

16.A

Construction of the Protection Data Base

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16.A.1 Overview

This section describes the construction of the protection data set in the GTAP 5 data base. The protection data set is used in further processing in the GTAP data construction process. It covers import-side, export-side, and domestic support instruments. The import-side instruments are ordinary import tariff rates and anti-dumping duties. The export-side instruments are ordinary export subsidy rates, export tax equivalent rates of the quotas under the Agreement on Textiles and Clothing (ATC), voluntary price undertakings, and voluntary export restraints (VERs). The domestic support data include the rates of total domestic support and the percentage shares of output subsidies, intermediate input subsidies, land-based payments, and capital-based payments to total domestic support.

Further processing of the protection data set is done in order to incorporate the protection data with the value flows data comprising the GTAP main data base. In particular, the import-side and export-side instruments are targeted and used to adjust the trade data flows (chapter 15) in the data base in the FIT procedure (chapter 19). The trade distortions are then reflected as differences between the market price and world price valuations of the same trade flow. The protection data for energy products is adjusted in the energy module (chapter 17) and the revised data is targeted in the FIT procedure (chapter 19). The shares to total domestic support payments are used in the FIT procedure to calculate output and input subsidies from the data base. These are then targeted and

used to adjust the relevant data flows related to values of outputs and inputs. The shares to total payments of land-based and capital-based payments are used in the final data assembly procedure (chapter 21) to include land-based and capital-based payments from the data base.

In the subsequent sections of this chapter(16.B - 16.F), the data contributors document their data sources and the procedures employed in preparing their data sets for contribution to the GTAP 5 data base. The rest of this section explains the procedures employed in constructing the protection data set.

16.A.2 Import Tariffs

Import tariff data in GTAP 5 come from two main sources – the merchandise tariff data set and the agricultural tariff data set – and the input-output tables. This section discusses the procedures employed in preparing the tariff data set.

16.A.2.1 Merchandise Tariff Data

Merchandise tariff data for GTAP 5 were supplied by Jerzy Rozanski and Aki Kuwahara of the World Bank and the United Nations Conference on Trade and Development (UNCTAD), respectively. The data are from the World Integrated Trade Solution (WITS) system, a new trade data delivery system which contains data from the United Nation’s COMTRADE and UNCTAD’s TRAINS data bases. The tariff data from the WITS system provided a significant improvement over the GTAP 4 merchandise tariff data, especially due to its relatively extensive country coverage. The WITS system is described in section 16.B. Details about the structure of the WITS tariff data set that was contributed to GTAP is also documented in that section.

The tariff data set contain bilateral information on 118 distinct country importers and 238 distinct partner countries (exporters) for 43 GTAP commodities. Although the tariff data are for 1997 for most countries, due to data availability constraints, the data years actually range from 1992 (for Brunei) to 2000 (for several countries). All data are given in Most Favored Nation (MFN) basis and not as effectively applied, including preferential, rates. Table 16.A.1 lists the 118 importer countries and the tariff year of the data.

For each observation in the WITS data set, the trade weighted average MFN tariff rate was calculated as $\text{SumRateByWghtTrdValue} / \text{SumWghtTrdValue4NotNull}$. As reported in chapter 16.B, $\text{SumRateByWghtTrdValue}$ is the sum over all HS 6-digits selected of the simple average tariff rates

Table 16.A.1 Importing Country and Tariff Year of Merchandise Tariff Data

Importing Country	Country Code	Tariff Year	Importing Country	Country Code	Tariff Year
Albania	ALB	1997	Guatemala	GTM	1998
Algeria	DZA	1997	Guyana	GUY	1996
Antigua and Barbuda	ATG	1996	Hong Kong, China	HKG	1998
Argentina	ARG	1997	Hungary	HUN	1997
Australia	AUS	1997	Iceland	ISL	1996
Bahamas, The	BHS	1999	India	IND	1997
Bahrain	BHR	1999	Indonesia	IDN	1996
Bangladesh	BGD	1999	Iran, Islamic Rep.	IRN	2000
Barbados	BRB	1996	Israel	ISR	1993
Belarus	BLR	1997	Jamaica	JAM	1996
Belize	BLZ	1996	Japan	JPN	1997
Bhutan	BTN	1996	Jordan	JOR	2000
Bolivia	BOL	1997	Kazakhstan	KAZ	1996
Brazil	BRA	1997	Kenya	KEN	1994
Brunei	BRN	1992	Korea, Rep.	KOR	1996
Burkina Faso	BFA	1993	Kyrgyz Republic	KGZ	1995
Cameroon	CMR	1995	Lao PDR	LAO	2000
Canada	CAN	1997	Latvia	LVA	1997
Central African Republic	CAF	1997	Lebanon	LBN	1999
Chad	TCD	1997	Libya	LBY	1996
Chile	CHL	1997	Lithuania	LTU	1997
China	CHN	1997	Madagascar	MDG	1995
Colombia	COL	1997	Malawi	MWI	1997
Congo, Rep.	COG	1997	Malaysia	MYS	1997
Costa Rica	CRI	1995	Maldives	MDV	2000
Cote d'Ivoire	CIV	1996	Mali	MLI	1995
Cuba	CUB	1997	Malta	MLT	1997
Czech Republic	CZE	1996	Mauritius	MUS	1997
Czechoslovakia	CSK	1992	Mexico	MEX	1997
Dominica	DMA	1996	Moldova	MDA	1996
Dominican Republic	DOM	1997	Montserrat	MSR	1996
Ecuador	ECU	1997	Morocco	MAR	1997
Egypt, Arab Rep.	EGY	1998	Mozambique	MOZ	1997
El Salvador	SLV	1997	Nepal	NPL	1998
Equatorial Guinea	GNQ	1998	New Zealand	NZL	1997
Estonia	EST	1995	Nicaragua	NIC	1998
Ethiopia (excludes Eritrea)	ETH	1995	Nigeria	NGA	1995
European Union	EUN	1997	Norway	NOR	1996
Gabon	GAB	1998	Oman	OMN	1997
Ghana	GHA	1993	Pakistan	PAK	1998
Grenada	GRD	1996	Panama	PAN	1998

Contd

Table 16.A.1 Importing Country and Tariff Year of Merchandise Tariff Data (Continued)

Importing Country	Short Name	Tariff Year	Importing Country	Short Name	Tariff Year
Papua New Guinea	PNG	1997	Sudan	SDN	1996
Paraguay	PRY	1997	Suriname	SUR	1996
Peru	PER	1997	Switzerland	CHE	1997
Philippines	PHL	1998	Taiwan	TWN	1996
Poland	POL	1996	Tanzania	TZA	1997
Romania	ROM	1999	Thailand	THA	1995
Russian Federation	RUS	1997	Trinidad and Tobago	TTO	1996
Rwanda	RWA	1993	Tunisia	TUN	1998
Saudi Arabia	SAU	1999	Turkey	TUR	1997
Seychelles	SYC	2000	Turkmenistan	TKM	1998
Singapore	SGP	1995	Uganda	UGA	1994
Slovenia	SVN	1999	Ukraine	UKR	1997
Solomon Islands	SLB	1995	United States	USA	1997
South Africa	ZAF	1997	Uruguay	URY	1997
Sri Lanka	LKA	1997	Venezuela	VEN	1997
St. Kitts and Nevis	KNA	1996	Vietnam	VNM	1999
St. Lucia	LCA	1996	Zambia	ZMB	1997
St. Vincent and the Grenadines	VCT	1996	Zimbabwe	ZWE	1997

multiplied by value of imports (weights) at each HS 6-digit. SumWghtTrdValue4NotNull is the sum of import values used as weights, i.e., the sum of values at HS 6-digit for which corresponding tariff rates are available. A matrix of tariff data for all the 118 importers, 238 partner countries, and 43 commodities was generated. The set of 238 partner countries is the union of all sets of partner countries for all importers. As such, there were cells of missing data in the 118 x 43 x 238 matrix. A parallel matrix of data flags was generated to indicate missing data, with ones and zeroes indicating the presence or absence of data, respectively.

Some data manipulation was done before the tariff data was brought into the GTAP data base construction process. Firstly, the MFN tariff rates were converted to powers of tariffs ($1 + \text{rate}/100$). Next, the exporting countries were mapped and aggregated to the 211 standard countries in GTAP 5. Since the set of importing countries includes the European Union as a single region, the set of importing countries was mapped and extended to a subset of the standard countries. This procedure extended the data to 130 importing countries. Finally, the data matrix was also extended on the commodity side to generate a complete tariff data matrix for 57 sectors, 130 importers and 211 exporters. The data flags were also updated to match the extended tariff data matrix.

Within the GTAP data construction process, the 57 sector x 130 importers x 211 exporters tariff data set was aggregated to the GTAP 5 regional classification. The exporters were aggregated to 66 GTAP 5 regions using trade weights and data flags. The same was done on the importer side. The data flags, indicating missing data, were also updated. A merchandise tariff data file, with data

flags, was then generated for each importer region. The regional merchandise tariff data files were then combined with regional agricultural tariff data files (see section 16.A.2.3).

16.A.2.2 Agricultural Tariff Data

The agricultural tariff data set for GTAP 5 is significantly different from that used in GTAP 4. In GTAP 4, agricultural tariffs for OECD countries were simply calculated from the PSE tables using the price gap approach. The value of market price support in the PSE tables was used to represent the price gap between market and world prices. For non-OECD countries, agricultural tariffs were based on adjusted data from the GTAP 3 data base.

The agricultural tariff data for GTAP 5 is from the Agricultural Trade Policy Database which was contributed by Paul Gibson, John Wainio, and Daniel Whitley. The Agricultural Trade Policy Database is in turn based largely on the Agricultural Market Access Database (AMAD), a comprehensive collection of data related to agricultural tariffs. Non-bilateral agricultural tariff data are given for 113 countries as bound MFN rates and, as available, applied tariff rates for 1995 through 1999. More information about the agricultural tariff data set, including data availability, is given in section 16.C.

The applied rates for 1998 or for the latest available year were used for GTAP 5. The bound MFN rates were used as proxy if applied rates are not available. However, the bound MFN rates were used only if they are differentiated across commodities, *i.e.*, countries with data only for uniform ceiling bindings were not included in the data set. Using this criterion, agricultural tariff data for 46 countries were extracted from the data set. Table 16.A.2 reports the importing countries, rate classification, and data year of the agricultural tariff data set used in GTAP 5.

Since Japan, South Korea, and the Philippines did not schedule tariffs for rice in their tariff schedule, the original data set does not include tariff rates for rice for these countries. Based on separate estimates from the ERS/USDA, 1998 tariff equivalent rates for rice (paddy rice and processed rice) imports from Japan, South Korea and the Philippines were set at 409 percent, 5 percent, and 50 percent, respectively.

The contributed data set includes data for 21 commodities. This includes data for all 20 GTAP primary agriculture and food sectors, except raw milk, and also for fishing and forestry. Prior to bringing the data set into the data construction process, the tariff rates were expressed as powers of tariffs and data flags were generated. Tariff data for fishing and forestry were effectively dropped in favor of tariff data from the merchandise tariff data set because of better concordance for these sectors in the latter data set.

Within the GTAP data base construction process, the agricultural tariff data set for 21 sectors and 46 regions was first extended to all 57 sectors. Since the set of importing countries include the European Union as a single region, the set of importing countries was mapped and extended to a 63-region subset of the standard countries. The importers were then further expanded to the set of 211

Table 16.A.2 Importing Country, Rate Classification, and Year of Agricultural Tariff Data

Country	Rate Classification	Country	Rate Classification
Argentina	Applied 1998	Morocco	Applied 1997
Austria	MFN Bound	Namibia	MFN Bound
Barbados	MFN Bound	New Zealand	MFN Bound
Botswana	MFN Bound	Nicaragua	Applied 1998
Brazil	Applied 1998	Norway	MFN Bound
Canada	MFN Bound	Pakistan	Applied 1998
Colombia	Applied 1998	Panama	Applied 1998
Costa Rica	Applied 1995	Paraguay	Applied 1998
Czech Rep.	MFN Bound	Philippines	Applied 1998
Ecuador	Applied 1998	Poland	MFN Bound
El Salvador	Applied 1998	Romania	MFN Bound
Egypt	MFN Bound	Singapore	MFN Bound
Eur. Union	MFN Bound	Slovak Rep.	MFN Bound
Guatemala	Applied 1998	Slovenia	MFN Bound
Hungary	MFN Bound	South Africa	MFN Bound
Iceland	MFN Bound	Swaziland	MFN Bound
India	Applied 1997	Switzerland	MFN Bound
Indonesia	Applied 1996	Thailand	Applied 1995
Israel	MFN Bound	Tunisia	Applied 1998
Japan	MFN Bound	Turkey	Applied 1997
Korea, Rep.	Applied 1996	United States	MFN Bound
Malaysia	MFN Bound	Uruguay	Applied 1998
Mexico	Applied 1998	Venezuela	Applied 1998

standard countries before they were mapped and aggregated to the 66 GTAP regions using trade weights and updated data flags. An agricultural tariff data file with data flags was then generated for each importer region. Each single region agricultural tariff data file was then expanded bilaterally by assigning the same tariff rate uniformly to all partner countries (exporters). The regional agricultural tariff data were combined with regional data on merchandise tariffs (see section 16.A.2.3).

16.A.2.3 Combined Tariff Data

The preparation of the merchandise and agricultural tariff data files for each GTAP region is documented in sections 16.A.2.1 and 16.A.2.2, respectively. The regional merchandise and agricultural tariff data files were first combined with the use of data flags and then combined with tariff data extracted from the input-output tables. For each region, we started with the merchandise tariff data set and overwrote the tariffs for agricultural and processed food commodities with data from the agricultural tariff data set, if data are available. Tariff data extracted from the regional input-output tables, if available, are then applied to the empty cells or missing values which are

indicated by data flags in the combined tariff data set. In using data from the I-O tables, we assume that the I-O table data covers only ordinary import tariffs, *i.e.* that they do not include information on anti-dumping duties.

A preference ordering for data sources is established in the procedure used for combining tariff data. In the case of agricultural and processed food commodities, we give priority to the agricultural tariff data set, then to the merchandise tariff data set, and finally to the tariff data extracted from the I-O tables. Similarly, for manufactures, we prefer first the merchandise tariff data set and then the tariff data extracted from the I-O tables.

16.A.3 Export Subsidies

Data on agricultural export subsidy rates for GTAP 5 was contributed by Aziz Elbehri of the Economic Research Service, USDA. As documented in Section 16.D, treatment of export subsidies in GTAP 5 is quite different from that in GTAP 4. Unlike the agricultural export subsidies (and agricultural tariffs) in GTAP 4 which were calculated using the price gap methodology based on the PSE data on market support price values, the agricultural export subsidy rates for GTAP 5 are now based on country submissions to the WTO of export subsidy expenditures for 1998.

The agricultural export subsidy data set contains non-bilateral export subsidy rates for 22 regions and 15 GTAP agricultural and processed food commodities. The data was expanded to 16 commodities by assigning the same export subsidy rates to paddy rice and processed rice.

Since the set of countries in the data set includes the European Union as a single region, the set of importing countries was mapped and extended to a subset of the standard countries. Using data flags to indicate missing data, the data set was then extended to the full set of GTAP sectors and standard countries and then aggregated to the 66 GTAP regions using trade weights. An agricultural export subsidy data file, with data flags, was then generated for each single GTAP 5 region.

Export subsidy/tax data were also extracted from the input-output tables. In using the data from the I-O tables, it is implicitly assumed that the export subsidy/tax information from the I-O tables cover only the ordinary export subsidies, *i.e.* excludes information on price undertakings, VERs, and MFA export tax equivalents. Agricultural export subsidies from the data set were combined with data from the I-O tables. Preference was given to the agricultural export subsidy data set, with data from the I-O tables brought in only for missing data indicated by data flags.

The export subsidy/tax data for each single region was then expanded bilaterally by assigning the same export subsidy/tax rate uniformly to all partner countries (importers).

16.A.4 Domestic Support

It is in the area of domestic support in agriculture where significant improvement over the GTAP 4 data base was brought into GTAP 5. In the GTAP 4 data base, output subsidies rates were computed from the domestic support payments and value of production data in the PSE tables. All PSE components, excluding market price support, were included in the calculation and lumped together as output subsidies.

In the GTAP 5 data base, all the PSE components, excluding market price support, were classified into one of four separate domestic support categories, namely: output subsidies, intermediate input subsidies, land-based payments, and capital-based payments. This was done for 14 OECD regions¹ and 9 agricultural commodities² plus a miscellaneous commodity category. In addition, using data on EAGGF Guarantee expenditures for individual EU members, Hans Grinsted Jensen of the SJFI split the total PSE payments for wheat, cereal grains, oilseeds, and cattle & sheep in the European Union into payments for the individual member states. Details about the calculation of the domestic support from the PSE tables for the OECD as well as for the EU member countries is available in Section 16.E.

A standard formula for assigning the PSE components into the four different support categories was adapted for all countries covered in the OECD tables. As shown in table 16.A.3, separate standard formulas were applied to crops and livestock.

The data on powers of total domestic support and shares of each domestic support category to total payments, by commodity, for all 14 OECD countries and the 15 EU member states were combined. Data for miscellaneous commodities, the composition of which varies by region, was disregarded. For the EU, since disaggregated data are available only for wheat, cereal grains, oil seeds, and cattle & sheep, the shares data for the aggregate EU was assigned to the rest of the agricultural commodities in the 15 member states. By merging the data for the EU member states with the rest of the OECD data, a data set for 28 regions and 9 agricultural commodities is generated.

The data on powers and shares of domestic support were extended to cover all 57 GTAP commodities with data flags indicating missing data. The regional coverage was also extended first to a subset of the standard countries and then to the set of standard countries. The data were then aggregated to the 66 GTAP regions using GDP weights. A data file with powers of total domestic support and shares of each of the four domestic support categories to total payments, by commodity, was then generated for each single GTAP region.

¹ The regions covered in the data set are Australia, Canada, European Union, Hungary, Iceland, Japan, Korea, Mexico, New Zealand, Norway, Poland, Switzerland, Turkey, and United States.

² The agricultural commodities are: wheat, paddy rice, cereal grains, oilseeds, cane and beets, raw milk, cattle & sheep, other meat, and wool.

The data set on total domestic support was then combined with output subsidy data extracted from the input-output tables. Data from the I-O tables, if available, were used to fill in missing data from the PSE domestic support data set. Data extracted from the I-O tables were classified as output subsidies and shares of output subsidies to total payments were set to 100 percent.

The domestic support data set was further processed and used to calculate subsidies to output and intermediate inputs in the FIT procedure (documented in chapter 19) and land-based and capital-based payments in the global data assembly procedure (documented in chapter 21).

Table 16.A.3 Standard Formula used in Domestic Support Categories

Domestic Support Category	PSE Components		Description of PSE Components
	Crops	Livestock	
Output Subsidies	B	B	Payments based on output
	H	H	Miscellaneous payments
Intermediate	E1	E1	Payments based on input use: variable inputs
Input Subsidies	E2	E2	Payments based on input use: on-farm services
Land Based Payments	C		Payments based on area planted/animal numbers
	D	D	Payments based on historical entitlements
	F1	F1	Payments based on input constraints: variable inputs
	F2		Payments based on input constraints: fixed inputs
	F3	F3	Payments based on input constraints: set of inputs
	G	G	Payments based on overall farming income
Capital Based Payments		C	Payments based on area planted/animal numbers
	E3	E3	Payments based on input use: fixed inputs
		F2	Payments based on input constraints: fixed inputs

16.A.5 ATC Export Tax Equivalents

The GTAP 5 data on export tax equivalents of the quotas on textiles and clothing exports to the United States, Canada and the European Union under the Agreement on Textiles and Clothing (ATC) are based on estimates of Joseph Francois and Dean Spinanger. Their methodology is documented in section 16.F. Table 16.A.4 presents the initial export tax equivalent rates data for an aggregated set of 24 ATC exporter regions.

The data set was extended on the exporter side by mapping the 24-region aggregate to the set of standard countries. The importer regions were first mapped to a subset of the standard countries, thereby assigning the data for the EU to all its member states, then to the set of standard countries. The data set was then aggregated to the set of 66 GTAP regions, in both the exporter and importer dimension, using trade weights. A data file with export tax equivalent rates for textiles and wearing apparel exports to all GTAP region importers was then generated for each single GTAP region.

Table 16.A.4 ATC Export Tax Equivalent Rate, Fraction of *f.o.b.* Value

MFA Exporters	to USA / Canada		to European Union	
	Textiles	WearApp	Textiles	WearApp
Australia / New Zealand	0.000	0.000	0.000	0.000
Japan	0.000	0.000	0.000	0.000
Korea	0.024	0.019	0.016	0.006
Indonesia	0.081	0.078	0.063	0.060
Malaysia	0.081	0.078	0.063	0.060
Philippines	0.065	0.078	0.057	0.060
Singapore	0.000	0.006	0.002	0.002
Thailand	0.083	0.132	0.064	0.078
Vietnam	0.069	0.071	0.075	0.072
China	0.200	0.330	0.120	0.150
Hongkong	0.010	0.100	0.010	0.050
Taiwan	0.022	0.075	0.069	0.059
India	0.098	0.342	0.120	0.152
Sri Lanka	0.153	0.081	0.055	0.064
South Asia	0.153	0.081	0.084	0.073
Canada	0.000	0.000	0.000	0.000
Unites States	0.000	0.000	0.000	0.000
Mexico	0.000	0.000	0.001	0.047
Latin America	0.072	0.053	0.031	0.052
Western Europe	0.000	0.000	0.000	0.000
Central European Associates	0.069	0.050	0.000	0.000
Turkey	0.070	0.049	0.015	0.000
Middle East / Africa	0.005	0.006	0.003	0.000
Rest of World	0.001	0.030	0.000	0.000

16.A.6 Other Protection Measures

The other protection measures that are reported in the GTAP data base are anti-dumping duties on the import side and price undertakings and voluntary export restraints (VERs) on the export side. Anti-dumping duties are duties that may be imposed by importers against dumped goods, if dumping causes injury to producers of competing products in the importing country. Price undertakings are agreements between an importer and exporter whereby the exporter agrees to raise the export price of the products above some minimum level to avoid the possibility of an anti-dumping duty. VERs are bilateral arrangements whereby an exporter agrees to restrict exports without the importing country having to make use of tariffs, quotas, or other import controls.

In GTAP 4, data for anti-dumping duties, and voluntary price undertakings were simply inherited from the GTAP version 3 data base and reported for information only. They were not

incorporated into the version 4 border wedges. Zero rates were reported for VERs. In GTAP 5, due to absence of up-to-date data, zero rates are reported for all three protection measures.

16.A.7 Free Trade Areas

The preparation of the import tariff and export subsidy data files are discussed in sections 16.A.4 and 16.A.5, respectively. The import duties and export subsidies were adjusted to impose zero rates between free trade areas (FTAs) for affected commodities. We recognize five FTAs in GTAP 5, as shown in table 16.A.5. For NAFTA and the EU-EFTA trade area, we impose zero rates outside the agriculture and food processing sectors; for the EU itself, for the ANZCERTA, and for SACU, we impose zero rates for all sectors, including agriculture and food processing.

Table 16.A.5 Free Trade Areas in GTAP Version 5 Data Base

Free Trade Area	GTAP Member Countries	Commodity Coverage
North American Free Trade Agreement (NAFTA)	USA, CAN, MEX	all commodities except primary agriculture and processed food
Australia New Zealand Closer Economic Relations Trade Agreement (ANZCERTA)	NZL, AUS	all commodities
European Union (EU)	AUT, BEL, DNK, FIN, FRA, DEU, GBR, GRC, IRL, ITA, LUX, NLD, PRT, ESP, SWE	all commodities
European Union -European Free Trade Association (EU-EFTA)	AUT, BEL, DNK, FIN, FRA, DEU, GBR, GRC, IRL, ITA, LUX, NLD, PRT, ESP, SWE, CHE, XEF	all commodities except primary agriculture and processed food
Southern Africa Customs Union (SACU)	BWA, XSC	all commodities

16.A.8 Assembly

The processing of the contributed data sets for each protection instrument was described in the previous sections of this document. A data file for each GTAP region was generated for each protection instrument. In the assembly process, the regional data files for each instrument are simply compiled into generate one data file for each region. The regional protection data files were used for further processing in the data construction process. Each regional protection data file includes the rates for ordinary tariffs, anti-dumping duties, ordinary export subsidies, ATC export subsidies, price

undertakings, VERs, and the domestic support data. The domestic support data include the rates of total domestic support and the shares to total payments of output subsidies, intermediate input subsidies, land-based payments, and capital-based payments. Also included in each regional protection data file are the comprehensive rates for import duties and export subsidies representing all import-side and export-side instruments, respectively. The comprehensive rates are the ones used in adjusting the trade value flows in the FIT procedure (chapter 19) to incorporate the trade distortions in the data base.

As noted in the overview section of this document, some more processing of the protection data is done further along in the GTAP data base construction process. These are done for energy commodities in the energy module (see chapter 17), in the FIT procedure (see chapter 19), and in the global data assembly process (see chapter 21).

The final protection data set is available in the GTAP data base either as explicit revenue values and tax rates or as implicit data calculable from two values of the same data flow. Further discussion about explicit and implicit protection is available in the guide to the GTAP data base (chapter 8). A summary tax rates file is generated by the GTAPView software described in chapter 10.