

Chapter 2

Guide to the GTAP Data Base

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The GTAP Data Base is the global data base representing the world economy for a given reference year — 2004, 2007, 2011 and 2014 for the GTAP 10 Data Base. The files comprising the GTAP Data Base are packaged with two alternative aggregation packages, the command line version FlexAgg and the graphical user interface (GUI) GTAPAgg. These packages include all the data files that comprise the GTAP Data Base, except for the time series trade data. The five GTAP files consist of sets, parameters, main data, energy volume data, and CO2 emissions data. All the files are header array files (a GEMPACK binary format) (Harrison and Pearson, 1998). In addition, since GTAP 8, there is an additional file, that contain meta-data information about the I-O tables.

This chapter provides a guide to the components of the five GTAP Data Base files. It also covers the concordances for the increased 65 sectors (from previous 57 sectors in version 9) and the 141 regions of the GTAP 10 Data Base. Details about sources and construction of the individual components such as domestic data bases (or I-O tables), international data sets, and parameters, are provided in subsequent chapters.

2.1 GTAP Sets File

Table 2.1 shows the arrays in the sets file. The array REG is the list of regions. Array COMM lists *commodities*, goods and services that can be traded between regions. In this, they contrast with the primary factors or *endowment commodities*, listed in ENDW such as land, labor, capital, and natural resources.¹ Capital is specified within the model for convenience in implementing the investment theory of the model. The GTAP 7 Model (Corong et al. 2017) considers a make matrix, therefore we also need to define and list activities in array ACTS.

Table 2.1 Arrays in the GTAP Sets File

Name	Dimension	Description
REG	r	Regions
COMM	c	Commodities
MARG	m	Margin commodities
ACTS	a	Activities
ENDW	e	Endowment commodities
TARS	2	Types of tariffs

r number of regions; c number of commodities; m number of margins commodities (sectors);
 a number of activities; e number of primary factors perfectly mobile across industries

Within the GTAP 7 Model (Corong et al. 2017) the endowment commodities are split into three

¹ Similar to GTAP 9, labor information is available for five types, 2 skilled (professionals and technical) and 3 unskilled (agricultural, clerical and other unskilled).

groups. The *mobile* endowment commodities, which are perfectly mobile across industries within each region; the *sluggish* endowment commodities, which are imperfectly mobile or immobile; and the *fixed* endowment, which are specific to a specified activity or industry.

In the standard data base, labor and capital are classed as mobile, while land is classed as sluggish and natural resources as fixed. This is suitable for long-run simulations. For short-run simulations, users may wish to treat capital as sluggish rather than mobile. Finally, array MARG lists the margin commodities.

Users of the GTAP 7 Model should note that non-margin commodities are derived in the model. Also, mobile, sluggish and fixed endowments are derived within the model based on information stored in the parameter file after you develop your aggregation. The header TARS was introduced in GTAP 8 Data Base, showing the components of tariff available in the dataset in the new additional data header VTTS.

2.2.1 GTAP Regions

In the standard GTAP 10 Data Base, there are 65 commodities and 141 regions. The commodity detail and concordance has increased relative to GTAP 9 Data Base. The regional detail has significantly been updated with 50+ I-O tables. Tajikistan is the new country in GTAP that has been separated from a “rest of” composite region.

Table 2.2 shows the regional definitions used in GTAP 10 Data Base.² The 141 regions are defined as aggregates of 244 countries using the GTAP standard country list (see section 2.2.2). The alpha-3 codes defined by the International Organization for Standardization (ISO) are used as country codes for the GTAP primary regions, i.e. regions developed from contributed domestic data bases.

Table 2.2 Regions in GTAP 10 Data Base

Code	Description	Code	Member Countries
AUS	Australia	AUS	Australia
		CCK	Cocos (Keeling) Islands
		CXR	Christmas Island
		HMD	Heard Island and McDonald Islands
		NFK	Norfolk Island
NZL	New Zealand	NZL	New Zealand
XOC	Rest of Oceania	ASM	American Samoa
		COK	Cook Islands
		FJI	Fiji
		FSM	Micronesia Federated States of
		GUM	Guam
		KIR	Kiribati
		MHL	Marshall Islands
		MNP	Northern Mariana Islands
		NCL	New Caledonia
		NIU	Niue

² Note that the country list has been re-ordered so that EU member countries are not separated as in previous GTAP versions.

Table 2.2 Regions in GTAP 10 Data Base

Code	Description	Code	Member Countries
		NRU	Nauru
		PLW	Palau
		PNG	Papua New Guinea
		PYF	French Polynesia
		SLB	Solomon Islands
		TKL	Tokelau
		TON	Tonga
		TUV	Tuvalu
		VUT	Vanuatu
		WLF	Wallis and Futuna
		WSM	Samoa
		PCN	Pitcairn
		UMI	United States Minor Outlying Islands
CHN	China	CHN	China
HKG	Hong Kong	HKG	Hong Kong
JPN	Japan	JPN	Japan
KOR	Korea Republic of	KOR	Korea Republic of
MNG	Mongolia	MNG	Mongolia
TWN	Taiwan	TWN	Taiwan
XEA	Rest of East Asia	MAC	Macao
		PRK	Korea, Democratic People's Republic of
BRN	Brunei Darussalam	BRN	Brunei Darussalam
KHM	Cambodia	KHM	Cambodia
IDN	Indonesia	IDN	Indonesia
LAO	Lao People's Democratic Republic	LAO	Lao People's Democratic Republic
MYS	Malaysia	MYS	Malaysia
PHL	Philippines	PHL	Philippines
SGP	Singapore	SGP	Singapore
THA	Thailand	THA	Thailand
VNM	Viet Nam	VNM	Viet Nam
XSE	Rest of Southeast Asia	MMR	Myanmar
		TLS	Timor-Leste
BGD	Bangladesh	BGD	Bangladesh
IND	India	IND	India
NPL	Nepal	NPL	Nepal
PAK	Pakistan	PAK	Pakistan
LKA	Sri Lanka	LKA	Sri Lanka
XSA	Rest of South Asia	AFG	Afghanistan
		BTN	Bhutan
		MDV	Maldives

Table 2.2 Regions in GTAP 10 Data Base

Code	Description	Code	Member Countries
CAN	Canada	CAN	Canada
USA	United States of America	USA	United States of America
MEX	Mexico	MEX	Mexico
XNA	Rest of North America	BMU	Bermuda
		GRL	Greenland
		SPM	Saint Pierre and Miquelon
ARG	Argentina	ARG	Argentina
BOL	Bolivia, Plurinational State of	BOL	Bolivia, Plurinational State of
BRA	Brazil	BRA	Brazil
CHL	Chile	CHL	Chile
COL	Colombia	COL	Colombia
ECU	Ecuador	ECU	Ecuador
PRY	Paraguay	PRY	Paraguay
PER	Peru	PER	Peru
URY	Uruguay	URY	Uruguay
VEN	Venezuela	VEN	Venezuela
XSM	Rest of South America	FLK	Falkland Islands (Malvinas)
		GUF	French Guiana
		GUY	Guyana
		SUR	Suriname
		SGS	South Georgia and the South Sandwich Islands
CRI	Costa Rica	CRI	Costa Rica
GTM	Guatemala	GTM	Guatemala
HND	Honduras	HND	Honduras
NIC	Nicaragua	NIC	Nicaragua
PAN	Panama	PAN	Panama
SLV	El Salvador	SLV	El Salvador
XCA	Rest of Central America	BLZ	Belize
DOM	Dominican Republic	DOM	Dominican Republic
JAM	Jamaica	JAM	Jamaica
PRI	Puerto Rico	PRI	Puerto Rico
TTO	Trinidad and Tobago	TTO	Trinidad and Tobago
XCB	Caribbean	ABW	Aruba
		AIA	Anguilla
		ANT	Netherlands Antilles (Curacao, Bonaire, Sint Eustatius and Saba)
		ATG	Antigua & Barbuda
		BHS	Bahamas
		BRB	Barbados
		CUB	Cuba

Table 2.2 Regions in GTAP 10 Data Base

Code	Description	Code	Member Countries
		CYM	Cayman Islands
		DMA	Dominica
		GRD	Grenada
		HTI	Haiti
		KNA	Saint Kitts and Nevis
		LCA	Saint Lucia
		MSR	Montserrat
		TCA	Turks and Caicos Islands
		VCT	Saint Vincent and the Grenadines
		VGB	Virgin Islands British
		VIR	Virgin Islands U.S.
AUT	Austria	AUT	Austria
BEL	Belgium	BEL	Belgium
BGR	Bulgaria	BGR	Bulgaria
HRV	Croatia	HRV	Croatia
CYP	Cyprus	CYP	Cyprus
CZE	Czech Republic	CZE	Czech Republic
DNK	Denmark	DNK	Denmark
EST	Estonia	EST	Estonia
FIN	Finland	FIN	Finland
		ALA	Aland Islands
FRA	France	FRA	France
		GLP	Guadeloupe
		MTQ	Martinique
		REU	Reunion
DEU	Germany	DEU	Germany
GRC	Greece	GRC	Greece
HUN	Hungary	HUN	Hungary
IRL	Ireland	IRL	Ireland
ITA	Italy	ITA	Italy
LVA	Latvia	LVA	Latvia
LTU	Lithuania	LTU	Lithuania
LUX	Luxembourg	LUX	Luxembourg
MLT	Malta	MLT	Malta
NLD	Netherlands	NLD	Netherlands
POL	Poland	POL	Poland
PRT	Portugal	PRT	Portugal
ROU	Romania	ROU	Romania
SVK	Slovakia	SVK	Slovakia
SVN	Slovenia	SVN	Slovenia

Table 2.2 Regions in GTAP 10 Data Base

Code	Description	Code	Member Countries
ESP	Spain	ESP	Spain
SWE	Sweden	SWE	Sweden
GBR	United Kingdom	GBR	United Kingdom
CHE	Switzerland	CHE	Switzerland
NOR	Norway	NOR	Norway
		SJM	Svalbard and Jan Mayen
XEF	Rest of EFTA	ISL	Iceland
		LIE	Liechtenstein
ALB	Albania	ALB	Albania
BLR	Belarus	BLR	Belarus
RUS	Russian Federation	RUS	Russian Federation
UKR	Ukraine	UKR	Ukraine
XEE	Rest of Eastern Europe	MDA	Moldova Republic of
XER	Rest of Europe	AND	Andorra
		BIH	Bosnia and Herzegovina
		FRO	Faroe Islands
		GIB	Gibraltar
		MCO	Monaco
		MKD	Macedonia the former Yugoslav Republic of
		SMR	San Marino
		SRB	Serbia
		GGY	Guernsey
		IMN	Isle of Man
		JEY	Jersey
		MNE	Montenegro
		VAT	Holy See (Vatican City State)
KAZ	Kazakhstan	KAZ	Kazakhstan
KGZ	Kyrgyzstan	KGZ	Kyrgyzstan
TJK	Tajikistan	TJK	Tajikistan
XSU	Rest of Former Soviet Union	TKM	Turkmenistan
		UZB	Uzbekistan
ARM	Armenia	ARM	Armenia
AZE	Azerbaijan	AZE	Azerbaijan
GEO	Georgia	GEO	Georgia
BHR	Bahrain	BHR	Bahrain
IRN	Iran Islamic Republic of	IRN	Iran Islamic Republic of
ISR	Israel	ISR	Israel
KWT	Kuwait	KWT	Kuwait
JOR	Jordan	JOR	Jordan

Table 2.2 Regions in GTAP 10 Data Base

Code	Description	Code	Member Countries
OMN	Oman	OMN	Oman
QAT	Qatar	QAT	Qatar
SAU	Saudi Arabia	SAU	Saudi Arabia
TUR	Turkey	TUR	Turkey
ARE	United Arab Emirates	ARE	United Arab Emirates
XWS	Rest of Western Asia	IRQ	Iraq
		LBN	Lebanon
		PSE	Palestinian Territory Occupied
		SYR	Syrian Arab Republic
		YEM	Yemen
EGY	Egypt	EGY	Egypt
MAR	Morocco	MAR	Morocco
TUN	Tunisia	TUN	Tunisia
XNF	Rest of North Africa	DZA	Algeria
		LBY	Libya
		ESH	Western Sahara
BEN	Benin	BEN	Benin
BFA	Burkina Faso	BFA	Burkina Faso
CMR	Cameroon	CMR	Cameroon
CIV	Cote d'Ivoire	CIV	Cote d'Ivoire
GHA	Ghana	GHA	Ghana
GIN	Guinea	GIN	Guinea
NGA	Nigeria	NGA	Nigeria
SEN	Senegal	SEN	Senegal
TGO	Togo	TGO	Togo
XWF	Rest of Western Africa	CPV	Cape Verde
		GMB	Gambia
		GNB	Guinea-Bissau
		LBR	Liberia
		MLI	Mali
		MRT	Mauritania
		NER	Niger
		SHN	Saint Helena, Ascension and Tristan da Cunha
		SLE	Sierra Leone
XCF	Central Africa	CAF	Central African Republic
		COG	Congo
		GAB	Gabon
		GNQ	Equatorial Guinea
		STP	Sao Tome and Principe

Table 2.2 Regions in GTAP 10 Data Base

Code	Description	Code	Member Countries
		TCD	Chad
XAC	South Central Africa	AGO	Angola
		COD	Congo, Democratic Republic of the
ETH	Ethiopia	ETH	Ethiopia
KEN	Kenya	KEN	Kenya
MDG	Madagascar	MDG	Madagascar
MWI	Malawi	MWI	Malawi
MUS	Mauritius	MUS	Mauritius
MOZ	Mozambique	MOZ	Mozambique
RWA	Rwanda	RWA	Rwanda
TZA	Tanzania United Republic of	TZA	Tanzania United Republic of
UGA	Uganda	UGA	Uganda
ZMB	Zambia	ZMB	Zambia
ZWE	Zimbabwe	ZWE	Zimbabwe
XEC	Rest of Eastern Africa	BDI	Burundi
		COM	Comoros
		DJI	Djibouti
		ERI	Eritrea
		MYT	Mayotte
		SDN	Sudan (includes South Sudan)
		SOM	Somalia
		SYC	Seychelles
BWA	Botswana	BWA	Botswana
NAM	Namibia	NAM	Namibia
ZAF	South Africa	ZAF	South Africa
XSC	Rest of South African Customs Union	LSO	Lesotho
		SWZ	Eswatini (Swaziland prior to 2018)
XTW	Rest of the World	ATA	Antarctica
		ATF	French Southern Territories
		BVT	Bouvet Island
		IOT	British Indian Ocean Territory

2.2.2 GTAP Standard Countries

A group comprised of 244 countries formed the set of standard countries in the construction of the GTAP 10 Data Base. The identification of a set of standard countries is key to achieving the goal of regional flexibility in the data base construction process. Regional flexibility is attained when new regions can readily be added to the data base by simply including the new region(s) in a list of regions and a mapping file used in the data construction process and supplying the additional country's input-output table.

To achieve regional flexibility, contributors of international data sets to GTAP are encouraged to

provide the data on a country basis rather than on a GTAP region basis. This facilitates revision of the GTAP regional classification without having to go back to the data contributors for new, reclassified source data. The contributed data is then mapped or transformed to apply to the set of standard countries. A mapping between the standard set of countries and the set of GTAP regions is then used to aggregate the data (see table 2.2). The mapping file is revised when a new region is introduced in the GTAP Data Base.

The country composition of the set of standard countries for GTAP 10 is such that it omits no significant economies and it captures all significant information from the contributed international data sets. We obtain a GDP estimate for each standard country for use as a scaling factor in aggregating data sets.

2.2.3 GTAP Sectoral Classification (GSC3)

Tables 2.3 and 2.4 show the sectoral definitions used in the GTAP 10 Data Base. We define the GTAP agricultural and food processing sectors by reference to the Central Product Classification (CPC), as shown in table 2.3. The other GTAP sectors are defined by reference to the International Standard Industry Classification (ISIC), as shown in table 2.4.³ We use the ISIC for most sectors, because it is the reference point for sectoral classification in most I-O statistics. But for agriculture and food processing, the ISIC does not provide the detail we need, so we use instead the CPC. The CPC was developed by the Statistical Office of the United Nations to serve as a bridge between the ISIC and other sectoral classifications (UN 2008, 2015).

Table 2.3 GSC3 Sectors defined by Reference to the CPC Ver. 2.1

GSC3 No.	Code	CPC Code	Description
1	pdr	0113	Rice
2	wht	0111	Wheat
3	gro	0112	Maize (corn)
		0114	Sorghum
		0115	Barley
		0116	Rye
		0117	Oats
		0118	Millets
		0119	Other cereals
4	v_f	012	Vegetables
		013	Fruit and nuts
		015	Edible roots and tubers with high starch or inulin content
		017	Pulses (dried leguminous vegetables)
5	osd	014	Oil seeds and oleaginous fruit
6	c_b	018	Sugar crops
7	pfb	0192	Fibre crops
8	ocr	016	Stimulant, spice and aromatic crops
		0191	Forage products
		0193	Plants and parts of plants used primarily in perfumery, in pharmacy, or for insecticidal, fungicidal or similar purposes
		0194	Beet seeds (excluding sugar beet seeds) and seeds of forage plants
		0195	Natural rubber in primary forms or in plates, sheets or strip
		0196	Living plants; cut flowers and flower buds; flower seeds

³ Note that for Other mining sector (formerly ‘omn’ code) is now ‘oxt’ and Insurance sector (formerly ‘isr’ code) is now ‘ins’. This is to avoid confusion with iso-country codes for Oman and Israel.

Table 2.3 GSC3 Sectors defined by Reference to the CPC Ver. 2.1

GSC3 No.	Code	CPC Code	Description
		0197	Unmanufactured tobacco
		0199	Other raw vegetable materials n.e.c.
9	ctl	0211	Bovine animals, live
		0212	Other ruminants
		0213	Horses and other equines
		02411	Bovine semen
10	oap	0214	Swine / pigs
		0215	Poultry
		0219	Other live animals
		023	Eggs of hens or other birds in shell, fresh
		02419	Semen, n.e.c
		0291	Natural honey
		0292	Snails, fresh, chilled, frozen, dried, salted or in brine, except sea snails
		0293	Edible products of animal origin n.e.c.
		0295	Hides, skins and furskins, raw
		0296	Insect waxes and spermaceti, whether or not refined or coloured
11	rmk	022	Raw milk
12	wol	0294	Raw animal materials used in textiles
13	frs	03	Forestry and logging products
19	cmt	21111	Meat of cattle, fresh or chilled
		21112	Meat of buffalo, fresh or chilled
		21115	Meat of sheep, fresh or chilled
		21116	Meat of goat, fresh or chilled
		21117	Meat of camels and camelids, fresh or chilled
		21118	Meat of horses and other equines, fresh or chilled
		21119	Other meat of mammals, fresh or chilled
		2113	Meat of mammals, frozen
		2115	Edible offal of mammals, fresh, chilled or frozen
20	omt	21113	Meat of pigs, fresh or chilled
		21114	Meat of rabbits and hares, fresh or chilled
		2112	Meat of poultry, fresh or chilled
		2114	Meat of poultry, frozen
		2116	Edible offal of poultry, fresh, chilled or frozen
		2117	Other meat and edible offal, fresh, chilled or frozen
		2118	Preserves and preparations of meat, meat offal or blood
		2119	Flours, meals and pellets of meat or meat offal, inedible; greaves
21	vol	215	Animal fats
		216	Vegetable oils
		217	Margarine and similar preparations
		218	Cotton linters
		219	Oil-cake and other residues resulting from the extraction of vegetable fats or oils; flours and meals of oil seeds or oleaginous fruits, except those of mustard; vegetable waxes, except triglycerides; degreas; residues resulting from the treatment of fatty substances or animal or vegetable waxes
22	mil	22	Dairy products
23	pcr	2316	Rice, semi- or wholly milled, or husked
24	sgr	235	Sugar and molasses

Table 2.3 GSC3 Sectors defined by Reference to the CPC Ver. 2.1

GSC3 No.	Code	CPC Code	Description
25	ofd	212	Prepared and preserved fish, crustaceans, molluscs and other aquatic invertebrates
		213	Prepared and preserved vegetables, pulses and potatoes
		214	Prepared and preserved fruits and nuts
		2311	Wheat and meslin flour
		2312	Other cereal flours
		2313	Groats, meal and pellets of wheat and other cereals
		2314	Other cereal grain products (including corn flakes)
		2317	Other vegetable flours and meals
		2318	Mixes and doughs for the preparation of bakers' wares
		232	Starches and starch products; sugars and sugar syrups n.e.c.
		233	Preparations used in animal feeding; lucerne (alfalfa) meal and pellets
		234	Bakery products
		236	Cocoa, chocolate and sugar confectionery
		237	Macaroni, noodles, couscous and similar farinaceous products
		239	Food products n.e.c.
26	b_t	24	Beverages
		25	Tobacco products

n.e.c. Not elsewhere classified

Table 2.4 GSC3 Sectors defined by Reference to the ISIC, Rev. 4

GSC3 No.	Code	ISIC4 Code	Description
14	fsh	03	Fishing and aquaculture
		017	Hunting, trapping and related service activities
15	coa	05	Mining of coal and lignite
16	oil	061	Extraction of crude petroleum
		091(part)	Support activities for petroleum and natural gas extraction (petroleum part)
17	gas	062	Extraction of natural gas
		091(part)	Support activities for petroleum and natural gas extraction (natural gas part)
18	oxt	07	Mining of metal ores
		08	Other mining and quarrying
		099	Support activities for other mining and quarrying
27	tex	13	Manufacture of textiles
28	wap	14	Manufacture of wearing apparel
29	lea	15	Manufacture of leather and related products
30	lum	16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
31	ppp	17	Manufacture of paper and paper products
		18	Printing and reproduction of record media
32	p_c	19	Manufacture of coke and refined petroleum products
33	chm	20	Manufacture of chemicals and chemical products
34	bph	21	Manufacture of pharmaceuticals, medicinal chemical and botanical products
35	rpp	22	Manufacture of rubber and plastics products

Table 2.4 GSC3 Sectors defined by Reference to the ISIC, Rev. 4

GSC3 No.	Code	ISIC4 Code	Description
36	nmm	23	Manufacture of other non-metallic mineral products
37	i_s	241	Manufacture of basic iron and steel
		2431	Casting of iron and steel
38	nfm	242	Manufacture of basic precious and other non-ferrous metals
		2432	Casting of non-ferrous metals
39	fmp	25	Manufacture of fabricated metal products, except machinery and equipment
40	ele	26	Manufacture of computer, electronic and optical products
41	eeq	27	Manufacture of electrical equipment
42	ome	28	Manufacture of machinery and equipment n.e.c.
43	mvh	29	Manufacture of motor vehicles, trailers and semi-trailers
44	otn	30	Manufacture of other transport equipment
45	omf	31	Manufacture of furniture
		32	Other manufacturing
		33	Repair and installation of machinery and equipment
46	ely	351	Production, collection and distribution of electricity
		353	Steam and hot water supply
47	gdt	352	Manufacture of gas; distribution of gaseous fuels through mains
48	wtr	36	Collection, purification and distribution of water, water collection, treatment and supply
		37	Sewerage
		38	Waste collection, treatment and disposal activities; materials recovery
		39	Remediation activities and other waste management services
49	cns	41	Construction of buildings
		42	Civil engineering
		43	Specialized construction activities
50	trd	45	Wholesale and retail trade and repair of motor vehicles and motorcycles
		46	Wholesale trade, except of motor vehicles and motorcycles
		47	Retail trade, except of motor vehicles and motorcycles
51	afs	55	Accommodation
		56	Food and beverage service activities
52	otp	49	Land transport and transport via pipelines
53	wtp	50	Water transport
54	atp	51	Air transport
55	whs	52	Warehousing and support activities for transportation
56	cmn	53	Postal and courier activities
		58	Publishing activities
		59	Motion picture, video and television program production, sound recording and music publishing activities
		60	Programming and broadcasting activities
		61	Telecommunications
		62	Computer programming, consultancy and related activities
		63	Information service activities
57	ofi	64	Financial service activities, except insurance and pension funding
		661	Activities auxiliary to financial service activities, except insurance and pension funding
		663	Fund management activities

Table 2.4 GSC3 Sectors defined by Reference to the ISIC, Rev. 4

GSC3 No.	Code	ISIC4 Code	Description
58	ins	65	Insurance, reinsurance and pension funding, except compulsory social security
		662	Activities auxiliary to insurance and pension funding
59	rsa	68	Real estate activities
60	obs	M, N	Professional, scientific and technical activities and Administrative and support service activities
61	ros	R, S, T	Arts, entertainment and recreation; Other service activities; Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
62	osg	84	Public administration and defense; compulsory social security
		99	Activities of extraterritorial organizations and bodies
63	edu	85	Education
64	hht	Q	Human health and social work activities
65	dwe	n.a.	n.a.

n.a. Not available

n.e.c. Not elsewhere classified

2.3 GTAP Parameters File

The parameters file contains invariant behavioral parameters and switch parameters, arranged in ten arrays, as listed in table 2.5. A detailed description of the parameters and their source data is available in chapter 14 of the documentation.

Table 2.5 Arrays in the GTAP Parameters File

Name	Dimension	Description
ESBD	$c \times r$	Armington elasticity of substitution (CES) between domestic product and imports
ESBM	$c \times r$	Armington elasticity of substitution (CES) between imports from different regions
ESBT	$a \times r$	CES elasticity of substitution between composite intermediate inputs
ESBV	$a \times r$	CES elasticity of substitution between primary factors in the production
ETRE	$e \times r$	CET elasticity of transformation between industries for sluggish primary factors
INCP	$c \times r$	CDE expansion parameter in the consumer demand system
SUBP	$c \times r$	CDE substitution parameter in the consumer demand system
RDLT	1	binary switch mechanism of allocating investment funds
RFLX	r	flexibility of expected net rate of return on capital stock w.r.t. investment
ESBG	r	CES elasticity of substitution for government demands
ETRQ	$a \times r$	CET elasticity of transformation for commodities produced by industries
ESBS	m	CES elasticity of substitution for international transport margins
ESBC	$a \times r$	CES elasticity of substitution for intermediate inputs
ESBQ	$c \times r$	1/CES elasticity for commodity sourcing

c number of commodities

r number of regions

a number of activities

e number of factor endowments

2.4 GTAP Data File

The main data file consists of dollar values of flows of goods and services listed in table 2.6.

Table 2.6 Data Arrays in the GTAP 10 Data File

Name	Dimension	Description
ADRV	$c \times r \times r$	anti-dumping duty
DPSM	r	sum of distribution parameters in the household demand system
EVFP	$e \times a \times r$	primary factor purchases, at producer prices
EVOS	$e \times a \times r$	primary factor sales, at supply prices (post-income tax)
FBEP	$e \times a \times r$	factor-based subsidies
FTRV	$e \times a \times r$	gross factor employment tax revenue
ISEP	$c \times a \times r \times d$	net investment input subsidies
CSEP	$c \times a \times r \times d$	net intermediate input subsidies
MFRV	$c \times r \times r$	export tax equivalent of MFA quota premium
OSEP	$c \times r$	net ordinary output subsidy
POP	r	Population
PURV	$c \times r \times r$	export tax equivalent of price undertakings
SAVE	r	net saving, by region
TFRV	$c \times r \times r$	ordinary import duty
VOSB	$c \times r$	sales of domestic product, at basic prices
VDEP	r	capital depreciation
VDFP	$c \times a \times r$	domestic purchases, by firms, at producer prices
VDGB	$c \times a \times r$	domestic purchases, by firms, at basic prices
VDGP	$c \times r$	domestic purchases, by government, at producer prices
VDGB	$c \times r$	domestic purchases, by government, at basic prices
VDPP	$c \times r$	domestic purchases, by households, at producer prices
VDPB	$c \times r$	domestic purchases, by households, at basic prices
EVFB	$e \times a \times r$	primary factor purchases, by firms, at basic prices
VMFP	$c \times a \times r$	import purchases, by firms, at producer prices
VMFB	$c \times a \times r$	import purchases, by firms, at basic prices
VMGP	$c \times r$	import purchases, by government, at producer prices
VMGB	$c \times r$	import purchases, by government, at basic prices
VMSB	$c \times r \times r$	imports, at basic prices
VMPP	$c \times r$	import purchases, by households, at producer prices
VMPB	$c \times r$	import purchases, by households, at basic prices
VCIF	$c \times r \times r$	imports, at CIF prices
VKB	r	capital stock
VRRV	$c \times r \times r$	export subsidy equivalent of voluntary export restraints
VST	$c \times r$	margin exports
VMTS	$2 \times c \times r \times r$	import tariff revenue by type of tariff paid
VTWR	$m \times c \times r \times r$	margins by margin commodity
VXSB	$c \times r \times r$	non-margin exports, at basic prices
VFOB	$c \times r \times r$	non-margin exports, at FOB prices
XTRV	$c \times r \times r$	ordinary export tax
VDIB	$c \times r$	domestic purchases, by investment, at basic prices
VDIP	$c \times r$	domestic purchases, by investment, at producer prices
VMIB	$c \times r$	import purchases, by investment, at basic prices
VMIP	$c \times r$	import purchases, by investment, at producer prices
MAKS	$c \times a \times r$	multi-production ('make') matrix at supply prices

Table 2.6 Data Arrays in the GTAP 10 Data File

Name	Dimension	Description
MAKB	$c \times a \times r$	multi-production ('make') matrix at basic prices
<i>c</i> number of commodities		
<i>r</i> number of regions		
<i>e</i> number of endowment commodities (primary factors)		
<i>a</i> number of activities; <i>d</i> number of trade directions (exports, imports)		
<i>m</i> number of margin commodities (sectors)		

The main data file also includes arrays summarizing the value of revenue generated from protection measures and the subsidy expenditures related to support measures. These values are all in millions of (2004, 2007, 2011 and 2014) current U.S. dollars in the GTAP 10 Data Base.

The protection data is available in the GTAP data file both implicitly and explicitly. Implicitly, the rates of different protection instruments may be calculated from two matrices which refer to two different valuations of the same value flow. Table 2.7 shows the protection measures that may be calculated from the data base and the arrays associated with these measures. The import and export duties calculated from the data base are the comprehensive measures, described in the detailed documentation.

Table 2.7 Implicit Protection in the GTAP Data File

Protection Measures	Formula*	Description
Import Duties	VMSB / VCIF	power of import tax (comprehensive)
Export Duties	VFOB / VXSB	power of export tax (comprehensive)
Output Subsidies	MAKEB / MAKES	power of output tax
Domestic Inputs Subsidies	VDFP / VDFB	power of domestic intermediate input tax
Imported Inputs Subsidies	VMFP / VMFB	power of imported intermediate input tax
Factor-Based Payments	EVFB / EVOS	power of factor-based subsidies

* The difference between the two value flows gives value of revenue or subsidy expenditure.

The protection data explicitly declared in the GTAP data file are the revenue values or expenditure values associated with the protection measures. The revenues/expenditures from the different types of import and export instruments are given in separate arrays. These explicit arrays are TFRV, XTRV, MFRV, ADRV, PURV, VRRV, OSEP, ISEP, and FBEP in table 2.6.

2.5 GTAP Energy Volumes Data File

As shown in table 2.8, the energy volumes data file includes three arrays reporting the volume of energy purchases by firms and by households and also the volume of bilateral trade in energy products, in millions of tons of oil equivalents. The headers in this file have changed in version 8. The detailed documentation available online describes the construction of the energy data.

Table 2.8 Arrays in the Energy Volumes Data File

Name	Dimension	Description
EC	n	energy commodities
EDF	$n \times p \times r$	volume of domestic input purchases by firms (Mtoe)
EDP	$n \times r$	volume of domestic purchases by households (Mtoe)
EDG	$n \times r$	volume of domestic purchases by government (Mtoe)
EDI	$n \times r$	volume of domestic purchases by investment (Mtoe)
EMF	$n \times p \times r$	volume of imported input purchases by firms (Mtoe)

Table 2.8 Arrays in the Energy Volumes Data File

Name	Dimension	Description
EMP	$n \times r$	volume of imported purchases by households (Mtoe)
EMG	$n \times r$	volume of imported purchases by government (Mtoe)
EMI	$n \times r$	volume of imported purchases by investment (Mtoe)
EXI	$n \times r \times r$	volume of bilateral trade (Mtoe)

n number of energy commodities (sectors)

r number of regions

p number of commodities (sectors)

2.6 GTAP CO₂ Emissions Data File

In the versions before GTAP 8 Data Base, this file was part of the satellite dataset. Since GTAP 8 Data Base, the energy volumes data file explained above was modified in its structure mainly to accommodate this new structure of CO₂ emissions dataset, described in table 2.9.

Table 2.9 Arrays in the CO₂ Emissions Data File

Name	Dimension	Description
FC	n	fuel commodities
MDF	$n \times p \times r$	emissions from domestic input purchases by firms (Mt CO ₂)
MDP	$n \times r$	emissions from domestic purchases by households (Mt CO ₂)
MDG	$n \times r$	emissions from domestic purchases by government (Mt CO ₂)
MDI	$n \times r$	emissions from domestic purchases by investment (Mt CO ₂)
MMF	$n \times p \times r$	emissions from imported input purchases by firms (Mt CO ₂)
MMP	$n \times r$	emissions from imported purchases by households (Mt CO ₂)
MMG	$n \times r$	emissions from imported purchases by government (Mt CO ₂)
MMI	$n \times r$	emissions from imported purchases by investment (Mt CO ₂)

n number of fuel commodities

r number of regions

p number of produced commodities (sectors)

2.7 GTAP 10 Data Packages

The GTAP 10 Data Base is available in two data distribution packages. In the command line version, the user has access to the full 65-sector x 141-region GTAP Data Base through FlexAgg (see chapter 4). Also, there is the GUI Package, GTAPAgg, described in chapter 5.

These data packages help perform a consistent aggregation of the data base for use with an economic model, such as the GTAP model. The GTAP model can be implemented using the the RunGTAP software. RunGTAP is a graphical user environment developed by Mark Horridge of the Centre of Policy Studies, Victoria University in Australia. RunGTAP allows the user to run simulations interactively in a Windows environment using the GTAP general equilibrium model.

Pricing and order information, as well as the online documentation, are available on the GTAP web site: <http://www.gtap.org>.

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