

2011 Report on the Regional I-O Tables and the GTAP 8p2 Data Base¹

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1. Introduction

I-O tables contributed by members of the GTAP network are at the core of the GTAP Data Base. The coverage and accuracy of the GTAP Data Base is contingent on the contribution of quality I-O tables from people within the GTAP network.² Updating current I-O tables with data from more recent years, the identification and correction of common errors in those I-O tables, and additional contributions of new I-O tables will lead to further improvements of the GTAP Data Base.

The purpose of this report is primarily to examine which countries the Center should be focusing on obtaining new contributions. First, we examine the I-O tables currently used to produce the GTAP Data Base 8 pre-release 2, to highlight those regions where updated contributions are desirable and whether an I-O table is listed for inclusion in the "chopping block". We examine the year upon which the I-O table is based, the version to which it was contributed and a number of flaws common in I-O tables. Lastly, we examine those countries not currently included in the GTAP Data Base that have significantly high economic features, such as GDP per capita and population and hence where contributions would be desirable.

2. Current GTAP I-O Tables

2.1 Version, Base Year and Level of Disaggregation

Table 1 (under *References*) provides a list of the sources and contributors of I-O tables for the GTAP 8pre2 Data Base. Version 8p2 reflects the global economy for two years 2004 and 2007. However, the I-O tables for 14 of the 93 distinct countries are from 1995 or older.³ The countries with the oldest base years for their I-O tables are listed in Table 2. The oldest four I-O tables are in the "chopping block" for Version 8.

¹ Prepared for the GTAP Advisory Board Meeting held in June 13 2011, Venice, Italy. Based on previous Regional I-O Tables and the GTAP Data Base Reports.

² Those interested in contributing are referred to GTAP Technical Paper # 1 by Huff, McDougall and Walmsley (1999).

³ Release numbers and data years for all regions taken from GTAP website, under I-O table pages for Board Members. https://www.gtap.agecon.purdue.edu/access_board/IO/default.asp.

One of these regions has an I-O table that is older than 1990 and in total 14 regions have I-O tables older than 1995. The only region for which there has not been an I-O table update since Version 1 is Hong Kong, which uses 1988 data. We know that a contributor is working on updating this table.

The I-O table from Venezuela was listed to be removed in version 8, but Roberto Ferrer and Jorge Hernandez, from Venezuela's Central Bank, have contributed a newer table and we are glad to have removed Venezuela from the Chopping Block list.

Another shortcoming of the I-O tables in the GTAP Data Base is that not all the tables have all 57 GTAP sectors and therefore additional disaggregation is required during the database construction process (see Appendix A for complete listing of sectors).

Table 2: Regions with oldest data years

<i>No.</i>	<i>Region</i>	<i>Data year</i>	<i>Initial release</i>	<i>Total</i>	<i>Agriculture</i>	<i>Processed food</i>	<i>Manufactures & services</i>
1	Hong Kong	1988	1	37	6	5	26
2	Zimbabwe	1991	5	57	12	8	37
3	Tanzania	1992	5	57	12	8	37
4	Uganda	1992	5	36	3	6	27
5	Bangladesh	1993-94	5	57	12	8	37
6	Botswana	1993-94	5	57	12	8	37
7	Paraguay	1994	7	51	9	7	35
8	Malawi	1994	5	57	12	8	37
9	Malaysia	1995	5.3	40	6	6	28
10	Thailand	1995	5.3	40	6	6	28
11	Croatia	1995	5.2	57	12	8	37
12	Tunisia	1995	6	37	3	5	29
13	Mozambique	1995	5	57	12	8	37
14	Zambia	1995	5	57	12	8	37

In total, there are 71 I-O tables for which data are not available for all 57 GTAP sectors (Table 3). Three countries, Panama, Nigeria, and Sri Lanka do not have data for 30 sectors, which is the minimum requirement for the GTAP Data Base. In these cases, data were not available and the contributors felt that they could not improve upon the techniques used at the Center to disaggregate sectors. The number of I-O tables with less than 57 sectors has increased significantly since version 6 with the increase in the number of countries in the data base.

Table 3: Regions with less than 57 sectors

No.	Region	Sector total	Version	Year
1	Panama	27	7	1996
2	Nigeria	29	6.1	1999
3	Sri Lanka	29	7	2000
4	Senegal	30	6.2	1996
5	Armenia	30	7	2002
6	Switzerland	30	7	2005
7	Lao PDR	31	7	2002
8	Kyrgyzstan	31	7	2003
9	Egypt	31	6.2	2003
10	Azerbaijan	32	7	2001
11	Bolivia	32	7	2004
12	Nicaragua	34	7	2000
13	Kazakhstan	34	7	2004
14	Uganda	36	5	1992
15	Hong Kong	37	1	1988
16	Tunisia	37	6	1995
17	Costa Rica	37	7	2002
18	Kuwait	37	8	2005
19	Norway	38	7	2004
20	Belarus	39	7	2004
21	Malaysia	40	5.3	1995
22	Thailand	40	5.3	1995
23	Russia	41	7	2003
24	Ecuador	41	7	2004
25	South Africa	41	7	2005
26	Mauritius	42	6.1	1997
27	Iran	43	7	2001
28	Chile	44	7	2003
29	Turkey	46	7	1998
30	Ukraine	46	7	2004
31	Morocco	46	7	2004
32	China	46	7.1	2007
33	Pakistan	46	6.1	2001/02
34	Vietnam	47	7.1	2005
35	Argentina	50	6.2	2000
36	Venezuela	50	4	1986
37	Guatemala	50	7	2001
38	Peru	50	7	2004

39	India	50	8	2003/04
40	Philippines	50	8	2000
41	Paraguay	51	7	1994
42	Canada	51	7	2003
43	Indonesia	53	7	2004
44	Austria	54	7.1	2000
45	Belgium	54	7.1	2000
46	Cyprus	54	7.1	2000
47	Czech Republic	54	7.1	2000
48	Denmark	54	7.1	2000
49	Estonia	54	7.1	2000
50	Finland	54	7.1	2000
51	France	54	7.1	2000
52	Germany	54	7.1	2000
53	Greece	54	7.1	2000
54	Hungary	54	7.1	2000
55	Ireland	54	7.1	2000
56	Italy	54	7.1	2000
57	Latvia	54	7.1	2000
58	Lithuania	54	7.1	2000
59	Luxembourg	54	7.1	2000
60	Malta	54	7.1	2000
61	Netherlands	54	7.1	2000
62	Poland	54	7.1	2000
63	Portugal	54	7.1	2000
64	Slovakia	54	7.1	2000
65	Slovenia	54	7.1	2000
66	Spain	54	7.1	2000
67	Sweden	54	7.1	2000
68	United Kingdom	54	7.1	2000
69	Bulgaria	54	7.1	2000
70	Romania	54	7.1	2000
71	Mexico	54	7	2002

2.2 The "Chopping Block"

In the past the Center has generally believed that providing some data, even if some of the data were missing and had to be filled with assumptions, improved information and was

therefore better than no data. However as the project has grown, concerns for ensuring that the data is of high quality have mounted, particularly as the number of users has increased and their knowledge of the potentially significant differences in the quality of data across countries and sources is more uncertain. As such the Center is increasingly asked to ensure the quality of the data that is being publicly provided.

In order to address some of these concerns the Center will clean the database of older I-O tables and encourage the contribution of new ones, as it was the case recently with the new I-O table for Venezuela. Based on Tables 2 and 3, we have prepared a sub-list (Table 4), also known as the “Chopping Block”, of countries that we plan to remove from versions 8 and 9 if no new contribution can be obtained. The criteria used to decide which countries are to be included on the chopping block are:

- a) the age of the IO table (1995 or older); and
- b) the version to which the table was submitted (prior to version 6).

I-O tables are still being accepted for version 8, including many of the older I-O tables listed in Table 2. Based on current information we would potentially remove 11 countries from the standard GTAP Data Base (Table 4); 4 from version 8 and 7 from version 9. Seven of these countries are publicly available through the African GTAP Data Base; while the remaining countries would not be included separately in the public version of the GTAP Data Base, although they would still be used to make the composite (rest of) regions. Our hope is that given the availability of SAM data, contributors will step forward to contribute before the final version 8 is released.

In addition to removing countries from the current GTAP Data Base, the Center will also give greater consideration to whether to include a new country. In particular countries based on limited data (e.g., if the table has less than 30 sectors, or has been significantly disaggregated or created using entropy type techniques by the contributor or the Center) then the country may not be included in the publicly available GTAP Data Base. In these cases we may decide to include the I-O table in a special version of the GTAP Data Base available to contributors and funding bodies only, rather than make the tables publicly available as part of the GTAP Data Base.

Table 4: The Chopping Block

<i>Region</i>	<i>Data year</i>	<i>Initial Release</i>	<i>Total number of sectors</i>	<i>Available in Alternative Version</i>	<i>Data Availability</i>
Version 8					
Hong Kong	1988	1	37	Contributor working on table	
Zimbabwe	1991	5	57	Africa	
Tanzania	1992	5	57	Africa	SAM available
Uganda	1992	5	36	Contributor working on table	
Version 9					
Bangladesh	1993-94	5	57	Contributor working on table	
Botswana	1993-94	5	57	Africa	SAM available
Malawi	1994	5	57	Africa	SAM available
Mozambique	1995	5	57	Africa	SAM available
Zambia	1995	5	57	Africa	SAM available
Croatia	1995	5.2	57		
Malaysia	1995	5.3	40	Contributor working on table	

2.3 Peer-review Process

This year we began a trial run of the I-O table peer-review process. Two countries already included in the GTAP 7 Data Base, Spain and Russia, were reviewed by two network members. The reviewers were granted access to all of the original data files and GTAP I-O report, which includes the Center's in-house checks. The reviewers were given two months for the review and their final reviews will be placed on the website along with the other country reports.

Although the review itself was successful in giving us additional valuable information on the quality of the table which were then forwarded to the original contributor, the review process itself took considerable time which would not normally be available during a hectic release schedule. In addition, the documentation usually comes at a later stage of the I-O contribution process and without this a good review is almost impossible. Due to these timing issues, we envisage that future peer-reviews will take place after inclusion in the GTAP Data Base. As a result they will not be undertaken as part of the normal acceptance/rejection checks, but will be used as a way of identifying what aspects of the tables could be improved in the next contribution.

In addition, we will look into ways to facilitate the contribution of GTAP I-O tables starting from a supply and use table because, according to SNA08, supply and use tables are the necessary first step in the development of I-O tables. One benefit of supply and use tables is that it must be compatible with macro data

2.4. Common I-O Table Flaws

Aside from a recent base year, the other desirable feature of an I-O table is the accuracy of the data. The GTAP 8 Data Base was scrutinized for known common problems with the regional I-O tables.⁴

Share of Dwellings

Dwellings (*dwe*) are defined as imputed rents. In some I-O tables dwellings are set equal to zero. An examination of the dwellings shares reveals that 21 I-O tables have *dwe* less than 1% (see Appendix B). Countries with no dwellings sector appear in all versions and from recent to old years.

Most of the regions have been contributed recently and despite attempts to obtain data on *dwe* none could be found. Given the difficulty of obtaining this data, the Center has begun a review process of the I-O tables that do contain dwelling sectors to analyze the feasibility of estimating dwellings based on a global/regional average size of the dwellings sector in a typical economy.

Related to this is the cost structure of dwellings. It is expected that the dwellings sector consist primarily of capital. There were no countries⁵ flagged for the capital share of total costs in the dwellings sector being less than 60%. In addition, the OECD has dwellings data for selected OECD countries that we will consider to supplement our estimation and dwelling allocation.

⁴ For a complete listing of regions, their GDP and various ratios used to analyze the data see Appendix B.

⁵ Note we do not include the regions that do not have a significant dwellings sector, i.e. the ones included in Table 3.

Agricultural Cost Shares

Another issue related to the IO table data that has been raised in a number of reports is the cost structure of agriculture, in particular the low use of agriculture in processed foods: paddy rice used in processed rice; sugar cane used in processed sugar; and raw milk used in milk.

The Center has adopted two changes to its policies in this area:

- a) Previously the Center encouraged contributors to disaggregate their own I-O table as it was felt that they knew their economies better than we did. Now the Center discourages contributors from disaggregating agriculture unless they have information on the different cost structures, not simply total production.
- b) The Center undertakes checks on the data to examine strange cost shares. Tables where cost shares differ significantly from the representative table are flagged in a report to the contributor for them to investigate further.

3. Regions Not in the GTAP Data Base

To determine how comprehensive the GTAP Data Base is, it is necessary to get an idea of which regions do not have country-level I-O tables included in the database. Currently individual countries together account for 96.5% of total world GDP and 88.21% of global population, a jump from version 7 that covered approximately 87.9% of the global population. The rest of the 11.8% of the population are included in countries that are incorporated within the 20 aggregated regions. We do not have individual I-O tables from many of the largely populated countries since most of them come from the developing world from which data are difficult to obtain. <https://www.gtap.agecon.purdue.edu/databases/regions.asp?Version=8.121>

Table 5 provides a list of twenty regions with the highest GDP in millions of 2007 US\$. It can be seen that nine of these regions are from the Middle East, four from the continent of Africa, and six from Central America and the Caribbean region. The remaining country is located in Europe.

Table 5: Regions not in Database with Highest GDP (Millions of 2007 US\$)

No.	Regions	GDP (2007 Million USD)
1	Saudi Arabia	384,076
2	Israel	166,990
3	Algeria	135,804
4	Puerto Rico	92,926
5	Qatar	80,751
6	Libya	71,803
7	Angola	59,263
8	Cuba	58,604
9	Sudan	46,531
10	Oman	41,909
11	Dominican Republic	41,315
12	Syrian Arab Republic	40,549
13	Serbia	39,385
14	Kenya	27,166
15	Lebanon	25,057
16	Ghana	24,632
17	Uzbekistan	22,308
18	Yemen, Rep.	21,657
19	Iraq	21,544
20	Trinidad and Tobago	20,997

Narrowing our perspective to per capita real GDP in 2007 US \$, it can be seen that only Monaco and Liechtenstein have per capita real GDP over a hundred thousand in this list, Table 6; the rest of the countries have income levels between \$91K and \$25K.

Table 6: Regions not in Database with Highest GDP/capita (2007 US\$)

No.	Regions	GDP per capita (2007 USD)
1	Monaco	183,151
2	Liechtenstein	123,970
3	Bermuda	91,058
4	Gibraltar	73,673
5	Qatar	70,986
6	Falkland Islands (Malvinas)	66,019
7	Iceland	65,566
8	Cayman Islands	59,262
9	San Marino	55,188
10	Isle of Man	50,594
11	Virgin Islands,British	49,304
12	Saint Pierre and Miquelon	42,506
13	Virgin Islands (U.S.)	41,704
14	Andorra	39,492
15	Faroe Islands	38,084
16	Greenland	37,517
17	New Caledonia	37,130
18	Macao SAR, China	36,249
19	Brunei Darussalam	31,824
20	Turks and Caicos	25,564

The regions with the highest populations are also noteworthy. It can be seen from Table 7 (showing population in millions) that among countries with highest population, exactly half are from Africa and the rest are from Asia and the Middle East.

Table 7: Regions not in Data Base with Highest Populations

<i>No.</i>	<i>Regions</i>	<i>Population (millions)</i>
1	Congo, Dem. Rep.	63
2	Myanmar	49
3	Sudan	40
4	Kenya	38
5	Algeria	34
6	Iraq	30
7	Nepal	28
8	Afghanistan	28
9	Uzbekistan	27
10	Saudi Arabia	24
11	Korea, Dem. Rep.	24
12	Ghana	23
13	Yemen, Rep.	22
14	Cote d'Ivoire	20
15	Syrian Arab Republic	20
16	Cameroon	19
17	Angola	18
18	Burkina Faso	15
19	Niger	14
20	Mali	12

4. Conclusion

Considering old data years and possible data flaws, there are several regions for which new or updated I-O tables may be desirable. In terms of countries not currently included in the GTAP Data Base, Saudi Arabia, Israel, Puerto Rico and Algeria top the list in terms of GDP; DR Congo, Myanmar, Sudan and Kenya are largely populated with over 30 million people and do not have individual I-O tables. Many of these African economies we are currently including in a special African GTAP Data Base. Also since countries in the GTAP Data Base covers 96.5% of GDP, the focus will now shift to obtaining data for countries that are largely populated. Finally, looking at income levels, many of the smaller island regions stand out, such as: Liechtenstein, Bermuda, San Marino, British Virgin Islands, Cayman Islands and Faroe Islands. Unfortunately, the political situation in several countries for which I-O tables may be desirable – such as Afghanistan and Iraq – may make it difficult to obtain data for several years to come.

Countries that make the ‘Top 8’ list for which contribution are desired are: Saudi Arabia, DR Congo, Israel, Iraq, Algeria and Libya. Countries that are in the Top 8 ‘most wanted’ list are: Hong Kong, Uganda, Switzerland, Bangladesh, Botswana, Zimbabwe and Tanzania.

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Table 1: Sources of I-O tables in GTAP Version 8p2 Data Base

<i>No.</i>	<i>Code</i>	<i>Description</i>	<i>Period</i>	<i>Source of I-O Table</i>	<i>Contributor(s)</i>	<i>Version</i>
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 Gabbittas	7
2	NZL	New Zealand	1996	Statistics New Zealand (1996)	Gerard Malcom and Allan Rae	6
3	XOC	Rest of Oceania		Composite		
4	CHN	China	2007	National Bureau of Statistics of China	Zhan-Ming Chen	7.1
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	The Bank of Korea (2007)	Jong-Hwan Ko	7
8	TWN	Taiwan	1999	Directorate-General of Budget, Accounting and Statistics (DGBAS) (2001)	Hsing-Chun Lin and Shih-Hsun Hsu	6
9	XEA	Rest of East Asia		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 and 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	MYS	Malaysia	1995	Department of Statistics, Malaysia (1994)	Kazuhiko Oyamada	5.3
14	PHL	Philippines	2000	National Statistical Office and National Statistical Coordination board (1988)	Erwin Corong	8
15	SGP	Singapore	1996	Department of Statistics, Singapore (1995).	Ni, Houming and Toh, Mun-Heng	6
16	THA	Thailand	1995	Office of National Economic and Social Development Board, Office of the Prime Minister (2000)	Kazuhiko Oyamada	5.3
17	VNM	Vietnam	2005	Vietnam General Statistics Office (GSO)	James Giesecke	7.1

18	XSE	Rest of Southeast Asia		Composite		
19	BGD	Bangladesh	1993-94	Bangladesh Planning Commission and Bangladesh Institute of Development Studies (1998)	A.N.K. Noman and Jong-Hwan Ko	5
20	IND	India	1994	Government of India (2000)	Rajesh Chadha	6
21	PAK	Pakistan	2001/02	Dorosh, Niazi and Nazli (2008)	Mark Horridge and Paul Dorosh	6.1
22	LKA	Sri Lanka	2000	Amarasinghe and Bandara (2005), and Bandara and Kelegama (2008)	Jeevika Weerahewa Jay Bandara	7
23	XSA	Rest of South Asia		Composite		
24	CAN	Canada	2003	Statistics Canada	Shenjie Chen and Rick Cameron	7
25	USA	United States	2002	Dixon and Rimmer (2001), Dixon, Rimmer, and Tsigas (2004), and Lawson (1997)	Marinos Tsigas	7
26	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
27	XNA	Rest of North America		Composite		
28	ARG	Argentina	2000	(1) National Institute of Statistics and Census, and (2) Secretary of Agriculture, Livestock-farming, Fisheries and Food Industry	Maximilliano Méndez Parra	6
29	BOL	Bolivia	2004	Instituto Nacional de Estadística (National Institute of Statistics of Bolivia)	Carlos Ludena	7
30	BRA	Brazil	1996	Matriz de Insumo-Produto (1996)	Joaquim Bento S. Ferreira Filho	6
31	CHL	Chile	2003	Banco Central de Chile (2001)	Andres Schuschny and Carlos Ludena	7
32	COL	Colombia	2003	Colombian National Statistical Office (DANE)	Alvaro Perdomo	7
33	ECU	Ecuador	2004	Central Bank of Ecuador (2000)	Sara Wong and Carlos Ludena	7
34	PAN	Panama	1996	SAM built by Marco V. Sanchez and Rob Vos based on Supply and Use Tables "Contraloría General of Panama"	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	1997	Department of Macroeconomic Accounts, Central Bank of Venezuela	Roberto Ferrer, Jorge Hernandez, Agustin Velasquez	8
39	XSM	Rest of South America		Composite		
40	CRI	Costa Rica	2002	SAM built by Sanchez (2006), based on data from Central Bank of Costa Rica	Carlos Ludena Marco Sanchez	7
41	GTM	Guatemala	2001	Guatemalas Secretaria General de Planificacion (SEGEPLAN).	Carlos Ludena Jose Duran	7
42	NIC	Nicaragua	2000	Central Bank of Nicaragua (2006)	Carlos Ludena Marco Sanchez Rob Vos	7
43	XCA	Rest of Central America		Composite		
44	XCB	Rest of the Caribbean		Composite		
45	AUT	Austria	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
46	BEL	Belgium	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
47	CYP	Cyprus	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
48	CZE	Czech Republic	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald	7.1

					Csilla Lakatos	
49	DNK	Denmark	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
50	EST	Estonia	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
51	FIN	Finland	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
52	FRA	France	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
53	DEU	Germany	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
54	GRC	Greece	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
55	HUN	Hungary	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
56	IRL	Ireland	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
57	ITA	Italy	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
58	LVA	Latvia	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
59	LTU	Lithuania	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
60	LUX	Luxembourg	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller	7.1

					Scott McDonald Csilla Lakatos	
61	MLT	Malta	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
62	NLD	Netherlands	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
63	POL	Poland	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
64	PRT	Portugal	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
65	SVK	Slovakia	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
66	SVN	Slovenia	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
67	ESP	Spain	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
68	SWE	Sweden	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
69	GBR	United Kingdom	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
70	CHE	Switzerland	2005	Antille (2000)	Renger van Nieuwkoop Nathani Carsten	7.1
71	NOR	Norway	2004	Statistics Norway: 2004 IOT consistent with the European System of Accounts 1995	Glen Peters Nathan Rive	7.1
72	XEF	Rest of EFTA	2004	Composite	Aaheim	

73	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
74	BGR	Bulgaria	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
75	BLR	Belarus	2004	Ministry of Statistics and Analysis of Belarus (2006)	Irina Tochitskaya	7
76	HRV	Croatia	1995	Henrichsmeyer, W., J. Köckler, A. Quiring and T. Möllmann (1999)	Martin Banse and Terrie Walmsley	5.2
77	ROU	Romania	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
78	RUS	Russian Federation	2003	Rosstat (2008) and (2006)	Natalia Tourdyeva	7
79	UKR	Ukraine	2004	Ukrainian Input-Output table, State Statistics Committee of Ukraine	Iryna Orlova	7
80	XEE	Rest of Eastern Europe	2004	Composite		
81	XER	Rest of Europe	2004	Composite		
82	KAZ	Kazakhstan	2004	Abdiev (2007)	David Roland-Holst Saula Kazybayeva	7
83	KGZ	Kyrgyzstan	2003	Miles Light	Aziz Atamanov, Lucio Vinhas de Souza and Joe Francois	7
84	XSU	Rest of Former Soviet Union		Composite		
85	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
86	AZE	Azerbaijan	2001	Statistical Committee of Azerbaijan Republic in Statistical Yearbook of Azerbaijan 2005.	Jesper Jensen, David Tarr and Oleksandr Shepotylo	7
87	GEO	Georgia	2001	Unofficial table provided by the Economic Policy Research Center (EPRC) in Georgia.	Jesper Jensen, David Tarr and Oleksandr	7

					Shepotylo	
88	IRN	Islamic Republic of Iran	2001	Statistical Center of Iran	Farzad Taheripour	7
89	TUR	Turkey	1998	State Institute of statistics (2004)	Mustafa Acar, Burcu Afyonoglu, Savas Kus and Bengisu Vural.	7
90	KWT	Kuwait	2005	Kuwait Central Statistics Office	David Green	8
91	XWS	Rest of Western Asia		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		Composite		
96	NGA	Nigeria	1999	Official 1990 Input-Output Table (30 sector), and an unofficial 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		Composite		
99	XCF	Rest of Central Africa	2004	Composite		
100	XAC	Rest of South-Central Africa		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.	Simon Njaka Randrianarivelo and	6

				Randriamiarana (2003)	Shuby Andriamanajara	
103	MWI	Malawi	1994	MERRISA/Wobst	Mark Horridge	5
104	MUS	Mauritius	1997	Supply and Use Table (SUT) 1997 compiled by the Central Statistical Office (CSO) of Mauritius and provided by Mr Dawnath, Head of National Accounts Department.	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
108	ZMB	Zambia	1995	MERRISA/Hausner	Mark Horridge	5
109	ZWE	Zimbabwe	1991	MERRISA/Thomas and Bautista	Mark Horridge	5
110	XEC	Rest of Eastern Africa		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		Composite		
114	XTW	Rest of the World		Composite		

Appendix A: 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	7.1	46	4	5	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	10	7	36	Basic	N/A
12	LAO	Lao PDR	7	31	12	1	18	Basic	Available
13	MYS	Malaysia	5.3	40	6	6	28	Unknown	Available
14	PHL	Philippines	8	52	10	6	36	Basic	
15	SGP	Singapore	6	57	12	8	37	Unknown	Available
16	THA	Thailand	5.3	40	6	6	28	Unknown	Available
17	VNM	Vietnam	7.1	47	6	7	34	Unknown	Available
19	BGD	Bangladesh	5	57	12	8	37	Basic	Available
20	IND	India	6	52	11	6	35	Basic & Purchaser	Available
21	PAK	Pakistan	6.1	46	8	6	32	Unknown	Available
22	LKA	Sri Lanka	7	29	5	3	21	Unknown	Available
24	CAN	Canada	7	51	8	8	35	Basic	N/A
25	USA	United States	7	57	12	8	37	Basic	N/A
26	MEX	Mexico	7	54	12	8	32	Unknown	Available
28	ARG	Argentina	6	57	12	8	37	Basic	Available
29	BOL	Bolivia	7	32	5	5	22	Unknown	Available
30	BRA	Brazil	6	57	12	8	37	Basic	Available
31	CHL	Chile	7	44	3	6	33	Unknown	Available
32	COL	Colombia	7	57	12	8	37	Purchaser	N/A
33	ECU	Ecuador	7	41	5	5	31	Unknown	Available

34	PAN	Panama	7	27	10	2	15	Market	N/A
35	PRY	Paraguay	7	51	9	7	35	Market	Available
36	PER	Peru	7	50	12	8	30	Unknown	N/A
37	URY	Uruguay	7	50	12	8	30	Basic	Available
38	VEN	Venezuela	8	45	2	6	37	Basic	
40	CRI	Costa Rica	7	37	9	7	21	Basic	N/A
41	GTM	Guatemala	7	50	12	7	31	Market	N/A
42	NIC	Nicaragua	7	34	5	5	24	Market	Available
45	AUT	Austria	7.1	54	12	8	34	Basic	Available
46	BEL	Belgium	7.1	54	12	8	34	Basic	Available
47	CYP	Cyprus	7.1	54	12	8	34	Basic	Available
48	CZE	Czech Republic	7.1	54	12	8	34	Basic	Available
49	DNK	Denmark	7.1	54	12	8	34	Basic	Available
50	EST	Estonia	7.1	54	12	8	34	Basic	Available
51	FIN	Finland	7.1	54	12	8	34	Basic	Available
52	FRA	France	7.1	54	12	8	34	Basic	Available
53	DEU	Germany	7.1	54	12	8	34	Basic	Available
54	GRC	Greece	7.1	54	12	8	34	Basic	Available
55	HUN	Hungary	7.1	54	12	8	34	Basic	Available
56	IRL	Ireland	7.1	54	12	8	34	Basic	Available
57	ITA	Italy	7.1	54	12	8	34	Basic	Available
58	LVA	Latvia	7.1	54	12	8	34	Basic	Available
59	LTU	Lithuania	7.1	54	12	8	34	Basic	Available
60	LUX	Luxembourg	7.1	54	12	8	34	Basic	Available
61	MLT	Malta	7.1	54	12	8	34	Basic	Available
62	NLD	Netherlands	7.1	54	12	8	34	Basic	Available
63	POL	Poland	7.1	54	12	8	34	Basic	Available
64	PRT	Portugal	7.1	54	12	8	34	Basic	Available
65	SVK	Slovakia	7.1	54	12	8	34	Basic	Available
66	SVN	Slovenia	7.1	54	12	8	34	Basic	Available
67	ESP	Spain	7.1	54	12	8	34	Basic	Available
68	SWE	Sweden	7.1	54	12	8	34	Basic	Available
69	GBR	United Kingdom	7.1	54	12	8	34	Basic	Available
70	CHE	Switzerland	7	30	3	1	26	Unknown	Available

71	NOR	Norway	7	38	3	1	34	Basic	Available
73	ALB	Albania	5.3	57	12	8	37	Unknown	Available
74	BGR	Bulgaria	7.1	54	12	8	34	Basic	Available
75	BLR	Belarus	7	39	1	1	35	Basic	N/A
76	HRV	Croatia	5.2	57	12	8	37	Unknown	N/A
77	ROU	Romania	7.1	54	12	8	34	Basic	Available
78	RUS	Russia	7	41	4	4	33	Basic	Available
79	UKR	Ukraine	7	46	1	8	37	Basic	Available
82	KAZ	Kazakhstan	7	34	1	1	32	Basic	N/A
83	KGZ	Kyrgyzstan	7	31	1	1	29	Basic	N/A
85	ARM	Armenia	7	30	6	4	20	Basic	Available
86	AZE	Azerbaijan	7	32	1	1	30	Basic	Available
87	GEO	Georgia	7	57	12	8	37	Market	Available
88	IRN	Iran	7	43	6	6	37	Unknown	Available
89	TUR	Turkey	7	46	3	7	36	Basic	Available
90	KWT	Kuwait	8	37	7	0	32	Producer Prices	Available
92	EGY	Egypt	6.2	31	3	4	24	Unknown	Available
93	MAR	Morocco	7	46	12	6	28	Unknown	Available
96	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
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	41	3	6	32	Market	N/A

Appendix B: Regions and Data

<i>Regions</i>	<i>Region Code</i>	<i>GDP (2007 Million USD)</i>	<i>GDP/capita (2007 USD)</i>	<i>Population (millions)</i>	<i>SHR Dwe in Total Production</i>	<i>SHR K+L Total Costs (Dwe)</i>	<i>Year</i>	<i>Version</i>
Albania	ALB	10834	3459	3.13	2.29%	80.21%	2000	5.3
Argentina	ARG	260789	6604	39.49	4.71%	99.98%	2000	6
Armenia	ARM	9206	2996	3.07	1.87%	73.73%	2002	7
Australia	AUS	856816	40660	21.07	4.54%	85.07%	1997	7
Austria	AUT	372291	44850	8.30	3.48%	83.74%	2000	7.1
Azerbaijan	AZE	33049	3851	8.58	0.01%	85.53%	2001	7
Belgium	BEL	458620	43161	10.63	3.22%	82.72%	2000	7.1
Bangladesh	BGD	68415	434	157.75	3.22%	75.51%	1993-94	5
Bulgaria	BGR	42114	5498	7.66	3.19%	90.22%	2000	7.1
Belarus	BLR	45276	4667	9.70	2.70%	82.11%	2004	7
Bolivia	BOL	13120	1378	9.52	2.06%	92.21%	2004	7
Brazil	BRA	1365983	7185	190.12	4.62%	94.85%	1996	6
Botswana	BWA	12386	6545	1.89	1.26%	99.98%	1993-94	5
Canada	CAN	1424066	43185	32.98	3.47%	87.12%	2003	7
Switzerland	CHE	434117	57490	7.55	6.04%	72.56%	2005	7.1
Chile	CHL	164315	9877	16.64	2.51%	79.78%	2003	7
China	CHN	3494056	2651	1317.89	1.14%	84.91%	2007	7.1
Colombia	COL	207363	4675	44.36	4.34%	90.01%	2003	7
Costa Rica	CRI	26267	5891	4.46	0.00%	84.45%	2002	7
Cyprus	CYP	21447	25119	0.85	4.20%	84.50%	2000	7.1
Czech Republic	CZE	174215	16858	10.33	2.14%	71.63%	2000	7.1
Germany	DEU	3329145	40468	82.27	4.29%	86.48%	2000	7.1
Denmark	DNK	310721	56894	5.46	4.04%	78.68%	2000	7.1
Ecuador	ECU	45789	3432	13.34	2.00%	77.49%	2004	7
Egypt	EGY	130473	1630	80.06	2.12%	92.69%	2003	6.2

Spain	ESP	1440837	32105	44.88	3.07%	78.21%	2000	7.1
Estonia	EST	21384	15938	1.34	3.15%	85.34%	2000	7.1
Ethiopia	ETH	19182	244	78.65	1.89%	96.26%	2002	7
Finland	FIN	245952	46505	5.29	4.36%	77.62%	2000	7.1
France	FRA	2594012	41880	61.94	5.18%	84.68%	2000	7.1
United Kingdom	GBR	2799040	45882	61.01	4.06%	85.29%	2000	7.1
Georgia	GEO	10173	2334	4.36	2.54%	85.52%	2001	7
Greece	GRC	309917	27689	11.19	5.26%	93.30%	2000	7.1
Guatemala	GTM	34113	2555	13.35	8.70%	92.74%	2001	7
Hong Kong	HKG	207069	29898	6.93	1.33%	88.23%	1988	1
Croatia	HRV	58558	13201	4.44	0.00%	85.24%	1995	5.2
Hungary	HUN	138757	13799	10.06	3.14%	89.40%	2000	7.1
Indonesia	IDN	432105	1923	224.67	6.20%	96.41%	2004	7
India	IND	1232816	1096	1124.79	2.01%	94.36%	1994	6
Ireland	IRL	259706	59608	4.36	1.78%	84.27%	2000	7.1
Iran Islamic Republic of	IRN	286058	4028	71.02	3.66%	88.27%	2001	7
Italy	ITA	2116202	35641	59.38	3.41%	90.89%	2000	7.1
Japan	JPN	4377944	34264	127.77	4.79%	86.95%	2000	6
Kazakhstan	KAZ	104853	6772	15.48	0.00%	83.65%	2004	7
Kyrgyzstan	KGZ	3803	726	5.23	0.01%	83.87%	2003	7
Cambodia	KHM	8358	583	14.32	2.13%	88.14%	2003	7
Korea Republic of	KOR	1049236	21653	48.46	2.55%	75.29%	2003	7
Kuwait	KWT	114739	43087	2.66	2.21%	96.05%	2005	8
Lao People's Democratic Republic	LAO	4286	704	6.09	0.98%	92.02%	2002	7
Sri Lanka	LKA	32351	1617	20.01	0.41%	88.67%	2000	7
Lithuania	LTU	39104	11584	3.38	2.97%	95.75%	2000	7.1
Luxembourg	LUX	51278	106831	0.48	2.25%	82.75%	2000	7.1
Latvia	LVA	28766	12638	2.28	0.95%	61.60%	2000	7.1
Morocco	MAR	75226	2409	31.22	1.29%	99.97%	2004	7

Madagascar	MDG	7343	395	18.60	0.00%	64.55%	1999	6
Mexico	MEX	1025583	9741	105.28	2.68%	98.14%	2002	7
Malta	MLT	7449	18209	0.41	1.52%	91.59%	2000	7.1
Mozambique	MOZ	8030	367	21.87	0.71%	77.70%	1995	5
Mauritius	MUS	7521	5966	1.26	0.01%	82.73%	1997	6.1
Malawi	MWI	3586	248	14.44	1.26%	82.55%	1994	5
Malaysia	MYS	186642	7028	26.56	0.69%	88.33%	1995	5.3
Nigeria	NGA	165921	1123	147.72	3.07%	94.63%	1999	6.1
Nicaragua	NIC	5618	1004	5.60	0.01%	78.61%	2000	7
Netherlands	NLD	778312	47511	16.38	3.80%	79.89%	2000	7.1
Norway	NOR	387536	82294	4.71	0.24%	42.00%	2004	7
New Zealand	NZL	138317	32712	4.23	3.68%	73.41%	1996	6
Pakistan	PAK	143171	881	162.59	1.49%	80.85%	2001-02	6.1
Panama	PAN	19794	5920	3.34	5.19%	90.48%	2004	7
Peru	PER	107492	3771	28.51	0.16%	75.01%	2004	7
Philippines	PHL	144070	1624	88.72	3.02%	93.95%	2000	8
Poland	POL	425321	11157	38.12	4.02%	80.85%	2000	7.1
Portugal	PRT	230945	21770	10.61	3.09%	83.41%	2000	7.1
Paraguay	PRY	12222	1995	6.13	0.83%	93.55%	1994	7
Romania	ROU	169282	7856	21.55	4.62%	84.14%	2000	7.1
Russian Federation	RUS	1299706	9146	142.10	0.00%	82.24%	2003	7
Senegal	SEN	11334	953	11.89	2.94%	99.06%	1996	6.2
Singapore	SGP	176766	38523	4.59	1.25%	85.33%	1996	6
Slovakia	SVK	84242	15608	5.40	2.62%	82.14%	2000	7.1
Slovenia	SVN	47315	23445	2.02	2.92%	76.00%	2000	7.1
Sweden	SWE	462513	50558	9.15	5.00%	78.13%	2000	7.1
Thailand	THA	247111	3689	66.98	1.96%	87.41%	1995	5.3
Tunisia	TUN	35620	3483	10.23	0.00%	64.68%	1995	6
Turkey	TUR	647155	8865	73.00	2.62%	82.24%	1998	7
Taiwan	TWN	393762	17211	22.88	3.61%	84.07%	1999	6

Tanzania United Republic of	TZA	16826	408	41.28	2.54%	88.44%	1992	5
Uganda	UGA	11892	388	30.64	3.44%	85.65%	1992	5
Ukraine	UKR	142719	3069	46.51	0.01%	85.98%	2004	7
Uruguay	URY	23952	7206	3.32	7.10%	80.73%	1997	7
United States of America	USA	14061800	46672	301.29	4.43%	86.62%	2002	7
Venezuela	VEN	226791	8252	27.48	2.47%	90.68%	1997	8
Viet Nam	VNM	68435	804	85.15	2.22%	90.46%	2005	7.1
South Africa	ZAF	286302	5983	47.85	1.75%	99.92%	2005	7
Zambia	ZMB	11541	937	12.31	0.54%	83.71%	1995	5
Zimbabwe	ZWE	4424	355	12.45	0.47%	87.62%	1991	5