
Productivity Commission — GTAP Board Summary 2001

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1 Application of the FTAP model

In 1999, the Commission developed a computable general equilibrium model of the world economy that includes a treatment of foreign direct investment on a bilateral basis. The FTAP model was developed from the GTAP model, with the addition of the structure necessary to support the analysis of services liberalisation.

During the past year the FTAP model was used in the Commission for analysing the economic effects of liberalising trade in some individual service sectors (telecommunications and financial services). To do this, the tertiary sector in the original FTAP model's database was further disaggregated into six sectors: construction, trade and transport, communications, banking, insurance and business services, other services, dwelling.

The major tasks necessary to disaggregate the FTAP database were the generation of arrays of FDI stocks and income flows by home region, host region and sector, and the incorporation of the available estimates of barriers to services trade in the database. At the time of construction of the 8-sector FTAP database, barriers for banking and telecommunications were available. These barriers were incorporated in the database as tax equivalents on capital and output using the ALTERNATE software. The 'taxes' on capital represent barriers to establishment, and the 'taxes' on output and exports represent barriers to ongoing operations. Different 'tax' rates apply to domestic and foreign-owned firms. The model structure ensures that the revenues from these 'taxes' are divided appropriately between the government and private agents.

The original FTAP model was also modified to accommodate the special features of telecommunications and financial services. As the domestic and imported services in telecommunications and financial services are usually different products, it is assumed, therefore, that they are non-substitutable with each other in consumption and intermediate use. A version of the FTAP model that does not account for dynamic effects was adopted to concentrate on assessing the allocative effects of trade liberalisation in telecommunications and financial services.

The work on telecommunications and financial services will be published as a PC report soon. A short version of the paper will be presented in the 4th GTAP conference in Purdue.

2 Future developments of FTAP model and database

In the process of conducting the work on telecommunications and financial services liberalisation, we have identified a number of areas in the FTAP model and database for further improvement.

- *Database development.* We plan to build a more complete set of balance of payment accounts for each region in the database. In addition to exports and imports of goods and services, the database will cover both outflows and inflows of factor incomes (including returns to labour and capital) and foreign direct, portfolio and other investment flows. The database will also incorporate the foreign direct investment, portfolio and other investment positions (stocks). The available barriers estimates for a number of service sectors will be injected into the database. The new database will be based on an aggregated GTAP v5 database composed of 48 countries/regions and 12 sectors.
- *Model development.*
 - Different mechanisms will be adopted to model the allocation of various types of capital (FDI, portfolio and other) across regions. The inflows and outflows of each type of capital will be linked with the changes in the positions of the capital for each region.
 - Dynamic features such as capital accumulation and technical changes/spillovers associated with FDI will be incorporated in the model.
 - Alternative treatments of barriers will be tested in the model. At the moment, all trade barriers in a given service sector are modelled as rent-generating. As barriers to trade in different service sectors may have different effects on their cost structures, modification is needed in the FTAP model to treat barriers to trade in different sectors differently. For some sectors, for instance, barriers may be cost-escalating rather than rent-generating. The revised model will be able to handle alternative treatments of trade barriers.

The revised model will be used to extend the current work on service trade liberalisation to other service sectors, such as distribution (wholesale and retail trade), and the professions (legal, accountancy, architectural, engineering), for which barrier estimates are available. The main objective of this work is to provide a preliminary run for as many service sectors as possible before embarking on an evaluation of priority areas on which to concentrate negotiations.

3 Access to restrictions on trade database

The Commission, in collaboration with the Australian National University and the University of Adelaide, has been measuring the price effect of restrictions on trade in services for up to 38 economies in a number of sectors. Two databases that cover Measures of Restrictions on Trade in Services for economies in Asia, Europe, and North and South America have been posted on the PC's internet site.

The two database are:

- the Trade Restrictiveness Indexes Database which includes measures of restrictions (or government regulation) for accounting, architectural, banking, distribution, engineering, legal, maritime and telecommunications services for up to 136 economies; and
- the Price and/or Cost Measures Database which includes price and cost effects (or tax equivalents) for banking, distribution, engineering and telecommunications services for up to 136 economies.

These databases can be downloaded for free from the following internet page:

<http://www.pc.gov.au/research/memoranda/servicesrestriction/index.html>

This internet page also summarises the methodology for calculating the Trade Restrictiveness Indexes and estimating the Price and/or Cost Measures.

The data has been produced from a joint research project between the Australian National University and the Productivity Commission. This research has been published in Productivity Commission staff research papers and a book published by Routledge. The citations for this research have been included in the databases.