

B Disaggregation of Input-Output Tables

Angel Aguiar

B.1 Overview

The disaggregation of the input-output (I-O) tables is a major step undertaken in our in-house processing of the tables. While we use a 65-sector classification since GTAP version 10, many countries' input-output tables do not support such detail. In particular, few I-O sources match the relatively ambitious requirements for agriculture and food processing, where GTAP distinguishes 20 sectors, while some sources distinguish as few as two (agriculture and food processing separately). Accordingly, we accept contributed I-O tables using any reasonable aggregation of this classification, (Huff et al. 2000). Where the contributed table uses an aggregated classification, we must disaggregate it to the standard GTAP sectors in-house.

B.2 Food and Agriculture

The detailed sectoral classification of agricultural and food products is one of the main features of the GTAP Data Base. Twelve sectors within agriculture and eight sectors within the area of food, beverages, and tobacco are identified. This however creates a problem in data collection since not all countries' input-output (I-O) statistics provide such fine sectoral detail.

To address this problem, the I-O data contributors for some countries undertook the agricultural and food disaggregation themselves. Table 9.5 lists the 42 countries/regions for which I-O tables are available at the full GTAP sectoral classifications and 99 regions that require sectoral disaggregation. To support this disaggregation process, we rely on the work of Peterson 2016 who developed a multi-country agriculture and food products dataset.

Table 9.5: Regions With and Without Full Agricultural and Food Sectoral I-O Data

Regions fully disaggregated		Regions requiring Sector disaggregation	
Australia	New Zealand	United Kingdom	Comoros
China	Hong Kong	Switzerland	Ethiopia
Japan	Mongolia	Norway	Kenya
Korea	Taiwan	Albania	Madagascar
Argentina	Brunei	Belarus	Malawi
Bolivia	Cambodia	Russia	Mauritius
Austria	Indonesia	Ukraine	Mozambique
Belgium	Laos	Kazakhstan	Rwanda
Bulgaria	Malaysia	Kyrgyzstan	Tanzania
Croatia	Philippines	Tajikistan	Uganda

Continued ...

... Continued

Regions fully disaggregated	Regions requiring Sector disaggregation	
Czech Republic	Singapore	Uzbekistan
Denmark	Thailand	Armenia
Estonia	Viet Nam	Azerbaijan
Finland	Afghanistan	Georgia
France	Bangladesh	Bahrain
Germany	India	Iran
Greece	Nepal	Jordan
Hungary	Pakistan	Kuwait
Ireland	Sri Lanka	Lebanon
Italy	Canada	Oman
Latvia	United States	State of Palestine
Lithuania	Mexico	Qatar
Luxembourg	Brazil	Saudi Arabia
Malta	Chile	Syria
Netherlands	Colombia	United Arab Emirates
Poland	Ecuador	Algeria
Portugal	Paraguay	Egypt
Romania	Peru	Morocco
Slovakia	Uruguay	Tunisia
Slovenia	Venezuela	Benin
Spain	Costa Rica	Burkina Faso
Sweden	Guatemala	Cameroon
Serbia	Honduras	Cote d'Ivoire
Iraq	Nicaragua	Ghana
Israel	Panama	Guinea
Turkey	El Salvador	Mali
Niger	Dominican Republic	Nigeria
Central African Republic	Haiti	Senegal
Congo	Jamaica	Togo
Equatorial Guinea	Puerto Rico	Chad
Sudan	Trinidad & Tobago	Congo, DR
South Africa	Cyprus	Gabon

The agricultural and food products dataset consists of two components. The first component consists of information on the quantities produced, imported, and exported, plus information on producer prices for a broad set of agricultural commodities for a variety of countries from the FAO. This information is then used to determine the value of production and trade, at producer prices, for as many GTAP agricultural and food commodities as possible. The second component uses the above information, along with I-O tables supplied for earlier GTAP data releases to develop an initial I-O table focused on the GTAP agricultural and food commodities for each

country/region listed in table 9.5 that lack this detail.

B.3 Non-Agricultural Disaggregation

The previous section explains that for each country in GTAP, we have developed Agricultural IO data, which contains little detail on sectors outside of food and agriculture. The additional detail that we require is obtained by using the representative table.

The representative table provides a kind of average of the IO structures for the countries where we have fully disaggregated contributed I-O tables (see Section D). This is less than ideal, but to the extent that industry structures reflect patterns of consumption and technology common across countries, we may hope that it generates reasonable results.

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.
- Peterson, Everett (2016). “Food and Agricultural Data Base”. In: *Global Trade, Assistance, and Production: The GTAP 9 Data Base*. Ed. by Badri Narayanan G., Angel Aguiar, and Robert McDougall. Department of Agricultural Economics, Purdue University, West Lafayette, IN. Chap. 8.A. URL: https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=4877.