

## GTAP-related activities of UNCTAD

Since the last Advisory Board meeting (June 2002), UNCTAD has continued its GTAP-related activities, in particular as regards the use of the GTAP database and model in its analytical work on trade and development.

Several smaller analyses were made with GTAP to provide quantitative information about the economic effects of possible trade policy changes. GTAP was used to provide briefings for the organization, especially concerning the tariff revenue implications of liberalization.

Major issues for UNCTAD's clients are the impacts of trade liberalization on:

1. the erosion of preferences;
2. export revenue effects;
3. displacement of local production; and
4. tariff revenue effects.

GTAP has proved useful in providing some light on these issues, particularly as the Armington structure permits an analysis of trade diversion. However, regarding the first point, there are data problems with preferential access, and tariff rate quotas and quota rents are not included (in the standard model at least). In addition the tariff rates are applied, so changes in bound rates need to be calculated off the model and the shocks modified accordingly. In reference to export revenues, the trade effects are driven by the Armington elasticities, and policy makers are naturally skeptical as to where these numbers came from. Tariff revenues are also driven by the Armingtons. We have had some comment that in addition the initial tariff revenues in the database don't reflect reality. Apart from making the general point that a 36 per cent cut in tariff won't lead to a 36 per cent reduction in tariff revenues, we are inclined to use the tariff revenue numbers with care.

UNCTAD has not modified the IO tables, although there is evidence that this would be desirable. Nor have we incorporates increasing RTS, monopolistic competition or other refinements.

A major stumbling block to credibility is the welfare impacts of global trade liberalization on the USA and Europe. Our analysis shows these countries losing or gaining very little in equivalent variation because of negative terms of trade effects, specifically a falling price of exports across a wide range of sectors. The inclusion of service protection data may alleviate this problem. Another consideration is that the comparative static analysis does not give any insight into the costs of adjustment, which are considered to be important in many developing countries. (Some of this might be addressed by looking more closely at dynamic gains.) There also remains a lack of understanding of inter-sectoral linkages, which we need to draw out more carefully.

In future, in addition to the more traditional global and regional trade liberalization applications, we would like to use GTAP to analyze (i) cartels; and (ii) trade and poverty.

Notwithstanding these concerns and limitation, the GTAP model and database were used to conduct the following UNCTAD studies:

## Research

### **Back to Basics: Market access Issues in the Doha Agenda, by Sam Laird, Lucian Cernat, Alessandro Turrini.**

WTO market access negotiations are critical to making trade work for development and to offset the decline in the share of trade by LDCs and commodity-dependent exporters. The reduction or elimination of tariff peaks and escalation would help developing countries expand and diversify their export base. A global general equilibrium model shows substantial gains for developing countries from liberalisation in agriculture, textiles and clothing, but the distribution of gains and losses is unequal across developing countries, and adjustment will require adequate support and time for implementation. Negotiating modalities, e.g., formulae, to address these problems also need to take account of developing country capacities.

### **The EU's Everything But Arms Initiative and the Least-developed Countries, by Lucian Cernat, Sam Laird, Luca Monge-Roffarello, Alessandro Turrini**

The European Union Trade Commissioners initiative "Everything But Arms" proposes to reduce to zero tariffs on all imports from Least Developed Countries except arms and to free such imports from any quantitative restriction. In the current paper we attempt to evaluate this proposal using GTAP.

The database used in the simulations is version 5 with a 1997 base year. The 66 GTAP country definitions are aggregated into 18 regional groups. The original 57 sectors available in GTAP5 have been aggregated into 21 new sectors. Services and several manufactures are quite aggregated in the used sectoral classification, whereas goods intensively exported by LDCs (agricultural products, food, basic commodities and light manufacturing) are kept disaggregated.

The protection data contained in GTAP include applied MFN tariffs and the ad valorem equivalents for non-tariff protection in agriculture and in textiles and clothing. Since LDCs also benefited from existing non-reciprocal preferential trading arrangements before the implementation of EBA, we have had to reconstruct this information in the GTAP modelling system and database that we use for the experiment. We have modified the basic protection data available in GTAP5 to take into account the pre-EBA preference margins available to LDCs in the EU market, using data from the UNCTAD TRAINS database. Applied MFN and preferential tariff data have been aggregated into the sectors we have defined for the simulations using world trade weights constructed from the UN COMTRADE database. The ratio between preferential and MFN tariffs so obtained was then used to compute LDC preference margins granted by the EU in each sector. These margins have been used to update the protection data of the GTAP5 database.

The study shows moderate welfare and trade gains from the EBA initiative, with the largest gains being recorded for Sub-Saharan Africa. The gains are likely to occur in relatively few sectors. The analysis highlights the significance of improved access for LDCs to the EU sugar market as the single most important source of change. In our analyses, the effects on the EU itself are minimal, but the increased market access for LDCs comes mostly at the expense of other preference-receiving countries (ACP countries in particular), although again the changes are not

enormous. There are some very minor negative effects on other countries that currently enjoy duty-free access to the EU market or MFN market access.

### **Strategic interactions in trade policy negotiations, by David Vanzetti, Ralf Peters**

Trade liberalization is a two-edged sword for many developing and least developed countries because the benefits from improved market access may be offset or outweighed by rising import prices, particularly if export subsidies contribute to holding down prices. In addition, many developing countries receive preferential access that would be eroded with MFN liberalization. Since adjustment costs following liberalization are perceived to be significant and uncertain, many countries seek flexibility to minimize their own tariff reductions on sensitive industries while hoping to benefit from the opening of other countries' markets. Given these conflicting objectives, it is unclear whether developing countries should support the ambitious reform proposals suggested by the United States or a more conservative approach such as that proposed by the European Union. A global general equilibrium model, GTAP, is used to analyze the impact of alternative trade reform proposals.

The results point to several interesting implications for developing country negotiators. At least in terms of standard welfare measures or export revenues, countries are not always made better off by following their own proposals. Furthermore, in spite of the emphasis on agriculture, results indicate that developing countries may receive greater gains from liberalization of manufactures. Finally, the nature of the interactions between the large number of players with diverse and conflicting interests suggest that the negotiations are likely to evolve towards a modest outcome, determined by EU policies as much as any other factor.

#### **Database development**

The current TRAINS database on protection and tariff data that is accessible through the Internet covers now 148 countries ( [www.unctad.org/tab/](http://www.unctad.org/tab/) ). The applied MFN rates included in TRAINS have served as a regular input to the GTAP protection database. UNCTAD has further spent a considerable amount of time on the further development of WITS (World Integrated Trade Solution), a trade information system being developed in close cooperation with the World Bank. WITS is comprised of both a user-friendly software offering a large number of data-retrieval options and a database including trade data dating back to 1962. WITS also contains import and export data from the UN COMTRADE database and tariff and non-tariff data from TRAINS. A preliminary version of WITS is currently operational. The program is still being improved. WITS has predefined product groups according to the GTAP sector classification. It will therefore facilitate the provision of data to GTAP. Applied MFN tariff rates are already being supplied through WITS to the GTAP database.

UNCTAD further contributes to the inter-agency Agricultural Market Access Database (AMAD) Group (comprising FAO, UNCTAD, OECD, Agriculture and AgriFood Canada, the European Commission and USDA-ERS), which provides data on tariffs, tariff-rate quotas, trade, production, consumption and conversion factors for about 50 WTO member countries ( [www.amad.org](http://www.amad.org) ). AMAD serves as an important supplier of GTAP agricultural tariff data.