

14.13

United Kingdom

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14.13.1 Introduction

Provision of the UK input-output (I/O) table for use in version 4 of the Global Trade Analysis Project (GTAP) data base followed as closely as possible the guidelines detailed in Technical Paper No. 1 (Huff and McDougall, 1996). The source data are the commodity by commodity domestic use matrix and the commodity by commodity imports use matrix for the UK for 1990, compiled by the Central Statistical Office. These matrices detail 123 commodity sectors (see table 14.13.1). The derivation of a GTAP Sectoral Classification Revision 1 (GSC1) concordance involved separate mapping procedures for agricultural and non-agricultural sectors. For the non-agricultural sectors, the procedure was mainly one of aggregation. For agriculture, the principal task was to disaggregate the single sector of the UK I/O table into the twelve agricultural sectors represented in GSC1.

14.13.2 Non-agricultural sectors

To derive a concordance between the 122 non-agricultural sectors in the UK I/O table and the 38 non-agricultural sectors in the GSC1 required a three-step procedure: first, a mapping between the UK I/O sectors and the UK Standard Industry Classification (SIC) for 1980; second, a mapping between the SIC and the International Standard Industry Classification (ISIC) Revision 3; and finally, a mapping between the ISIC Revision 3 and the GSC1. The first of these is published with

the UK I/O tables; the second is provided by the Office for National Statistics; and the third is listed in Huff and McDougall (1996).

On completion of this three-step procedure, if a UK I/O sector was represented by more than a single sector in the GSC1, then an allocation of the former to the recipient sectors of the latter was made on the basis of gross output shares, as recorded in *Business Monitor, Census of Production* and *Business Monitor, Retailing*. Where insufficient information prevented this approach, an arbitrary equal division was applied (as the number of recipient GSC1 sectors was never more than two, this division was always 50:50). Details of the concordance, with percentage allocations, are given in table 14.13.2.

14.13.3 Agricultural sectors

In the UK I/O table, agriculture is represented by a single sector. The principal task therefore was to disaggregate this sector into the 12 sectors representative of agriculture in the GSC1. A first step was simply to split the row and column entries for agriculture in the UK I/O table into the 12 GSC1 sectors on the basis of gross output shares (from *Agriculture in the UK*), thus treating as identical the input and supply structures in each of the 12 agricultural sectors.

The resulting row and column entries for the 12 agricultural sectors were then modified using data from a Social Accounting Matrix (SAM) for the UK for 1984 (Roberts, 1992). This SAM focuses on agriculture, with 23 farm types (industries), 12 agricultural commodities (unfortunately not a perfect mapping of the 12 agricultural sectors represented in GSC1), and 25 non-agricultural sectors. Data from the SAM were used to produce a symmetric 37 sector commodity by commodity matrix under the industry technology assumption. Coefficients from this matrix were then used to make adjustments to cell entries in the rows and columns of the 12 disaggregated agricultural sectors that had been derived from the UK I/O table on the basis of gross output shares. Finally, the rows and columns for these 12 agricultural sectors were balanced using a RAS approach.

14.13.4 Caveat

An exercise of this type demands a caveat. The provision of a UK I/O table for use in version 4 of the GTAP data base required some heroic assumptions, particularly in the disaggregation of the single agricultural sector. Mechanical apportionment was combined with human judgement, the latter based primarily on a 1984 SAM for the UK. Greater accuracy in provision of the agricultural sectors awaits the availability of more recent and more detailed I/O type data. In the meantime, the current offering, however imperfect, does allow separate identification of the UK in the data base. An improved version is a quest for the future.

14.13.5 Additional comments

In the primary inputs quadrant of the UK Commodity by Commodity Domestic Use matrix, “Sales by Final Demand”, representing transactions which are required for accounting purposes but which do not accord with a “produced” good, e.g., used cars, have been stripped out, with corresponding row totals amended through “Changes in Stocks”. Likewise, re-exports of imports were also stripped out from the Imports Use and Domestic Use matrices. Commodity tax and import duty data were not available.

References

Agriculture in the UK. Various years, H.M.S.O., London.

Business Monitor, Report on Census of Production, 1991 PA1002, Summary Volume. H.M.S.O., London.

Business Monitor, Retailing, SDA25, 1990. H.M.S.O., London.

Huff, K. and McDougall, R. (1996). *Contributing I/O Tables to the GTAP Data Base*, GTAP Technical Paper No. 1, Purdue University, USA.

I/O Tables for the United Kingdom, Central Statistical Office, H.M.S.O., 1995, London.

Roberts, D. (1992). *UK Agriculture in the Wider Economy: An Analysis using a Social Accounting Matrix*, unpublished Ph.D. thesis, University of Manchester, U.K.

Table 14.13.1 Classification of UK I/O industry/product groups (1990 level)

Sector	Industry/product groups
1	agriculture and horticulture
2	forestry
3	fishing
4	coal extraction and manufacture of solid fuels
5	extraction of mineral oil and natural gas
6	coke ovens, mineral oil processing and nuclear fuel production
7	electricity production
8	gas
9	water supply
10	extraction of metalliferous ores and minerals n.e.c.
11	iron and steel, and steel products
12	aluminum and aluminium alloys
13	other non-ferrous metals (including precious metals)
14	extraction of stone, clay, sand and gravel
15	structural clay products
16	cement, lime and plaster
17	concrete, stone, asbestos and abrasive products
18	glass
19	refractory and ceramic goods
20	inorganic chemicals
21	organic chemicals
22	fertilizers
23	synthetic resins and plastic materials, synthetic rubber
24	paints, dyes, pigments, printing ink
25	specialized chemicals for industry and agriculture
26	pharmaceutical products
27	soap and toilet preparations
28	chemical product n.e.c.
29	man-made fibers
30	metal castings, forgings, fastenings, springs, etc.
31	metal doors, windows, etc.
32	packaging products of metal
33	metal goods n.e.c.
34	industrial plant and steelwork

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Table 14.13.1 Classification of UK I/O industry/product groups (1990 level) (continued)

Sector	Industry/product groups
35	agricultural machinery and tractors
36	metal-working machine tools
37	engineers small tools
38	textile machinery, machinery for working other materials
39	process machinery and contractors
40	mining, construction and mechanical handling equipment
41	mechanical power transmission equipment
42	other machinery and mechanical equipment
43	ordnance, small arms and ammunition
44	office machinery and computer equipment
45	insulated wires and cables
46	basic electrical equipment
47	electrical equipment for industry, batteries, etc.
48	telecommunication etc. equipment, electronic capital goods
49	electronic components and sub-assemblies
50	electronic consumer goods, records and tapes
51	domestic electric appliances
52	electric lighting equipment, etc.
53	motor vehicles and parts
54	shipbuilding and repairing
55	aerospace equipment manufacturing and repairing
56	other vehicles
57	instrument engineering
58	oils and fats
59	slaughtering and meat processing
60	milk and milk products
61	fruit, vegetables and fish processing
62	grain milling and starch
63	bread, biscuits and flour confectionery
64	sugar
65	confectionery
66	animal feeding stuffs
67	miscellaneous foods
68	alcoholic drink
69	soft drinks
70	tobacco
71	woollen and worsted

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Table 14.13.1 Classification of UK I/O industry/product groups (1990 level) (continued)

Sector	Industry/product groups
72	cotton etc. spinning and weaving
73	hosiery and other knitted goods
74	textile finishing
75	carpets and other textile floor coverings
76	jute etc. yarns and fabrics, and miscellaneous textiles
77	leather and leather goods
78	footwear
79	clothing and furs
80	household and other made-up textiles
81	timber processing and wood products (not furniture)
82	wooden furniture, shop and office fittings
83	pulp, paper and board
84	paper and board products
85	printing and publishing
86	rubber products
87	processing of plastics
88	jewellery and coins
89	sports goods and toys
90	other goods
91	construction
92	wholesale distribution
93	retail distribution
94	distribution and repair of vehicles, filling stations and other goods
95	hotels, catering, public houses, etc.
96	railways
97	road and other inland transport
98	sea transport
99	air transport
100	transport services
101	postal services
102	telecommunications
103	banking and finance
104	insurance
105	auxiliary financial services
106	estate agents
107	legal services

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Table 14.13.1 Classification of UK I/O industry/product groups (1990 level) (continued)

Sector	Industry/product groups
108	accountancy services
109	other professional services
110	advertising
111	computing services
112	other business services
113	renting of movables
114	owning and dealing in real estate
115	public administration
116	sanitary services
117	education
118	research and development
119	health services
120	recreational and welfare services
121	personal services
122	domestic services
123	ownership of dwellings

Source: I/O tables for the United Kingdom.

Table 14.13.2 Concordance between GSC1 and UK I/O table for 1990

GSC1		UK I/O table
Code	Sector	Industry/product groups
pdr	nil entry	-
wht	part of 1	Agriculture and horticulture
gro	part of 1	Agriculture and horticulture
v_f	part of 1	Agriculture and horticulture
osd	part of 1	Agriculture and horticulture
c_b	part of 1	Agriculture and horticulture
pfb	nil entry	-
ocr	part of 1	Agriculture and horticulture
ctl	part of 1	Agriculture and horticulture
oap	part of 1	Agriculture and horticulture
rmk	part of 1	Agriculture and horticulture
wol	part of 1	Agriculture and horticulture
for	2	Forestry
fsh	3	Fishing
col	4	Coal extraction and manufacture of solid fuels
oil	68% of 5	Extraction of mineral oil and natural gas
gas	32% of 5	Extraction of mineral oil and natural gas
omn	10	Extraction of metalliferous ores and minerals n.e.c.
	14	Extraction of stone, clay, and gravel
cmt	39% of 59	Slaughtering and meat processing
omt	50% of 58	Oils and fats
	61% of 59	Slaughtering and meat processing
vol	50% of 58	Oils and fats
mil	60	Milk and milk products
	22% of 65	Confectionery
pcr	nil entry	-
sgr	64	Sugar
ofd	61	Fruit, vegetables and fish processing
	62	Grain milling and starch
	63	Bread, biscuits and flour confectionery
	66	Animal feeding stuffs
	67	Miscellaneous foods
	78% of 65	Confectionery
	50% of 69	Soft drinks
b_t	68	Alcoholic drink
	70	Tobacco
	50% of 69	Soft drinks

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Table 14.13.2 Concordance between GSC1 and UK I/O table for 1990 (continued)

GSC1		UK I/O table
Code	Sector	Industry/product groups
tex	29	Man-made fibres
	71	Woollen and worsted
	72	Hosiery and other knitted goods
	74	Textile finishing
	75	Carpets and other textile floor coverings
	76	Jute etc. yarns and fabrics, and miscellaneous textiles
	80	Household and other made-up textiles
	56% of 73	Hosiery and other knitted goods
wap	79	Clothing and furs
	44% of 73	Hosiery and other knitted goods
lea	77	Leather and leather goods
	78	Footwear
lum	82	Wooden furniture, shop and office fittings
	15% of 33	Metal goods n.e.c.
	96% of 81	Timber processing and wood products (not furniture)
ppp	83	Pulp, paper and board
	84	Paper and board products
	85	Printing and publishing
p_c	94% of 6	Coke ovens, mineral oil processing and nuclear fuel production
crp	20	Inorganic chemicals
	21	Organic chemicals
	22	Fertilisers
	23	Synthetic resins and plastic materials, synthetic rubber
	24	Paints, dyes, pigments, printing ink
	25	Specialised chemicals for industry and agriculture
	26	Pharmaceutical products
	27	Soap and toilet preparations
	28	Chemical products n.e.c.
	86	Rubber products
	87	Processing of plastics
	6% of 6	Coke ovens, mineral oil processing and nuclear fuel production
nmm	15	Structural clay products
	16	Cement, lime and plaster
	17	Concrete, stone, asbestos and abrasive products
	18	Glass
	19	Refractory and ceramic goods
i_s	87% of 11	Iron and steel, and steel products
	27% of 30	Metal castings, forgings, fastenings, springs, etc.
nfm	12	Aluminium and aluminium alloys
	13	Other non-ferrous metals (including precious metals)
	11% of 30	Metal castings, forgings, fastenings, springs, etc.

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Table 14.13.2 Concordance between GSC1 and UK I/O table for 1990 (continued)

GSC1		UK I/O table
Code	Sector	Industry/product groups
fmp	31	Metal doors, windows, etc.
	32	Packaging products of meal
	34	Industrial plant and steelwork
	13% of 11	Iron and steel, and steel products
	62% of 30	Metal castings, forgings, fastenings, springs, etc.
	79% of 33	Metal goods n.e.c.
mvh	53	Motor vehicles and parts
otn	54	Shipbuilding and repairing
	56	Other vehicles
	50% of 55	Aerospace equipment manufacturing and repairing
ele	44	Office machinery and computer equipment
	48	Telecommunication etc. equipment, electronic capital goods
	49	Electronic components and sub-assemblies
ome	35	Agricultural machinery and tractors
	36	Metal-working machine tools
	37	Engineers small tools
	38	Textile machinery, machinery for working other materials
	40	Mining, construction and mechanical handling equipment
	41	Mechanical power transmission equipment
	42	Other machinery and mechanical equipment
	43	Ordnance, small arms and ammunition
	45	Insulated wires and cables
	46	Basic electrical equipment
	47	Electrical equipment for industry, batteries, etc.
	50	Electronic consumer goods, records and tapes
	51	Domestic electric appliances
	52	Electric lighting equipment, etc.
	57	Instrument engineering
	6% of 33	Metal goods n.e.c.
	58% of 39	Process machinery and contractors
	50% of 55	Aerospace equipment manufacturing and repairing
omf	88	Jewellery and coins
	89	Sports goods and toys
	4% of 81	Timber processing and wood products (not furniture)
	77% of 90	Other goods
ely	7	Electricity production
gdt	8	Gas
wtr	9	Water supply

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Table 14.13.2 Concordance between GSC1 and UK I/O table for 1990 (continued)

GSC1		UK I/O table
Code	Sector	Industry/product groups
t_t	92	Wholesale distribution
	93	Retail distribution
	94	Distribution & repair of vehicles, filling stations & other goods
	95	Hotels, catering, public houses, etc.
	96	Railways
	97	Road and other inland transport
	98	Sea transport
	99	Air Transport
	100	Transport services
	101	Postal services
	102	Telecommunications
osp	103	Banking and finance
	104	Insurance
	105	Auxiliary financial services
	106	Estate agents
	107	Legal services
	108	Accountancy services
	110	Advertising
	111	Computing services
	112	Other business services
	113	Renting of movables
	114	Owning and dealing in real estate
	121	Personal services
	122	Ownership of dwellings
	42% of 39	Process machinery and contractors
	23% of 90	Other goods
	50% of 109	Other professional services
osg	50% of 116	Sanitary services
	50% of 120	Recreational and welfare services
	115	Public administration
	117	Education
	118	Research and development
	119	Health services
	50% of 109	Other professional services
dwe	50% of 116	Sanitary services
	50% of 120	Recreational and welfare services
	123	Ownership of dwellings

Note: Percentage allocations are based on gross output shares, except all 50:50 splits which are arbitrary (see text).