

14.7

Germany

Martina Brockmeier

14.7.1 *Introduction*

This chapter documents the procedure for compiling the German input-output (I/O) table for version 4 of the Global Trade Analysis Project (GTAP) data base. The documentation is organized as follows. In section 2, general characteristics of the currently available German I/O table are shown. Section 3 explains how the German I/O table is mapped with the GTAP concordance. As the original German I/O table does not meet all the requirements of the GTAP data base, additional information is need. Section 3 therefore also describes briefly the supplementary data utilized to obtain a complete match of the GTAP concordance. In the last section some specific problems in the mapping between the constructed German I/O table and the GTAP data base are discussed.

14.7.2 *Data source*

The original I/O table used to compute the German I/O table for the GTAP data base is provided by the national statistical office in Wiesbaden (STATISTISCHES BUNDESAMT, 1995). At the time this work was conducted, the recent available German I/O table was for the year 1991. It is the first German I/O table that includes data on the former German Democratic Republic as well. (In the following, the German I/O table of the national statistical office will be referred to as GNSO)

The GNSO I/O table is grouped commodity by commodity and disaggregated up to 59 sectors employing the definitions of the national accounts of Germany. According to this sectoring three different kind of tables are available

- total uses and resources
- domestic production
- imports

The flows in the GNSO I/O table are expressed in value terms using millions of German Marks. The table on total uses and resources is obtained by adding domestic production and imports. The second table - domestic production - reflects domestic goods and services as well as an aggregated row for the total import requirements of production and final use. The import table represented as a matrix give a detailed sectoral breakdown of the imports, but does not differentiate between imports from EU member countries and imports from third countries. The starting point of the compilation of the German I/O table for the GTAP version 4 data base constitutes the domestic production table. However, in a first step the aggregated row of total imports is substituted by the matrix of imports with the detailed sectoral breakdown. These table is then used to map the GTAP concordance as described in the next section.

14.7.3 Mapping between the German I/O table and the GTAP concordance

Table 14.7.1A in the appendix shows how the GTAP concordance matches the classification of the GNSO I/O table used by the national statistical office of Germany. Since the GNSO I/O table is in some parts more disaggregated than the GTAP classification, it easily fulfils most of the requirements. However, there are five cases where one entry of the national classification falls under more than one GTAP category. In order to meet the complete GTAP sectoral structure, additional information is utilized. First, supplementary data are taken from the German I/O table supplied by Eurostat (EUROSTAT, 1992). The German I/O table of EUROSTAT (in the following referred to as GEST) are also grouped commodity by commodity, but the 59 sectoral classification follows the European System of National Accounts (ESA). The recent available GEST I/O table has the base year 1985 and is given for the categories

- total uses and resources
- domestic production
- imports from EU member countries
- imports from third countries

To employ the information of the GEST I/O table for the split of some sectors of the GNSO I/O table, the imports from EU member countries and the imports from third countries given in the GEST I/O table are added up to one matrix. The row of aggregated imports in the domestic production table is then substituted by this matrix. Thereafter, the ESA classification of the rearranged GEST I/O table is mapped with the sectoral classification of the GNSO I/O table.¹

The cost sales shares obtained from this rearranged GEST I/O table is first applied to the items listed in table 1. This procedure yields a GNSO I/O table of the 64x59 sectors with separated rows for:

- crude petroleum
- natural gas
- meat, meat products
- milk, dairy products
- other processed food.

Next, the cost shares of the GEST I/O table are utilized to obtain the cost structure of the items listed above. Using the new row sums of these items as target column sums and the original columns for crude petroleum and natural gas and for food products as target row sums in a RAS procedure, a balanced I/O table of 64x64 sectors is achieved.

Table 14.7.1 Mapping between the GNSO, GEST and GTAP sectoral classification

GNSO sectoral classification	GEST sectoral classification (ESA)	GTAP sectoral classification
8. crude petroleum and natural gas	071 crude petroleum 075 natural gas	16. OIL oil 17. GAS gas
38. food products (except beverages)	310 meat, meat products 330 milk, dairy products 350 other processed food	19. CMT bovine cattle, and goat, horse meat prod. 20. OMT meat products nec 22. MIL dairy products 21. VOL vegetable oils and fats 23. PCR processed rice 24. SGR sugar 25. OFD food products nec

The resulting 64x64 GNSO I/O table does not differentiate between coal and coal products (see table 2 and table 1A in the appendix). To match sector 15 (COL - coal) and 32 (P_C - petroleum and coal products) additional information on energy supply and use for the base year 1991 is used.

¹The ESA sectoral classification and the sectoral classification used by the German national statistical office matches in most regards. However, in the GEST I/O table textiles and clothing (ESA 410) are combined in one sector whereas the GNSO I/O table includes separate sectors for textiles and clothing. In this case a fifty - fifty split is imposed to the textile and clothing sector of the GEST I/O table.

These tables are published by the national statistical office of Germany (STATISTISCHEN BUNDESAMT, 1995). Employing the sales and cost shares for coal and coal products and the RAS procedure (see above), a 65x65 GNSO I/O table is obtained.

Finally, sector 2 of the GNSO I/O table need to be split between the GTAP categories "13 forestry" and "14 fisheries". As additional information on these items was not available, a fifty-fifty split is imposed. Thereafter, the resulting 65x65 GNSO I/O table is aggregated according to the GTAP concordance (see table 14.7.1A in the appendix).

Table 14.7.2 Required disaggregation of the GNSO and GTAP sectoral classification

GNSO sectoral classification	GTAP sectoral classification
6 coal and coal products	15. COL coal 32. P_C petroleum and coal products
2 forestry and fishery products	13. FOR forestry 14. FSH fisheries

14.7.4 Other deviations from the GTAP target structure

The data source used for the construction of the German I/O table do not supply all information necessary to match the target structure of GTAP. The German I/O table supplied to the GTAP center does not differentiate between the agricultural sectors (sectors 1 - 12) of the revised version 4 GTAP concordance. Additionally, the sectors covering the processed food (sectors 19 - 25 of the version 4 GTAP concordance) are only matched by three sectors (1. meat, meat products; 2. milk, dairy products; 3. other processed food) in the supplied German I/O table. These sectors are disaggregated with the help of the FAO agricultural data base.

References

- STATISTISCHES BUNDESAMT (1995) Volkswirtschaftliche Gesamtrechnung. I/O-Tabellen 1991. Fachserie 18, Reihe 2, Wiesbaden.
- EUROSTAT (1992) National Accounts ESA. Input Output Tables for Germany 1985. Theme 2, Series C, Luxembourg.

Appendix

Table 14.7.1 A Mapping between GTAP concordance and the 59 sector GNSO I/O table

GTAP CC (Rev.1)			GNSO CC
1.	PDR	paddy rice	1.* agricultural products
2.	WHT	wheat	1.* agricultural products
3.	GRO	grains except wheat and rice	1.* agricultural products
4.	V_F	vegetables, fruit, nuts	1.* agricultural products
5.	OSD	oil seed	1.* agricultural products
6.	C-B	sugar cane, sugar beet	1.* agricultural products
7.	PFB	plant-based fibers	1.* agricultural products
8.	OCR	crops nec	1.* agricultural products
9.	CTL	bovine cattle, sheep and goats	1.* agricultural products
10.	OAP	animal products nec	1.* agricultural products
11.	RMK	raw milk	1.* agricultural products
12.	WOL	wool, silk-worm cocoons	1.* agricultural products
13.	FOR	forestry	2.* forestry and fishery products
14.	FSH	fisheries	2.* forestry and fishery products
15.	COL	coal	6.* coal and coal products
16.	OIL	oil	8.* crude petroleum and natural gas
17.	GAS	gas	8.* crude petroleum and natural gas
18.	OMN	other minerals	7.* other minerals
19.	CMT	bovine cattle & goat, horse meat	38.* food products (except beverages)
20.	OMT	prod	38.* food products (except beverages)
21.	VOL	meat products nec	38.* food products (except beverages)
22.	MIL	vegetable oils and fats	38.* food products (except beverages)
23.	PCR	dairy products	38.* food products (except beverages)
24.	SGR	processed rice	38.* food products (except beverages)
25.	OFD	sugar	38.* food products (except beverages)
		food products nec	
26.	B_T	beverages and tobacco	39. beverages
			40. tobacco
27.	TEX	textiles	36. textiles
28.	WAP	wearing apparel	37. clothing
29.	LEA	leather, fur and their products	35. leathers, leather, skin goods and footwear
30.	LUM	lumber and wood products	30. timber
			31. wooden products
31.	PPP	pulp, paper and printing	32. pulp, paper and board
			33. paper goods
			34. products of printing
32.	P_C	petroleum and coal products	6.* coal and coal products
			10. petroleum products
33.	CRP	chemicals, rubber and plastic products	9. chemical products
			11. plastic products
			12. rubber products

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Table 14.7.1 A Mapping between GTAP concordance and the 59 sector GNSO I/O table
(continued)

GTAP CC (Rev.1)		GNSO CC
34.NMM	non-metallic mineral products	13. cement, lime and plaster 14. ceramic products 15. glass and glass products
36. NFM	primary non-ferrous metals	17. non-ferrous metal and casting of non-ferrous metalGTAP CC (Rev.1)
37. FMP	fabricated metal products	
38. MVH	motor vehicles and parts	23. motor vehicles
39. OTN	transport equipment	24. ships 25. aircraft and space
40. ELE	electronic equipment	22. office, accounting and computing machinery, television, radio transmitters, telephone
41. OME	other machinery and equipment	26. other electrical equipment nec 27. precision and optical products, watches and clocks
42. OMF	manufactures nec	28. other manufacturing nec 29. musical instruments, games and toys, jewelry and related products, sports goods
43. ELY	electricity	3.* electricity, steam and hot water
44. GDT	gas manufacturing, distribution	4. gas 3.* electricity, steam and hot water
45. WTR	water	5. water
46. CNS	construction	41. building and civil engineering work 42. building installation
47. T-T	trade and transport	43. wholesale and recycling 44. retail sale 45. transport via railways 46. sea and costal water transport 47. national post activities 48. other transport activities 52. restaurants, bars and canteens
48. OSP	other services (priv)	49. credit 50. insurance 51. other market services
49. OSG	other services (gov't)	53. non market services of education and research 54. non market service of health 56. non market service of regional administration 57. non market services of social insurance 58. non market services of nec
50. DWE	ownership of dwellings	51. renting of immovable goods

* Requirements of the GTAP classification are not fulfilled.