

14.4

China

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14.4.1 Initial input-output table for China

The source of the initial input-output (I/O) table for China is: "Input-Output Table of China (1992)", Department of National Economy Accounting, State Statistical Bureau, Chinese Statistical Publishing House. The units of accounts are 10 thousands Chinese Yuan (RMB).

The intermediate input matrix of Chinese I/O table at 118 sectors refers to total intermediate usage, i.e. the sum of domestic and imported intermediate transactions. It is commodity by commodity matrix. There is only one single net export vector in the Chinese 1992 I/O table.

14.4.2 Sectoral classification of the contributed table

The contributed table includes 40 sectors. It uses original GSC(37 sectors) as its sectoral classification in agricultural and food processing sectors (*except processed rice*), and uses GSC1 (50 sectors) as its sectoral classification in other sectors. The concordance from GSC1 to the classification used in the contributed table is shown in table 14.3. A1, and table 14.3.A2 and gives the concordance from the 118 sectoral classification of the Chinese I/O table (State Statistics Bureau, SSB) to the classification used in the contributed table.

14.4.3 Trade data

The Chinese I/O table only provides a single vector - "net exports". We aggregated import data from China's Customs Statistics at 8-digits HS classification to SSB I/O sectoral classification for all merchandise imports (at *cif* price). And we added the imports for service sectors based upon the estimates made by SSB and DRC staffs. The tariff data by SSB I/O sectoral classification is estimated by ourselves based on actual duty collections. The exports of the contributed table equal the sum of imports (at *cif* price), tariffs and "net exports" of the initial Chinese I/O table.

14.4.4 Treatment of "error" item

There is an "error" vector in the initial Chinese I/O table. The errors are very small, ranging from 1.4 to 1.7 percent of sectoral gross output. We added it to "stock changes" to balance the initial I/O table.

14.4.5 Split of import and domestic matrices

In the contributed table, the import matrix is constructed by pro-rating the import column across intermediate demand and final demand¹ (except exports) by applying the structure implied by the total use matrix. The new import matrix is then deducted from the total use matrix to provide the domestic use matrix.

14.4.6 Splits of Chinese input-output sectors

There are 3 Chinese I/O sectors that had to be split in consistence with the original GSC. The splits are shown in table 14.4.1 below. The * signifies the Chinese I/O table sectors affected by the split.

¹ The stock change has been adjusted in this step, which includes the "error" item of the initial I/O table.

Table 14.4.1 Agricultural commodities

GTAP (original GSC)	Chinese I/O table
GTAP 1 -- Paddy Rice	* 49.3% CN 1101 -- Grain crop cultivation
GTAP 2 -- Wheat	* 12.9% CN 1101 -- Grain crop cultivation
GTAP 3 -- Cereal grains n.e.c.	* 16.4% CN 1101 -- Grain crop cultivation
GTAP 4 -- Non-grain Crops	* 21.4% CN 1101 -- Grain crop cultivation
GTAP 5 -- Wool	* 1.9% CN 1300 -- Livestock production
GTAP 6 -- Other livestock products	* 98.1% CN 1300 -- Livestock production
GTAP 15 - Milk products	* 70.9% CN 6103 -- Egg and dairy products
GTAP 16 - Other food products	* 29.1% CN 6103 -- Egg and dairy products

The split of sector 1101 of Chinese I/O table was estimated based on values of 1992 output of paddy rice, wheat, cereal grain n.e.c, soybeans and tubers. (See table 14.4.2)

Table 14.4.2 Splits of sector 1101

	Volume	Price	Value	Share (%)
Paddy rice	186.2	1639.2	305259.6	49.3
Wheat	101.6	783.0	79546.0	12.9
Cereal grains n.e.c.	113.9	893.3	101739.1	16.4
Non-grain crops				21.4
Soybeans	12.5	1348.0	16877.5	2.7
Tubers	28.4	4054.9	115328.9	18.6
Total			618751.2	100.0

Source: Volume - Chinese Statistical Yearbook, 1996, p371; Price - Calculated from China's Customs Statistics

Note: The prices are *cif* prices, which are weighted by 1992 Chinese imports.

The split of sector 1300 of Chinese I/O table was estimated based on values of 1992 output of wool. (See table 14.4.3).

Table 14.4.3 Splits of sector 1300

	Volume (metric tons)	Price (yuan / ton)	Value (thousand yuan)	Share (%)
Wool				1.87
Sheep Wool	238192	17963	4278677	1.74
Goat Wool	17496	17963	314283	0.13
Other livestock products				98.13
Total output value of sector 1300 of Chinese I/O table			246052100	100.0

Source: Volume - Chinese Statistical Yearbook, 1996, p378-9; Price - Calculated from China's Customs Statistics

Note: The prices are *cif* prices, which weighted by 1992 Chinese imports.

The split of sector 6103 of Chinese I/O table was estimated based on values of 1992 output of processed milk. (See table 14.4.4).

Table 14.4.4 Splits of sector 6103

	Volume (Mn. metric tons)	Price (yuan / ton)	Value (Mn. yuan)	Share (%)
Processed Milk	0.4131	1297.6	4664.8	70.9
Egg products				29.1
Total output value of Item 6103 of Chinese I/O table			6581.0	100.0

Source: Volume - China Industry Economic Statistical Yearbook, 1995, p29

Price - Calculated from China's Customs Statistics

Note: The prices are *cif* prices, which are weighted by 1992 Chinese imports.

14.4.7 Adjustment of negative exports in "trade and transportation" sector

In the initial Chinese I/O table, the exports of "Domestic and foreign trade" (27101) is -29.057 billion yuan. We assume that the value-added tax (VAT) rebate for exports is entered into production subsidies of "domestic and foreign trade" in the Chinese I/O table, so that there are negative exports. We adjusted the exports of "domestic and foreign trade" by adding the export VAT rebate in 1992 -- 26.587 billion yuan (Chinese Fiscal Statistical Yearbook 1993). The VAT rebate was also added to the production tax of domestic and foreign trade.

14.4.8 Export taxes/subsidies

Since export rebate is an important feature of China's trade policy during recent years of economic reform. We try to capture this feature to some extent in the contributed table by providing estimates of export taxes/subsidies. In what follows we describe our estimation method briefly.

According to the note in China's I/O table (*Input-Output Table of China, 1992*, p7), when the net exports column in the table was estimated, imports was valued at domestic prices, which was calculated as *cif* prices of imports plus tariffs. Exports was valued at domestic producers' prices which was derived from the *fob* value of exports multiplied by export conversion coefficients. Thus, we can obtain the following formulas:

$$NetEx = EXp - IMp \quad (1)$$

$$Imp = IM + Tar \quad (2)$$

$$Exp = EX \text{ Conv} \quad (3)$$

where *NetEx* is the "net export" vector in the Chinese I/O table, *Exp* and *Imp* denote exports and imports at domestic price respectively, *EX* and *IM* denote exports at *fob* prices and imports at *cif* prices respectively. *Tar* is tariff for imports and *Conv* is the export conversion coefficients.

If we assume that the margins between *fob* value of exports and domestic producers' value of exports equal export taxes/subsidies, we can have:

$$Exp + TaxEX = EX \quad (4)$$

where *TaxEX* is the export taxes/subsidies.

We have calculated *Exp* as the export vector of the contributed table according to (1) and (2). Similar to the data of imports at *cif* price, the *fob* value of merchandise exports can be obtained from China's Customs Statistics, therefore, the *TaxEX* for commodity sectors can be calculated from (4). We assume that the domestic prices of service exports are the same with their border prices, i.e. *TaxEX* for service sectors are zero.

The calculated export taxes/subsidies rate is shown in column two of table 14.4.4. Total value of export taxes is -16.3 billion yuan at these rates. But the rates of four sectors (10 Oil, 28 Motor vehicles and parts, 32 Manufactures n.e.c., and 34 Gas manufacture & distribution) are too high to be believed. Since there are no more empirical evidences available now to adjust them, we simply set them to 50%. The rates of other sectors are left unadjusted. The total value of export taxes after adjustment is -25.1 billion yuan, which is close to the actual value of VAT rebate for exports (-26.59) in 1992.

Table 14.4.5 Adjustment of export taxes/subsidies

Sectors	Initial estimates of export taxes/subsidies rate	Adjustment
1 Paddy rice	7	
2 Wheat	7	
3 Cereal grains n.e.c.	7	
4 Non-grain crops	6	
5 Wool	12	
6 Other livestock products	12	
7 Forestry	-2	
8 Fishing	3	
9 Coal	-4	
10 Oil	195	50
11 Gas	28	
12 Minerals n.e.c.	-1	
13 Meat Products	36	
14 Milk products	14	
15 Other food products	-6	
16 Beverages and tobacco	-2	
17 Textiles	-8	
18 Wearing apparel	-3	
19 Leather products	-7	
20 Wood products	-7	
21 Paper products, publishing	-6	
22 Petroleum, coal products	13	
23 Chemical, rubber, plastic products	12	
24 Mineral products n.e.c.	22	
25 Ferrous metals	-4	
26 Metals n.e.c.	-11	
27 Metal products	-10	
28 Motor vehicles and parts	90	50
29 Transport equipment n.e.c.	-7	
30 Electronic equipment	-2	
31 Machinery and equipment n.e.c.	-8	
32 Manufactures n.e.c.	415	50
33 Electricity	-11	
34 Gas manufacture, distribution	340	50
35 Water	--	
36 Construction	--	
37 Trade, transport	0	
38 Financial business recrea. serv.	0	
39 Public administration and other	0	
40 Dwellings	--	

Appendix

Table 14.4.A1 Concordance from GSC1 to the classification used in the contributed table.

Classification in the contributed table	GSC1
1. Paddy rice	1 Paddy rice
2. Wheat	2 Wheat
3. Cereal grains n.e.c.	3 Cereal grains n.e.c.
4. Non-grain crops	4 Vegetables, fruit, nuts
	5 Oil seeds
	6 Sugar cane, sugar beet
	7 Plant-based fibers
	8 Crops n.e.c.
5. Wool	12 Wool, silk-worm cocoons
6. Other livestock products	9 Bovine cattle, sheep and goats, horses
	10 Animal products n.e.c.
	11 Raw milk
7. Forestry	13 Forestry
8. Fishing	14 Fishing
9. Coal	15 Coal
10. Oil	16 Oil
11. Gas	17 Gas
12. Minerals n.e.c.	18 Minerals n.e.c.
13. Meat Products	19 Bovine cattle, sheep and goat, horse meat products
	20 Meat products n.e.c.
14. Milk products	22 Dairy products
15. Other food products	21 Vegetable oils and fats
	23 Processed rice
	24 Sugar
	25 Food products n.e.c.
16. Beverages and tobacco products	26 Beverages and tobacco products
17. Textiles	27 Textiles
18. Wearing apparel	28 Wearing apparel
19. Leather products	29 Leather products
20. Wood products	30 Wood products
1. Paper products, publishing	31 Paper products, publishing
22. Petroleum, coal products	32 Petroleum, coal products
23. Chemical, rubber, plastic products	33 Chemical, rubber, plastic products
24. Mineral products n.e.c.	34 Mineral products n.e.c.
25. Ferrous metals	35 Ferrous metals
26. Metals n.e.c.	36 Metals n.e.c.
27. Metal products	37 Metal products
28. Motor vehicles and parts	38 Motor vehicles and parts
29. Transport equipment n.e.c.	39 Transport equipment n.e.c.
30. Electronic equipment	40 Electronic equipment
31. Machinery and equipment n.e.c.	41 Machinery and equipment n.e.c.
32. Manufactures n.e.c.	42 Manufactures n.e.c.
33. Electricity	43 Electricity
34. Gas manufacture, distribution	44 Gas manufacture, distribution
35. Water	45 Water
36. Construction	46 Construction
37. Trade, transport	47 Trade, transport
38. Financial, business, recreational services	48 Financial, business, recreational services
39. Public administration and defense, education, health services	49 Public administration and defense, education, health services
40. Dwellings	50 Dwellings

Table 14.4.A2 Concordance from the classification used in the contributed table to the sectoral classification of Chinese I/O table

Classification in the contributed table	Classification of Chinese I/O table
1. Paddy rice	* 1101 Grain crop cultivation
2. Wheat	* 1101 Grain crop cultivation
3. Cereal grains n.e.c.	* 1101 Grain crop cultivation
4. Non-grain crops	* 1101 Grain crop cultivation 1109 Other crop cultivation 1400 Other agricultural production
5. Wool	* 1300 Livestock production
6. Other livestock products	* 1300 Livestock production
7. Forestry	1200 Forestry 5300 Logging and transport of timber and bamboo
8. Fishing	1500 Fishing
9. Coal	2100 Coal mining 2200 Coal cleaning and screening 13001 Coking
10. Oil	3100 Crude petroleum production
11. Gas	3200 Natural gas production
12. Minerals n.e.c.	4100 Ferrous ore mining 4200 Non ferrous ore mining 5100 Quarrying of building materials and non metal minerals 5200 Salt mining
13. Meat Products	6102 Slaughtering and preparing meat
14. Milk products	* 6103 Manufacture of egg and dairy products
15. Other food products	6101 Grain mill products and vegetable oil manufacturing * 6103 Manufacture of egg and dairy products 6104 Fish processing 6105 Sugar refining 6109 Manufacture of food products not elsewhere classified 6400 Forage
16. Beverages and tobacco products	6201 Wine and spirits industries 6209 Beverages 6300 Tobacco
17. Textiles	7001 Cotton textiles 7002 Woollen textiles 7003 Hemp textiles 7004 Silk textiles 7005 Knitting mills 7009 Textiles not elsewhere classified
18. Wearing apparel	8100 Wearing apparel
19. Leather products	8200 Leather fur and their products
20. Wood products	9100 Sawmills and fire boards 9200 Furniture and other wood products

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Table 14.4.A2 Concordance from the classification used in the contributed table to the sectoral classification of Chinese I/O table (continued)

Classification in the contributed table	Classification of Chinese I/O table
21. Paper products, publishing	10100 Paper and paper products 10200 Printing 10300 Articles for cultural activities education
22. Petroleum, coal products	12000 Petroleum refineries
23. Chemical, rubber, plastic products	14101 Basic chemicals 14102 Chemicals fertilizers 14103 Chemical pesticides 14104 Organic chemical products 14105 Chemical products for daily use 14106 Synthetic chemicals 14109 Other chemicals 14200 Medicines 14300 Chemical fibers 14401 Rubber for production 14402 Rubber for daily use 14501 Plastic for production 14502 Plastic for daily use
24. Mineral products n.e.c.	15001 Cement 15002 Cement and asbestos products 15003 Bricks, tiles, lime and light weight building materials 15004 Glass and glass products 15005 Pottery, china and earthenware 15006 Fireproof materials 15009 Non-metallic mineral products not elsewhere classified
25. Ferrous metals	16100 Primary iron and steel
26. Metals n.e.c.	16200 Primary non ferrous metals manufacturing
27. Metal products	17001 Metal products for production use 17002 Metal products for daily use
28. Motor vehicles and parts	19002 Motor vehicles
29. Transport equipment n.e.c.	19001 Railroad transport equipment 19003 Ship building 19004 Aircraft 19009 Transport equip. not elsewhere classified
30. Electronic equipment	21001 Computers 21002 Electronic appliances 21009 Electronic and telecommunication equipment not elsewhere classified

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Table 14.4.A2 Concordance from the classification used in the contributed table to the sectoral classification of Chinese I/O table (continued)

Classification in the contributed table	Classification of Chinese I/O table
31. Machinery and equipment n.e.c.	18001 Boilers, engines and turbines 18002 Metalworking machinery 18003 Special industrial machinery and equipment 18004 Agricultural, forestry, animal husbandry and fishing machinery 18005 Machinery for daily use 18006 Special equipment 18009 Machinery not elsewhere classified 20001 Generators 20002 Household electrical appliances 20009 Electric machinery not elsewhere classified 22000 Instruments 23000 Maintenance and repair of machinery and equipment
32. Manufactures n.e.c.	24101 Products for production use not elsewhere classified 24102 Products for daily use not elsewhere classified 24200 Scrap and waste
33. Electricity	11000 Electricity, steam and hot water
34. Gas manufacture, distribution	13002 Gas and coal products
35. Water	5400 Production and supply of water
36. Construction	25000 Construction
37. Trade, transport	26101 Railway freight transport 26102 Highway freight transport 26103 Water freight transport 26104 Air freight transport 26105 Pipe transport 26200 Communications 27100 Supply and marketing of materials and storage 27201 Domestic and foreign trade 27202 Trade of grain and cooking oils 28000 Restaurants 9001 Railway passenger transport 9002 Highway passenger transport 9003 Water passenger transport 9004 Air passenger transport

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Table 14.4.A2 Concordance from the classification used in the contributed table to the sectoral classification of Chinese I/O table (continued)

Classification in the contributed table	Classification of Chinese I/O table
38. Financial, business, recreational services	30300 Services to household 31102 Sports 31202 Cultural services, arts radio and television broadcasting 31302 General technical services 32001 Financial institutions 32002 Insurance
39. Public administration and defense, education, health services	30200 Public utilities 31101 Health service 31103 Social welfare institutions 31201 Education services 31301 Research and scientific institution 33000 Public administration
40. Dwellings	30100 Real estate