

Chapter 8

Guide to the GTAP data base

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The GTAP data base is the data base for the GTAP model of the world economy. It covers all the data included in the data package, except the time series trade data (chapter 7), and in addition a sets file. It comprises three files: sets, parameters, data. sets and data files are header array files (a GEMPACK binary format), the parameters file an ASCII text file. data are updatable, parameters invariant.

The sets file enumerates the GTAP regions and commodities and other sets used in the model. The parameters file contains invariant behavioral parameters. The data file is a representation of the state of the world economy in 1992. It represents the world economy as a system of flows of goods and services, measured as money values. These flows include both input-output flows within each region and also bilateral international trade flows. Since most flows are measured at both tax-free and tax-paid prices, it also implicitly covers indirect taxation. On the other hand, it does not include price or quantity data, and does not include time series data.

The sets file is not included in the data package. Instead it is created by the aggregation program, according to the user's aggregation of the GTAP regions and sectors. In this chapter we describe the sets file that would be created by a "dummy aggregation" in which no aggregation is done at all, but the original regions and sectors are preserved.

Table 8.1 shows the arrays in the sets file.

Table 8.1 Arrays in the GTAP sets file

Name	Dimension	Description
H1	r	Regions
H2	t	Traded commodities
H3	s+m+t+1	Non-saving commodities
H4	s+m+t	Demanded commodities
H5	t+1	Produced commodities
H6	s+m	Endowment commodities
H7	s	Sluggish endowment commodities
H8	m	Mobile endowment commodities
H9	1	Capital endowment commodity

m	number of primary factors perfectly mobile across industries
r	number of regions
s	number of primary factors not perfectly mobile across industries
t	number of sectors

The array H1 is a list of regions in the model. H2 lists ordinary goods and services or *traded commodities*, so called because they can be traded across regions. In this they contrast with the primary factors or *endowment commodities*, listed in array H6. In any data base produced with the aggregation program, this lists the usual three primary factors, land, labor and capital. The last of these, capital, is specified in array H9 as the *capital endowment commodity* (this is for convenience in implementing the investment theory of the model).

The arrays H7 and H8 divide the endowment commodities into two groups. The *mobile* endowment commodities (H8) are perfectly mobile across industries within each region; the *sluggish* endowment commodities (H7) are imperfectly mobile or immobile. In any data base produced with the aggregation program, labor and capital are classed as mobile, and land as sluggish. This is suitable for long-run simulations. For short-run simulations, users may wish to move capital from H8 to H7, to treat it as sluggish rather than mobile.

The remaining arrays are provided for technical convenience in implementing the theoretical structure of the model. The *non-savings commodities*, array H3, comprise the endowment commodities, the traded commodities, and an investment good. The *demanded commodities*, H4, comprise endowment and traded commodities; the *produced commodities*, H5, comprise traded commodities and the investment good. Finally, array H9 specifies as the *capital endowment commodity* one of the endowment commodities listed in H6 (the task of identifying this commodity is left to the reader).

In the full size data base, there are thirty regions and thirty-seven traded commodities. These are defined in the GTAP regional and sectoral classifications.

Table 8.2 shows the regional definitions used in version 3 of the data base.

Table 8.2 Regions in the GTAP data base

Number	Code	Name	Member regions
1	AUS	Australia	Australia
2	NZL	New Zealand	New Zealand
3	JPN	Japan	Japan
4	KOR	Korea	Korea
5	IDN	Indonesia	Indonesia
6	MYS	Malaysia	Malaysia
7	PHL	Philippines	Philippines
8	SGP	Singapore	Singapore
9	THA	Thailand	Thailand
10	CHN	China	China
11	HKG	Hong Kong	Hong Kong
12	TWN	Taiwan	Taiwan
13	IDI	India	India
14	RAS	Rest of South Asia	Bangladesh Bhutan Maldives Nepal Pakistan Sri Lanka
15	CAN	Canada	Canada
16	USA	United States	United States
17	MEX	Mexico	Mexico
18	CAM	Central America and the Carribean	Antigua & Barbuda Bahamas Barbados Belize Costa Rica Cuba Dominica Dominican Republic El Salvador

			Grenada
			Guatemala
			Haiti
			Honduras
			Jamaica
			Nicaragua
			Panama
			St. Kitts & Nevis
			St. Lucia
			St. Vincent
			Trinidad & Tobago
19	ARG	Argentina	Argentina
20	BRA	Brazil	Brazil
21	CHL	Chile	Chile
22	RSM	Rest of South America	Bolivia
			Colombia
			Ecuador
			Guyana
			Paraguay
			Peru
			Suriname
			Uruguay
			Venezuela
23	E_U	European Union 12	Belgium
			Denmark
			France
			Germany
			Greece
			Ireland
			Italy
			Luxembourg
			Netherlands
			Portugal
			Spain
			United Kingdom
24	EU3	Austria, Finland and Sweden	Austria
			Finland
			Sweden
25	EFT	EFTA	Iceland
			Norway

			Switzerland
26	CEA	Central European Associates	Bulgaria Czech Republic Hungary Poland Romania Slovakia Slovenia
27	FSU	Former Soviet Union	Armenia Azerbaijan Belarus Estonia Georgia Kazakhstan Kyrgyz Republic Latvia Lithuania Moldova Russian Federation Tajikistan Turkmenistan Ukraine Uzbekistan
28	MEA	Middle East and North Africa	Algeria Bahrain Egypt Iran Iraq Israel Israel Jordan Kuwait Lebanon Libya Morocco Oman Qatar Saudi Arabia Syrian Arab Republic Tunisia United Arab Emirates Yemen Arab Republic

29	SSA	Sub Saharan Africa	Angola Benin Botswana Burkina Faso Burundi Cameroon Cape Verde Central African Republic Chad Comoros Congo Cote d'Ivoire Djibouti Equatorial Guinea Eritrea Ethiopia Gabon Gambia Ghana Guinea Guinea-Bissau Kenya Lesotho Liberia Madagascar Malawi Mali Mauritania Mauritius Mozambique Namibia Niger Nigeria Rwanda Sao Tome & Principe Senegal Seychelles Islands Sierra Leone Somalia South Africa Sudan Swaziland Tanzania
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			Togo
			Uganda
			Zaire
			Zambia
			Zimbabwe
30	ROW	Rest of World	Afghanistan
			Albania
			Andorra
			Bosnia-Herzegovina
			Brunei
			Cyprus
			Fiji
			Kiribati
			Laos
			Leichtenstein
			Macedonia (former Yugoslav Republic of)
			Malta
			Monaco
			Mongolia
			Myanmar
			Nauru
			North Korea
			Papua New Guinea
			San Marino
			Solomon Islands
			Tonga
			Turkey
			Tuvalu
			Vanuatu
			Viet Nam
			Western Samoa
			Yugoslavia (Serbia and Montenegro)

Table 8.3 shows the sectoral definitions used in version 3 of the data base.

GTAP sector		ISIC class	
Number	Code	Code	Description
1	pdr	1110 (p)	Agricultural & livestock production (paddy rice only)
		1120 (p)	Agricultural services (servicing paddy rice production only)
2	wht	1110 (p)	Agricultural & livestock production (wheat only)

		1120 (p)	Agricultural services (servicing wheat production only)
3	gro	1110 (p)	Agricultural & livestock production (grains except wheat & rice only)
		1120 (p)	Agricultural services (servicing production of grains, except wheat & rice only)
4	ngc	1110 (p)	Agricultural & livestock production (non-grain crops only)
		1120 (p)	Agricultural services (servicing non-grain crops production only)
5	wol	1110 (p)	Agricultural & livestock production (wool only)
		1120 (p)	Agricultural services (servicing wool production only)
6	olp	1110 (p)	Agricultural & livestock production (other livestock production only)
		1120 (p)	Agricultural services (servicing other livestock production only)
		1130	Hunting, trapping & game propagation
7	for	1210	Forestry
		1220	Logging
8	fsh	1301	Ocean and coastal fishing
		1302	Fishing n.e.c.
9	col	2100	Coal mining
		3540 (p)	Manufacture of miscellaneous products of petroleum and coal (briquettes only) **
10	oil	2200 (p)	Crude petroleum & natural gas production (oil only)
11	gas	2200 (p)	Crude petroleum & natural gas production (gas only)
		3530 (p)	Petroleum refineries (LPG only) **
12	omn	2301	Iron ore mining
		2302	Non-ferrous ore mining
		2901	Stone quarrying, clay and pits
		2902	Chemical and fertiliser mineral mining
		2903	Salt mining
		2909	Mining and quarrying n.e.c.
13	pcr	3116 (p)	Grain mill products (processed rice only)
14	met	3111	Slaughtering, preparing and preserving meat
15	mil	3112	Manufacture of dairy products
16	ofp	3113	Canning and preserving of fruits and vegetables
		3114	Canning, preserving & processing of fish, crustaceans and similar foods

		3115	Manufacture of vegetable and animal oils & fats
		3116 (p)	Grain mill products (except processed rice)
		3117	Manufacture of bakery products
		3118	Sugar factories and refineries
		3119	Manufacture of cocoa, chocolate & sugar confectionery
		3121	Manufacture of food products n.e.c.
		3122	Manufacture of prepared animal feeds
17	b_t	3131	Distilling, rectifying & blending spirits
		3132	Wine industries
		3133	Malt liquors and malt
		3134	Soft drinks & carbonated waters industries
		3140	Tobacco manufactures
18	tex	3211	Spinning, weaving & finishing textiles
		3212	Manufacture of made-up textile goods excluding wearing apparel
		3213	Knitting mills
		3214	Manufacture of carpets & rugs
		3215	Cordage, rope & twine industries
		3219	Manufacture of textiles n.e.c.
19	wap	3220	Manufacture of wearing apparel, except footwear
20	lea	3231	Tanneries & leather finishing
		3232	Fur dressing & dyeing industries
		3233	Manufacture of products of leather & leather substitutes, except footwear and wearing apparel
		3240	Manufacture of footwear, except vulcanised or moulded rubber or plastic footwear
21	lum	3311	Sawmills, planing & other wood mills
		3312	Manufacture of wooden & cane containers & small cane ware
		3319	Manufacture of wood & cork products n.e.c.
		3320	Manufacture of furniture & fixtures, except primarily of metal
22	ppp	3411	Manufacture of pulp, paper & paperboard
		3412	Manufacture of containers & boxes of paper and paperboard
		3419	Manufacture of pulp, paper & paperboard articles n.e.c.
		3420	Printing, publishing & allied industries
23	p_c	3530 (p)	Petroleum refineries (except LPG) **
		3540 (p)	Manufacture of miscellaneous products of petroleum and coal (except briquettes) **
24	crp	3511	Manufacture of basic industrial chemicals except fertilisers
		3512	Manufacture of fertilisers and pesticides

		3513	Manufacture of synthetic resins, plastic materials and man-made fibres except glass
		3521	Manufacture of paints, varnishes and lacquers
		3522	Manufacture of drugs and medicines
		3523	Manufacture of soap and cleaning preparations, perfumes and cosmetics
		3529	Manufacture of chemical products n.e.c.
		3551	Tyre and tube industries
		3559	Manufacture of rubber products n.e.c.
		3560	Manufacture of plastic products n.e.c.
25	nmm	3610	Manufacture of pottery, china and earthenware
		3620	Manufacture of glass and glass products
		3691	Manufacture of structural clay compounds
		3692	Manufacture of cement, lime and plaster
		3699	Manufacture of non-metallic mineral products n.e.c.
26	i_s	3710	Iron and steel basic industries
27	nfm	3720	Non-ferrous metal basic industries
28	fmp	3811	Manufacture of cutlery, hand tools and general hardware
		3812	Manufacture of furniture and fixtures primarily of metal
		3813	Manufacture of structural metal products
		3819	Manufacture of fabricated metal products except machinery & equipment n.e.c.
29	trn	3841	Ship building and repairing
		3842	Manufacture of railroad equipment
		3843	Manufacture of motor vehicles
		3844	Manufacture of motorcycles and bicycles
		3845	Manufacture of aircraft
		3849	Manufacture of transport equipment n.e.c.
30	ome	3821	Manufacture of engines and turbines
		3822	Manufacture of agricultural machinery and equipment
		3823	Manufacture of metal and wood working machinery
		3824	Manufacture of special industrial machinery and equipment except metal and wood working machinery
		3825	Manufacture of office, computing and accounting machinery
		3829	Machinery and equipment except electrical n.e.c.
		3831	Manufacture of electrical industrial machinery and apparatus
		3832	Manufacture of radio, television and communication equipment and apparatus
		3833	Manufacture of electrical appliances and housewares

		3839	Manufacture of electrical apparatus and supplies n.e.c.
		3851	Manufacture of professional and scientific, and measuring and controlling equipment, n.e.c.
		3852	Manufacture of photographic and optical goods
		3853	Manufacture of watches and clocks
31	omf	3901	Manufacture of jewelry and related articles
		3902	Manufacture of musical instruments
		3903	Manufacture of sporting and athletic goods
		3909	Manufacturing industries n.e.c.
32	egw	4101	Electric light and power
		4102	Gas manufacture and distribution
		4103	Steam and hot water supply
		4200	Water works and supply
33	cns	5000	Construction
34	t_t	6100	Wholesale trade
		6200	Retail trade
		6310	Restaurants, cafes, and other eating and drinking places
		6320	Hotels, rooming houses, camps and other lodging places
		7111	Railway transport
		7112	Urban, suburban and inter-urban highway passenger transport
		7113	Other passenger land transport
		7114	Freight transport by road
		7115	Pipeline transport
		7116	Supporting services to land transport
		7121	Ocean and coastal transport
		7122	Inland water transport
		7123	Supporting services to water transport
		7131	Air transport carriers
		7132	Supporting services to air transport
		7191	Services incidental to transport
		7192	Storage and warehousing
		7200	Communication
35	osp	0	Activities not adequately defined
		8101	Monetary institutions
		8102	Other financial institutions
		8103	Financial services
		8200	Insurance
		8310	Real estate
		8321	Legal services

		8322	Accounting, auditing and bookkeeping services
		8323	Data processing and tabulating services
		8324	Engineering, architectural and technical services
		8325	Advertising services
		8329	Business services, except machinery and equipment rental and leasing, n.e.c.
		8330	Machinery and equipment rental and leasing
		9411	Motion picture production
		9412	Motion picture distribution and projection
		9413	Radio and television broadcasting
		9414	Theatrical producers and entertainment services
		9415	Authors, music composers and other independent artists n.e.c.
		9420	Libraries, museums, botanical and zoological gardens, and other cultural services, n.e.c.
		9490	Amusement and recreational services n.e.c.
		9511	Repair of footwear and other leather goods
		9512	Electrical repair shops
		9513	Repair of motor vehicles and motorcycles
		9514	Watch, clock and jewelry repair
		9519	Other repair shops n.e.c.
		9520	Laundries, laundry services, and cleaning and dyeing plants
		9530	Domestic services
		9591	Barber and beauty shops
		9592	Photographic studios, including commercial photography
		9599	Personal services n.e.c.
36	osg	9100	Public administration and defence
		9200	Sanitary and similar services
		9310	Education services
		9320	Research and scientific institutes
		9331	Medical, dental and other health services
		9332	Veterinary services
		9340	Welfare institutions
		9350	Business, professional and labour associations
		9391	Religious organisations
		9399	Social and related community services n.e.c.
		9600	International and other extra-territorial bodies
37	dwe	n.a.	n.a.

<sector definitions>

primary factors

<header list for params file>

<parameter settings>

<header list for data file>

properties of the data: some flows must be non-negative. some flows must agree in sign. some flows must balance.

viewing the data: ViewHAR, SEEHAR.