

Chapter 8

Regional Input-Output Data

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This chapter documents the input-output tables (IOTs) used in constructing the GTAP 11 Data Base. The GTAP Data Base consists mainly of intersectoral transactions and the primary source for this data is a large collection of single-country IOTs contributed to GTAP by researchers from around the world. This chapter summarizes this collection process. Documentation for each country contribution to this version is available in sub-chapters.¹ Other existing countries submitted prior to GTAP 11 can be found in the documentation for the relevant version.² In this chapter we describe what's new in the contributed I-O tables in the GTAP 11 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 IOT.

8.1 *What's New in Version 11?*

Compared to the GTAP 10 Data Base, version 11 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 11 Data Base includes data for 160 regions. Of these 160, 141 are primary regions developed from contributed I-O tables; the remaining 19 are composite regions. Version 10 had 141 regions, 121 of which were primary regions. Table 8.1 summarizes the sources and reference period for all the regional I-O tables underpinning the GTAP 11 Data Base.

Compared to version 10, in version 11, the number of 'rest of' composite regions was reduced by 1 because many countries in the former *Rest of Central Africa* are now part of the database as separate countries. In GTAP 11, we define a new *Rest of South and Central Africa* region that is composed of Angola and São Tomé and Príncipe.³

¹The GTAP 11 Data Base Documentation is available on the GTAP website at: https://www.gtap.agecon.purdue.edu/databases/v11/v11_doco.aspx.

²Links to countryspecific documentation can also be found in the summary documentation of each country, which can be obtained via:<https://www.gtap.agecon.purdue.edu/databases/regions.asp?Version=11.131>

³The standard country list used in GTAP is comprehensive and covers more than 200 countries.

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 et al. 2000). Relative to version 10, there are 20 new and 39 updated national IOTs have been incorporated. The new countries extracted from previous regional aggregates are: Afghanistan, Algeria, Central African Republic, Chad, Comoros, the Congo Republic, the Democratic Republic of the Congo, Equatorial Guinea, Eswatini, Gabon, Haiti, Iraq, Lebanon, Mali, Niger, Palestine, Serbia, Sudan, Syria, and Uzbekistan. References to the IOTs used for each of these new and updated countries are available on the GTAP website⁴ and listed in Table 3.1.⁵

8.2 *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.

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.⁶ Secondly, we check that the contributor has mapped the original data to the sectors according to the concordances⁷; 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. Anything over 100% tax or subsidy is flagged.

⁴For new and updated country information included in version 11, please refer to https://www.gtap.agecon.purdue.edu/databases/v11/v11_doco.asp.

⁵For information on all countries available in GTAP, please refer to <https://www.gtap.agecon.purdue.edu/databases/regions.asp?Version=11.131>.

⁶The Center has instituted a peer-review system for countries with less than 30 sectors.

⁷GTAP sector concordances against the Central Product Classification (CPC) and International Standard Industry Classification (ISIC) are available at: <https://www.gtap.agecon.purdue.edu/databases/contribute/concordinfo.asp>

- Other. We also check that the other government services (osg, edu, hht) 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 9.3).
- I-O structure. Finally we compare the I-O structure to that of an average I-O table to ensure that there are no unusual 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 2007. 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.

8.3 *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 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, since GTAP version 6, we have been targeting agricultural production in I-O tables based on data from the Organization for Economic Co-operation and Development, OECD. Since version 10, we also use data from the Food and Agricultural Organization (FAO). For version 11, this is documented in Chapter 9.1.

Third, as mentioned above many tables contain inappropriate treatment of government services. Under standard national accounting conventions (SNA 2008), 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 9.3.

Fourth, having cleaned the I-O tables as required, we take those that have the full 65-sector GTAP sectoral classification and calculate from them a representative table (see Chapter 9.4) as a linear combination, giving each region's I-O table its appropriate GDP weight.

Fifth, for the tables that do not have the full 65 sectors, we disaggregate, as described in Chapter 9.2. The GTAP 11 Data Base provides details on 65 sectors – the new standard since GTAP 10. Of the contributed tables, 96 do not contain all sectors and required disaggregation, of which 50 required agricultural disaggregation and 94, non-agricultural disaggregation. Table 8.2 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 9.2. For the non-agricultural commodities we use the representative I-O table to disaggregate the sectors (see Chapters 9.2 and 9.4).

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 9.4.

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 8.1 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, 2007, 2011, 2014, and 2017. The procedure used to update the I-O tables is described in Chapter 17. 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 14).

8.4 *Concluding Remarks*

We have yet to mention 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

- Huff, Karen et al. (2000). *Contributing Input-Output Tables to the GTAP Data Base*. GTAP Technical Paper 01. Department of Agricultural Economics, Purdue University, West Lafayette, IN: Global Trade Analysis Project (GTAP). URL: https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=304.
- SNA (2008). *System of National Accounts*. Brussels/Luxembourg, Washington, D.C., Paris, New York, United Nations. URL: <http://unstats.un.org/unsd/nationalaccount/docs/SNA2008.pdf>.
- Walmsley, Terrie and Robert McDougall (2007). *Using Entropy to Compare IO tables*. GTAP Research Memorandum 09. Department of Agricultural Economics, Purdue University, West Lafayette, IN: Global Trade Analysis Project (GTAP). URL: <https://doi.org/10.21642/GTAP.RM09>.

Table 8.1: Sources of I-O tables in GTAP Version 11 Data Base

No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
1	AUS	Australia	2018	https://www.abs.gov.au/statistics/economy/national-accounts/australian-national-accounts-input See also archive items https://www.copmodels.com/archivep.htmDPGW0149\&TPGW0172	Glyn Wittwer	11, Pre-Release 2
2	NZL	New Zealand	2013	New Zealand Input Output Table (Supply and Use Tables)	Erwin Corong, Anna Strutt	10, Interim Release 1
3	CHN	China	2017	National Bureau of Statistics of China	Yu Liu	11, Pre-Release 1
4	HKG	China, Hong Kong Special Administrative Region	1988	Tormey (1993)	SALTER project	1, Final Release 1
5	JPN	Japan	2011	Director-General for Policy Planning (Statistical Standards), the Ministry of Internal Affairs and Communications (2015). "2011 Input-Output Tables for Japan".	Susumu Suzuki	10, Final Release 1
6	KOR	Republic of Korea	2015	The Bank of Korea	Jong-Hwan Ko	11, Pre-Release 2
7	MNG	Mongolia	2016	National Statistics Office	Erwin Corong, Bayarmaa Baatarsuren, Tserenkhand Bideriya	10, Interim Release 1
8	TWN	Taiwan	2006	Taiwan Input Output Table	Hsing-Chun Lin, Shih-Hsun Hsu	8, Interim Release 1
9	BRN	Brunei Darussalam	2005	BRUNEI DARUSSALAM'S INPUT-OUTPUT TABLES 2005 by Department of Economic Planning and Development, Prime Ministers Office, Brunei Darussalam; publicly available at http://www.dep.gov.bn/home.html	Ken Itakura	8, Interim Release 2

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No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
10	KHM	Cambodia	2003	Primary: Economic Institute of Cambodia (EIC); Secondary: Cambodian National Institute of Statistics (NIS), National Bank of Cambodia and other international organizations (the World Bank and IMF)	Sothea Oum	7, Final Release 1
11	IDN	Indonesia	2017	Indonesian Statistical Agency	Angel Aguiar	11, Pre-Release 4
12	LAO	Lao People's Democratic Republic	2017	ADB	Sumathi Chakravarthy, Badri Gopalakrishnan	11, Pre-Release 2
13	MYS	Malaysia	2005	Malaysian Input-output tables for the year 2005, Department of Statistics, 2009.	Nhi Tran	8, Final Release 1
14	PHL	Philippines	2018	2018 Philippine Input-Output Table	Caesar Cororaton	11, Pre-Release 4
15	SGP	Singapore	2007	Singapore Input-output tables for 2007	Nhi Tran	8, Interim Release 1
16	THA	Thailand	2015	2015 Input-Output Table of Thailand from the Office of the National Economic and Social Development Council (NESDC, formerly NESDB), available at: https://www.nesdc.go.th/ewt_news.php?nid=9712&filename=io_page	Tosapol Apaitan	11, Pre-Release 2
17	VNM	Viet Nam	2016	WB SAM	Angel Aguiar	11, Pre-Release 4
18	AFG	Afghanistan	2017	National Statistics & Information Authority (NSIA)	Sebnem Sahin	11, Pre-Release 3
19	BGD	Bangladesh	2012	Bangladesh Planning Commission	Selim Raihan, Bazlul Haque Khondker	10, Final Release 1
20	IND	India	2015	Ministry of Statistics and Programme Implementation, Government of India http://mospi.nic.in/publication/supply-use-tables	Devender Pratap	11, Pre-Release 3
21	NPL	Nepal	2007	An Input-output technology matrix of year 2001 from the Planning Commission of Nepal and the Central Bureau of Statistics (CBS) which has been updated; National Accounts from CBS; Trade data from UNCOMTRADE; domestic tax data from department of inland revenue; import duties from Department of Customs. Also, Nepal Labour Force Survey and Nepal Living Standard Survey by CBS	Selim Raihan, Bazlul Khondker	8, Final Release 1

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No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
22	PAK	Pakistan	2017	Mariasingham, J 2019, 'ADB Multi-Region Input-Output Database: Sources and Methods', Asian Development Bank. Asian Development Bank (2017), 'Compendium of Supply and Use Tables for Selected Economies in Asia and the Pacific', Manila, Philippines.	Muhammad Zeshan	11, Pre-Release 1
23	LKA	Sri Lanka	2011	Department of Census and Statistics Sri Lanka	Jeevika Weerahewa, Senal Weerasooriya, Jay Bandarlage	10, Final Release 1
24	CAN	Canada	2014	Statistics Canada	Philip Bagnoli	11, Pre-Release 1
25	USA	United States of America	2012	BEA, IOT 2012	Erwin Corong, Marinos Tsigas	11, Pre-Release 3
26	MEX	Mexico	2013	Inegi	Carmen Estrades	11, Pre-Release 1
27	ARG	Argentina	2000	Secretaría de Agricultura, Ganadería, Pesca y Agricultura – Ministerio de Economía	Martin Cicowiez	10, Final Release 1
28	BOL	Bolivia (Plurinational State of) (BOL)	2014	BOLIVIA : MATRIZ DE INSUMOS - PRODUCTO 2014	José Elías Durán Lima, Angel Aguiar	10, Interim Release 1
29	BRA	Brazil	2010	Instituto Brasileiro de Geografia e Estatística - IBGE	Joaquim Bento Ferreira-Filho	10, Interim Release 1
30	CHL	Chile	2016	Central Bank of Chile 2016's Input-Output Table	Alonso Gonzalez Marentis, Jonas Luckmann, Khalid Siddiq	11, Pre-Release 1
31	COL	Colombia	2014	Departamento Administrativo Nacional de Estadística (DANE)	Gabriel Piraquive Galeano, Erick Céspedes Rangel, Nicolás Ramírez Guerrero	11, Pre-Release 3
32	ECU	Ecuador	2019	IOT from NSO	Angel Aguiar	11, Pre-Release 4
33	PRY	Paraguay	2014	Central Bank of Paraguay- Results of CAB	Edgar Gómez Leiva, Natalia Peña	10, Interim Release 1
34	PER	Peru	2004	A 1994 Input-output table estimated by the Ministry of Industry, 2004 National Accounts published by the Peruvian Ministry of Finance, 2004 Household survey data from the World Bank LSMS project	David Roland-Holst, Saule Kazybayeva	7, Final Release 1
35	URY	Uruguay	2016	Central Bank of Uruguay	Carmen Estrades, Erwin Corong	11, Pre-Release 3

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No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
36	VEN	Venezuela (Bolivarian Republic of)	2007	Central Bank of Venezuela	Francesco Leone, Roberto Ferrer Jorge Hernandez	9 , Interim Release 1
37	CRI	Costa Rica	2017	Central Bank of Costa Rica	Marlon Molina, Diego Agüero, Henry Vargas, Gabriela Saborio, Francisco Monge, Arlina Gómez, Marlene Salazar, Kimberly Valverde	11, Pre-Release 2
38	GTM	Guatemala	2001	Guatemalas Secretaría General de Planificación (SEGEPLAN).	Carlos Ludena, Jose Duran	7 , Pre-Release 6
39	HND	Honduras	2004	Honduras 2004 SAM	José Elías Durán Lima, Gonzalo R. Véliz Marín, Carlos Eduardo Ludeña, Mauricio Pereira Flores	8 , Final Release 1
40	NIC	Nicaragua	2000	Sanchez and Vos (2006) and Central Bank of Nicaragua	Marco Sanchez and Rob Vos, Carlos Ludena	7 , Pre-Release 6
41	PAN	Panama	2016	El Instituto Nacional de Estadística y Censo (INEC), https://www.inec.gob.pa/publicaciones/Default3.aspx?ID_PUBLICACION=900&ID_CATEGORIA=4&ID_SUBCATEGORIA=26	Raymond Mi	11, Pre-Release 2
42	SLV	El Salvador	2000	Social Accounting Matrix, year 2000, from IFPRI (International Food Policy Reasearch Institute)	José Elías Durán Lima, Carlos Ludeña, Mauricio Pereira, Gonzalo Véliz	8 , Final Release 1
43	DOM	Dominican Republic	2005	Banco Central de la República Dominicana	Carlos Ludena, Mark Horridge	8 , Interim Release 2
44	HTI	Haiti	2012	Social Accounting Matrix	Angel Aguiar	11, Pre-Release 4
45	JAM	Jamaica	2007	Hope Perkins, Statistical Institute of Jamaica	Carlos Ludena, Mark Horridge	8 , Interim Release 2
46	PRI	Puerto Rico	2000	Nelson D. López Esquerdo, Programa Planificación Económica y Social de Puerto Rico	Carlos Ludena, Mark Horridge	8 , Interim Release 2
47	TTO	Trinidad and Tobago	2000	Inter-American Institute for Cooperation on Agriculture (IICA)	Carlos Ludena, Mark Horridge	8 , Interim Release 2
48	AUT	Austria	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
49	BEL	Belgium	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2

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No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
50	BGR	Bulgaria	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
51	HRV	Croatia	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
52	CYP	Cyprus	2010	EUROSTAT	Angel Aguiar	11, Pre-Release 4
53	CZE	Czechia	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
54	DNK	Denmark	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
55	EST	Estonia	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
56	FIN	Finland	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
57	FRA	France	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
58	DEU	Germany	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
59	GRC	Greece	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
60	HUN	Hungary	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
61	IRL	Ireland	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
62	ITA	Italy	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
63	LVA	Latvia	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
64	LTU	Lithuania	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
65	LUX	Luxembourg	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
66	MLT	Malta	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
67	NLD	Netherlands	2010	EUROSTAT	Jose M. Rueda-Cantuche, Tamas Revesz, Bert Saveyn	9 , Interim Release 2

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No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
68	POL	Poland	2010	EUROSTAT	Jose M. Rueda-Cantucho, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
69	PRT	Portugal	2010	EUROSTAT	Jose M. Rueda-Cantucho, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
70	ROU	Romania	2010	EUROSTAT	Jose M. Rueda-Cantucho, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
71	SVK	Slovakia	2010	EUROSTAT	Jose M. Rueda-Cantucho, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
72	SVN	Slovenia	2010	EUROSTAT	Jose M. Rueda-Cantucho, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
73	ESP	Spain	2010	EUROSTAT	Jose M. Rueda-Cantucho, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
74	SWE	Sweden	2010	EUROSTAT	Jose M. Rueda-Cantucho, Tamas Revesz, Bert Saveyn	9 , Interim Release 2
75	GBR	United Kingdom of Great Britain and Northern Ireland	2013	UK Office for National Statistics	Kevin Hanslow	11, Pre-Release 2
76	CHE	Switzerland	2014	Input Output Table Swiss Federal Office of Statistics	Renger van Nieuwkoop, Carsten Nathani	11, Pre-Release 2
77	NOR	Norway	2017	NSO at https://www.ssb.no/en/nasjonalregnskap-og-konjunkturer/metoder-og-dokumentasjon/supply-and-use-and-input-output-tables	Robbie Andrew, Glen Peters	11, Pre-Release 4
78	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 , Interim Release 3
79	SRB	Serbia	2015	Statistical Office of the republic of Serbia (SORS).	Diamantis Koutsandreas	11, Pre-Release 1
80	BLR	Belarus	2010	2010 I-O tables from the Belarus Statistical Committee	Csilla Lakatos, Irina Tochitskaya	8 , Interim Release 1

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No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
81	RUS	Russian Federation	2016	ROSSTAT	Sindhu Bharathi Mandharachalam, Sumathi Chakravarthy	11, Pre-Release 3
82	UKR	Ukraine	2017	NSO	Maksym Chepeliev	11, Pre-Release 3
83	KAZ	Kazakhstan	2017	National Committee Of Statistics of the Republic of Kazakhstan	Aigerim Kushumbayeva	11, Pre-Release 1
84	KGZ	Kyrgyzstan	2003	Miles Light	Aziz Atamanov, Lucio Vinhas de Souza Joe Franco	7, Pre-Release 1
85	TJK	Tajikistan	2011	Agency on Statistics under the President of the Republic of Tajikistan	Parviz Khakimov	9, Interim Release 1
86	UZB	Uzbekistan	2018	Combined official, academic, and private sources.	David Roland-Holst	11, Pre-Release 3
87	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. Their table has 25 sectors and is produced using official data provided by Armenian Ministries and Departments including the National Statistical Service, the Customs Authorities, and the Tax Authorities.	Jesper Jensen, David Tarr and Oleksandr Shepotylo	7, Pre-Release 3
88	AZE	Azerbaijan	2016	Input-output tables in 2016, by basic prices, thsd. manat. Available from: https://www.stat.gov.az/source/system_nat_accounts/?lang=en	Angel Aguiar, Arvind Nair	11, Pre-Release 4
89	GEO	Georgia	2001	Unofficial table provided by the Economic Policy Research Center (EPRC) in Georgia	Jensen, Jesper	7, Pre-Release 4
90	BHR	Bahrain	2005	General national accounts data for 2005, Central Informatics Organisation, Bahrain. Detailed national accounts statistics 2006 and 2007, Central Informatics Organisation, Bahrain. UN trade data (Comtrade) for imports and exports. Kuwait I/O table for 2005 with 44-sectors.	David Green	8, Final Release 1
91	IRN	Iran (Islamic Republic of)	2012	Iran Statistical Center	Wajih Saeed	11, Pre-Release 1

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No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
92	IRQ	Iraq	2011	Debowicz, Dario. 2013. A Social Accounting Matrix for Iraq, 2011. Washington, D.C.: International Food Policy Research Institute (IFPRI). Debowicz, D. 2016. "A Social Accounting Matrix for Iraq." Journal of Economic Studies 5 (24). https://doi.org/10.1186/s40008-016-0057-4 .	Angel Aguiar	10, Interim Release 1
93	ISR	Israel	2004	Domestic institutions in Israel, including but not limited to: the Israeli Central Bureau of Statistics, the Central Bank of Israel, and the Israeli Tax Authority (ITA). See the extended documentation for more details.	Khalid Siddig, Dorothee Flaig; Jonas Luckmann; Harald Grethe	8, Final Release 1
94	JOR	Jordan	2006	Social Accounting Matrix for Jordanian Economy	Mohamed Hedi Bchir, Sandra El-Saghir Sinno, and Angel Aguiar	8, Interim Release 2
95	KWT	Kuwait	2005	Detailed 54-sector I/O table for 2000 published by the Kuwait Central Statistics Office. Abbreviated 29-sector I/O table for 2005 (unpublished) provided by the Kuwait Ministry of Planning. The National Accounts Statistics 2005 published by the Kuwait Central Statistics Office in 2008. UN Comtrade trade data.	David Green	8, Pre-Release 1
96	LBN	Lebanon	2010	The staff of the United Nations Economic and Social Commission for Western Asia (UNESWA) made these tables available to us.	Angel Aguiar	10, Interim Release 1
97	OMN	Oman	2005	National Accounts 2005, Ministry of National Economy, Oman. Nine-Sector Social Accounting Matrix 1999, Boughanmi, et al 2002, Department of Agricultural Economics and Rural Studies, Sultan Qaboos University, Oman. UN trade data (Comtrade) for imports and exports. Kuwait I/O table for 2005 with 44 sectors, 2011.	David Green	8, Final Release 1

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No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
98	PSE	State of Palestine	2011	The original data source for this IOT is the 2011 SAM for the West Bank (Agahey et al., 2016), which is itself based on the national accounts, the supply and use table and other data sets mostly provided by the Palestinian Central Bureau of Statistics (PCBS).	Johanes Agahey, Khalid Siddig Harald Grethe	10, Interim Release 1
99	QAT	Qatar	2005	Annual Statistical Abstract, 2007, Qatar Statistics Authority. Economic Statistics Bulletin, 2008, Qatar Statistics Authority. UN trade data (Comtrade) for imports and exports. Kuwait I/O table for 2005 with 44 sectors, 2011.	David Green	8, Final Release 1
100	SAU	Saudi Arabia	2005	The key sources of data used to produce the input-output table were as follows: • Kuwait I/O table for 2005 with 44 sectors, 2011. • National Accounts Data 2005, Central Department of Statistics and Information, Saudi Ministry of Economy and Planning • The National Accounts Statistics 2005, Kuwait Central Statistical Office • UN trade data (Comtrade) for imports and exports. In addition, various data on specific sectors was also used (e.g. refining capacity, crude oil production, etc.).	David Green	8, Final Release 1
101	SYR	Syrian Arab Republic	2007	Staff of the United Nations Economic and Social Commission for Western Asia (UNESCWA) made these tables available to us.	Angel Aguiar	10, Interim Release 1
102	TUR	Turkey	2012	The original data source of Turkey's input-output (I/O) table is published by the Turkish Statistical Institute (TURKSTAT) in December 2016.	Yasin Biyyik, Prof. Dr. Lerzan Özkale	10, Final Release 1
103	ARE	United Arab Emirates	2005	National Accounts Data, 2005, UAE Ministry of Economy. Ten-Sector Input-Output Table for the UAE, 2003. Eight-Sector Social Accounting Matrix of the UAE Economy, 2006, Working Paper by Nico Vellinga, Economic Policy Research Unit, Zayed University. Kuwait I/O table for 2005 with 44 sectors, 2011.	David Green	8, Pre-Release 3
104	DZA	Algeria	2015	NSO	Angel Aguiar	11, Pre-Release 3

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No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
105	EGY	Egypt	2003	Mr. Afara, Director of National Accounts, National Planning Unit of Egypt	Noura Abdelwahab and Miles Light	6 , Interim Release 2
106	MAR	Morocco	2004	A 1990 Input-output table estimated by Bussolo and Roland-Holst (1993) from official data, 2004 National Accounts published by the Moroccan Ministry of Finance, 2004 Household survey data from the World Bank LSMS project	David Roland-Holst, Saad Belghazi	7 , Final Release 1
107	TUN	Tunisia	2005	Drine, I., Y. Jmal and J. Thurlow. 2012.	Lacina Balma	9 , Interim Release 1
108	BEN	Benin	2003	Base de données MCS 2003 du Bénin	Badri Narayanan	8 , Interim Release 1
109	BFA	Burkina Faso	2005	Ministry of Agriculture, Hydraulic and Fisheries Resources	Lacina Balma, Dramane Bako	8 , Interim Release 1
110	CMR	Cameroon	2017	Supply and use table	Jean Pierre Assako Essiben	11, Pre-Release 3
111	CIV	Côte d'Ivoire	2015	Cote d'Ivoires Social Accounting Matrix	Souleymane Sadio Diallo	11, Pre-Release 3
112	GHA	Ghana	2005	A 2005 Social Accounting Matrix (SAM) for Ghana, published in October 2007, by Ghana Statistical Services (GSS), International Food Policy Research Institute (IFPRI) under the Ghana Strategy Support Program (GSSP)	Charles Adjasi, Emmanuel Kinful	8 , Pre-Release 3
113	GIN	Guinea	2005	MATRICE DE COMPTABILITE SOCIALE DE LA GUINEE, Ismael FOFANA & Lacina BALMA, International Food Policy Research Institute (IFPRI), West and Central Africa Office (Janvier 2012). Source: TRE 2005, Comptes Nationaux 1997-2006, EIBEP 2002-2003	Lacina Balma, Ismael Fofana	8 , Interim Release 1
114	MLI	Mali	2017	NSOs SUTs	Kadidia Traore	11, Pre-Release 4
115	NER	Niger	2019	Tableau des ressources-emplois 2019	Laouali Chaibou	11, Pre-Release 3
116	NGA	Nigeria	2006	The Nigerian SAM of Nwafor et al. (2010) together with several domestic data sources such as the National Bureau of Statistics and the Central Bank of Nigeria are used to develop the 2006 Nigerian IOT.	Khalid Siddig, Jonas Luckmann	8 , Interim Release 1

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No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
117	SEN	Senegal	2005	Diagne, Abdoulaye, François Joseph Cabral, Fatou Cissé, and Anne-Sophie Robilliard. 2011. Country Study: Assessing Development Strategies to Achieve the MDGs in the Republic of Senegal. United Nations Department for Social and Economic Affairs, March.	Angel Aguiar	8 , Interim Release 2
118	TGO	Togo	2006	Unpublished research by a PEP network team member.	Lacina Balma, Damien AGBODJI	8 , Interim Release 1
119	CAF	Central African Republic	2017	Les Comptes économiques de la République centrafricaines, 2017, ICASEES, Ministère du Plan, de l'Economie et de la Coopération Internationale	Roger Yele	11, Pre-Release 3
120	TCD	Chad	2016	National Institute of Statistics, Economics and Demographics Studies	Ibn Ali Youssouf	11, Pre-Release 2
121	COG	Congo	2016	Direction des Synthèses et Analyses Economiques	Alain Patrick Makouala	11, Pre-Release 2
122	COD	Democratic Republic of the Congo	2013	SAM (2013)	Hans Lofgren	11, Pre-Release 3
123	GNQ	Equatorial Guinea	2017	INEGE	Severo Ngua Bibang Obono	11, Pre-Release 3
124	GAB	Gabon	2017	Direction Générale de la Statistique/Ministère de l'Economie et de la Relance	Paul Mapessi	11, Pre-Release 2
125	COM	Comoros	2017	Tableaux Ressources Emploi de 2017, Données d'Enquêtes, INSEED COMORES	Mohamed Said Ali	11, Pre-Release 2
126	ETH	Ethiopia	2002	Social Accounting Matrix 2001/02 compiled by IDS in collaboration with EDRI	Angel Aguiar, This is a minor fix to previously contributed table by Dirk Willenbockel and Sherman Robinson in version 7.1.	8 , Final Release 1

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No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
127	KEN	Kenya	2001	Several structural and annual data sources such as national accounts, government accounts, balance of payments and foreign trade data, as well as the most recent IO table (1997 SAM constructed by the Kenya Institute for Public Policy Research and Analysis KIPPRA), SAMs for earlierbase years constructed by the Kenyan Central Bureau of Statistics and the 1997 Welfare Monitoring Survey	Peter Wobst, Benjamin Schraven	8 , Pre-Release 3
128	MDG	Madagascar	1999	INSTAT, (2003) "Matrice de la Comptabilite Sociale de Madagascar en 1999," National Institute of Statistics, Antananarivo, Madagascar	Simon Njaka Randrianarivelo, Shuby Andriamanajara	6 , Final Release 1
129	MWI	Malawi	2007	Douillet, M., K. Pauw and J. Thurlow (2012) "A Standard 2007 Social Accounting Matrix for Malawi." Washington DC, USA: International Food Policy Research Institute.	Zekarias Hussein, James Thurlow	8 , Interim Release 1
130	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 , Interim Release 1
131	MOZ	Mozambique	2015	WB SAM	Angel Aguiar	11, Pre-Release 4
132	RWA	Rwanda	2006	Arnault, E. C. 2007. "The 2006 Social Accounting Matrix of Rwanda: Methodology Note." Unpublished memo, University of Yaounde II, Yaounde, Cameroon.	Zekarias Hussein	8 , Interim Release 1
133	SDN	Sudan	2012	Major data sets used include the 2012 National Accounts and Trade Statistics of the CBS, the 53rd Annual Report of the Central Bank of the Sudan, the 2011 Labor Force Survey, the 2009 Household Income and Expenditure Survey, The 2009-2012 Agricultural Production Cost Survey and the 2005 Industrial Survey. Data from external sources are used to complement national sources. These sources include IMF studies on government finances, FAO reports and data on agriculture and ILO reports on labor.	Khalid Siddig	10, Interim Release 1

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No.	Code	Country Name	Period	Source of I-O Table	Contributor(s)	Version
134	TZA	United Republic of Tanzania	2007	Xinshen D., J. Thurlow, S. Benin, and S. Fan (eds) 2012. Strategies and priorities for African agriculture: economy wide perspectives from country studies. International Food Policy Research Institute (IFPRI)	Zekarias Hussein, James Thurlow	8 , Interim Release 1
135	UGA	Uganda	2007	Thurlow, J. 2008. A 2007 Social Accounting Matrix for Uganda. International Food Policy Research Institute, Washington, DC. Electronic database (Uganda 2007 SAM.xlsx), downloaded on 7 October 2015 from: https://dataverse.harvard.edu/dataset.xhtml?persist	Isabel Teichmann	9 , Interim Release 1
136	ZMB	Zambia	2007	Chikuba, Z., M. Syacumpi, J. Thurlow and E. Zulu (2012) "A Standard 2007 Social Accounting Matrix for Zambia." Washington DC, USA: International Food Policy Research Institute.	Zekarias Hussein, James Thurlow	8 , Interim Release 1
137	ZWE	Zimbabwe	2017	NSO	Rob Davies, Dirk van Seventer	11, Pre-Release 3
138	BWA	Botswana	2016	Botswana 2016 Supply and Use Table	Lekoko Simako	11, Pre-Release 3
139	SWZ	Eswatini	2017	Supply Use Table (SUT) 2017 for Eswatini	Nsika Melusi Dlamini	11, Pre-Release 3
140	NAM	Namibia	2004	Marie-Lange, G. (2008). A social accounting matrix for Namibia, 2004: A tool for analysing economic growth, income distribution and poverty, Namibian Economic Research Unit,	Michael Begg, Lelly Nghixulifwa	8 , Final Release 1
141	ZAF	South Africa	2017	Statistics South Africa, 2021a, Benchmarked and rebased estimates of Gross Domestic Product, 2021, Report 04-04-04, http://www.statssa.gov.za/?page_id=1854&PPN=Report%2004-04-04&SCH=72991 , SUT 2013-2018,	Dirk van Seventer, Rob Davies	11, Pre-Release 3

Table 8.2: Number of Sectors in the Contributed I-O Tables

No.	Code	Country Name	Version	GTAP Sector Classification	Total # of sectors	Agriculture	Food	Manufacturing and services
1	AUS	Australia	11	3	65	12	8	45
2	NZL	New Zealand	10.1	3	55	6	6	43
3	CHN	China	11	3	53	2	7	44
4	HKG	China, Hong Kong Special Administrative Region	1	2	37	6	5	26
5	JPN	Japan	10	3	65	12	8	45
6	KOR	Republic of Korea	11	3	65	12	8	45
7	MNG	Mongolia	10.1	3	50	8	5	37
8	TWN	Taiwan	8.1	2	57	12	8	37
9	BRN	Brunei Darussalam	8.2	2	34	1	1	32
10	KHM	Cambodia	7	2	57	12	8	37
11	IDN	Indonesia	11	3	65	12	8	45
12	LAO	Lao People's Democratic Republic	11	3	31	1	1	29
13	MYS	Malaysia	8	2	46	6	5	35
14	PHL	Philippines	11	3	60	10	6	44
15	SGP	Singapore	8.1	2	43	2	5	36
16	THA	Thailand	11	3	59	9	7	43
17	VNM	Viet Nam	11	3	65	12	8	45
18	AFG	Afghanistan	11	3	31	4	1	26
19	BGD	Bangladesh	10	3	57	12	8	37
20	IND	India	11	3	57	10	4	43
21	NPL	Nepal	8	2	57	12	8	37
22	PAK	Pakistan	11	3	35	1	1	33
23	LKA	Sri Lanka	10	3	51	8	6	37
24	CAN	Canada	11	3	50	2	4	44
25	USA	United States of America	11	3	57	7	6	44
26	MEX	Mexico	11	3	55	5	6	44
27	ARG	Argentina	10	2	33	8	6	19
28	BOL	Bolivia (Plurinational State of)	10.1	3	31	5	5	21
29	BRA	Brazil	10.1	3	56	11	8	37
30	CHL	Chile	11	3	56	7	6	43
31	COL	Colombia	11	3	64	12	7	45
32	ECU	Ecuador	11	3	43	5	6	32

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No.	Code	Country Name	Version	GTAP Sector Classification	Total # of sectors	Agriculture	Food	Manufacturing and services
33	PRY	Paraguay	10.1	3	36	2	7	27
34	PER	Peru	7	2	46	10	5	31
35	URY	Uruguay	11	3	56	11	7	38
36	VEN	Venezuela (Bolivarian Republic of)	9.1	2	49	7	6	36
37	CRI	Costa Rica	11	3	64	12	7	45
38	GTM	Guatemala	7	2	50	12	7	31
39	HND	Honduras	8	2	42	7	7	28
40	NIC	Nicaragua	7	2	34	5	5	24
41	PAN	Panama	11	3	43	8	5	30
42	SLV	El Salvador	8	2	38	7	6	25
43	DOM	Dominican Republic	8.2	2	30	4	4	22
44	HTI	Haiti	11	3	18	1	1	16
45	JAM	Jamaica	8.2	2	35	6	5	24
46	PRI	Puerto Rico	8.2	2	38	1	7	30
47	TTO	Trinidad and Tobago	8.2	2	43	6	7	30
48	AUT	Austria	9.2	2	57	12	8	37
49	BEL	Belgium	9.2	2	57	12	8	37
50	BGR	Bulgaria	9.2	2	57	12	8	37
51	HRV	Croatia	9.2	2	57	12	8	37
52	CYP	Cyprus	9.2	2	57	12	8	37
53	CZE	Czechia	9.2	2	57	12	8	37
54	DNK	Denmark	9.2	2	57	12	8	37
55	EST	Estonia	9.2	2	57	12	8	37
56	FIN	Finland	9.2	2	57	12	8	37
57	FRA	France	9.2	2	57	12	8	37
58	DEU	Germany	9.2	2	57	12	8	37
59	GRC	Greece	9.2	2	57	12	8	37
60	HUN	Hungary	9.2	2	57	12	8	37
61	IRL	Ireland	9.2	2	57	12	8	37
62	ITA	Italy	9.2	2	57	12	8	37
63	LVA	Latvia	9.2	2	57	12	8	37
64	LTU	Lithuania	9.2	2	57	12	8	37
65	LUX	Luxembourg	9.2	2	57	12	8	37
66	MLT	Malta	9.2	2	57	12	8	37
67	NLD	Netherlands	9.2	2	57	12	8	37

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No.	Code	Country Name	Version	GTAP Sector Classification	Total # of sectors	Agriculture	Food	Manufacturing and services
68	POL	Poland	9.2	2	57	12	8	37
69	PRT	Portugal	9.2	2	57	12	8	37
70	ROU	Romania	9.2	2	57	12	8	37
71	SVK	Slovakia	9.2	2	57	12	8	37
72	SVN	Slovenia	9.2	2	57	12	8	37
73	ESP	Spain	9.2	2	57	12	8	37
74	SWE	Sweden	9.2	2	57	12	8	37
75	GBR	United Kingdom of Great Britain and Northern Ireland	11	3	49	1	5	43
76	CHE	Switzerland	11	1	40	1	1	38
77	NOR	Norway	11	3	38	1	1	36
78	ALB	Albania	5.3	2	57	12	8	37
79	SRB	Serbia	11	3	40	1	1	38
80	BLR	Belarus	8.1	2	40	12	1	27
81	RUS	Russian Federation	11	3	48	1	5	42
82	UKR	Ukraine	11	3	46	2	4	40
83	KAZ	Kazakhstan	11	3	46	1	1	44
84	KGZ	Kyrgyzstan	7	2	31	1	1	29
85	TJK	Tajikistan	9.1	2	37	1	2	34
86	UZB	Uzbekistan	11	3	41	1	2	38
87	ARM	Armenia	7	2	30	6	4	20
88	AZE	Azerbaijan	11	3	43	1	2	40
89	GEO	Georgia	7	2	57	12	8	37
90	BHR	Bahrain	8	2	37	5	1	31
91	IRN	Iran (Islamic Republic of)	11	3	48	2	3	43
92	IRQ	Iraq	10.1	3	65	12	8	45
93	ISR	Israel	8	2	43	8	4	31
94	JOR	Jordan	8.2	2	45	4	7	34
95	KWT	Kuwait	8	2	37	5	1	31
96	LBN	Lebanon	10.1	3	65	12	8	45
97	OMN	Oman	8	2	37	5	1	31
98	PSE	State of Palestine	10.1	2	44	6	5	33
99	QAT	Qatar	8	2	37	5	1	31
100	SAU	Saudi Arabia	8	2	37	5	1	31
101	SYR	Syrian Arab Republic	10.1	3	65	12	8	45

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No.	Code	Country Name	Version	G'TAP Sector Classification	Total # of sectors	Agriculture	Food	Manufacturing and services
102	TUR	Turkey	10	2	32	1	1	30
103	ARE	United Arab Emirates	8	2	37	5	1	31
104	DZA	Algeria	11	3	65	12	8	45
105	EGY	Egypt	6.2	2	31	3	4	24
106	MAR	Morocco	7	2	46	12	6	28
107	TUN	Tunisia	9.1	2	31	5	2	24
108	BEN	Benin	8.1	2	29	6	1	22
109	BFA	Burkina Faso	8.1	2	38	8	6	24
110	CMR	Cameroon	11	3	31	2	2	27
111	CIV	Côte d'Ivoire	11	3	40	8	6	26
112	GHA	Ghana	8	2	41	7	5	29
113	GIN	Guinea	8.1	2	30	8	3	19
114	MLI	Mali	11	3	30	2	1	27
115	NER	Niger	11	3	65	12	8	45
116	NGA	Nigeria	8.1	2	38	12	4	22
117	SEN	Senegal	8.2	2	31	2	4	25
118	TGO	Togo	8.1	2	30	3	4	23
119	CAF	Central African Republic	11	3	49	8	8	33
120	TCD	Chad	11	3	51	9	7	35
121	COG	Congo	11	3	61	11	7	43
122	COD	Democratic Republic of the Congo	11	3	37	3	6	28
123	GNQ	Equatorial Guinea	11	3	33	4	3	26
124	GAB	Gabon	11	3	44	8	5	31
125	COM	Comoros	11	3	34	5	4	25
126	ETH	Ethiopia	7.1	2	39	6	5	28
127	KEN	Kenya	8	2	33	10	2	21
128	MDG	Madagascar	6	2	57	12	8	37
129	MWI	Malawi	8.1	2	36	9	4	23
130	MUS	Mauritius	6.1	2	42	11	5	26
131	MOZ	Mozambique	11	3	65	12	8	45
132	RWA	Rwanda	8.1	2	34	8	4	22
133	SDN	Sudan	10.1	2	37	9	2	26
134	TZA	United Republic of Tanzania	8.1	2	39	11	6	22
135	UGA	Uganda	9.1	2	30	4	2	24
136	ZMB	Zambia	8.1	2	36	9	5	22

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No.	Code	Country Name	Version	GTAP Sector Classification	Total # of sectors	Agriculture	Food	Manufacturing and services
137	ZWE	Zimbabwe	11	3	54	12	5	37
138	BWA	Botswana	11	3	35	2	4	29
139	SWZ	Eswatini	11	3	43	3	5	35
140	NAM	Namibia	8	2	29	3	2	24
141	ZAF	South Africa	11	3	65	12	8	45