

2012 Report on the Regional Input-Output Tables in the GTAP Data Base Version 8¹

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1. Introduction

Input-Output (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 The GTAP Data Base can be further improved by updating current I-O tables with more recent data, by identifying and correcting common errors in existing I-O tables and by contributing new I-O tables.

The purpose of this report is 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 version 8, 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 8 Data Base. Version 8 reflects the global economy for two years 2004 and 2007. However, the I-O tables for 11 of the 109 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. One of these regions, Hong Kong, has an I-O table that is older than 1990. This is the only region for which

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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.

there has not been an I-O table update since Version 1, but we are aware that a contributor is working on updating this table.

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	Bangladesh*	1993-94	5	57	12	8	37
5	Botswana	1993-94	5	57	12	8	37
6	Paraguay	1994	7	41	9	7	25
7	Malawi**	1994	5	57	12	8	37
8	Croatia	1995	5.2	57	12	8	37
9	Tunisia	1995	6	37	3	5	29
10	Mozambique**	1995	5	57	12	8	37
11	Zambia**	1995	5	57	12	8	37

*Contributor is working on this table.

**New data is expected as part of the new GTAP Africa Project.

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).

In total, there are 86 I-O tables for which data are not available for all 57 GTAP sectors (Table 3). Four countries, Panama, Nigeria, Namibia, 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 suggested that it would be better for the Center to disaggregate these 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

<i>No.</i>	<i>Description</i>	<i>Total</i>	<i>Version</i>	<i>Year</i>
1	Panama	27	7	1996
2	Nigeria	29	6.1	1999
3	Sri Lanka	29	7	2000
4	Namibia	29	8	2004
5	Senegal	30	6.2	1996

6	Armenia	30	7	2002
7	Switzerland	30	8	2008
8	Egypt	31	6.2	2003
9	Kyrgyzstan	31	7	2003
10	Lao PDR	31	7	2002
11	Azerbaijan	32	7	2001
12	Bolivia	32	7	2004
13	Kenya	33	8	2001
14	Uganda	33	8	2002
15	Kazakhstan	34	7	2004
16	Nicaragua	34	7	2000
17	Cote d'Ivoire	34	8	1998
18	Mongolia	34	8	2005
19	Hong Kong	37	1	1988
20	Tunisia	37	6	1995
21	Costa Rica	37	7	2002
22	Bahrain	37	8	2005
23	Kuwait	37	8	2005
24	Oman	37	8	2005
25	Qatar	37	8	2005
26	Saudi Arabia	37	8	2005
27	United Arab Emirates	37	8	2005
28	El Salvador	38	8	2000
29	Mexico	38	8	2003
30	Norway	38	8	2007
31	Belarus	39	7	2004
32	Thailand	40	5.3	2005
33	Ecuador	41	7	2004
34	Russia	41	7	2003
35	South Africa	41	7	2005
36	Ghana	41	8	2005
37	Mauritius	42	6.1	1997
38	Honduras	42	8	2004
39	Iran	43	7	2001
40	Israel	43	8	2004
41	Chile	44	7	2003
42	China	45	8	2007
43	Venezuela	45	8	1997
44	Pakistan	46	6.1	2001/02
45	Morocco	46	7	2004
46	Turkey	46	7	1998
47	Ukraine	46	7	2004

48	Malaysia	46	8	2005
49	Vietnam	47	7.1	2005
50	Guatemala	50	7	2001
51	Peru	50	7	2004
52	Uruguay	50	7	1997
53	India	50	8	2003/04
54	Philippines	50	8	2000
55	Canada	51	7	2003
56	Paraguay	51	7	1994
57	Brazil	52	8	2005
58	Indonesia	53	7	2004
59	Austria	54	7.1	2000
60	Belgium	54	7.1	2000
61	Bulgaria	54	7.1	2000
62	Cyprus	54	7.1	2000
63	Czech Republic	54	7.1	2000
64	Denmark	54	7.1	2000
65	Estonia	54	7.1	2000
66	Finland	54	7.1	2000
67	France	54	7.1	2000
68	Germany	54	7.1	2000
69	Greece	54	7.1	2000
70	Hungary	54	7.1	2000
71	Ireland	54	7.1	2000
72	Italy	54	7.1	2000
73	Latvia	54	7.1	2000
74	Lithuania	54	7.1	2000
75	Luxembourg	54	7.1	2000
76	Malta	54	7.1	2000
77	Netherlands	54	7.1	2000
78	Poland	54	7.1	2000
79	Portugal	54	7.1	2000
80	Romania	54	7.1	2000
81	Slovakia	54	7.1	2000
82	Slovenia	54	7.1	2000
83	Spain	54	7.1	2000
84	Sweden	54	7.1	2000
85	United Kingdom	54	7.1	2000
86	Australia	54	8	2005

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 not having data. However as the project continues to grow, we need to make every effort to maintain high data quality, 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.

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. 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 version 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).

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 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		

*New data is expected as part of the new GTAP Africa Project.

Contribution of I-O tables are ongoing, including many of the older I-O tables listed in Table 2. Based on current information we would potentially remove 2 countries from the standard GTAP 9 Data Base, Botswana and Croatia (Table 4). Botswana will still be publicly available through the African GTAP Data Base; while Croatia would not be included separately in the public version of the GTAP 9 Data Base, although it 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 for version 9.

This encouragement proved to be useful as members of our network responded to our calls and have contributed more recent tables for a couple of countries that were listed to be removed in version 8. Isabel Teichmann from the German Institute for Economic Research (DIW Berlin) contributed the 2002 Uganda SAM table and Roberto Ferrer and Jorge Hernandez, from Venezuela's Central Bank, have contributed the 1997 Venezuela I-O table.

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.

2.3 Peer-review Process

Last 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 impossible. Due to these timing issues, we decided that future peer-reviews will be seek in cases where there is concerns about the data or a reviewer steps forward voluntarily. Therefore, these 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 subsequent contributions.

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 14 I-O tables have *dwe* less than 2% (see Appendix B). Table 5 reports regions with a *dwe* flaw and for which the contributed table contains information on dwellings. Nevertheless, countries with no dwellings sector appear in all versions and from recent to old years.

Most of the regions have been contributed in the last two versions 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 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.

Table 5: Regions with share of dwelling flaw

<i>Regions</i>	<i>Share of Dwellings in total production</i>	<i>Year</i>	<i>Version</i>
Azerbaijan	0.00%	2001	7
Cameroon	0.00%	2003	8
Costa Rica	0.00%	2002	7
Cote d'Ivoire	0.00%	1998	8
Croatia	0.00%	1995	5.2
Kazakhstan	0.00%	2004	7
Kyrgyzstan	0.00%	2003	7
Madagascar	0.00%	1999	6
Mauritius	0.00%	1997	6.1
Mexico	0.00%	2003	8
Nicaragua	0.00%	2000	7
Russian Federation	0.00%	2003	7
Tunisia	0.00%	1995	6
Ukraine	0.00%	2004	7

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 dairy products.

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 98.02% of total world GDP and 90.45% of global population, a jump from version 7 that covered approximately 87.9% of the global population. The rest of the 9.55% 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, for a complete list of countries in GTAP 8 Data Base please go to:
<https://www.gtap.agecon.purdue.edu/databases/regions.asp?Version=8.211>

Table 6 provides a list of fourteen regions with the highest GDP in millions of 2007 US\$. It can be seen that nine of these regions, four from the continent of Africa, and six from Central America and the Caribbean region. The remaining country is located in Europe.

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

No.	Regions	GDP (2007 Million USD)
1	Algeria	135,804
2	Puerto Rico	92,926
3	Libya	71,803
4	Angola	59,263
5	Cuba	58,604
6	Sudan	46,531
7	Dominican Republic	41,315
8	Syrian Arab Republic	40,549
9	Serbia	39,385
10	Lebanon	25,057
11	Uzbekistan	22,308
12	Yemen, Rep.	21,657
13	Iraq	21,544
14	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; the rest of the countries have income levels between \$91K and \$25K.

Table 7: 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	Falkland Islands (Malvinas)	66,019
6	Iceland	65,566
7	Cayman Islands	59,262
8	San Marino	55,188
9	Isle of Man	50,594
10	Virgin Islands, British	49,304
11	Saint Pierre and Miquelon	42,506
12	Virgin Islands (U.S.)	41,704
13	Andorra	39,492
14	Faroe Islands	38,084
15	Greenland	37,517
16	New Caledonia	37,130
17	Macao SAR, China	36,249
18	Brunei Darussalam	31,824
19	Turks and Caicos	25,564

The regions with the highest populations are also noteworthy. It can be seen from Table 8 (showing population in millions) that among countries with highest population, 6 are from Africa, 4 are from Asia and 3 are from the Middle East.

Table 8: 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	Algeria	34
5	Iraq	30
6	Afghanistan	28
7	Uzbekistan	27
8	Korea, Dem. Rep.	24
9	Yemen, Rep.	22
10	Syrian Arab Republic	20
11	Angola	18
12	Niger	14
13	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, Puerto Rico and Algeria top the list in terms of GDP; in addition, DR Congo, Myanmar, and Sudan are largely populated with over 30 million people and do not have individual I-O tables listed in GTAP. The representation of many African economies is improving in part by the special African GTAP Data Base. Also since countries in the GTAP Data Base covers 98% of world's 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. Apart from these, it is unfortunate that 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.

5. References

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

- 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 Einführung*, 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. 2009. *Input-Output Tables, 2005-06*. Cat. no. 5209.055.001, Electronic Publication, Canberra, Australia.
- Bangladesh Planning Commission and Bangladesh Institute of Development Studies. 1998. *An Input-Output Table for Bangladesh Economy, 1993-94*. Dhaka, Bangladesh.
- Bank of Korea. 2003. *Input-Output Tables of Korea 2000*. Seoul, Korea.
- 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 Paraguay, 2006. *Tablas de Oferta y Utilización de Paraguay, 1991-1997*, Electronic File in Excel.
- Department of National Economy Accounting, National Bureau Statistic(NBS). 2009. *Input-Output Table of China - 2007*. China Statistics Press, Beijing, China.
- Department of Statistics, Malaysia. 2010. *Input-Output Tables 2005*. 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.
- 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.
- European Communities. 2008. Eurostat Manual of Supply, Use and Input-Output Tables. Eurostat Methodologies and Working Papers. Luxembourg.
- Gabrielle Antille. 2000. Die input-output-tabellen. In Peter Bohley, Armin Jans, and Carlo Malaguerra, editors, *Wirtschafts- und Sozialstatistik der Schweiz. Eine Einführung*, volume 3.. Aufl., pages 489–504. Verlag Haupt, Bern.
- Government of India. 2008. *Input-Output Transactions Table, 2003-04*. Central Statistical Organization, Department of Statistics, Ministry of Planning and Programme Implementation.

- 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.
- International Monetary Fund. 2000. “Albania: Statistical Appendix,” IMF Staff Country Report No. 00/87, Washington, D.C.
- 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.
- Institut National de la Statistique et des Études Économiques. 1996. *Comptes et Indicateurs Economique; Rapport sur les Comptes de la Nation 1995*. Paris, France.
- Instituto Brasileiro de Geografia e Estatística. 2008. *Matriz de Insumo-Produto do Brasil 2000/2005*. Contas Nacionais no. 23. 57 p. <http://www.ibge.gov.br/>
- Központi Statisztikai Hivatal (Central Statistical Office). 1999. *Magyarország Nemzeti Számlái (National Accounts Hungary) 1995-1997*. Budapest, Hungary.
- Statistics Bureau. 2004. “2000 Input-Output Tables for Japan” Ministry of Public Management, Home Affairs, Posts and Telecommunications.
- Ministry of Statistics and Analysis of the Republic of Belarus, (2006). *National Accounts of the Republic of Belarus*. Statistical Compilation.
- Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009). *Construction of Social Accounting Matrices for EU27 with a Disaggregated Agricultural Sector (AgroSAM)*. Available at <http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=2679>: JRC Scientific and Technical Reports.
- 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. 2006. *2000 Input-Output Accounts of the Philippines*. National Statistical and Coordination board, Makati City.
- Nielsen, Chantal Pohl. 2001. “Social Accounting Matrices for Vietnam: 1996 and 1997,” Working Paper No. 8/2001, Danish Institute of Agricultural and Fisheries Economics (SJFI), Copenhagen, Denmark.

- Office of National Economic and Social Development Board, Office of the Prime Minister. 2005. *Input-Output Table of Thailand 2005*. Bangkok, Thailand. www.nesdb.go.th/Default.aspx?tabid=97
- 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.
- Republic of Albania, Ministry of Finance. 2001. *Fiscal Statistics of Government*. Tirana, Albania.
- The Russian Federation State Statistics Committee. 2001. *Input-Output Tables, 1996-1997*. Moscow, Russian Federation.
- Secretariat of Agriculture, Livestock-Farming, Fisheries and Food Industry. *The 2000 Agri-food Social Accounting Matrix*. Buenos Aires, Argentina.
- State Institute of Statistics. 2001. *The Input-Output Structure of the Turkish Economy 1996*. Ankara, Turkey.
- Statistical Center of Iran. 2001. *2001 Symmetric Iran Input-Output Tables*
http://www.sci.org.ir/portal/faces/public/sci_en/sci_en.selecteddata/sci_en.inputoutput
- Statistical Offices in Central Europe, Malta and Cyprus. National Account and Trade Statistics: Input-Output Tables.
- Statistics New Zealand. 1996. Interim Release of Tables, New Zealand Inter-Industry Study.
<http://www.stats.govt.nz/>
- Statistics South Africa. 2006. *Final supply and use tables, 2002*. Pretoria
- 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.
- The Bank of Korea. 2007. *Input-Output Tables of Korea 2003*. Seoul.
- 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.
- U.S. Department of Commerce, Bureau of Economic Analysis. 1997. *Survey of Current Business*. Washington, D.C.
- Walmsley T. L. and R. McDougall. 2004. "Using Entropy to Compare Shares," Center for Global Trade Analysis, Purdue University, West Lafayette, Indiana.

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

No.	Code	Description	Period	Source of I-O Table	Contributor(s)	Version
1	AUS	Australia	2005	MMRF database derived from Australian Bureau of Statistics Input-Output tables, 2005-06	Patrick Jomini, Simone Hone, Alexandra Strzelecki	8
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	Liu Yu, Li Xiangyang	8
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	MNG	Mongolia	2005	Mongolian Inter-Sector Balance Table for 2005	Michael Begg	8
9	TWN	Taiwan	1999	Directorate-General of Budget, Accounting and Statistics (DGBAS) (2001)	Hsing-Chun Lin and Shih-Hsun Hsu	6
10	XEA	Rest of East Asia		Composite		
11	KHM	Cambodia	2003	National Institute of Statistics (2006), National Institute of Statistics (2005), and National Bank of Cambodia (2006)	Sothea Oum	7
12	IDN	Indonesia	2004	Biro Pusat Statistik (1999)	Mark Horridge and Armida S.Alisjahbana)	7
13	LAO	Lao People's Democratic Republic	2002	Asian Development Bank (2005), Menon and Warr (2006), and Rao (1993)	Carlos Ludeña	7
14	MYS	Malaysia	2005	Malaysian Input-output tables for the year 2005, Department of Statistics, 2009.	Nhi Tran	8
15	PHL	Philippines	2000	National Statistical Office and National Statistical Coordination board (1988)	Erwin Corong	8
16	SGP	Singapore	1996	Department of Statistics, Singapore (1995).	Ni, Houming and Toh, Mun-Heng	6

17	THA	Thailand	2005	2005 Input-Output Table of Thailand from the Office of the National Economic and Social Development Board (NESDB)	Tosapol Apaitan	8
18	VNM	Vietnam	2005	Vietnam General Statistics Office (GSO)	James Giesecke	7.1
19	XSE	Rest of Southeast Asia		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	2003-04	Input-output transactions table, 2003-04, (Government of India, 2008)	Rajesh Chadha and Anjali Tandon	8
22	NPL	Nepal	2007	2001 Input-output matrix, Planning Commission of Nepal and the Central Bureau of Statistics (CBS), CBS National Accounts; UNCOMTRADE; domestic tax data from department of inland revenue; import duties from Department of Customs; CBS Labour Force Survey and Living Standard Survey	Selim Raihan, Bazlul Khondker	8
23	PAK	Pakistan	2001/02	Dorosh, Niazi and Nazli (2008)	Mark Horridge and Paul Dorosh	6.1
24	LKA	Sri Lanka	2000	Amarasinghe and Bandara (2005), and Bandara and Kelegama (2008)	Jeevika Weerahewa Jay Bandara	7
25	XSA	Rest of South Asia		Composite		
26	CAN	Canada	2003	Statistics Canada	Shenjia Chen and Rick Cameron	7
27	USA	United States	2002	Dixon and Rimmer (2001), Dixon, Rimmer, and Tsigas (2004), and Lawson (1997)	Marinos Tsigas	7
28	MEX	Mexico	2003	National Institute of Statistical Geography and Informatics (INEGI)	Aída González, Claudia Octaviano	8
29	XNA	Rest of North America		Composite		
30	ARG	Argentina	2000	(1) National Institute of Statistics and Census, and (2) Secretary of Agriculture, Livestock-farming, Fisheries and Food Industry	Maximiliano Méndez Parra	6
31	BOL	Bolivia	2004	Instituto Nacional de Estadística (National Institute of Statistics of Bolivia)	Carlos Ludeña	7

32	BRA	Brazil	2005	Brazilian 2005 IO table from Instituto Brasileiro de Geografia e Estatística - IBGE	Joaquim Bento S. Ferreira Filho	8
33	CHL	Chile	2003	Banco Central de Chile (2001)	Andres Schuschny and Carlos Ludeña	7
34	COL	Colombia	2003	Colombian National Statistical Office (DANE)	Alvaro Perdomo	7
35	ECU	Ecuador	2004	Central Bank of Ecuador (2000)	Sara Wong and Carlos Ludeña	7
36	PAN	Panama	1996	SAM built by Marco V. Sanchez and Rob Vos based on Supply and Use Tables "Contraloría General of Panama"	Carlos Ludeña	7
37	PRY	Paraguay	1994	Central Bank of Paraguay (2006)	Carlos Ludeña, Ruiz Diaz, Francisco Carlos and Gustavo Biedermann	7
38	PER	Peru	2004	Peruvian Ministry of Finance (2004)	David Roland-Holst Saule Kazybayeva	7
39	URY	Uruguay	1997	Terra, Olivieri, Tellechea and Zalcicever (2008)	Ines Terra	7
40	VEN	Venezuela	1997	Department of Macroeconomic Accounts, Central Bank of Venezuela	Roberto Ferrer, Jorge Hernandez, Agustín Velásquez	8
41	XSM	Rest of South America		Composite		
42	CRI	Costa Rica	2002	SAM built by Sanchez (2006), based on data from Central Bank of Costa Rica	Carlos Ludeña Marco Sanchez	7
43	GTM	Guatemala	2001	Secretaria General de Planificación (SEGEPLAN).	Carlos Ludeña José Durán	7
44	HND	Honduras	2004	BCH (Honduras Central Bank)	José Durán, Gonzalo Véliz, Carlos Ludeña, Mauricio Pereira	8
45	NIC	Nicaragua	2000	Central Bank of Nicaragua (2006)	Carlos Ludeña Marco Sánchez Rob Vos	7

46	SLV	El Salvador	2000	Social Accounting Matrix, year 2000, from IFPRI (International Food Policy Research Institute)	José Durán, Carlos Ludeña, Mauricio Pereira, Gonzalo Véliz	
47	XCA	Rest of Central America		Composite		
48	XCB	Rest of the Caribbean		Composite		
49	AUT	Austria	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
50	BEL	Belgium	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
51	CYP	Cyprus	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
52	CZE	Czech Republic	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
53	DNK	Denmark	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
54	EST	Estonia	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
55	FIN	Finland	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
56	FRA	France	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
57	DEU	Germany	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald	7.1

					Csilla Lakatos	
58	GRC	Greece	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
59	HUN	Hungary	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
60	IRL	Ireland	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
61	ITA	Italy	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
62	LVA	Latvia	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
63	LTU	Lithuania	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
64	LUX	Luxembourg	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
65	MLT	Malta	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
66	NLD	Netherlands	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
67	POL	Poland	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
68	PRT	Portugal	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1

69	SVK	Slovakia	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
70	SVN	Slovenia	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
71	ESP	Spain	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
72	SWE	Sweden	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
73	GBR	United Kingdom	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
74	CHE	Switzerland	2008	Swiss Input-Output Table 2008 (Swiss Federal Office of Statistics)	Renger van Nieuwkoop Nathani Carsten	7.1
75	NOR	Norway	2007	Statistics Norway: 2007 IOT consistent with the European System of Accounts 1995	Glen Peters Nathan Rive Aaheim	7.1
76	XEF	Rest of EFTA	2004	Composite		
77	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
78	BGR	Bulgaria	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1
79	BLR	Belarus	2004	Ministry of Statistics and Analysis of Belarus (2006)	Irina Tochitskaya	7
80	HRV	Croatia	1995	Henrichsmeyer, W., J. Köckler, A. Quiring and T. Möllmann (1999)	Martin Banse and Terrie Walmsley	5.2
81	ROU	Romania	2000	Mueller, M., Pérez Domínguez, I., & Gay, S. H. (2009)	Marc Mueller Scott McDonald Csilla Lakatos	7.1

82	RUS	Russian Federation	2003	Rosstat (2008) and (2006)	Natalia Tourdyeva	7
83	UKR	Ukraine	2004	Ukrainian Input-Output table, State Statistics Committee of Ukraine	Iryna Orlova	7
84	XEE	Rest of Eastern Europe	2004	Composite		
85	XER	Rest of Europe	2004	Composite		
86	KAZ	Kazakhstan	2004	Abdiev (2007)	David Roland-Holst Saule Kazybayeva	7
87	KGZ	Kyrgyzstan	2003	Miles Light	Aziz Atamanov, Lucio Vinhas de Souza and Joe Francois	7
88	XSU	Rest of Former Soviet Union		Composite		
89	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
90	AZE	Azerbaijan	2001	Statistical Committee of Azerbaijan Republic in Statistical Yearbook of Azerbaijan 2005.	Jesper Jensen, David Tarr and Oleksandr Shepotylo	7
91	GEO	Georgia	2001	Unofficial table provided by the Economic Policy Research Center (EPRC) in Georgia.	Jesper Jensen, David Tarr and Oleksandr Shepotylo	7
92	BHR	Bahrain	2005	2005-06-07 National accounts data, Central Informatics Organisation, Bahrain; UNCOMTRADE. 2005 Kuwait I/O	David Green	8
93	IRN	Islamic Republic of Iran	2001	Statistical Center of Iran	Farzad Taheripour	7
94	ISR	Israel	2004	Israeli Central Bureau of Statistics, the Central Bank of Israel, and the Israeli Tax Authority (ITA).	Khalid Siddig; Dorothee Flaig; Jonas Luckmann; Harald Grethe	8
95	KWT	Kuwait	2005	Kuwait Central Statistics Office	David Green	8

96	OMN	Oman	2005	2005 National Accounts, Ministry of National Economy, Oman. 9 Sector SAM 1999, Boughanmi, et al 2002, UNCOMTRADE. 2005 Kuwait I/O	David Green	8
97	QAT	Qatar	2005	2007 Annual Statistical Abstract, 2008 Economic Statistics Bulletin, Qatar Statistics Authority; UNCOMTRADE; 2005 Kuwait I/O	David Green	8
98	SAU	Saudi Arabia	2005	2005 National Accounts Data, Central Department of Statistics and Information, Saudi Ministry of Economy and Planning; UNCOMTRADE; 2005 Kuwait I/O	David Green	8
99	TUR	Turkey	1998	State Institute of statistics (2004)	Mustafa Acar, Burcu Afyonoglu, Savas Kus and Bengisu Vural.	7
100	ARE	United Arab Emirates	2005	2005 National Accounts Data, UAE Ministry of Economy. 10 Sector I-O Table for the UAE, 2003; 8 Sector SAM of the UAE Economy, 2006; 2005 Kuwait I/O table for 2005	David Green	8
101	XWS	Rest of Western Asia		Composite		
102	EGY	Egypt	2003	National Accounts, National Planning Unit of Egypt	Noura Abdelwahab and Miles Light	6.2
103	MAR	Morocco	2004	Bussolo and Roland-Holst (1993)	David Roland-Holst Saad Belghazi	7
104	TUN	Tunisia	1995	Institut National de la Statistique, Tunisia (1998)	Denise Konan and Ari Van Assche	6
105	XNF	Rest of North Africa		Composite		
106	CMR	Cameroon	2003	Not specified.	Christian Emini	8
107	CIV	Cote d'Ivoire	1998	1998 Input-Output table for Cote d'Ivoire	Youssef Kone	8
108	GHA	Ghana	2005	2005 SAM, Ghana Statistical Services (GSS), International Food Policy Research Institute (IFPRI) under the Ghana Strategy Support Program (GSSP)	Charles Adjasi, Emmanuel Kinful	8
109	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	Mark Horridge and Patrick Osakwe (UNECA)	6.1

				Economic Commission for Africa (UNECA)		
110	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
111	XWF	Rest of Western Africa		Composite		
112	XCF	Rest of Central Africa	2004	Composite		
113	XAC	Rest of South-Central Africa		Composite		
114	ETH	Ethiopia	2002	Social Accounting Matrix 2001/02 compiled by IDS in collaboration with EDRI	Dirk Willenbockel Sherman Robinson	7
115	KEN	Kenya	2001	National accounts and IO table (1997 SAM constructed by the Kenya Institute for Public Policy Research and Analysis KIPPRA)	Peter Wobst, Benjamin Schraven	8
116	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
117	MWI	Malawi	1994	MERRISA/Wobst	Mark Horridge	5
118	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
119	MOZ	Mozambique	1995	MERRISA/Arndt et al.	Mark Horridge	5
120	TZA	Tanzania	1992	MERRISA/Wobst	Mark Horridge	5
121	UGA	Uganda	2002	Uganda SAM 2002, provided by the Uganda Bureau of Statistics (UBoS), Kampala, Uganda	Teichmann	8
122	ZMB	Zambia	1995	MERRISA/Hausner	Mark Horridge	5
123	ZWE	Zimbabwe	1991	MERRISA/Thomas and Bautista	Mark Horridge	5
124	XEC	Rest of Eastern Africa		Composite		
125	BWA	Botswana	1993-94	McDonald	Mark Horridge	5
126	NAM	Namibia	2004	Marie-Lange, G. (2008). A SAM for Namibia, 2004: A tool for analysing economic growth, income distribution and poverty, Namibian Economic Research Unit	Michael Begg	8

127	ZAF	South Africa	2005	Statistics South Africa (2006)	Cecilia Punt	7
128	XSC	Rest of South African Customs Union		Composite		
129	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	8	54	11	6	37	Basic	N/A
2	NZL	New Zealand	6	57	12	8	37	Basic	Available
4	CHN	China	8	45	2	7	36	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	MNG	Mongolia	8	34	2	3	29	Basic	Available
9	TWN	Taiwan	6	57	12	8	37	Basic	Available
11	KHM	Cambodia	7	57	12	8	37	Basic	Available
12	IDN	Indonesia	7	53	10	7	36	Basic	N/A
13	LAO	Lao PDR	7	31	12	1	18	Basic	Available
14	MYS	Malaysia	8	46	6	5	35	Basic	Available
15	PHL	Philippines	8	50	9	6	35	Basic	Available
16	SGP	Singapore	6	57	12	8	37	Unknown	Available
17	THA	Thailand	5.3	40	6	6	28	Unknown	Available
18	VNM	Vietnam	7.1	47	6	7	34	Unknown	Available
20	BGD	Bangladesh	5	57	12	8	37	Basic	Available
21	IND	India	8	50	10	4	36	Basic & Purchaser	Available
22	NPL	Nepal	8	57	12	8	37	Purchaser	N/A
23	PAK	Pakistan	6.1	46	8	6	32	Unknown	Available
24	LKA	Sri Lanka	7	29	5	3	21	Unknown	Available
26	CAN	Canada	7	51	8	8	35	Basic	N/A
27	USA	United States	7	57	12	8	37	Basic	N/A
28	MEX	Mexico	8	38	2	1	35	Basic	Available
30	ARG	Argentina	6	57	12	8	37	Basic	Available
31	BOL	Bolivia	7	32	5	5	22	Unknown	Available
32	BRA	Brazil	8	52	11	8	33	Basic	Available
33	CHL	Chile	7	44	3	6	33	Unknown	Available

34	COL	Colombia	7	57	12	8	37	Purchaser	N/A
35	ECU	Ecuador	7	41	5	5	31	Unknown	Available
36	PRY	Paraguay	7	51	9	7	35	Purchaser	Available
37	PER	Peru	7	50	12	8	30	Unknown	N/A
38	URY	Uruguay	7	50	12	8	30	Basic	Available
39	VEN	Venezuela	8	45	2	6	37	Basic	Available
41	CRI	Costa Rica	7	37	9	7	21	Basic	N/A
42	GTM	Guatemala	7	50	12	7	31	Purchaser	N/A
43	HND	Honduras	8	42	7	7	28	Basic	Available
44	NIC	Nicaragua	7	34	5	5	24	Purchaser	Available
45	PAN	Panama	7	27	10	2	15	Purchaser	N/A
46	SLV	El Salvador	8	38	7	6	25	Basic	Available
49	AUT	Austria	7.1	54	12	8	34	Basic	Available
50	BEL	Belgium	7.1	54	12	8	34	Basic	Available
51	CYP	Cyprus	7.1	54	12	8	34	Basic	Available
52	CZE	Czech Republic	7.1	54	12	8	34	Basic	Available
53	DNK	Denmark	7.1	54	12	8	34	Basic	Available
54	EST	Estonia	7.1	54	12	8	34	Basic	Available
55	FIN	Finland	7.1	54	12	8	34	Basic	Available
56	FRA	France	7.1	54	12	8	34	Basic	Available
57	DEU	Germany	7.1	54	12	8	34	Basic	Available
58	GRC	Greece	7.1	54	12	8	34	Basic	Available
59	HUN	Hungary	7.1	54	12	8	34	Basic	Available
60	IRL	Ireland	7.1	54	12	8	34	Basic	Available
61	ITA	Italy	7.1	54	12	8	34	Basic	Available
62	LVA	Latvia	7.1	54	12	8	34	Basic	Available
63	LTU	Lithuania	7.1	54	12	8	34	Basic	Available
64	LUX	Luxembourg	7.1	54	12	8	34	Basic	Available
65	MLT	Malta	7.1	54	12	8	34	Basic	Available
66	NLD	Netherlands	7.1	54	12	8	34	Basic	Available
67	POL	Poland	7.1	54	12	8	34	Basic	Available
68	PRT	Portugal	7.1	54	12	8	34	Basic	Available
69	SVK	Slovakia	7.1	54	12	8	34	Basic	Available
70	SVN	Slovenia	7.1	54	12	8	34	Basic	Available

71	ESP	Spain	7.1	54	12	8	34	Basic	Available
72	SWE	Sweden	7.1	54	12	8	34	Basic	Available
73	GBR	United Kingdom	7.1	54	12	8	34	Basic	Available
74	CHE	Switzerland	8	30	3	1	26	Basic	Available
75	NOR	Norway	8	38	3	1	34	Basic	Available
77	ALB	Albania	5.3	57	12	8	37	Unknown	Available
78	BGR	Bulgaria	7.1	54	12	8	34	Basic	Available
79	BLR	Belarus	7	39	1	1	35	Basic	N/A
80	HRV	Croatia	5.2	57	12	8	37	Unknown	N/A
81	ROU	Romania	7.1	54	12	8	34	Basic	Available
82	RUS	Russia	7	41	4	4	33	Basic	Available
83	UKR	Ukraine	7	46	1	8	37	Basic	Available
86	KAZ	Kazakhstan	7	34	1	1	32	Basic	N/A
87	KGZ	Kyrgyzstan	7	31	1	1	29	Basic	N/A
89	ARM	Armenia	7	30	6	4	20	Basic	Available
90	AZE	Azerbaijan	7	32	1	1	30	Basic	Available
91	GEO	Georgia	7	57	12	8	37	Purchaser	Available
92	BHR	Bahrain	8	37	5	1	31	Purchaser	Available
93	IRN	Iran	7	43	6	6	37	Unknown	Available
94	ISR	Israel	8	43	9	5	29	Unknown	Available
95	KWT	Kuwait	8	37	5	1	31	Producer	Available
96	OMN	Oman	8	37	5	1	31	Purchaser	Available
97	QAT	Qatar	8	37	5	1	31	Purchaser	Available
98	SAU	Saudi Arabia	8	37	5	1	31	Basic	Available
99	TUR	Turkey	7	46	3	7	36	Basic	Available
100	ARE	United Arab Emirates	8	37	5	1	31	Purchaser	Available
102	EGY	Egypt	6.2	31	3	4	24	Unknown	Available
103	MAR	Morocco	7	46	12	6	28	Unknown	Available
104	TUN	Tunisia	6	37	3	5	29	Basic	Available
106	CMR	Cameroon	8	57	12	8	37	Basic	N/A
107	CIV	Cote d'Ivoire	8	34	4	2	28	Basic	Available
108	GHA	Ghana	8	41	9	4	28	Basic	Available
109	NGA	Nigeria	6.1	29	2	4	23	Unknown	Available

110	SEN	Senegal	6.2	30	7	4	19	Producer	Available
114	ETH	Ethiopia	7	57	12	8	37	Basic	N/A
115	KEN	Kenya	8	33	10	3	20	Basic	Available
116	MDG	Madagascar	6	57	12	8	37	Unknown	Available
117	MWI	Malawi	5	57	12	8	37	Unknown	N/A
118	MUS	Mauritius	6.1	42	11	5	26	Unknown	Available
119	MOZ	Mozambique	5	57	12	8	37	Unknown	N/A
120	TZA	Tanzania	5	57	12	8	37	Unknown	N/A
121	UGA	Uganda	8	33	3	2	28	Producer	Available
122	ZMB	Zambia	5	57	12	8	37	Unknown	Available
123	ZWE	Zimbabwe	5	57	12	8	37	Unknown	N/A
125	BWA	Botswana	5	57	12	8	37	Unknown	N/A
126	NAM	Namibia	8	29	3	2	24	Basic	Available
127	ZAF	South Africa	7	41	3	6	32	Purchaser	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	3.132	0.021	0.789	2000	5.3
Argentina	arg	260789	6604	39.490	0.045	1.000	2000	6
Armenia	arm	9206	2996	3.072	0.018	0.737	2002	7
Australia	aus	856911	40657	21.077	0.042	0.848	2005	8
Austria	aut	372291	44850	8.301	0.009	0.714	2000	7.1
Azerbaijan	aze	33049	3851	8.581	0.000	0.864	2001	7
Bahrain	bhr	18473	24321	0.760	0.007	0.963	2005	8
Bangladesh	bgd	68416	434	157.753	0.031	0.754	1994	5
Belarus	blr	45276	4667	9.702	0.023	0.818	2004	7
Belgium	bel	458620	43161	10.626	0.010	0.857	2000	7.1
Bolivia	bol	13120	1378	9.524	0.018	0.919	2004	7

Botswana	bwa	12386	6545	1.892	0.013	1.000	1994	5
Brazil	bra	1365983	7185	190.120	0.032	0.946	2005	8
Bulgaria	bgr	42114	5498	7.660	0.009	0.777	2000	7.1
Cambodia	khm	8358	583	14.324	0.021	0.879	2003	7
Cameroon	cmr	20686	1109	18.660	0.000	0.867	2003	8
Canada	can	1424063	43185	32.976	0.033	0.870	2003	7
Caribbean	xcb	263735	6529	40.393				
Central Africa	xcf	41363	2003	20.653				
Chile	chl	164315	9877	16.636	0.025	0.798	2003	7
China	chn	3494058	2651	1317.885	0.010	0.829	2007	8
Colombia	col	207363	4675	44.359	0.042	0.899	2003	7
Costa Rica	cri	26267	5891	4.459	0.000	0.821	2002	7
Cote d'Ivoire	civ	19796	984	20.123	0.000	0.763	1998	8
Croatia	hrv	58558	13201	4.436	0.000	0.866	1995	5.2
Cyprus	cyp	21447	25119	0.854	0.024	0.667	2000	7.1
Czech Republic	cze	174215	16858	10.334	0.004	0.853	2000	7.1
Denmark	dnk	310721	56894	5.461	0.011	0.715	2000	7.1
Ecuador	ecu	45789	3432	13.342	0.018	0.779	2004	7
Egypt	egy	130473	1630	80.061	0.019	0.926	2003	6.2
El Salvador	slv	20377	3337	6.107	0.045	0.963	2000	8
Estonia	est	21384	15938	1.342	0.007	0.686	2000	7.1
Ethiopia	eth	19182	244	78.646	0.022	0.987	2002	7
Finland	fin	246584	46382	5.316	0.012	0.669	2000	7.1
France	fra	2638204	41546	63.501	0.012	0.859	2000	7.1
Georgia	geo	10173	2334	4.358	0.025	0.845	2001	7
Germany	deu	3329145	40468	82.266	0.015	0.808	2000	7.1
Ghana	gha	24633	1077	22.871	0.023	0.684	2005	8
Greece	grc	309917	27689	11.193	0.018	0.865	2000	7.1
Guatemala	gtm	34113	2555	13.354	0.087	0.927	2001	7

Honduras	hnd	12392	1727	7.174	0.024	0.946	2004	8
Hong Kong	hkg	207071	29898	6.926	0.013	0.877	1988	1
Hungary	hun	138756	13799	10.056	0.011	0.910	2000	7.1
India	ind	1232816	1096	1124.787	0.020	0.951	2003	8
Indonesia	idn	432103	1923	224.670	0.059	0.964	2004	7
Iran IR	irn	286057	4028	71.021	0.030	0.876	2001	7
Ireland	irl	259707	59608	4.357	0.006	0.748	2000	7.1
Israel	isr	166990	23257	7.180	0.041	0.936	2004	8
Italy	ita	2116202	35641	59.375	0.008	0.929	2000	7.1
Japan	jpn	4377945	34264	127.771	0.048	0.858	2000	6
Kazakhstan	kaz	104854	6772	15.484	0.000	0.858	2004	7
Kenya	ken	27166	720	37.755	0.022	0.950	2001	8
Korea	kor	1049236	21653	48.456	0.023	0.733	2003	7
Kuwait	kwt	114739	43087	2.663	0.010	0.964	2005	8
Kyrgyztan	kgz	3803	726	5.235	0.000	0.865	2003	7
Lao People's DR	lao	4286	704	6.092	0.009	0.918	2002	7
Latvia	lva	28766	12638	2.276	0.007	0.918	2000	7.1
Lithuania	ltu	39104	11584	3.376	0.008	0.882	2000	7.1
Luxembourg	lux	51278	106831	0.480	0.005	0.765	2000	7.1
Madagascar	mdg	7343	395	18.604	0.000	0.639	1999	6
Malawi	mwi	3586	248	14.439	0.012	0.823	1994	5
Malaysia	mys	186642	7028	26.556	0.008	0.643	2005	8
Malta	mlt	7449	18209	0.409	0.004	0.858	2000	7.1
Mauritius	mus	7521	5966	1.261	0.000	0.831	1997	6.1
Mexico	mex	1025580	9741	105.281	0.000	0.364	2003	8
Mongolia	mng	3930	1505	2.611	0.017	0.757	2005	8
Morocco	mar	75226	2409	31.224	0.013	1.000	2004	7
Mozambique	moz	8030	367	21.869	0.006	0.779	1995	5
Namibia	nam	8806	4216	2.089	0.023	1.000	2004	8

Nepal	npl	10283	364	28.287	0.042	0.876	2007	8
Netherlands	nld	778312	47511	16.382	0.013	0.860	2000	7.1
New Zealand	nzl	138317	32712	4.228	0.037	0.723	1996	6
Nicaragua	nic	5618	1004	5.595	0.000	0.819	2000	7
Nigeria	nga	165922	1123	147.722	0.025	0.944	1999	6.1
Norway	nor	387539	82258	4.711	0.033	0.764	2007	7.1
Oman	omn	41909	15372	2.726	0.006	0.964	2005	8
Pakistan	pak	143170	881	162.591	0.014	0.808	2001	6.1
Panama	pan	19794	5920	3.343	0.050	0.904	1996	7
Paraguay	pry	12222	1995	6.127	0.008	0.934	1994	7
Peru	per	107492	3771	28.508	0.002	0.749	2004	7
Philippines	phl	144071	1624	88.718	0.026	0.939	2000	8
Poland	pol	425322	11157	38.121	0.007	0.901	2000	7.1
Portugal	prt	230945	21770	10.608	0.015	0.766	2000	7.1
Qatar	qat	80751	70986	1.138	0.005	0.961	2005	8
Rest of Central America	xca	1277	4099	0.312				
Rest of East Asia	xea	32972	1360	24.241				
Rest of Eastern Africa	xec	58477	801	72.972				
Rest of Eastern Europe	xee	4402	1200	3.667				
Rest of EFTA	xef	24809	71516	0.347				
Rest of Europe	xer	91845	6431	14.281				
Rest of Former Soviet Union	xsu	38685	1003	38.573				
Rest of North Africa	xnf	208159	5152	40.400				
Rest of North America	xna	8201	64845	0.126				
Rest of	xoc	31830	3372	9.438				

Oceania								
Rest of South African Customs	xsc	4527	1422	3.183				
Rest of South America	xsm	5923	3939	1.504				
Rest of South Asia	xsa	12017	411	29.237				
Rest of Southeast Asia	xse	28601	565	50.578				
Rest of the World	xtw	123	18661	0.007				
Rest of Western Africa	xwf	38150	469	81.421				
Rest of Western Asia	xws	133215	1549	86.013				
Romania	rou	169283	7856	21.547	0.011	0.472	2000	7.1
Russian Federation	rus	1299708	9146	142.100	0.000	0.836	2003	7
Saudi Arabia	sau	384076	15899	24.157	0.006	0.961	2005	8
Senegal	sen	11334	953	11.893	0.033	0.994	1996	6.2
Singapore	sgp	176760	38521	4.589	0.010	0.854	1996	6
Slovakia	svk	84242	15608	5.397	0.005	0.907	2000	7.1
Slovenia	svn	47315	23445	2.018	0.008	0.670	2000	7.1
South Africa	zaf	286301	5983	47.851	0.017	0.998	2005	7
South Central Africa	xac	69241	865	80.077				
Spain	esp	1440835	32105	44.879	0.009	0.849	2000	7.1
Sri Lanka	lka	32351	1617	20.010	0.004	0.886	2000	7
Sweden	swe	462513	50558	9.148	0.008	0.653	2000	7.1
Switzerland	che	434116	57490	7.551	0.061	0.730	2008	7.1
Taiwan	twm	393763	17211	22.878	0.034	0.840	1999	6
Tanzania	tza	16825	408	41.276	0.024	0.882	2005	5

Thailand	tha	247110	3689	66.979	0.005	0.949	2005	8
Tunisia	tun	35620	3483	10.225	0.000	0.416	1995	6
Turkey	tur	647155	8865	73.004	0.022	0.869	1998	7
Uganda	uga	11892	388	30.638	0.031	0.863	2002	8
Ukraine	ukr	142719	3069	46.509	0.000	0.873	2004	7
United Arab Emirates	are	207571	47565	4.364	0.014	0.963	2005	8
United Kingdom	gbr	2799041	45882	61.005	0.014	0.693	2000	7.1
United States of America	usa	14061780	46672	301.290	0.043	0.864	2002	7
Uruguay	ury	23952	7206	3.324	0.069	0.807	1997	7
Venezuela	ven	226791	8252	27.483	0.024	0.906	1997	8
Viet Nam	vnm	68435	804	85.155	0.020	0.902	2005	7.1
Zambia	zmb	11541	937	12.314	0.005	0.833	1995	5
Zimbabwe	zwe	4424	355	12.449	0.014	0.874	1991	5