16.5 India

Rajesh Chadha

16.5.1 The original input-output transactions tables

The source tables for the India IO Table, included in the GTAP (Release. 3) database, are the following:

— 1. Input-Output Transactions Table, 1983-84, Central Statistical Organization, Department of Statistics, Ministry of Planning, Government of India (published in 1990). This Table has 115 sectors.

— 2. Input-Output Table for 1989-90, Planning Commission, Government of India. This has been constructed by the Planning Commission by updating and aggregating the 115-sector 1983-84 IO Table into 60 sectors.

The 1983-84 IO Table is updated to 1989-90 on the basis of input norms, commodity output, exports, imports, investment, public and private consumption each at the prices prevailing in 1991-92. The actual price rise between 1983-84 and 1989-90 has been assessed for each sector from the detailed data on wholesale price index as available from the Economic Adviser, Ministry of Industry, Government of India.

The original table has the following characteristics:

— Reference Year: 1983-84

— Units: Rupees lakhs (10 lakhs = 1 million)

— Sectoring: 115 sectors, presented both as Commodity by Industry (Absorption Matrix) as well as Industry by Commodity (Make Matrix).

The updated table has the following characteristics:

— Reference Year: 1989-90

— Units: Rupees lakhs (10 lakhs = 1 million)

— Sectoring: 60 sectors, presented both as Commodity by Industry (Absorption Matrix) as well as Industry by Commodity (Make Matrix).

All the entries in the IO transactions tables are at factor cost, i.e. excluding trade and transport margins. To begin with, the IO table is prepared at original purchasers' price, i.e. at the price in which the actual transactions take place. The entries at factor cost are arrived thereafter by removing the components of trade and transport margins and net indirect taxes (indirect taxes minus subsidies).

There is no other source for obtaining India's IO tables.

16.5.2 The India IO table for GTAP

The 60-sector IO table for 1989-90 has been concorded to the 37-sector IO table required for the GTAP database. The mapping from the 60-sector IO table to 37-sector GTAP IO table is given in appendices 1 and 2.

Three types of matrices have been reported with GTAP sector classification, viz.: a) Total transactions (domestic + imports); b) Imports; and c) Domestic.

The *total transactions matrix* is a commodity by commodity table.

The *imports transactions matrix* has been generated as suggested by Hambley like in Canadian I/O Table. The imports column has been pro-rated across the user industries.

The *domestic use matrix* has been generated by deducting the generated imports matrix from total use matrix.

The final uses of gross domestic product have been classified into six categories, viz. (i) private final consumption expenditure; (ii) government final consumption expenditure; (iii) gross fixed capital formation; (iv) change in stocks; (v) exports; and (vi) imports.

Imports include the imports of merchandise and other items like transport services of merchandise, imports by resident industries, other transport and communications services by non-residents and misc. commodities, etc. Imports are reported at c.i.f. values and are exclusive of import duties and domestic taxes.

Exports comprise exports merchandise (f.o.b.) and other items like transport and communication in respect of exports other than merchandise, insurance, etc.

The indirect taxes are distinguished as commodity taxes and other indirect taxes. Commodity taxes include union and state excise duties, sales tax, custom duties on imports and exports, and various other duties and cess. "Other indirect taxes" include levies like electricity duty, motor vehicle tax, entertainment tax and stamp duty, etc.

The aggregate value added is given as a row vector. its breakup into returns to labor and capital is not available from the IO table.

Appendix 1 : GTAP Indian IO concordance

GTAP sectors		India input output sectors	
Number	Code	Number	Description
1	PDR	1	Paddy
2	WHT	2	Wheat
3	GRO	3	Other cereals
		4	Pulses
4	NGC	5	Sugarcane
		6	Jute
		7	Cotton
		8	Tea
		9	Coffee
		10	Rubber
		11	Other crops
5	WOL	12	Animal Husbandry
6	LP	12	Animal Husbandry
7	FOR	13	Forestry & Logging
8	FSH	14	Fishing
9	COL	15	Coal & Liginite
10	OIL	16	Crude Petroleum & NGas
11	GAS	16	Crude Petroleum & NGas
12	OMN	17	Iron Ore
		18	Other Metallic Minerals
		19	Non Met & Minor Minerals
13	PCR	23	OtherFood & Beverages Ind
14	MET	23	Other food & Beverage Ind
15	MIL	24	Other food & Beverage Ind
16	OFP	20	Sugar
		21	Khandsari boora

		22	Hyderogenated Oil
		23	Other Food & Beverages Ind
17	B_T	23	Other Food & Beverages Ind
18	TEX	24	Cotton Textiles
		25	Woollen Textiles
		26	Art Silk & Synth Fibre
		27	Jute, Hemp, Mesta Textiles
		28	Other Textiles
19	WAP	28	Other Textiles
20	LEA	31	Leather & Leather Products
21	LUM	29	Wood & Wood Products
22	PPP	30	Paper & Paper Products
23	P_C	34	Petroleum Products
		35	Coal Tar Products
24	CRP	32	Rubber Products
		33	Plastic Products
		36	Fertilisers
		37	Pesticides
		38	Synthetic Fibre & Resin
		39	Other Chemicals
25	NMM	40	Cement
		41	Other Non-Metallic Mineral Products
26	I_S	42	Iron & Steel
27	NFM	43	Non-ferrous Metal
28	FMP	45	Machine Tools
29	TRN	50	Rail Equipments
		51	Motor Vehicles
		52	Other Transport Equipments
30	OME	44	Tractor & Other Agricultural Machinery
		46	Other Non-electrical Machinery
		47	Electrical Machinery
		48	Communication Equipments
		49	Electronic Equipments

31	OMF	53	Other Manufacturing
32	EGW	55	Electricity etc
33	CNS	54	Construction
34	T_T	56	Rail Transport Service
		57	Other Transport Service
		59	Trade
35	OSP	58	Communication
		60	Other Services
36	OSG	58	Communication
		60	Other Services
37	DWE	58	Communication
		60	Other Services

Appendix 2 : Indian IO concordance

In the Indian Input-Output Table the imports data are provided as a column, i.e. as a breakdown of total import sales by commodity but not by end use. The total use matrix has been used to pro-rate the imports column across user industries and final demands (except exports). The new imports matrix has been then deducted from the total use matrix to provide the domestic use matrix.

The Indian input-output categories affected by splits in allocation to the SALTER classification. All are implemented in the stage of processing. The * signifies the Indian sectors affected by a split.

GTAP	**INDIAN**
GTAP 5 - Wool	* .0030 IND12 - Animal Husbandry
GTAP 6 - Other livestock	* .9970 IND12 - Animal Husbandry
GTAP 10- Oil	* .7019 IND16 - Crude Petroleum & N. Gas
GTAP 11- Gas	* .2981 IND16 - Crude Petroleum & N. Gas
GTAP 14- Meat products	* .0731 IND23 - Other food & Beverage Ind.
GTAP 15- Milk products	* .0124 IND23 - Other food & Beverage Ind.
GTAP 13- Processed rice	* 0 (Processed rice is included in Other Food & Beverages.)
GTAP 16- Other food products	* .0927 IND23 - Other food & Beverage Ind.
GTAP 17- Beverages and tobacco	* .0214 IND23 - Other food & Beverage Ind.
GTAP 18- Textiles	* .9893 IND28 - Other Textiles
GTAP 19- Wearing Apparels	* .1217 IND28 - Other Textiles
GTAP 35- Other services (private)	* .0653 IND58&60 - Other Services & Communication
GTAP 35- Other services (govt)	* .9347 IND58&60 - Other Services & Communication
GTAP 37- Ownership of dwellings	* .3288 IND58&60 - Other Services & Communication

Basis for splits

The split for wool is estimated based on :

— Value of 1989-90 output of Livestock was Rs. 376850 million

— Value of 1989-90 output of Wool was Rs. 1120 million.

The split for Natural gas and Oil is estimated based on :

— Output Of Crude oil 1990 was 33.9 million tonne.

— Output of Natural Gas (Oil equivalent) was 14.4 million tonnes.

The split for Meat & Milk Products is estimated based on WPI weights.

— Weight for Food Products is 10.143
— Weight for Milk is 0.742
— Weight for Meat is 0.126.

The split for Other Food Products & Beverages and Tobacco is estimated based on WPI weights.

— Weight for Other Food Products is 9.275
— Weight for Beverages & Tobacco is 2.149

The split for Ownership of dwellings is estimated based on GDP. GDP from Other Services in 1989-90 was Rs. 335770 million and GDP from Ownership of Dwelling in 1989-90 was Rs. 164460 million.

The split for "Other services" (private & public) is based on GDP. GDP from Banking in 1989-90 was Rs. 130420 million. This has been distributed between Public and Private in proportion to deposits. Deposits of Public Sector Banks was Rs 1520877 million and for Private sector it was Rs. 198237 million. GDP from Insurance was Rs. 40890 million which has gone to the public sector. Further, GDP from Other Services was Rs. 164460 million in which GDP from Personal Services was Rs. 20420 million which has been put into the private sector.