

Chapter 3

What's New in GTAP 7?

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The GTAP 7 Data Base is the seventh major public release of the GTAP Data Base since the Project began in 1992. A GTAP Data Base cycle typically begins with updating of the data base to a new reference year – 2004 for GTAP 7. The domestic data bases or input-output (I-O) tables are combined with international datasets on macroeconomic aggregates, bilateral trade, energy, agricultural input-output, and protection for the new reference year. Interim releases of the data base are constructed as significant updated datasets become available. Improvements are also made in data sourcing, scope, and construction procedures. Part III of this volume provides detailed information on the sources and procedures employed in the construction of the GTAP 7 Data Base. This chapter provides a summary of the changes that have been made since the GTAP 6 Data Base. Table 3.1 provides a quick comparison of the GTAP Data Base versions 6 and 7.

3.1 Domestic Data

3.1.1 New Regions

The disaggregation of each regional economy to 57 sectors remains the same in the GTAP 6 and GTAP 7 Data Bases. A total of 25 new primary regions have been added to the GTAP Data Base since GTAP 6 bringing the total to 113 regions. Primary regions are the countries for which we have national input-output tables. The GTAP 6.1 Data Base included six new regions, namely, Pakistan, Bolivia, Ecuador, Iran, Mauritius and Nigeria. With the inclusion of Bolivia and Ecuador, the composite region 'Rest of Andean Pact' (XAP) was eliminated. The total number of regions in this release was 92. The GTAP 6.2 Data Base included four new regions - Cambodia, Paraguay, Egypt and Senegal, raising the region total to 96. The GTAP 7 Data Base includes 15 more new regions - Nicaragua, Kazakhstan, Kyrgyzstan, Armenia, Azerbaijan, Georgia, Ukraine, Belarus, Costa Rica, Guatemala, Lao People's Democratic Republic, Norway, Ethiopia, Panama and Myanmar.

In addition, a change in regional classification resulted in some changes in the composite regions: merger of the region Rest of Free Trade Area of the Americas (XFA) into the region Rest of Caribbean (XCB); the elimination of the region Rest of COMESA (XCS), by merging it with the region Rest of Sub-Saharan Africa, which is further split into Rest of Eastern Africa (XEC), Rest of West Africa (XWS), Central Africa (XCF) and South-Central Africa (XAC); splitting of Rest of Soviet Union (XSU) into XSU and Rest of Eastern Europe (XEE). This resulted in the new total of 113 regions in GTAP 7 Data Base. A detailed listing of the 113 GTAP 7 regions and their country composition is available in Chapter 2.

3.1.2 Updated Regions

Aside from introducing new regions, updated input-output tables for regions that are already in the data base were also incorporated in the GTAP 7 Data Base. More recent input-output tables for Australia, Chile, Vietnam, United States, Mexico and Bolivia were included in GTAP Data Base versions 6.1 and 6.2. Updated input-output tables for 36 countries (Mexico, Colombia, Romania, Canada, Kazakhstan, Ecuador, Paraguay, Russia, Bolivia, Nicaragua, Sri Lanka, Morocco, Peru, Uruguay, Korea, Iran, Austria, Czech Republic, Estonia, Germany, Netherlands, Ireland, Poland, Sweden, UK, Denmark, France, Greece, Spain, Cambodia, Switzerland, South Africa, Philippines, Vietnam, Morocco and Peru) are included in the GTAP 7 Data Base.

3.1.3 Agricultural Production Targeting

The input-output tables of several countries, especially the OECD members, are pre-adjusted to match 2004 agricultural production statistics by sector. This was done initially for the EU countries to more accurately reflect the shares of each member to total agricultural production in the EU and to more accurately reflect domestic support payments. The 2004 agricultural production targets for the EU are sourced from EUROSTAT and contributed to GTAP by Hans Grinsted Jensen of FOI. The I-O tables for the EU27 (except Malta and Luxembourg), Australia, New Zealand, Japan, Korea, USA, Canada, Mexico, Switzerland, Turkey, Norway, South Africa and Brazil are now pre-adjusted to match 2004 agricultural production data. Hsin Huang (OECD) supplied GTAP with the agricultural production targets for the non-EU15 OECD countries. Agricultural production targeting is documented in the detailed documentation available online.

3.2 International Datasets: Sources and Procedure Changes

3.2.1 Macroeconomic Data

Macroeconomic aggregates (GDP, private consumption, government consumption, and investment) are used in updating the input-output tables to a common reference year 2004. The primary source of 2004 macroeconomic data used in the GTAP 7 Data Base is the World Bank. The data is augmented with macroeconomic data from other published sources such as the World Development Report and the CIA Factbook.

3.2.2 Trade Data

As in previous versions of the GTAP Data Base, reconciled bilateral merchandise trade data, based on data from COMTRADE, was contributed by Mark Gehlhar of ERS/USDA. Documentation on the reconciliation procedure is given in the online detailed version. Significant improvements have been made to the bilateral services trade data in GTAP 7 as a result of the efforts of Nico van Leeuwen and Arjan Lejour from the CPB. In the past bilateral services trade has been estimated based on data obtained from the IMF. In the GTAP 7 Data Base, bilateral data on services trade was obtained for the OECD countries and this is now combined with the IMF data to significantly improve the quality of the estimated bilateral services trade data.

3.2.3 *Protection Data*

Domestic Support

Domestic support data for 2004 from the OECD PSE/CSE database are incorporated in the GTAP 7 Data Base. In the GTAP Data Base releases prior to this, we had been using activity-specific domestic support payment data to calculate the powers of support for each sector. However, largely as a consequence of efforts to decouple agricultural support from production of particular commodities over the past decade, these domestic support instruments increasingly provide support to farmers regardless of the commodity produced. This suggests that the subsidy rates for decoupled payments should be equalized across commodities. We carry out this exercise for EU25 countries in the GTAP 7 Data Base. Hans Grinsted Jensen (FOI) supplied the disaggregated agricultural domestic support for the EU25 countries for 2004.

Hsin Huang (OECD) provided us a new format of data for five domestic support categories for the OECD countries - output subsidies, input subsidies, land-based payments, labor-based payments and capital-based payments. This data gives us the breakup of activity-specific, group-generic and activity-generic payments. We incorporate this data for the non-EU25 OECD countries, because country-level information for EU was not available.

The country coverage of the data has been expanded to include some more non-OECD member countries in addition to those in the previous version, supplied by Hsin Huang (OECD). Domestic support data are now available for the following OECD countries: Australia, Canada, European Union (EU25), Iceland, Japan, Korea, Mexico, Norway, Switzerland, Turkey, and the United States. The non-OECD member economies covered in the domestic support dataset are: Bulgaria, China, Romania, Russia, South Africa, Brazil and Ukraine.

Agricultural Export Subsidies

Agricultural export subsidy data for 2004, calculated from country notifications to the WTO and “Financial report on the European Agricultural Guidance and Guarantee Fund”, was contributed by Aziz Elbehri of the Food and Agriculture Organization of the United Nations (FAO), with inputs from David Laborde (IFPRI) and Hans Jensen. Agricultural export subsidies are identified for the year 2004 for Canada, Switzerland and the European Union. Data is still for 2003 for Panama and Israel, for 2002 for United States, Tunisia and Morocco, and for 2001 for Norway. We continue to use a common agricultural export subsidy rate for the EU member countries.

MFA Export Tax Equivalents

Estimates of the export tax equivalent (ETE) of the export quotas on textiles and clothing (wearing apparel) exports under the Agreement on Textiles and Clothing (ATC) were provided by Joseph Francois and Julia Wörz. For Canada and the EU15, the ETE estimates are for 2003 and for the USA, the ETE estimates are for 2004.

Import Tariffs

Similar to the GTAP 6 Data Base, the 2004 tariff data in the GTAP 7 Data Base is based on the Market Access Maps (MAcMapHS6) contributed by David Laborde. The MAcMap data base is compiled by [ITC](#) and [CEPII](#) from UNCTAD TRAINS data, country notifications to the WTO, AMAD, and from national customs information.

3.2.4 Energy Data

In the GTAP 6 Data Base we incorporated 2001 IEA energy volume data and the 1997 energy prices data updated to 2001 using price indices and exchange rates. Similarly, for version 7, the 2004 IEA energy volume data has been incorporated and the energy prices for the year 2000 have been updated to 2004 using price indices and exchange rates. Documentation about the energy is available in the detailed version.

3.2.5 Behavioral Parameters

The GTAP Data Base includes a parameters file that consists of the various behavioral parameters used in the standard GTAP Model. Armington elasticities and Trade elasticities in GTAP 7 Data Base are the same as those in version 6. As in the GTAP 6 Data Base, CDE (Constant Difference Elasticity) parameters were calibrated from expenditure elasticities that are calculated using parameters from the AIDADS model estimated using GTAP data, as reported in Reimer and Hertel (2004).

3.2.6 Other Features

Estimates of income taxes and factor taxes (payroll, land, etc.) based on data from the IMF Government Financial Statistics, assembled by Jan Hagemeyer and Robert McDougall, were incorporated into the GTAP 7 Data Base, as in the previous version. Population data for 2004, in millions, is reported in the global flows data file (header POP). This may be useful for use in post-simulation calculations. Population data is not read in by the current standard version of the GTAP Model file (GTAP.TAB). Reconciled bilateral time series trade data for 1992 to 2006 from Mark Gehlhar (ERS/USDA) have been incorporated into the time series trade data, as in version 6.

Table 3.1 Comparison of GTAP Data Base, versions 6 and 7

	GTAP 6	GTAP 7
Reference year	2001	2004
No. of Sectors	57	57
Sector Names	Forestry: FOR renamed as FRS; Coal: COL renamed as COA	No Change since Version 6
No. of Regions	87	113
Region Names	No Change since Version 5	Romania: ROM renamed as ROU
New Primary Regions	16 since Version 5	15
Updated I-O Tables	16 since Version 5	36
Regional Classification	New classification	Composite regions changed: 2 eliminated and 4 created.
Macroeconomic Data	2001, using World Bank Data	2004, using World Bank Data
Govt. Consumption	2001, using World Bank Data	2004, using World Bank Data
Trade Data	2001, COMTRADE through ERS, USDA	2004, COMTRADE through ERS, USDA
Domestic Support	2001 OECD PSE Data; some non-OECD members also included.	2004, New OECD dataset and different methodology.
Export Subsidies	2001	2004 or the latest available
MFA Export Tax	2001, Francois and Spinanger	2004, Francois and Wörz
Agricultural Tariffs	2001, ITC-CEPII MacMAP and AMAD	2004, ITC-CEPII MacMAP
Merchandise Tariffs	2001, ITC-CEPII MacMAP	2004, ITC-CEPII MacMAP
Energy Data	1997 energy prices data updated to 2001 using price indices; 2001 IEA energy volume data	2000 energy prices data updated to 2004 using price indices; 2004 IEA energy volume data
Agricultural Factor Split	Updated using new literature	Updated using new literature
Income & Factor Taxes	2001 data from IMF	No change since Version 6
Demand Elasticities	Revised	Updated using 2004 GTAP Data
Trade Elasticities	Revised	No change since Version 6
Population Data	2001 Data from World Bank	2004, using World Bank Data
Time Series Trade	Extended to 2002 using new data for 1992-2002, by Mark Gehlhar	Extended to 2006 using new data for 1992-2006, by Mark Gehlhar