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AGRICULTURE DIRECTORATE (Hsin Huang)

The agriculture directorate uses a modified version of the GTAP model called GTAPEM to analyze the impact of agriculture and non-agriculture reform, with a particular focus on the effects of OECD agricultural policy on developing countries. GTAPEM incorporates the main structural features of agriculture as found in OECD's in house Policy Evaluation Model (PEM). GTAPEM was constructed for OECD by LEI, borrowing some ideas (and model code) from the work by Hertel and Keeney on GTAP-AGR. GTAPEM includes:

- factor substitution between purchased farm input intermediates, and between the aggregate intermediates and farm-owned inputs (as in GTAP-AGR)
- agriculture and non-agriculture specific factors of production (as in GTAP-AGR)
- a land allocation system that distinguishes among a large number of different land types using a three level constant elasticity of transformation structure (as in PEM)

GTAPEM will be further developed to align the representation of policy more closely with the way support measures are classified for the OECD's PSE. The OECD is currently discussing with member countries a new classification system. A key motivation is the need to appropriately capture agricultural policies that are increasingly less directed at specific commodities, but rather at groups of commodities, or that may not even require agricultural production.

The OECD has also commissioned the LEI to conduct some research on the well-known problem in applied trade policy models using an Armington-style specification of import demand. The 'small shares stay small' problem implies that even after significant reductions of import barriers these models do not predict sizeable changes in trade flows from importers whose initial import shares are small before liberalisation, but who might be competitive suppliers after liberalisation. To solve this problem, this research proposes a marriage between an estimated gravity equation and an Armington import demand specification, which both come together in a CGE model. A paper will be presented at this year's GTAP conference (van Tongeren and Kuiper)

ENVIRONMENT DIRECTORATE (Philip Bagnoli)

There are a number studies that have been undertaken with the ENV-Linkages.

Baseline to 2030

The major work is that we finished a joint baseline with RIVM that covers economic and environmental projections to 2030. That work is now being used to discuss environmental issues in about a dozen areas that will form the core of the OECD Environmental Outlook to 2030. We will be developing a series of policy analyses to respond to whatever pressures are identified in the baseline. We are also extending the period of the baseline past 2030 to be able to address issues that are more long term in nature.

Other work

A series of studies were undertaken to explore the properties of our model and calibrate our results (we calibrated the energy sector of ENV-Linkages to reproduce the IEA energy results, given IEA GDP projections).

With regard to economic and environmental consequences, three main sets of assumptions concerning the drivers of growth were postulated for the baseline scenario and are of crucial importance:

- The assumptions concerning the trends of the labour factor from the standpoint of both its quality (“human capital”) and quantity (“population employed”) and the assumptions concerning the quality of the physical capital with which labour will be combined;
- The assumptions concerning the growth of world trade and the factors behind this trend;
- The assumptions in the field of energy: reserves of fossil raw materials, and the autonomous factor of the efficiency of energy use.

Each of these was explored in detail in a paper completed this past winter. The following gives a bit more background on our study.

A model simulation aimed at reproducing certain stylised facts included in a baseline scenario faces the problem that some of these should logically be determined by the mechanics of the model and not be imposed beforehand. This is the case of our baseline scenario for the trend of the growth rates of average labour productivity and the trend of the share of imports in real GDP. It must then be assumed that certain a priori variables imposed in the model change so as to reproduce these characteristics. The choice of these variables is dictated intuitively: these are variables that it is difficult to observe or quantify in reality and that are known to play an essential role in explaining the phenomena that we are trying to reproduce. For example, in the two preceding cases, these would be the average growth rates of the factor of technical progress in the use of labour (or “human capital”) and invisible costs in international transactions (Samuelsonian “Iceberg Costs” [1954]). Technically, these costs mean that when a quantity of merchandise is transported between two countries, a fraction of it disappears during the journey. However, these invisible costs are difficult to measure directly since they cover a number of different phenomena that in general do not involve financial compensation. This is the case of border effects that reflect the fact that for a comparable size and distance, two regions trade less when they are separated by a border (McCallum, 1996) and there are many reasons for this: customs, non-customs and cultural barriers, exchange rate volatility, etc. Whatever the most adequate explanation for these effects, they seem to be diminishing and therefore partly explain the growing openness of economies.

TRADE DIRECTORATE (Przemyslaw Kowalski)

Trade Directorate continues to use the GTAP database and associated products as an important source of protection and structural data in its analytical work. Some recent more specific applications of the database and the model include:

China’s trade and growth: Impact on selected OECD countries and the Russian Federation

This ongoing project aims to quantify the sectoral output and price effects caused by China’s integration into global goods and services trade and the welfare implications of these changes on selected OECD countries. Given the investment-dominated profile of China’s recent growth, the model employed in this paper places special emphasis on China’s foreign direct investment policies and inflows and puts a special emphasis on the examination of the additional implications of China’s opening of services trade and lifting of obstacles to foreign investment. The model attempts to analyse in detail the services and investment-specific effects as well as their interactions with the impacts of goods trade liberalisation.

In order to include the services and investment-related dimensions into the analysis and increase the reliability of results concerning the impact of China's integration on the world economy, this paper employs the FTAP (the Foreign Direct Investment and Trade Analysis Project) model of the world economy that features increasing returns to scale and large-group monopolistic competition in all sectors, and includes a treatment of foreign direct investment on a bilateral basis. The FTAP model employed in this exercise had been developed in stages from the GTAP model, with the addition of the structure necessary to support the analysis of services liberalisation and in particular the removal of barriers to FDI in the tertiary sector.

In addition to using structural and protection data from version 6 of the GTAP database and to enable the analysis of services liberalisation through commercial presence, a bilateral capital stock matrix for 2001 was developed. Bilateral FDI stocks at the GTAP sectoral level were estimated from the new OECD FDI database, UNCTAD World Investment Directory, local government sources for China, Hong Kong, China, Russia, Singapore, Chile, Peru, and Brazil, and ASEAN (2004) for Malaysia, Philippines, Thailand and Vietnam. This information allowed construction of a consistent database of bilateral FDI stocks by region and sector following the methodology employed for the construction of previous FTAP databases.

This work is still in progress but some of its results will be presented at the 2006 GTAP Conference in Addis Ababa.

The Doha Development Agenda: Welfare Gains from Further Multilateral Tariff Liberalisation

Standard GTAP model and the version 6 of the database were used to update Trade Directorate's analysis assessment of welfare gains from further tariff liberalisation in the DDA. This paper considers the welfare gains from trade liberalisation with particular emphasis on reduction of tariff protection. The first part of the paper examines the present structure of tariffs, outlines the DDA work in the area of tariffs, briefly discusses the various approaches to tariff reduction used in past rounds of multilateral trade negotiations and considers a sample of the existing literature on the effects of various trade liberalisation scenarios involving tariff reductions. The second part presents a quantitative assessment of the potential welfare gains from trade liberalisation involving tariff reduction and trade facilitation. This assessment takes into account certain negotiating realities in the WTO including the fact that negotiations focus on bound tariffs while the main focus for many actors in the economy is on the applied tariffs. A number of generic tariff reduction scenarios are examined to reflect elements of some proposals now under consideration in the WTO.

Time as a trade barrier and logistics services

The GTAP version 6 Data Base was used to calculate the import content of exports. This was used in the analysis of the impact of time for exports and imports for trade performance.

Enhanced economic co-operation

In the course of 2005 the GTAP model and a pre-release of version 6 of GTAP database were employed as a supplementary methodology in a project examining the potential benefits of enhanced economic co-operation between OECD countries via comprehensive reductions in barriers to foreign trade and investment as well as domestic restraints on competition. This project was led by the OECD Economics Department (with contributions by Trade Directorate). The analysis of the impact of reforms on trade and output is based primarily on earlier regression results obtained by the OECD Secretariat in its work on the determinants of

economic growth and on the drivers of trade and FDI, supplemented by general equilibrium analysis using the Global Trade Analysis Project (GTAP) model.

Trade preference erosion: potential economic impacts (update)

The Trade Directorate continued work on the issue of trade preference erosion. New papers were prepared on the preferential programmes of Australia and Canada, and on selected countries exhibiting particular preference reliance vis-à-vis the preferential programmes of the European Union. The papers each deliver updates to the corresponding sections of our previous review of the recent literature, then develop two main types of analysis: 1) detailed statistical analysis of actual trade flows drawing on the trade preferences database developed by the OECD Secretariat and covering the Quad countries and Australia (an internal OECD resource) and 2) analysis using the standard GTAP model and version 6 of GTAP database to simulate trade liberalisation scenarios that would entail preference erosion.