

**Productivity Commission
Activity Report
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During 2005-06, the Commission's commissioned work concentrated on domestic issues and did not make an intensive use of GTAP. However, the following may be of interest to the Board:

1. following difficulties in 'selling' Monash modeling results in the context of inquiries into reducing tariffs on automobiles and textiles, clothing and footwear, we initiated a small research program to inform our Commissioners on the properties of Armington models.
2. the Commission report on the *Economic impacts of migration and population growth* involved an innovative development of the labour market in Monash model
3. the Commission contributed financially to the development of the SPLITCOM facility and made a simple test of the facility
4. the Commission has agreed in principle to collaborate on a project on barriers to trade in services.
5. the Commission has been asked to model the benefits from a new round of reforms, entitled the National Reform Agenda. This has led to a major update of the MMRF model

Many of these projects have involved close collaboration with the Centre of Policy Studies.

1. Armington elasticities

The Commission has published two reports from its research program on the role of Armington elasticities in global and single-country CGE models:

- *Armington Elasticities and Terms of Trade Effects in Global CGE Models*
- *The Armington Model*

Among other reasons, the Armington assumption is used to avoid extreme specialization and because aggregate trade statistics typically include two-way trade. Both papers explore properties of the Armington model and some of their consequences for trade liberalization simulation results. In a way, the papers do for the Armington model what Deardorff does for the Heckscher-Ohlin model (most standard results do not hold when the dimensions of the model are expanded). Deardorff's lectures on *The Heckscher-Ohlin model: Flaws, Fixes and Future* are found at:

<http://www-personal.umich.edu/~alandear/writings/HO-1.pdf>

<http://www-personal.umich.edu/~alandear/writings/HO-2.pdf>

<http://www-personal.umich.edu/~alandear/writings/HO-3.pdf>

A third paper is in preparation. One of the consequences of the research program is the attempt to develop a 'mixed' model which incorporates Armington and homogeneous goods. It is hoped that the introduction of homogeneous goods will limit the terms of trade effects (but not eliminate them) and increase reallocation gains relative to a pure Armington model.

2. Economic impacts of migration and population growth

The main output of the Commission of interest to GTAP is a report on the *Economic impacts of migration and population growth*. The Monash model was developed to include a labour supply module which uses:

1. input from a demographic model that was developed for the report on the *Economic implications of an ageing Australia*, and
2. educational characteristics of the native population and migrants.

The Centre of Policy Studies developed a labour market extension. Educational qualifications are transformed into occupations through CET functions.

3. SPLITCOM

The facility passed a simple test splitting TCF in a 19-country version of the GTAP database.

4. Barriers to services trade

The Commission is expecting to participate in a 3-year project with the Australian National University designed to determine priorities in services trade liberalisation. The project is a follow-up of the project on services trade barriers that involved Chris Findley, Tony Warren and Philippa Dee. This new project will be led by Philippa Dee (now at ANU). Among other things, the project is designed to determine whether service trade barriers are 'rent-seeking' (Harberger triangles) or 'cost-increasing' (productivity rectangles).

5. National Reform Agenda

This is an ambitious project. The objective is to estimate the economic and budgetary impacts of reforms in 3 streams:

1. competition in energy and transport
2. reduction in costs of regulation
3. improved work participation and productivity linked to improvements in human capital and work incentives.

The Commission has asked the Centre of Policy Studies to produce an updated version of the MMRF model (model of Australia with 8 States and Territories) which includes:

- a. a 2001 database based on a national input-output table produced by the Australian Bureau of Statistics
- b. improved government accounting
- c. inter-modal transport substitution

- d. inter-fuel substitution in electricity generation
- e. about 100 sectors

The project is similar in nature to the 1995 *The Growth and Revenue Implications of Hilmer and Related Reforms*. It is made more challenging by including the possible effects of reforms in education and health on labour participation and productivity, as well as possible productivity improvements in health, in addition to more traditional economic infrastructure sectors.

The 2001 database is likely to be the basis for the next Australian contribution to GTAP.

References:

Industry Commission 1995 *The Growth and Revenue Implications of Hilmer and Related Reforms: a Report by the Industry Commission to the Council of Australian Governments*. Canberra.

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Lloyd, P.J. and Zhang, X.G. 2006, *The Armington Model*, Productivity Commission Staff Working Paper, Melbourne, January.

<http://www.pc.gov.au/research/swp/armingtonmodel/armingtonmodel.pdf>

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<http://www.pc.gov.au/research/swp/armingtonelasticities/armingtonelasticities.pdf>