terms of reference for a consortium. The terms of reference would then be considered by the entire group at a meeting in spring 2005. The entire group will be contacted in early 2005 regarding a location and date for the meeting.