14.1

Overview of regional input-output tables

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The purpose of this chapter is to describe the sources and procedures used to develop the domestic data bases used in the Global Trade Analysis Project (GTAP) version 4 data base. A large number of these input-output (I/O) tables were initially inherited from the Australian Industry Commission's SALTER project (Hambley, 1993) and have gradually been updated and supplemented by contributions from GTAP collaborators all over the world. Individuals interested in contributing I-O tables to future versions of the GTAP data base are referred to GTAP Technical Paper No.1 (Huff and McDougall, 1996) for a detailed discussion of what is involved.

Table 14.1 summarizes the sources and reference periods for the regional I/O tables underpinning the version 4 data base. As you may notice, the reference period varies across regions. The reason is that I/O tables for most of the regions are available at five year or longer intervals, and they are often published several years after the data have been collected. This means that these source data sets are impossible to keep fully up to date. Fortunately, the I/O coefficients tend to change relatively slowly, and these country data base are updated to match observed macroeconomic, trade and protection targets in our base year, 1995, using a fitting procedure described in chapter 20. We believe that the resulting "estimated"domestic data bases are of reasonably high quality, in all but a few cases. Apparently in some of the economies in transition (e.g., the former Soviet Union Bloc), recent changes have been very dramatic and nothing short of (as yet unavailable) up-to-date I/O tables will solve the problem.

Compared with version 3 I/O tables, the new tables have more regional and sectoral breakdowns. This means GTAP users will be able to better analyze economic problems which are particularly relevant to these new GTAP regions or sectors. Another important improvement in the version 4 data base over previous releases is that it includes a substantial number of new tables. Of

the total number of 45 regions in the new data base, 24 regions are either new I/O tables or newly updated ones. Table 14.2 lists these newly contributed tables and their sectoral breakdown. Please note that most of these tables have sufficient details about sectoral breakdown to be easily converted into the standard version 4 sectoral classification. Interested GTAP users are encouraged to refer to chapter 16 for detailed description of the sectoral disaggregation.

Table 14.1 Source of I/O tables in GTAP version data base

Reg*	Reference period	Source of I/O	Version 4 contributor(s)
AUS	1992-93	Australian Bureau of Statistics	Ilias Mastoris
NZL	1992-93	Statistics New Zealand(1997)	Gerard Malcolm
JPN	1985	Ministry of International Trade and Industry(1989), Japan	
KOR	1985	Bank of Korea (1988)	
IDN	1993	Biro Pusat Statistik, Jakarta	Marpudin
MYS	1983	Department of Statistic (1987), Malaysia	
PHL	1985	National Economic and Development Authority(1988), Philippines	
SGP	1983	Department of Statistic(1987), Singapore	
THA	1990	Institution of Developing Economies, Tokyo and Socio Economic Policy and Forecasting Unit, Chulalongkorn University Social Research Institute, Thailand	Marpudin
VNM	1989	CoPS, Monash University, Melbourne, Australia; General Statistical Office, Hanoil, (1992)	Jay Bandara
CHN	1992	Department of National Economy Accounting State Statistical Bureau, Chinese Statistical Publishing Housing	Zhi Wang
HKG	1988	Tormey (1993)	
TWN	1994	Directorate General of Budget, Accounting & statistics (1996), Taiwan	
IND	1983-84	India, Central Statistical Organization (1990)	Rajesh Chadha
LKA	1989	CIE, Export Development Broad, Colombo, Sri Lanka	Jay Bandara
RAS	1995	Composite	
CAN	1990	Statistics Canada	Channing Arndt & Bryant Fairley
USA	1992	Department of Commerce. Bureau of Economic Analysis (1994).	Agapi Somwaru
MEX	1995	Secretaria de Pramacion y Presupuesto (1985), Burfisher, Thierfelder, and Hanson (1992)	Mary Burfisher
CAM	1995	Composite	
VEN	1986	Planning Agency (CORDIPLAN), Venezuela	Juan Jose Echavarria & Maria Arbalaez
COL	1992	National Department of Statistics, Dane	Juan Jose Echavarria & Maria Arbalaez
RAP	1989	Composite	
ARG	1984	Secretaria de Planificacion(1986), Argentina	
BRA	1985	Fundacao Instituto Brasileiro de Geografia e Estatistica (1995)	
CHL	1986	Central Bank of Chile (1986)	

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Table 14.1 Source of I/O tables in GTAP version data base (continued)

Reg*	Reference period	Source of IO	Version 4 contributor(s)
URY	1983	Banco Central Del Uruguay, Departmentto De Estadisticas Economicas (1991)	Alejandro Nin
RSM	1995	Composite	
GBR	1990	Central Statistical Office, H.M.S.O., 1995	Lionel Hubbard
DEU	1991	National statistical office of Germany(Wiesbaden)	Martina Brockmeier
DNK	1992	Statistics Denmark	Lars-Bo Jacobsen
SWE	1985	Statistics Sweden	Leena Kerkela
FIN	1992	Statistics Finland	Leena Kerkela
REU	1986	National Statistical offices in EU	Myrna Van Leeuwen & David Verhoog
EFT	1995	Composite	
CEA	1987-89	World Bank	Tom Wahl, Lan Yu
FSU	1989	World Bank	Tom Wahl, Lan Yu
TUR	1990	State institute of Statistics (Turkey)	Mustafa Acar
RME	1995	Composite	
MAR	1990	Bacilli and David Roland-Hoist (1993)	Aziz Elbehri
RNA	1995	Composite	
SAF	1992	WEFA 1992	Jay Bandara
RSA	1995	Composite	
RSS	1995	Composite	
ROW	1995	Composite	

* See glossary at the front of this document for GTAP regional description.

Table 14.2 New I/O tables in GTAP version 4 data base

Region	Base year	Number of sectors available in original i/o tables			
		Total	Agriculture	Processed foods	Manufacture & services
V4 standard	1995	50	12	8	30
Australia	1992	50	12	8	30
New Zealand	1992	49	12	8	29
USA	1992	50	12	8	30
Canada	1990	37	6	5	26
European Union	1986	49	12	8	29
Germany	1991	35	1	2	32
United Kingdom	1990	50	12	8	30
Sweden	1985	38	1	7	30
Denmark	1992	50	12	8	30
Finland	1992	44	6	8	30
Turkey	1990	36	2	5	29
Columbia	1992	50	12	8	30
Venezuela	1996	50	12	8	30
Peru	1989	50	12	8	30
South Africa	1992	49/33	1	7	25
Morocco	1990	45	10	6	29
Uruguay	1983	50	12	8	30
India	1983/84	50	12	8	30
Indonesia	1993	50	12	8	30
Thailand	1990	50	12	8	30
Sri Lanka	1989	49/35*	3	4	28
Vietnam	1989	30	Total 6 sectors		24
China	1992	40	6	4	30
Taiwan	1994	50	12	8	30

Note 1: Sri Lanka only effectively has 35 sectors, even though the contributed I/O tables has 49 sectors since some of sectors have zero entries and some need further disaggregation. Same story applies for South Africa.
Note 2: Some 11 single regions use version 3 data and have 36 sectors of which 8 are in agriculture, 4 in processing food, and 24 in manufacture. These 11 regions are Japan, Korea, Malaysia, Philippines, Singapore, Hong Kong, India, Mexico, Argentina, Brazil, and Chile.

The bulk of this chapter describes the preparation of the I/O tables as contributed to GTAP. But before turning to that, we describe here briefly the subsequent processing of those tables.

After receiving a table, we first check that it satisfies certain formal requirements. If there are serious deviations from those requirements, we advise the contributor and request changes; but if there are only minor deviations, we may remove them in-house following certain mechanical adjustment procedures. Having *cleaned* the incoming tables as required, we take those that use the full 50-sector GTAP sectoral classification, and calculate from them a world *representative I/O table* as a suitable linear combination, giving each region's I/O table its appropriate GDP weight. The tables that do not use the full 50-sector GTAP sectoral classification, we disaggregate, as described in chapter 16. The regions covered by this disaggregation are then called *primary* regions.

For each region where we have no contributed table, we calculate a *composite* table, as a linear combination of I/O tables for selected primary regions. We make a different selection of primary regions for each composite region, matching as closely as possible the composite region's climate and income level. At this point we have a set of tables covering all GTAP regions. We make some

further minor technical adjustments, to ensure the success of the next major operation, the adjustment of the I/O tables to match external macroeconomic, trade, protection, and energy use data, otherwise known as *fitting* (chapter 20). After fitting, the primary factor "labor" is disaggregated into two varieties distinguished by skill level (chapter 18), and adjustments are made to primary factor usage in agriculture and other resource-intensive industries (section 17.4).