Chapter 7

Regional Input-Output Data

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This chapter documents the input-output (I-O) tables used in constructing the GTAP 7 Data Base. The GTAP Data Base consists mainly of I-O data, and the primary source for this data is a large collection of single-country I-O tables contributed to GTAP by researchers from around the world. This chapter summarizes this collection process. Detailed documentation for each country contribution is included in the unabridged version[1] of the GTAP 7 Data Base Documentation as sub-chapters of this chapter[2]. In this chapter we describe what's new in the contributed I-O tables in the GTAP 7 Data Base and outline the screening and preliminary adjustments we make to the contributed tables. We also briefly discuss the processing of these tables. Finally we provide some summary statistics of the contributed I-O data in this chapter and summary data is available on the GTAP website.

7.1 What's New in Version 7?

Compared with the GTAP 6 Data Base, version 7 has more regional detail, but the same sectoral coverage. The lists of regions and sectors are provided in Chapter 2. The additional detail provides considerable scope for users of the GTAP Data Base to investigate a variety of issues related to these new regions.

The GTAP 7 Data Base includes data for 113 regions. Of these 113, 94 are primary regions developed from contributed I-O tables; the remaining 19 are composite regions. This is a substantial increase over the GTAP 6 Data Base which contained 87 regions, 69 of which were primary regions. Table 7.1 summarizes the sources and reference period for all the regional I-O tables underpinning the GTAP 7 Data Base.

The inclusion of a new country into the data base is driven by the needs of the users of the GTAP Data Base. Country I-O tables are prepared by contributors who have a particular interest in including the country in the GTAP Data Base. Users interested in contributing I-O tables are referred to GTAP Technical Paper No. 01 on this subject (Huff, McDougall, and Walmsley, 2000).

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[1] The unabridged version of the GTAP 7 Data Base Documentation is available on the GTAP website at: https://www.gtap.agecon.purdue.edu/databases/v7/v7_doco.asp.

[2] Note that documentation for countries contributed prior to the GTAP 7 Data Base can be found in the relevant documentation for the version to which they were contributed. In addition, links to country-specific documentation can also found in the summary documentation of each country, which can be obtained via: https://www.gtap.agecon.purdue.edu/databases/regions.asp?Version=7.211.

There has been a considerable increase in the number of new countries added to the GTAP 7 Data Base and most importantly in the number of older I-O tables from GTAP's Most Wanted list[3] being updated, including Canada (Shenjie Chen and Richard Cameron), South Africa (Cecilia Punt), Mexico (Aida Gonzalez); the Philippines (Erwin Corong), Sri Lanka (Jeevika Weerahewa and Jayatilleke S. Bandara) and Peru and Morocco (David Roland-Holst). Other tables updated for version 7 include Australia (Terry Maidment and Owen Gabbitas), the USA (Marinos Tsigas), Korea (Jong Ko), China (Jianwu He and Shantong Li), Vietnam (David Roland-Holst), Colombia (Alvaro Perdomo), Uruguay (Ines Terra), Romania (David Laborde and Csilla Lakatos), Russia (Natalia Tourdyeva), Indonesia (Mark Horridge), and Turkey (Mustafa Acar).

New country contributions have also led to significant disaggregation of previously aggregated regions in the Former Soviet Union, Latin America, Asia and Africa. As in the GTAP 6 Data Base, specially funded projects have been an important factor in providing the impetus for the increased regional coverage of the GTAP 7 Data Base. Two projects have been undertaken to extend coverage of Central Eastern Europe; one led by Joseph Francois and Lucio Souza and funded by the European Commission, and another led by David Roland-Holst and funded by the Asian Development Bank. In addition some of the EU I-O tables have also been updated by Marc Mueller, Scott McDonald and Csilla Lakatos; and Norway has finally been included with a contribution from Glen Peters.

In Asia, the Asian Development Bank Institute funded the inclusion of Laos by Carlos Ludena, which combined with Myanmar (contributed by David Roland-Holst) and Cambodia (Sothea Oum) significantly increases the ability of users to conduct analysis in this region. Pakistan was also contributed by Hina Nazli and Paul Dorosh with funding from the World Bank.

Considerable progress has also been made in Latin America with the inclusion of Bolivia, Chile, Ecuador, Guatemala, Panama, Cost Rica, Nicaragua, and Paraguay; thanks to the special efforts of Carlos Ludena, Jose Duran, Marco V. Sanchez, Rob Vos, Andres Schuschny and Francisco Ruiz Diaz.

The United Nations Economic Commission for Africa (UNECA) also funded the inclusion of Nigeria and Senegal by Mark Horridge, and along with contributions for Ethiopia (Dirk Willenbockel and Sherman Robinson), Iran (Farzad Taheripour), Egypt (Noura Abdelwahab and Miles Light, with funding from Nathan Associates), and Mauritius (Sawkut Rojid), this has led to a considerable increase in the ability of users to conduct analysis in the region. Further improvements in Africa are also expected as more work is undertaken to develop a special African GTAP Data Base.

7.2 Checking the I-O Tables

After receiving an I-O table, we first check that it satisfies certain formal requirements. If there are serious deviations from these requirements, we advise the contributor and request changes. The procedures for checking the I-O tables are continuously being reviewed and improved during the production process. Further details about the checking procedures are provided in Huff, et al. (2000) and on the contributors' website

[3] See https://www.gtap.agecon.purdue.edu/databases/contribute/ for GTAP's Most Wanted list.

There are 5 groups of checks made on the I-O tables. These include:

Data structure. This includes a number of checks. Firstly, we ensure that there are at least 30 sectors and that agriculture and energy are separate from other sectors. Secondly, we check that the contributor has mapped the original data to the sectors according to the concordances; and finally, we ensure that there are no serious data omissions.

Balance condition. Each table should be balanced. A check is made to ensure that total sales equal total costs for each sector in the contributed I-O table.

Sign. There are certain requirements about the signs of elements in the tables. For example, the value of capital services must be positive reflecting the normal return to capital services.

Tax rates. A check is made to ensure that there are no ridiculous tax rates implied by the data.

Other. We also check that the other government services (osg) and dwellings (dwe) sectors have been treated in the preferred way and therefore that the I-O table is consistent with the other I-O tables. Both of these problems are prevalent in many of the tables. In the case of government services modifications have been made in the construction process to rectify tables with this problem (see Chapter 8.E). The problem related to dwellings (imputed rents) in contributed I-O tables has increase considerably with the new contributions to GTAP 7, as outlined in Ahmed, Mirza and Walmsley (2008). In version 8 we will examine alternative sources of dwellings information.

I-O structure. Finally we compare the I-O structure to that of an average I-O table to ensure that there are no ridiculous unexplainable entries. The results of these checks are then given to the contributor, who then satisfies him/herself that any substantial differences are explainable or, in the case of errors, these are fixed. Further details on the method used to compare an I-O table to the average I-O table can be found in Walmsley and McDougall (2004). We increasingly rely on these entropy measures to highlight errors in mappings and in the underlying I-O tables. In some cases, where shares are exceedingly strange, tables have been rejected.

In general, we require substantive, but not rigorous compliance with all these conditions. For example, we accept tables with negative entries in cells that should have non-negative entries but only if we judge that the negative values are economically insignificant; that is, that we can remove them without substantially altering the I-O structure. Then in our initial processing of the tables, we remove these minor defects.

7.3 Processing of I-O Tables

Once accepted, the I-O tables go through a number of stages before they can be integrated into the GTAP 7 Data Base.

First, despite all the preliminary checks made we do accept tables with minor deviations; hence some cleaning of the I-O tables is usually required to remove any minor problems or deviations in sign or balance.

Second, agricultural production targets are applied to certain I-O tables before the main data construction phase. In the GTAP 5 Data Base, the data for European Union (*EU*) member countries contained considerable inaccuracies in levels and international distribution of agricultural production. As a result, agricultural production was targeted for the Organization for Economic Cooperation (OECD) I-O tables in the data base. In the GTAP 7 Data Base, this targeting has continued (see Chapter 8.C).

Third, as mentioned above many tables contain inappropriate treatment of government services. Under standard national accounting conventions (U.N. 1993), government consumption includes the outputs of "non-market processes of production" and excludes their inputs, these being accounted as intermediate usage by various industries, notably, public administration and defense. Most I-O tables contributed to GTAP apply this convention, but some do not. For those that do not, modifications have been made in the construction process to rectify the problem. The procedure is outlined in Chapter 8.E.

Forth, having cleaned the I-O tables as required, we take those that have the full 57-sector GTAP sectoral classification and calculate from them a representative table (see Chapter 8.F) as a linear combination, giving each region's I-O table its appropriate GDP weight.

Fifth, the tables that do not have the full 57 sectors, we disaggregate, as described in Chapter 8.D. The GTAP 7 Data Base provides details on 57 sectors – no new sectors have been added since GTAP 6. Of the contributed tables, 58 do not contain all 57 sectors and required disaggregation, of which 38 required agricultural disaggregation and 54, non-agricultural disaggregation. This is an increase on the number of regions requiring disaggregation in the GTAP 6 Data Base and is the result of two developments: first, the increase in the number of regions where quality disaggregated data is unavailable; and second, increased quality controls by the Center which have led to us discouraging disaggregation by contributors. Table 7.2 lists the contributed I-O tables and the level of aggregation. This disaggregation is done for agricultural and food sectors separately from other goods. The disaggregation of agricultural and food commodities is undertaken using a database constructed by Everett Peterson and described in Chapter 8.A. For the non agricultural commodities we use the representative I-O table to disaggregate the sectors (see Chapters 8.D and 8.F).

Finally, 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 income level and production pattern, as described in Chapter 8.F.

At this point we have a set of tables covering all GTAP regions and the I-O tables are ready to be incorporated into the GTAP Data Base and reconciled with the other macroeconomic datasets. First, you may have noticed in Table 7.1 that the reference periods for the regional I-O tables vary across regions. The reason for this 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 it is impossible to keep source data up-to-date. Fortunately

the I-O coefficients tend to change relatively slowly, and the data are updated to reflect macroeconomic aggregates, trade, energy, and protection targets for 2004. The procedure used to update the I-O tables is described in Chapter 15. We believe that the resulting estimated domestic data bases are of reasonably high quality in almost all cases.

In the final stages, revisions are made to the value-added in the I-O table. You may have noticed that contributed I-O tables only contain data on the aggregate value of labor. Using other data sources, we split these values between skilled and unskilled labor, and also revise primary factor usage in agriculture and resource-intensive industries (Chapter 12).

7.4 Concluding Remarks

So far, we have not mentioned the work undertaken by the contributor in preparing an I-O table for incorporation into the GTAP Data Base. There are numerous problems and issues that a contributor has to consider when preparing an I-O table. In the sub-chapters of this chapter, available on the GTAP website, the contributors provide detailed information about the source of the data, how it was prepared, and any problems encountered and how they were dealt with.

References

Abdiev, K.S. 2007. *National Accounts of the Republic of Kazakhstan*, Agency on Statistics of the Republic of Kazakhstan, Almaty

Ahmed, S. A., Mirza, T. and Walmsley, T. L., "Regional I-O Tables and the GTAP Data Base", Report produced for 2008 GTAP Advisory Board meeting, GTAP Data Base Documentation, Helsinki, Finland, 2008.

Alarcón 2006. "Matriz de Contabilidad Social para Guatemala, 2001", Final Report, Institute of Social Studies (ISS), The Hague, and Secretaría General del Consejo Nacional de Planificación Económica de Guatemala (SEGEPLAN), February.

Albanian Ministry of Finance. 2001. "Fiscal Statistics of Government".

Amarasinghe, D. and Bandara, J.S. 2005. "Input Output Tables for Sri Lanka – 2000", Research Studies: Macroeconomic Policy Series No. 16, Institute Policy Studies, Colombo.

Antille, G. 2000. Die input-output-tabellen. In Peter Bohley, Armin Jans, and Carlo Malaguerra, editors, *Wirtschafts- und Sozialstatistik der Schweiz. Eine EinfÃhrung*, volume 3. Aufl., pages 489–504. Verlag Haupt, Bern.

Asian Development Bank. 2005. Input-Output Table for Lao PDR, Economics and Research Department, Asian Development Bank.

Australian Bureau of Statistics. 2001. *Input-Output Tables, 1996-97.* Cat. no. 5209.0, Canberra, Australia.

Bandara, J.S. and Kelegama, S. 2008. "Compiling Input-Output (I-O) tables and Social Accounting Matrices (SAMs) for Sri Lanka: Review of the Progress, Problems and the Challenge", in Senanayake, S.M.P., Wimalaratana, W. and de Silva, A., Development Perspectives – Growth and Equity in Sri Lanka, Department of Economics, University of Colombo, Colombo.

Bangladesh Planning Commission and Bangladesh Institute of Development Studies. 1998. *An Input-Output Table for Bangladesh Economy, 1993-94.* Dhaka, Bangladesh.

Bank of Korea. 2007. *Input-Output Tables of Korea 2003.* Seoul, Korea.

Banco Central de Chile. 2001. "Matriz de Insumo Producto de la Economía Chilena 1996," September 2001, http://www.bcentral.cl/esp/publ/estad/aeg/aeg06.htm .

Biro Pusat Statistik. 1999. *Table Input-Output Indonesia 1995.* Jakarta, Indonesia.

Bussolo, M. and D. Roland-Holst. 1993. "A Detailed Input-Output Table for Morocco, 1990," OECD Technical Paper. No. 90, Paris, France.

Central Bank of Ecuador, 2000. "*Cuentas Nacionales del Ecuador 1993. Cambio de Año Base y Adopción del SCN93*." Dirección General de Estudios, Technical Paper No. 121. April 2000.

Central Bank of Nicaragua, 2006. *Sistema de Cuentas Nacionales, año base 1994: Cuadros de Oferta y Utilización 1994-2000*, electronic file in Excel.

Central Bank of Paraguay, 2006. *Tablas de Oferta y Utilización de Paraguay, 1991-1997*, Electronic File in Excel.

Central Statistical Office, H.M.S.O. 1995. *Input-Output Tables for the United Kingdom.* London, United Kingdom.

Central Statistical Office (CSO) of Mauritius. "Supply and Use Table (SUT) 1997", Provided by Mr Dawnath, Head of National Accounts Department.

Central Statistical Organization (CSO), 1990-2007, "National Economic Accounts," Ministry of National Planning and Economic Development, Union of Myanmar, Yangon.

Central Statistics Office, Ireland. 1997. *Input-Output Tables 1990.* Cork, Ireland.

Department of National Economy Accounting, State Statistical Bureau (SSB). 2006. *Input-Output Table of China - 2002.* China Statistics Press, Beijing, China.

Department of Statistics, Malaysia. 1994. *Input-Output Tables 1987.* Department of Statistics Malaysia. Kuala Lumpur, Malaysia.

Department of Statistics, Singapore. 1995. *Singapore Input-Output Table 1995.* Singapore.

Directorate-General of Budget, Accounting and Statistics (DGBAS). 2001. *1999 Input-Output Tables.* Executive Yuan, R.O.C. Taipei, Taiwan.

Dixon, P.B., & Rimmer, M.T. (2001). "MONASH-USA: Creating a 1992 Benchmark Input-Output database." Clayton: Centre of Policy Studies, Monash University.

Dixon, P.B., Rimmer, M.T., & Tsigas, M. (2004). "Creating a USAGE-ITC database for 2002." Clayton: Centre of Policy Studies, Monash University.

Dorosh, P., S. Haggblade, C. Lungren, T. Razafimanantena, and Z. Randriamiarana. 2003. "Economic Motors for Poverty Reduction in Madagascar," Cornell Food and Nutrition Policy Program (CFNPP), Working Paper 144, May 2003.

Dorosh, P., M. K. Niazi, and H. Nazli, 2008. *Distributional Impacts of Agricultural Growth in Pakistan: A Multiplier Analysis*, mimeo.

European Communities. 2008. Eurostat Manual of Supply, Use and Input-Output Tables. Eurostat Methodologies and Working Papers. Luxembourg.

Government of India. 2000. *Input-Output Transactions Table, 1993-94.* Central Statistical Organization, Department of Statistics, Ministry of Planning and Programme Implementation.

Government Statistical Office (GSO), 2000, "1996 Input-output Table for the Socialist Republic of Vietnam State Budget", electronic data, Government Statistical Office, Ha Noi.

Henrichsmeyer, W., J. Köckler, A. Quiring and T. Möllmann. 1999. *SPEL/CEEC Data.* Unpublished data base, Bonn.

Huff, K., McDougall, R. and Walmsley, T. 2000. "Contributing Input-Output Tables to the GTAP Data Base," GTAP Technical Paper No. 1, Purdue University, West Lafayette, Indiana.

INSTAT (The Institute of Statistics). 2000. *Structural Survey of Economic Enterprises.* The Institute of Statistics, Tirana, Albania.

INSTAT. 2003. *Matrice de la Comptabilite Sociale de Madagascar en 1999.* National Institute of Statistics, Antananarivo, Madagascar.

Instituto Brasileiro de Geografia e Estatística (IBGE). 1999. *Matriz de Insumo-Produto do Brasil-1996.* Sao Paulo, Brazil.

Instituto Nacional de Estatistica, Portugal. 1996. National Accounts. Lisbon, Portugal.

International Monetary Fund. 2000. "Albania: Statistical Appendix," IMF Staff Country Report No. 00/87, Washington, D.C.

Központi Statisztikai Hivatal (Central Statistical Office). 1999. *Magyarország NemzetiSzámlái (National Accounts Hungary) 1995-1997.* Budapest, Hungary.

Lawson, A.M. (1997). "Benchmark Input-Output Accounts for the U.S. Economy, 1992: Make, Use, and Supplementary Tables." *Survey of Current Business.* 77, 36-82. Washington DC: Bureau of Economic Analysis, U.S. Dept. of Commerce.

Menon, J. and P. Warr. 2006. Does Road Improvement Reduce Poverty? A General Equilibrium Analysis for Lao PDR. October 2006.

Mexican Ministry of Finance and Public Credit (SHCP) (2008) www.sat.gob.mx

Ministry of Statistics and Analysis of the Republic of Belarus, (2006). *National Accounts of the Republic of Belarus.* Statistical Compilation.

National Institute of Statistics. 2005. "National Accounts of Cambodia 1993 – 2004", *Bulletin No.9*, Ministry of Planning, Kingdom of Cambodia.

National Bank of Cambodia. 2005. "Cambodia: Balance of Payments Statistics Bulletin", *Series No.7*, National Bank of Cambodia.

National Institute of Statistical Geography and Informatics (INEGI) (2008), www.inegi.gob.mx.

National Institute of Statistics. 2006. "Cambodian Statistical Year Book 2005", Ministry of Planning, Kingdom of Cambodia.

National Statistical Agency of Romania, "*Input Output table 2002*"

National Statistics Office and National Statistical Coordination Board. 1988. *Input-Output Accounts of the Philippines.* Unpublished Electronic Data, Manilla, Philippines.

National Institute of Statistics of Bolivia, 2004. "*Tablas de Oferta y Utilización de Bolivia, 2000*."

Office of National Economic and Social Development Board, Office of the Prime Minister. 2000. *Input-Output Table of Thailand 1995.* Bangkok, Thailand.

Peruvian Ministry of Finance. 2004. "1994 Input-output table", Ministry of Industry

Rand, John, Finn Tarp, and David Roland-Holst. 2003. "Economic Structure And Development In An Emergent Asian Economy: Evidence from A Social Accounting Matrix for Vietnam," *Journal of Asian Economics*, 13, 847-871, North-Holland.

Rao, P.D.S. 1993. Intercountry Comparisons of Agricultural Output and Productivity, FAO Economic and Social Development Paper No. 1 12, FAO, Rome

Republic of Albania, Ministry of Finance. 2001. *Fiscal Statistics of Government.* Tirana, Albania.

Rosstat. 2006. *System of Input-Output tables of Russia for 2003*. Moscow. (in Russian) [Росстат. Система таблиц "Затраты-Выпуск" России за 2003 год. Статистический сборник. Москва 2006 год.

Rosstat. 2008. *National Accounts in Russia, 2000-2007*. Moscow. (in Russian) [Росстат. Национальные счета России в 2000 - 2007 годах. Статистический сборник. Москва 2008 год. (http://www.gks.ru/doc_2008/nac_sh.zip)]

Secretariat of Agriculture, Livestock-Farming, Fisheries and Food Industry. *The 2000 Agri-food Social Accounting Matrix*. Buenos Aires, Argentina.

State Institute of statistics, 2004. 'The Input-Output Structure of the Turkish Economy 1998'

Statistics Bureau, the Ministry of Public Management, Home Affairs, Posts and Telecommunications. 2004. "2000 Input-Output Tables for Japan"

Statistical Center of Iran. *2001 Symmetric Iran Input-Output Tables* http://www.sci.org.ir/portal/faces/public/sci_en/sci_en.selecteddata/sci_en.inputoutput

Statistical Committee of Azerbaijan. 2005. "Republic in Statistical Yearbook of Azerbaijan."

Statistical Offices in Central Europe, Malta and Cyprus. National Account and Trade Statistics: Input-Output Tables.

Statistics Canada. Canadian Input-Output table, 2003.

Statistics New Zealand. 1996. Interim Release of Tables, New Zealand Inter-Industry Study. http://www.stats.govt.nz/

Statistics South Africa. 2006. "Supply and Use Tables 2002. Report no. 04-04-01(2002)." Pretoria: Statistics South Africa.

Tarp Jensen, Henning, and Finn Tarp. 2007. A Vietnam Social Accounting Matrix (SAM) for the Year 2003," A Study Prepared under the CIEM-Danida Project "Strengthening the Development Research and Policy Analysis Capacity of CIEM" funded by the Danida Poverty Reduction Grant (PRG), Faculty of Economics, University of Copenhagen.

Terra, I., Olivieri, C., Tellechea, F. and Zaclicever, D. 2008. "Matriz de Insumo-Producto de Uruguay 1997", draft working paper, Departamento de Economía, Facultad de Ciencias Sociales, Universidad de la República.

Tormey, J. 1993. "Creating Synthetic Single Region Input-Output Data for SALTER: Hong Kong and the Rest of the World," SALTER Working Paper No. 20, Industry Commission, Canberra.

Walmsley T. L. and R. McDougall. 2004. "Using Entropy to Compare Shares," Center for Global Trade Analysis, Purdue University, West Lafayette, Indiana.

Table 7.1. Sources of I-O tables in GTAP 7 Data Base

No.	*Code*	*Description*	*Period*	*Source of I-O Table*	*Contributor(s)*	*Version*
1	AUS	Australia	1997	Australian Bureau of Statistics (2001) (and associated unpublished data supplied by the ABS) and selected shares obtained from the Monash MM144 model database	Terry Maidment Owen Gabbitas	7
2	NZL	New Zealand	1996	Statistics New Zealand (1996)	Gerard Malcolm Allan Rae	6
3	XOC	Rest of Oceania	2004	Composite		
4	CHN	China	2002	Department of National Economy Accounting (2006)	Jianwu He Shantong Li	7
5	HKG	Hong Kong	1988	Tormey (1993)	SALTER project	1
6	JPN	Japan	2000	Statistics Bureau, the Ministry of Public Management, Home Affairs, Posts and Telecommunications (2004)	Hirofumi Kawasaki	6
7	KOR	Korea	2003	Bank of Korea (2007)	Jong-Hwan Ko	7
8	TWN	Taiwan	1999	Directorate-General of Budget, Accounting and Statistics (DGBAS) (2001)	Hsing-Chun Lin Shih-Hsun Hsu	6
9	XEA	Rest of East Asia	2004	Composite		
10	KHM	Cambodia	2003	National Institute of Statistics (2006), National Institute of Statistics (2005), and National Bank of Cambodia (2006)	Sothea Oum	7
11	IDN	Indonesia	2004	Biro Pusat Statistik (1999)	Mark Horridge Dr. Armida S. Alisjahbana	7
12	LAO	Lao People's Democratic Republic	2002	Asian Development Bank (2005), Menon and Warr (2006), and Rao (1993)	Carlos Ludena	7
13	MMR	Myanmar	2005	GSO (2000) and CSO (2000)	David Roland-Holst Saad Belghazi	7
14	MYS	Malaysia	1995	Department of Statistics, Malaysia (1994)	Kazuhiko Oyamada	5.3
15	PHL	Philippines	2000	National Statistical Office and National Statistical Coordination board (1988)	Erwin Corong	7
16	SGP	Singapore	1996	Department of Statistics, Singapore (1995)	Ni, Houming Toh, Mun-Heng	6
17	THA	Thailand	1995	Office of National Economic and Social Development Board, Office of the Prime Minister (2000)	Kazuhiko Oyamada	5.3

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No.	*Code*	*Description*	*Period*	*Source of I-O Table*	*Contributor(s)*	*Version*
18	VNM	Vietnam	2003	Rand, John, Finn Tarp, and David Roland-Holst (2003) and Jensen and Tarp (2007)	David Roland-Holst Finn Tarp Jesper Jensen	7
19	XSE	Rest of Southeast Asia	2004	Composite		
20	BGD	Bangladesh	1993-94	Bangladesh Planning Commission and Bangladesh Institute of Development Studies (1998)	A.N.K. Noman and Jong-Hwan Ko	5
21	IND	India	1994	Government of India (2000)	Rajesh Chadha	6
22	PAK	Pakistan	2001/02	Dorosh, Niazi and Nazli (2008)	Mark Horridge and Paul Dorosh	6.1
23	LKA	Sri Lanka	2000	Amarasinghe and Bandara (2005), and Bandara and Kelegama (2008)	Jeevika Weerahewa Jay Bandara	7
24	XSA	Rest of South Asia	2001	Composite		
25	CAN	Canada	2003	Statistics Canada	Shenjie Chen and Rick Cameron	7
26	USA	United States	2002	Dixon and Rimmer (2001), Dixon, Rimmer, and Tsigas (2004), and Lawson (1997)	Marinos Tsigas	7
27	MEX	Mexico	2002	National Institute of Statistical Geography and Informatics (INEGI) (2008) and the Mexican Ministry of Finance and Public Credit (SHCP) (2008)	Aída González	7
28	XNA	Rest of North America	2004	Composite		
29	ARG	Argentina	2000	Secretary of Agriculture, Livestock-farming, Fisheries and Food Industry	Maximilliano Méndez Parra	6
30	BOL	Bolivia	2004	National Institute of Statistics of Bolivia (2004)	Carlos Ludena	7
31	BRA	Brazil	1996	Matriz de Insumo-Produto (1996)	Joaquim Bento S. Ferreira Filho	6
32	CHL	Chile	2003	Banco Central de Chile (2001)	Andres Schuschny and Carlos Ludena	7
33	COL	Colombia	2003	Colombian National Statistical Office (DANE)	Alvaro Perdomo	7

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No.	*Code*	*Description*	*Period*	*Source of I-O Table*	*Contributor(s)*	*Version*
34	ECU	Ecuador	2004	Central Bank of Ecuador (2000)	Sara Wong Carlos Ludena	7
35	PRY	Paraguay	1994	Central Bank of Paraguay (2006)	Carlos Ludena, Ruiz Diaz, Francisco Carlos and Gustavo Biedermann	7
36	PER	Peru	2004	Peruvian Ministry of Finance (2004)	David Roland-Holst Saule Kazybayeva	7
37	URY	Uruguay	1997	Terra, Olivieri, Tellechea and Zaclicever (2008)	Ines Terra	7
38	VEN	Venezuela	1986	Planning Agency (CORDIPLAN), Venezuela	Echavarria & Arbalaez	4
39	XSM	Rest of South America	2004	Composite		
40	CRI	Costa Rica	2002	Central Bank of Costa Rica	Carlos Ludena Marco Sanchez	7
41	GTM	Guatemala	2001	Alarcón (2006)	Carlos Ludena Jose Duran	7
42	NIC	Nicaragua	2000	Central Bank of Nicaragua (2006)	Carlos Ludena Marco Sanchez Rob Vos	7
43	PAN	Panama	1996	SAM built by Marco V. Sanchez and Rob Vos based on Supply and Use Tables from "Contraloría General of Panama"	Carlos Ludena	7
44	XCA	Rest of Central America	2004	Composite		
45	XCB	Caribbean	2004	Composite		
46	AUT	Austria	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
47	BEL	Belgium	1995	Peeters (Limburgs Universitair Centrum LUC-Deipenbeek, Belgium)	Myrna van Leeuwen (LEI) and Frank van Tongeren	5
48	CYP	Cyprus	1986	Statistical Offices in Central Europe, Malta and Cyprus	Martin Banse and Terrie Walmsley	5.2

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No.	*Code*	*Description*	*Period*	*Source of I-O Table*	*Contributor(s)*	*Version*
49	CZE	Czech Republic	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
50	DNK	Denmark	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
51	EST	Estonia	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
52	FIN	Finland	1995	Statistics Finland (Leena Kerkela)	Myrna van Leeuwen (LEI)	5
53	FRA	France	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
54	DEU	Germany	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
55	GRC	Greece	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
56	HUN	Hungary	1991 (96)	Központi Statisztikai Hivatal (Central Statistical Office) (1999)	Martin Banse	5
57	IRL	Ireland	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
58	ITA	Italy	1992	Instituto Nazionale di Statistica, Italy (1996)	Myrna van Leeuwen (LEI) Frank van Tongeren	5
59	LVA	Latvia	1997	Henrichsmeyer, W., J. Köckler, A. Quiring and T. Möllmann (1999)	Martin Banse and Terrie Walmsley	5.2
60	LTU	Lithuania	1997	Henrichsmeyer, W., J. Köckler, A. Quiring and T. Möllmann (1999)	Martin Banse and Terrie Walmsley	5.2
61	LUX	Luxembourg	1995	None, based on Belgium	Myrna van Leeuwen (LEI) and Frank van Tongeren	7
62	MLT	Malta	1986	Statistical Offices in Central Europe, Malta and Cyprus	Martin Banse and Terrie Walmsley	5.2

Table 7.1. Sources of I-O tables in GTAP 7 Data Base

No.	*Code*	*Description*	*Period*	*Source of I-O Table*	*Contributor(s)*	*Version*
63	NLD	Netherlands	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
64	POL	Poland	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
65	PRT	Portugal	1993 (1995)	Instituto Nacional de Estatistica, Portugal (1996)	Myrna van Leeuwen (LEI)	5
66	SVK	Slovakia	1997	Henrichsmeyer, W., J. Köckler, A. Quiring and T. Möllmann (1999)	Martin Banse and Terrie Walmsley	5.2
67	SVN	Slovenia	1997	Henrichsmeyer, W., J. Köckler, A. Quiring and T. Möllmann (1999)	Martin Banse and Terrie Walmsley	5.2
68	ESP	Spain	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
69	SWE	Sweden	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
70	GBR	United Kingdom	2000	European Communities (2008)	Marc Mueller Scott McDonald Csilla Lakatos	7
71	CHE	Switzerland	2005	Antille (2000)	Renger van Nieuwkoop Nathani Carsten	7
72	NOR	Norway	2004	European Communities (2008)	Glen Peters Nathan Rive Aaheim	7
73	XEF	Rest of EFTA	2004	Composite		
74	ALB	Albania	2000	(1) Albanian Ministry of Finance publication, (2001) (2) Ms. Godiva Rembeci, Institute of Statistics, (3) IMF (2000) (4) INSTAT (2000) (5) Albanian Ministry of Finance publication (2001), and also discussions with taxation officials.	Mark Horridge	5.3
75	BGR	Bulgaria	1996	National Statistical Institute of Bulgaria (NSI)	Martin Banse and Terrie Walmsley	5.2

Table 7.1. Sources of I-O tables in GTAP 7 Data Base

No.	*Code*	*Description*	*Period*	*Source of I-O Table*	*Contributor(s)*	*Version*
76	BLR	Belarus	2004	Ministry of Statistics and Analysis of the Republic of Belarus, (2006)	Irina Tochitskaya	7
77	HRV	Croatia	1995	Henrichsmeyer, W., J. Köckler, A. Quiring and T. Möllmann (1999)	Martin Banse and Terrie Walmsley	5.2
78	ROU	Romania	2002	National Statistical Agency of Romania	David Laborde and Csilla Lakatos	7
79	RUS	Russian Federation	2003	Rosstat (2008) and (2006)	Natalia Tourdyeva	7
80	UKR	Ukraine	2004	Ukrainian Input-Output table, State Statistics Committee of Ukraine	Iryna Orlova	7
81	XEE	Rest of Eastern Europe	2004	Composite		
82	XER	Rest of Europe	2004	Composite		
83	KAZ	Kazakhstan	2004	Abdiev (2007)	David Roland-Holst Saule Kazybayeva	7
84	KGZ	Kyrgyzstan	2003		Aziz Atamanov	7
85	XSU	Rest of Former Soviet Union	2004	Composite		
86	ARM	Armenia	2002	The table is based on a table included in a social accounting matrix developed by Miles K. Light, Ekaterine Vashakmadze, and Artsvi Khatchatryan	Jesper Jensen, David Tarr and Oleksandr Shepotylo	7
87	AZE	Azerbaijan	2001	Statistical Committee of Azerbaijan (2005)	Jesper Jensen, David Tarr and Oleksandr Shepotylo	7
88	GEO	Georgia	2001	Unofficial table provided by the Economic Policy Research Center (EPRC) in Georgia	Jesper Jensen, David Tarr and Oleksandr Shepotylo	7
89	IRN	Iran, Islamic Republic of	2001	Statistical Center of Iran	Farzad Taheripour	7
90	TUR	Turkey	1998	State Institute of statistics (2004)	Mustafa Acar, Burcu Afyonoglu, Savas Kus and Bengisu Vural	7

Table 7.1. Sources of I-O tables in GTAP 7 Data Base

No.	*Code*	*Description*	*Period*	*Source of I-O Table*	*Contributor(s)*	*Version*
91	XWS	Rest of Western Asia	2004	Composite		
92	EGY	Egypt	2003	National Accounts, National Planning Unit of Egypt	Noura Abdelwahab and Miles Light	6.2
93	MAR	Morocco	2004	Bussolo and Roland-Holst (1993)	David Roland-Holst Saad Belghazi	7
94	TUN	Tunisia	1995	Institut National de la Statistique, Tunisia (1998)	Denise Konan and Ari Van Assche	6
95	XNF	Rest of North Africa	2004	Composite		
96	NGA	Nigeria	1999	Official 1990 Input-Output Table (30 sector), and an un-official 1999 Input-Output Table (18 sector) supplied by Patrick Osakwe, of the Trade and Regional Integration Division, UN Economic Commission for Africa (UNECA)	Mark Horridge and Patrick Osakwe (UNECA)	6.1
97	SEN	Senegal	1996	1996 SAM prepared by Dr Mamadou Dansokho and Amadou Diouf in 1999 for the Senegal government	Patrick Osakwe and Mark Horridge	6.2
98	XWF	Rest of Western Africa	2004	Composite		
99	XCF	Rest of Central Africa	2004	Composite		
100	XAC	Rest of South-Central Africa	2004	Composite		
101	ETH	Ethiopia	2002	Social Accounting Matrix 2001/02 compiled by IDS in collaboration with EDRI	Dirk Willenbockel Sherman Robinson	7
102	MDG	Madagascar	1999	INSTAT (2003), also documented in Dorosh, P., S. Haggblade, C. Lungren, T. Razafimanantena, and Z. Randriamiarana (2003)	Simon Njaka Randrianarivelo and Shuby Andriamanajara	6
103	MWI	Malawi	1994	MERRISA/Wobst	Mark Horridge	5
104	MUS	Mauritius	1997	Central Statistical Office of Mauritius	Sawkut Rojid	6.1
105	MOZ	Mozambique	1995	MERRISA/Arndt et al	Mark Horridge	5
106	TZA	Tanzania	1992	MERRISA/Wobst	Mark Horridge	5
107	UGA	Uganda	1992	Ugandan National Statistics Department (UNSD)	Adam Blake	5

Table 7.1. Sources of I-O tables in GTAP 7 Data Base

No.	*Code*	*Description*	*Period*	*Source of I-O Table*	*Contributor(s)*	*Version*
108	ZMB	Zambia	1995	MERRISA/Hausner	Mark Horridge	5
109	ZWE	Zimbabwe	1991	MERISSA/Thomas and Bautista	Mark Horridge	5
110	XEC	Rest of Eastern Africa	2004	Composite		
111	BWA	Botswana	1993-94	McDonald	Mark Horridge	5
112	ZAF	South Africa	2005	Statistics South Africa (2006)	Cecilia Punt	7
113	XSC	Rest of South African Customs Union	2004	Composite		

Table 7.2. Number of Sectors in the Contributed I-O Tables

No.	*Code*	*Description*	*Version*	*Total*	*Agriculture*	*Processed Food*	*Manufactures & Services*	*Prices: Basic or Producer*	*Documentation Availability*
1	AUS	Australia	7	57	12	8	37	Basic	Available
2	NZL	New Zealand	6	57	12	8	37	Basic	Available
4	CHN	China	7	42	2	3	37	Basic	Available
5	HKG	Hong Kong	1	37	6	5	26	Unknown	N/A
6	JPN	Japan	6	57	12	8	37	Basic	N/A
7	KOR	Korea	7	57	12	8	37	Basic	Available
8	TWN	Taiwan	6	57	12	8	37	Basic	Available
10	KHM	Cambodia	7	57	12	8	37	Basic	Available
11	IDN	Indonesia	7	53	7	10	36	Basic	N/A
12	LAO	Leo People's Democratic Republic	7	31	12	3	16	Basic	Available
13	MMR	Myanmar	7	45	12	8	25	Unknown	Available
14	MYS	Malaysia	5.3	37	6	6	28	Unknown	Available
15	PHL	Philippines	7	54	12	8	34	Basic	Available
16	SGP	Singapore	6	57	12	8	37	Unknown	Available
17	THA	Thailand	7	40	6	6	28	Unknown	N/A
18	VNM	Vietnam	7	45	6	5	34	Unknown	Available
20	BGD	Bangladesh	5	57	12	8	37	Basic	Available
21	IND	India	6	52	11	6	35	Basic & Purchaser	Available
22	PAK	Pakistan	6.1	46	8	6	32	Unknown	Available
23	LKA	Sri Lanka	7	29	3	3	23	Basic	Available
25	CAN	Canada	7	51	8	8	35	Basic	N/A
26	USA	United States	7	57	12	8	37	Basic	N/A
27	MEX	Mexico	7	54	12	8	34	Unknown	Available
29	ARG	Argentina	6	50	12	8	37	Basic	Available
30	BOL	Bolivia	7	34	4	7	23	Market	N/A
31	BRA	Brazil	6	57	12	8	37	Basic	Available
32	CHL	Chile	7	44	3	6	33	Unknown	N/A

Table 7.2. Number of Sectors in the Contributed I-O Tables

No.	*Code*	*Description*	*Version*	*Total*	*Agriculture*	*Processed Food*	*Manufactures & Services*	*Prices: Basic or Producer*	*Documentation Availability*
33	COL	Colombia	7	57	12	8	37	Basic	N/A
34	ECU	Ecuador	7	41	5	5	31	Market	N/A
35	PRY	Paraguay	7	41	8	7	26	Market	Available
36	PER	Peru	7	46	10	6	30	Unknown	Available
37	URY	Uruguay	7	57	12	8	37	Basic	Available
38	VEN	Venezuela	4	50	12	8	30	Basic	Available
40	CRI	Costa Rica	7	37	9	6	22	Market	N/A
41	GTM	Guatemala	7	50	12	8	30	Market	N/A
42	NIC	Nicaragua	7	34	5	5	24	Market	Available
43	PAN	Panama	7	27	9	3	15	Market	N/A
46	AUT	Austria	7	54	12	8	34	Basic	N/A
47	BEL	Belgium	7	57	12	8	37	Basic	N/A
48	CYP	Cyprus	5.2	57	12	8	37	Unknown	N/A
49	CZE	Czech Republic	7	54	12	8	34	Basic	N/A
50	DNK	Denmark	7	54	12	8	34	Basic	N/A
51	EST	Estonia	7	54	12	8	34	Basic	N/A
52	FIN	Finland	5	57	12	8	37	Basic	Available
53	FRA	France	7	54	12	8	34	Basic	N/A
54	DEU	Germany	7	54	12	8	34	Basic	N/A
55	GRC	Greece	7	54	12	8	34	Basic	N/A
56	HUN	Hungary	5	57	12	8	37	Basic	Available
57	IRL	Ireland	7	54	12	8	34	Basic	N/A
58	ITA	Italy	5	57	12	8	37	Basic	N/A
59	LVA	Latvia	5.2	57	12	8	37	Unknown	N/A
60	LTU	Lithuania	5.2	57	12	8	37	Unknown	Available
61	LUX	Luxembourg	7	57	12	8	37	Basic	Available
62	MLT	Malta	5.2	57	12	8	37	Unknown	N/A
63	NLD	Netherlands	7	54	12	8	34	Basic	N/A
64	POL	Poland	7	54	12	8	34	Basic	N/A

Table 7.2. Number of Sectors in the Contributed I-O Tables

No.	*Code*	*Description*	*Version*	*Total*	*Agriculture*	*Processed Food*	*Manufactures & Services*	*Prices: Basic or Producer*	*Documentation Availability*
65	PRT	Portugal	5	57	12	8	37	Unknown	Available
66	SVK	Slovakia	5.2	57	12	8	37	Unknown	N/A
67	SVN	Slovenia	5.2	57	12	8	37	Unknown	N/A
68	ESP	Spain	7	54	12	8	34	Unknown	N/A
69	SWE	Sweden	7	54	12	8	34	Basic	N/A
70	GBR	United Kingdom	7	54	12	8	34	Basic	N/A
71	CHE	Switzerland	7	30	1	1	28	Basic	Available
72	NOR	Norway	7	38	1	1	36	Basic	Available
74	ALB	Albania	5.3	57	12	8	37	Unknown	Available
75	BGR	Bulgaria	5.2	57	12	8	37	Unknown	N/A
76	BLR	Belarus	7	39	1	1	37	Basic	Available
77	HRV	Croatia	5.2	57	12	8	37	Unknown	N/A
78	ROU	Romania	7	57	12	8	37	Unknown	Available
79	RUS	Russian Federation	7	41	2	5	34	Basic	N/A
80	UKR	Ukraine	7	46	1	8	37	Basic	Available
83	KAZ	Kazakhstan	7	36	1	1	34	Basic	N/A
84	KGZ	Kyrgyzstan	7	31	1	1	29	Basic	N/A
86	ARM	Armenia	7	30	6	4	20	Basic	Available
87	AZE	Azerbaijan	7	32	1	1	30	Basic	Available
88	GEO	Georgia	7	57	12	8	37	Market	Available
89	IRN	Iran, Islamic Republic of	7	45	8	6	31	Basic	Available
90	TUR	Turkey	7	46	3	7	36	Basic	Available
92	EGY	Egypt	6.2	31	3	4	24	Unknown	Available
93	MAR	Morocco	7	46	9	6	29	Unknown	Available
94	TUN	Tunisia	6	37	3	5	29	Basic	Available
96	NGA	Nigeria	6.1	29	2	4	23	Unknown	Available
97	SEN	Senegal	6.2	30	7	4	19	Producer	Available
101	ETH	Ethiopia	7	57	12	8	37	Basic	N/A
102	MDG	Madagascar	6	57	12	8	37	Unknown	Available

Table 7.2. Number of Sectors in the Contributed I-O Tables

No.	*Code*	*Description*	*Version*	*Total*	*Agriculture*	*Processed Food*	*Manufactures & Services*	*Prices: Basic or Producer*	*Documentation Availability*
103	MWI	Malawi	5	57	12	8	37	Unknown	N/A
104	MUS	Mauritius	6.1	42	11	5	26	Unknown	Available
105	MOZ	Mozambique	5	57	12	8	37	Unknown	N/A
106	TZA	Tanzania	5	57	12	8	37	Unknown	N/A
107	UGA	Uganda	5	36	3	6	27	Unknown	Available
108	ZMB	Zambia	5	57	12	8	37	Unknown	Available
109	ZWE	Zimbabwe	5	57	12	8	37	Unknown	N/A
111	BWA	Botswana	5	57	12	8	37	Unknown	N/A
112	ZAF	South Africa	7	57	12	8	37	Market	N/A