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China

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11.C.1 Initial Input-Output Table

The source of the initial input-output (I-O) table for China is "Input-Output Table of China - 1997" from the Department of National Economy Accounting, State Statistical Bureau (SSB), China Statistics Press. It is the third such I-O table following the 1987 and 1992 tables. These tables are based on large-scale input-output survey across the country but the latest one has better gross root survey support and wider data coverage.

The original 1997 table includes 124 sectors, 5 more than that of 1992, of which there are 5 sectors for agriculture, 84 sectors for manufacture, and 35 sectors for services. The units are 10 thousands Yuan (RMB) at current producers' prices, which includes value-added tax but excludes commercial margin, transportation and telecommunication cost.

The intermediate input matrix of the Chinese I-O table refers to total intermediate usage, i.e. the sum of domestic and imported intermediate transactions. It is a commodity by commodity matrix. Household consumption, government consumption, capital formation, changes in stock and exports are final demand categories. The original table includes a column vector reporting imports by sector valued at *c.i.f.* price plus custom duties. Exports are valued at *f.o.b.* price.

11.C.2 Sectoral Classification

The contributed table includes 42 sectors. It includes all sectors for manufacturing and services in the GTAP Sectoral Classification, revision 2 (GSC2), but because of data limitations in the original 1997 China I-O table, it has only 5 aggregated sectors corresponding the 19 sectors for agriculture and processed food in GSC2. The concordance from GSC2 to the sectoral classification used in the contributed table is listed in Table 11C.A1, while Table 11.C.A2 gives the concordance from the 124 sectors in the 1997 China I-O table to the sector classification in the contributed table.

11.C.3 Treatment of "Error" Item

There is an "Error" vector, by sector, in the original 1997 China I-O table. The errors are relatively small, most of them below 2 percent of sectoral gross output. We added them to "stock changes" to balance the original table.

11.C.4 Split of Import and Domestic Matrices

There is only a column vector reporting total imports by commodity in the original China I-O table. Following the procedure suggested in Huff, McDougall and Walmsley (1999), we constructed an import use matrix for the original table by pro-rating the import column across intermediate demand and final demand (except exports) applying the structure implied by the total use matrix. The resulting import matrix was then subtracted from the total use matrix to obtain the domestic use matrix.

11.C.5 Sectoral Split

There are two sectors in the original 1997 China I-O table that had to be split to be consistent with the manufacturing and service sector classifications in GSC2. These are the furniture (sector 031) and real estate (sector 108) sectors. Table 11.C.1 shows the percentage shares used in splitting these sectors to match the GSC2 sectors.

Table 11.C.1 Sectoral Splits, Percentage Shares

1997 China I-O Table	GCS2	Shares (%)
031 Furniture and products of wood, bamboo, cane, palm, and straw, etc.	30 Wood products	60.05
	42 Manufactures, n.e.c.	39.95
108 Real estate	57 Dwellings	85.21
	54 Business service n.e.c.	14.79

The split of sector 031 of the 1997 China I-O table was estimated based on gross output and value-added of enterprises at town and town-above level and enterprises under town level but with 100 million Yuan sales in the Third National Industrial Census. The data used is shown in table 11.C.2.

Table 11.C.2 Splits of Sector 031, 100 Million Yuan

	Gross Output	Wages	Profits	Taxes	Output Share
Products of wood, bamboo, cane, palm and straw, etc	623.67	51.29	13.60	26.56	60.05
Furniture	414.88	33.98	14.08	14.82	39.95

Source: The Data of the Third National Industrial Census of the People's Republic of China in 1995, Comprehensive & Industry Volume", p 10. China Statistics press.

The split of sector 108 of 1997 China I-O table was estimated based on values of final demand data in the original table. There is no sector for household ownership of dwellings in the original table, however, there is a real estate sector (108) with household consumption and capital formation as the only component of its final demand. The household consumption in this sector mainly refers to imputed expenditure by the owner occupied dwellings. Therefore, we use the share of household consumption in final demand to separate out a dwelling sector from the real estate sector in the original table.

Table 11.C.3. Splits of Sector 108

	Household Consumption	Capital Formation	Share of Final Demand
Real estate	1076.23	186.87	85.21

Source: Table 5.1 of 1997 China Input-output table, China Statistics Press.

11.C.6 Exchange Rates

To convert Chinese RMB to U.S. currency, the yearly average exchange rate of 829 RMB Yuan to 100 US dollars was used (middle rate). This is consistent with total trade numbers measured by RMB and U.S. dollars as reported by official China statistics¹. Thus, the contributed table is in million US dollars.

11.C.7 Differences Between the Contributed Table and GTAP Data Base

There are several differences between our contributed table with that required by the GTAP data base.

The major tax in China is value-added tax and this is included in the 1997 producer price at which all the input-output flows in the original 1997 China I-O table were valued. Therefore, we do not have UF (tax-free) table, with commodity taxes excluded, in our contributed table. However, a net taxes vector is reported as part of the valued-added. It equals taxes on production minus subsidies. Taxes on production include sales tax and extra charges, value-added tax, various taxes paid in the administrative expense, road toll payable, sewage, extra charges on water and electric power consumed, special revenue turnover to the government by monopolized trade of tobacco and liquor, etc. Subsidies include expenditure covering the loss due to implementation of government policies, price subsidies to the grain institutions, foreign trade corporations' receipts from drawback, etc.

Our MF vector, imports by commodity, includes import duties. The total imports in the 1997 China I-O table is 1654.32 billion RMB Yuan, while the number reported by SSB, which exclude tariffs, was 1515.28 billion RMB Yuan. This indicates an aggregate import tax rate about 8.1 percent. However, the total tariff collected in 1997 was about 32 billion Yuan, which only implies a tariff rate of 2.7 percent. The difference may be made up by other types of taxes such as value-added tax.

In terms of value-added part, we do not have information on returns to agricultural land, therefore, only value-added by labor and capital are reported in our contributed table. However, two additional categories were included: depreciation of fixed capital and net tax on production. The

¹ China Statistical Year Book, 1998, p. 620.

former refers to the value transferred from fixed assets in the production process in the current period and calculated as part of production cost.

References

Huff, Karen, Robert McDougall, and Terrie Walmsley. 1999. "Contributing Input-Output Tables to the GTAP Data Base" GTAP Technical Paper No. 1, August.

Department of National Economy Accounting, State Statistical Bureau (SSB). 2000. "Input-Output Table of China - 1997," China Statistics Press.

State Statistical Bureau (SSB). 1998. "China Statistical Year Book, 1998," China Statistics Press.

Appendix

Table 11.C.A1 Concordance from GSC2 to the Classification Used in the Contributed Table

Classification in the contributed table	GSC2 Sectors
1 Crops	1 Paddy rice 2 Wheat 3 Cereal grains n.e.c. 4 Vegetables, fruit, nuts 5 Oil seeds 6 Sugar cane, sugar beet 7 Plant-based fibbers 8 Crops n.e.c.
2 Livestock products	9 Bovine cattle, sheep and goats, horses 10 Animal products n.e.c. 11 Raw milk 12 Wool, silk-worm cocoons
3 Forestry	13 Forestry
4 Fishing	14 Fishing
5 Coal	15 Coal
6 Oil	16 Oil
7 Gas	17 Gas
8 Minerals n.e.c.	18 Minerals n.e.c.
9 Meat and dairy products	19 Bovine cattle, sheep and goat, horse meat products 20 Meat products n.e.c. 22 Dairy products
10 Other food products	21 Vegetable oils and fats 23 Processed rice 24 Sugar 25 Food products n.e.c.
11 Beverages and tobacco products	26 Beverages and tobacco products
12 Textiles	27 Textiles
13 Wearing apparel	28 Wearing apparel
14 Leather products	29 Leather products
15 Wood products	30 Wood products
16 Paper products, publishing	31 Paper products, publishing
17 Petroleum, coal products	32 Petroleum, coal products
18 Chemical, rubber, plastic products	33 Chemical, rubber, plastic products
19 Mineral products n.e.c.	34 Mineral products n.e.c.
20 Ferrous metals	35 Ferrous metals
21 Metals n.e.c.	36 Metals n.e.c.
22 Metal products	37 Metal products

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Table 11.C.A1 Concordance from GSC2 to the Classification Used in the Contributed Table
(continued)

Classification in the contributed table	GSC2 Sectors
23 Motor vehicles and parts	38 Motor vehicles and parts
24 Transport equipment n.e.c.	39 Transport equipment n.e.c.
25 Electronic equipment	40 Electronic equipment
26 Machinery and equipment n.e.c.	41 Machinery and equipment n.e.c.
27 Manufactures n.e.c.	42 Manufactures n.e.c.
28 Electricity	43 Electricity
29 Gas manufacture, distribution	44 Gas manufacture, distribution
30 Water	45 Water
31 Construction	46 Construction
32 Trade	47 Trade
33 Transport n.e.c.	48 Transport n.e.c.
34 Water transport	49 Water transport
35 Air transport	50 Air transport
36 Communication	51 Communication
37 Financial service n.e.c.	52 Financial service n.e.c.
38 Insurance	53 Insurance
39 Business services	54 Business service n.e.c.
40 Recreational services n.e.c.	55 Recreational services n.e.c.
41 Public administration and defense, education, health services	56 Public administration and defense, education, health services
42 Dwellings	57 Dwellings

Table 11.C.A2 Concordance from the Classification Used in the Contributed Table to the
Sectoral Classification of Chinese Input-output Table

Classification in the Contributed Table	Classification of Chinese input-output table	
1 Crops	001	Crop cultivation
	005	Other agricultural products
2 Livestock products	003	Livestock and livestock products
3 Forestry	002	Forestry
	013	Logging and transport of timber and bamboo
4 Fishing	004	Fishery
5 Coal	006	Coal mining and processing
6 Oil	007	Crude petroleum products
7 Gas	008	Natural gas products
8 Minerals n.e.c.	009	Ferrous ore mining
	010	Non-ferrous ore mining
	011	Salt mining
	012	Non-metal minerals and other mining
9 Meat Products	016	Slaughtering , meat processing, eggs and dairy products
10 Other food products	014	Grain mill products, vegetable oil and forage
	015	Sugar refining
	017	Prepared fish and seafood
	018	Other food products
11 Beverages and tobacco products	019	Wines, spirits and liquors
	020	Non-alcoholic beverage
	021	Tobacco products
12 Textiles	022	Cotton textiles
	023	Woolen textiles
	024	Hemp textiles
	025	Silk textiles
	026	Knitted mills
	027	Other textiles
	045	Chemical fibers
13 Wearing apparel	028	Wearing apparel
14 Leather products	029	Leather, furs, down and related products
15 Wood products	030	Sawmills and fiberboard
	031*	Products of wood, bamboo, cane, palm, straw, etc.
16 Paper products, publishing	032	Paper and products
	033	Printing and record medium reproduction
	034	Cultural goods
17 Petroleum, coal products	036	Petroleum refining
	037	Coking

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Table 11.C.A2 Concordance from the Classification Used in the Contributed Table to the
Sectoral Classification of Chinese Input-output Table (continued)

Classification in the Contributed Table	Classification of Chinese input-output table	
18 Chemical, rubber, plastic products	038	Raw chemical materials
	039	Chemical fertilizers
	040	Chemical pesticides
	041	Organic chemical products
	042	Chemical products for daily use
	043	Other chemical products
	044	Medical and pharmaceutical products
	046	Rubber products
	047	Plastic products
19 Mineral products n.e.c.	048	Cement
	049	Cement and asbestos products
	050	Bricks, tiles, lime and light-weight building materials
	051	Glass and glass products
	052	Pottery, china and earthenware
	053	Fireproof products
	054	Other non-metallic mineral products
	055	Iron-smelting
20 Ferrous metals	056	Steel-smelting
	057	Steel processing
	058	Alloy iron smelting
21 Metals n.e.c.	059	Nonferrous metal smelting
	060	Nonferrous metal processing
22 Metal products	061	Metal products
23 Motor vehicles and parts	068	Motor vehicles
24 Transport equipment n.e.c.	067	Railroad transport equipment
	069	Ship building
	070	Aircraft
	071	Bicycle
	072	Other transport machinery
25 Electronic equipment	076	Electronic computer
	077	Electronic appliances
	078	Electronic element and device
	079	Other electronic and communication

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Table 11.C.A2 Concordance from the Classification Used in the Contributed Table to the
Sectoral Classification of Chinese Input-output Table (continued)

Classification in the Contributed Table	Classification of Chinese input-output table	
26 Machinery and equipment n.e.c.	062	Boiler, engines and turbine
	063	Metalworking machinery
	064	Other general industrial machinery
	065	Agriculture, forestry, animal husbandry and fishing machinery
	066	Other special industrial equipment
	073	Generators
	074	Household electric appliances
	075	Other electric machinery and equipment
	080	Instruments, meters and other measuring equipment
	081	Cultural and office equipment
	082	Maintenance and repair of machinery and equipment
27 Manufactures n.e.c.	031*	Furniture
	035	Toys, sporting and athletic and recreation products
	083	Arts and crafts products
	084	Other manufacturing products
	085	Scrap and waste
28 Electricity	086	Electricity production and supply
29 Gas manufacture, distribution	087	Steam and hot water production and supply
	088	Gas production and supply
30 Water	089	Water production and supply
31 Construction	090	Construction
32 Trade	097	Warehousing
	100	Wholesale and retail trade
	101	Eating and drinking places
	111	Hotels
	112	Tourism
33 Transport n.e.c.	091	Railway freight transport
	092	Highway freight transport
	093	Pipeline transport
	096	Transportation not elsewhere classified and auxiliary body
	102	Railway passenger transport
	103	Highway passenger transport
34 Water transport	094	Water freight transport
	104	Water passenger transport
35 Air transport	095	Air freight transport
	105	Air passenger transport
36 Communication	098	Post
	099	Telecommunication
37 Financial service n.e.c.	106	Finance

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Table 11.C.A2 Concordance from the Classification Used in the Contributed Table to the
Sectoral Classification of Chinese Input-output Table (continued)

Classification in the Contributed Table	Classification of Chinese input-output table	
38 Insurance	107	Insurance
39 Business services	108*	Real estate (business)
	110	Resident services
	121	General technical services
	122	Technical services for agriculture, forestry, livestock and fishing
40 Recreational services	113	Recreational services
n.e.c.	114	Other social services
	116	Sports
	119	Culture and arts, radio, film and television
41 Public administration	109	Public services
and defense, education,	115	Health services
health services	117	Social welfare
	118	Educational services
	120	Scientific research
	123	Geological prospecting and water conservancy
	124	Public administration and other sectors
42 Dwellings	108*	Real estate (household use)

* Denotes a China I-O table sector split into more than one GTAP GSC2 sector.