Regional Input Output Table for the State of Punjab

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Abstract

Because of policy relevance of regional input-output analysis, a vast literature on the construction of regional input-output tables has emerged in the recent past, especially on the non-survey and hybrid methods. Although, construction of regional input-output tables is not new in India, but generation of input-output table using non-survey methods is relatively a rare phenomenon. This work validates alternative non-survey, location quotient methodologies and finally uses comparatively better approach to generate the forty two sector regional input-output table for the state of Punjab for 2006-07.

Keywords: Regional, Input-Output, Location Quotients

Introduction

Construction of input-output table needs an extensive amount of data. Constructing a survey based regional input-output table is a difficult task, especially, if the required disaggregated data for a certain region is not available. As an alternative to survey method, there are varieties of non-survey and semi survey techniques. Survey based methods give high accuracy at a high cost but the non-survey methods sacrifice accuracy marginally and are less costly. Because of policy relevance of regional input-output analysis, a vast literature on the construction of regional input-output tables has emerged in the recent past, especially on the non-survey and hybrid methods. Hybrid methods combine non-survey approaches with superior survey-based data. Non-survey techniques are at the heart of the first step of hybrid methods (Lahr, 1993, 2001; Okamoto and Zhang, 2007; Bonfiglio and Chelli, 2008). Among the non-survey techniques, as an alternative to RAS method, regional input-output table is prepared from the survey-based national table, by using location quotients (Flegg et al., 1995; Flegg and Webber, 1997, 2000; Round, 1978; Swaminathan, 2008).

The construction of regional input-output matrices, in India, dates back to early sixties; thereafter a large number of studies dealing with methodology and construction of regional input tables have been done in India (Alagh, Bhalla and Kashyap, 1980; Dhal and Saxena, 2005; Goswami, 2005; Saluja and Sharma, 1991, 1992; Swaminathan, 2008; and Venkatramaih, 1979). Regional Input-output table exercises on Punjab have been done, a long back (Alagh, Bhalla and Kashyap, 1980; Saluja, 1990; and Bhalla et al., 1990). Although, construction of regional input-output tables is not new in India, but generation of input-output table using non-survey methods is relatively rare phenomenon. There are three types of non-survey method approaches: (a) the quotients approach; (b) the commodity balance approach; and (c) the use of iterative procedure. In this study, we have followed the quotient approach, which uses of location quotients (LQs), to generate regional input-output table for the state of Punjab. This work validates alternative non-survey LQ methodologies and finally uses a comparatively better approach to generate the forty two sector regional input-output table for Punjab.

Model

The input-output system is a convenient means of representing a huge mass of data into a coherent whole such that the structural relationships underlying the economy are meaningfully revealed. A simple Leontief system can be described in terms of a set of simultaneous linear equations as follows:

$$X_i = \sum_{j=1}^{n} X_{ij} + C_i \quad (i = 1, 2, \ldots\ldots, n) \qquad (1)$$

Where X_i stands for the gross of output the i^{th} industry, X_{ij} is the output of the i^{th} industry used as input in the i^{th} industry and C_i denotes and output of industry i available for outside consumption or final demand. This equation system, known as the balance equations, shows that the total gross output of a commodity is equal to inter-industry requirements and the outside consumption which may comprise of household and government consumption, capital formation and not foreign trade. If we postulate that every commodity is produced by only one given process, then $X_{ij} = a_{ij} \overline{X}_j$ (i, j = 1, 2…n); where a_{ij} stands for the amount of the i^{th} commodity used as an

input for production of one unit of j^{th} commodity. We can rewrite the equation system (1) as:

$$X_i = \sum_{j=1}^{n} aijX_j + C_i \qquad (i = 1, 2, \ldots\ldots, n) \tag{2}$$

Equation system (2) constitutes the fundamental relationship of a simple Leontief system. The basic input relations may be rewritten compactly as,

$$A\,X + C = X$$

$$(I\text{-}A)\,X = C \tag{3}$$

Where A is the matrix of coefficients; X is a vector of gross outputs; and C is a vector of final demand. It is obvious from the above that once we have the matrix A and the vector of total output X we can easily commodity available for final use. By multiplying throughout (I-A) X=C by $(I\text{-}A)^{-1}$ we could obtain for specified C the compatible levels of various X_{ij}'s as follows:

$$X = (I\text{-}A)^{-1}\,C \tag{4}$$

It may be noted that the entries in the set of balance equations are in appropriate physical units.

The above input-output formalism can be assumed to depict the national system using symbols with a superscript "N" and its regional counterpart with superscript "R". Let us define location quotient (LQ_i) as a ratio of regional output to the national output share of each sector. As per the location quotient approach, the regional trade flows are estimated by assuming that $a_{ij}^R = LQ_i a_{ij}^N$ subject to $LQ_i \leq 1$. The process of preparing a regional input-output table involves two stages: *First,* the stage of generating regional inter-sector flow matrix; and *secondly*, the generation of the final demand vector with the break-up of personal consumption expenditures, investments, government expenditure, inventories, as well as exports both abroad and to rest of the country.

Stage 1: Regional inter-sector flow matrix

Simplest possible location coefficient for i^{th} sector of a region is defined as the ratio of regional contribution of i^{th} sector in total regional output to national contribution of i^{th} sector in total national output. Symbolically, a simple location coefficient is defined as follows:

$$LQ_i = (X_i^R / \textstyle\sum_i X_i^R)/(X_i^N / \textstyle\sum_i X_i^N) \tag{5}$$

Where the subscript i represents the sectors, X_i^R refers to regional output of sector 'i', $\sum_i X_i^R$ is the total regional output, X_i^N refers to the national output of sector 'i' and $\sum_i X_i^N$ is the total national output. A location quotient greater than unity means a sector is more specialized than its national counterpart and is therefore self-sufficient and less than unity means, it needs to import from other regions to meet the demand requirements of the region. In regional table formulation, in practice, location quotient greater than one, is considered as one. Regional technical coefficient a_{ij}^R is estimated from the national technical coefficient a_{ij}^N as follows: $a_{ij}^R = LQ_i a_{ij}^N$. The limitation of

simple location quotient is that only the size of the selling industry is considered in determining the extent of regional imports whereas the relative size of the purchasing industry may also be crucial in determining the extent of regional imports.

Another alternative to location quotient is to go for Cross Industry Location Quotient(CINDLQ). It compares the share of i^{th} selling industry's output of the region to the national with that of the j^{th} purchasing industry in the region to the national. Practically, it is the ratio of simple location quotient of i^{th} sector to simple location quotient of j^{th} as follows:

$$CINDLQ_{ij} = LQ_i / LQ_j \quad (6)$$

Like above, the $CINDLQ_{ij}$ greater than one is taken as one and less than one is taken, as it is and regional input coefficient is defined as: $a_{ij}^R = CINDLQ_{ij} a_{ij}^N$. Although, the $CINDLQ_{ij}$ takes into account the size of selling and purchasing industry but it does not take into account the size of the region or the nation. To overcome this limitation, $CINDLQ_{ij}$ has been modified by Round (1978) and later by Flegg et al.(1995). According to Round, the size of any trading coefficient is likely to be a function of: the relative size of the supplying sector; the relative size of the purchasing sector; the relative size of a region; and some other additional unspecified factors. As per Round's formulation:

$$ROUNDLQ_{ij} = LQ_i / \text{Log}_2 (1 + LQ_j) \quad (7)$$

Here too the location quotients are scaled down to one if these are greater than one and regional coefficients are estimated as: $a_{ij}^R = ROUNDLQ_{ij} a_{ij}^N$. Flegg et al.'s method, a modified version of Round's location quotient formula, incorporates the properties of both simple and the cross industrial location quotient. It appears as follows:

$$FLEGGLQ_{ij} = [(X_i^R / X_j^R)/(X_i^N / X_j^N)] \times \lambda^* \quad (8)$$

Where $\lambda^* = [\sum_i \text{Log}_2 (1 + \sum_i X_i^R / \sum_i X_i^N)] \delta$ and regional technical coefficients can be computed as: $a_{ij}^R = FLEGGLQ_{ij} a_{ij}^N$. It needs estimation of δ; a bigger δ it is said, results in regional imports adjustments being greater. Studies (including that of Flegg's testing) on this, have found that δ being equal to 0.3 helps in deriving multipliers close to those calculated through survey based regional input output tables.

Further, the $CINDLQ_{ij}$, is based on an implied misleading assumption, specifically if the industry/sector is very small. When $CINDLQ_{ij}$=1 for all i, it implies that every sector can meet all its demand of output from its own sector locally, whatever be the size of the sector. Morrison and Smith (1974) modified the $CINDQ_{ij}$ in such a way that a simple LQ_i is applied all along the principal diagonal of the matrix as follows:

$$MOSLQ_{ij} = CINDLQ_{ij} \times \hat{SLQ_i} \quad (9)$$

and regional technical coefficients are calculated as above.

Stage 2: Regional final demand categories

The regional final demand categories are personal consumption expenditure, government expenditure, investments, inventories, exports and imports. Before generating the final demand categories, balancing of sector output is required. The sector outputs generated through location quotients may be overestimated. According

to Miller and Blair (1985), this requires balancing the equations. This is done by calculating the ratio of estimated output to actual output of the region for any i^{th} sector. If ratio is greater than unity, the downward adjustment is done and if it is less than or equal to unity, it is retained as it is. Once the balancing is done, the final consumption coefficients can be generated much in the same way as input coefficients. These coefficients along with elaborate regional final demand data can be used to arrive at regional final demand vectors.

Methodology

As already said, we have followed the quotient approach, which uses of location quotients (LQs), to generate regional input-output table for the state of Punjab. The approach uses the national input output table to derive the regional table. The basic assumption of the approach is that the national technical relationships hold good at the regional level. The recent available input-output transaction table (130x130 sectors) at the national level for India pertains to the year 2006-07 prepared by CSO, India. Keeping in view the nature of economy and the availability of data, a 42 sector disaggregation has been finalized for the regional exercise. First step in the formation of regional input-output table is to aggregate the national level 130 sector input-output table in to a 42 sector input-output table. This 42x42 flow table is then converted into an input-coefficient table by dividing the sector-wise columns with their respective output. This coefficient table forms the basis for computation of regional input-output table for Punjab using the location quotients. As explained in the above discussion, there are several formulations to arrive at the location quotients but Flegg et al.'s formulation gave the best estimates. The calculations of location quotients require sector-wise ratio of sectoral output to total output at regional as well as at the national level. This can be computed from Gross State Domestic Product at Factor Cost (GSDP_FC) at current prices but the state level GSDP_FC is not available up to 42 sector level disaggregation. State level, agriculture related disaggregated data has been obtained from the office of Economic and Statistical Organization (ESO), Punjab. Annual Survey of Industries (ASI) data for Punjab has been used for arriving at the share of regional manufacturing related sectors in the GSDP_FC at a required level of disaggregation level. The national sectoral shares have been computed using the GDP data from 'National Accounts Statistics', CSO.

Sector-wise final demand categories are calculated using different data sources. Sector-wise Private Final Consumption Expenditure (PFCE) is calculated by using the monthly per capita consumption expenditure given by NSSO Surveys for 2006-07 along with rural and urban population for year 2006-07 calculated from population census statistics of year 2001. Government final consumption expenditure has been derived from 'State Finances' published by RBI and has been allocated at the rate of sectoral shares. First approximation of other final demand categories like gross fixed capital and changes in stocks have been obtained from ASI and allocated to respective sectors.

Discussion

Regional planning requires disaggregated inter-industry flow matrices. But generation of regional input-output tables needs a huge database and a massive cost under the survey approach. As an alternative to survey approach, there are a variety of non-survey approaches. There are three types of non-survey method approaches: (a) the quotients approach; (b) the commodity balance approach; and (c) the use of iterative procedure. Under quotients approach, several variants are available. In its simplest

form, a location quotient is defined as the ratio of regional output to the national output of each sector. As per the location quotient approach, the regional trade flows are estimated by assuming that $a_{ij}^{R} = LQ_i a_{ij}^{N}$ subject to $LQ_i \leq 1$. The simple location quotient considers only the size of the selling industry in determining the extent of regional imports whereas the relative size of the purchasing industry may also be crucial. As an alternative to it, there are several formulations like: cross industry location quotient; Round's location quotient; Flegg et al.'s location quotient; and Morrison and Smiths's location quotient. We have generated regional input-output tables by using all the formulations.

An analysis of overestimation (table 1) is indicative of the fact that in terms of number of sectors, there is overestimation in 16 sectors when cross industrial or Round's method has been used. It comes down to 15 and 14 sectors with the use of simple location quotients method and Morris and Smith's method, respectively. Flegg's method gave over estimation only in 5 sectors. In value terms, the largest overestimation is associated with simple location quotients. It is followed by 'Round's method', 'Cross Industrial method' and 'Morrison and Smith's method', in order. Flegg's method gives the least over-estimation. Under the balancing procedure, adjustment mechanism provided best results in case of Flegg's Method. That is to say, Flegg's method gives the least overestimation both in terms of value and number of sectors. These results are in consonance with findings of Swaminathan (2008) that Flegg's method is the best. But it is in contrast with Morrison and Smith (1974) finding that simple location quotient method is the best.

Using Flegg's location quotients, a regional input-output table for Punjab (table 2) has been generated at a 42 sector disaggregation. The first 13 sectors in the sector classification represent primary production, the next 18 sectors relate to manufacturing industries and the remaining 11 sectors deal with the tertiary activities. In the primary production, 9 sectors belong to agriculture, 1 each to animal husbandry, forestry, fishing and mining. Tertiary activities include services like construction, electricity, water supply, railway transport, transport by other means, storage and warehousing, communication, trade, hotels & restaurants, banking, insurance, ownership of dwellings, and other services. Being a non-producing sector, public administration has neither any intermediate flows nor any input, but appears as a sector in gross domestic product of the economy; its contribution being in the form of compensation of employees. This sector is included to take complete account of total gross value added (GVA) by all sectors of the economy. The final uses have been distinguished under six categories (i) Private Final Consumption Expenditure (PFCE), (ii) Government Final Consumption Expenditure (GFCE), (iii) Gross Fixed Capital Formation (GFCF), (iv) Change in Stocks (CIS), (v) Exports of goods and services (EXP) and (vi) Imports of goods and services (IMP). The table gives fairly good coverage to the basic structure of the economy. Further fine tuning and validation of final demand categories of the table is in progress.

Conclusion

The generation of regional input-output matrices, using non-survey techniques, saves the time and resources and gives a fairly good level of accuracy. In non-survey techniques, out of alternative location quotient formulations, Flegg's method gives the best results.

Abbreviations

GVA	Gross Value Added
IIUSE	Intermediate Input Use
PFCE	Private Final Consumption Expenditure
GFCE	Government Final Consumption Expenditure
GFCF	Gross Fixed Capital Formation
CIS	Change in Stocks
EXP	Exports of goods and services
IMP	Imports of goods and services
TFUSE	Total Final Use
GVOUT	Gross Value of Output

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Table 1: Extent of Over Estimation under Different Method

Detail	Location Quotient				
	Simple	**Cross Industrial**	**Round's**	**Morrison and Smith's**	**Flegg's**
Sectors Characterized with over estimation	1	1	1	1	10
	2	2	2	2	14
	4	4	4	4	32
	9	9	9	9	38
	10	10	10	10	42
	14	14	14	14	-
	17	17	17	17	-
	20	20	20	20	-
	31	23	25	31	-
	32	25	31	32	-
	33	31	32	33	-
	35	32	33	35	-
	38	33	35	38	-
	39	35	38	42	-
	42	38	39	-	-
	-	42	42	-	-
Total Value of Over Estimation (Rs. Crore)	72228.09	52737.46	58693.32	51713.84	24996.33

Source: Calculated

Table 2: Inter-Industry Flows at Factor Cost for Punjab Economy, 2006-07

(Rs. Crore)

Code	Sector	1	2	3	4	5	6
1	Wheat	2142.92	36.45				7.15
2	Paddy	23.98	1715.19				21.46
3	Maize	0.1		64.85			0.09
4	Cotton				135.62		
5	Sugarcane					107.9	
6	Grains and Pulses	0.01					13.58
7	Oil Seeds	0.01					1.95
8	Bajra						
9	Other Agriculture	0.79	0.1				17.48
10	Livestock	15.13	119.36	571.28	145.39	109.12	410.9
11	Forestry and Logging		0.04				
12	Fishing						
13	Mining and Quarrying						
14	Food Products	0.04	1.54				2.23
15	Beverages, Tobacco and Tobacco Products						
16	Khadi and Cotton Textile						
17	Woolen Textiles, Silk, Synthetic incl. Art Silk Hosiery	0.19	0.2				1.39
18	Leather and Fur Products (Except Repair)						
19	Wood and Wood Products	0.02	0.02	0.04	0.01	0.03	0.01
20	Paper, Paper Products and Newsprint			0.01		0.01	0.01
21	Printing and Publishing	0.02	0.02	0.06	0.01	0.08	0.14
22	Rubber, Plastic, Petroleum and Coal Products	3.49	8.31	27.48	3.81	13.38	254.75
23	Chemical and Chemical Products (Except Petroleum)	16.41	19.97	42.78	11.69	72.71	133.55
24	Non-Metallic Mineral Products						0.17
25	Basic Metal and Machinery	0.64	0.49	0.74	0.13	0.5	34.16
26	Metal Products	0.05	0.07	0.17	0.04	0.22	0.11
27	Machinery Except Electrical Machinery	0.57	1.18	0.21	0.05	0.29	0.16
28	Electrical Machines, Apparatus, Appliances etc.						0.01
29	Transport Equipment and Parts	0.21	0.43	0.8	0.14	0.59	1.57
30	Misc. Manufacturing	0.19	0.16	0.1	0.02	0.08	0.04
31	Other Industries						
32	Construction	6.56	11.24	26.43	2.5	11.76	25.36
33	Electricity, Gas and Water Supply	65.43	71.89	144.85	8.08	84.62	57.04
34	Railway Transport Service	9.14	40.07	27.08	5.14	42.56	25.43
35	Transport by Other Means	9.6	15.64	30.29	6.52	32.64	113.52
36	Storage and Warehousing	14.14	19.73	35.29	10.49	25.47	13.71
37	Communication	1.98	2.75	6.47	1.43	9.21	6.54
38	Trade, Hotels and Restaurants	55.41	84.02	72.8	15.05	111.26	702.49
39	Banking and Insurance	21.59	56.26	306.64	41.52	54.52	337.95
40	Real Estate, Ownership of Dwelling and Business Serv.		0.01				0.04
41	Public Administration						
42	Other Services	0.17	4.21	6.25	0.49	10.25	8.86
	Total	2388.79	2209.35	1364.62	388.13	687.2	2191.85
	GVA	7598.72	5083.78	268.77	2154.66	706.14	36.98

Contd..

Input Industry Flows at Factor Cost for Punjab Economy, 2006-07 (Contd.)

Code	7	8	9	10	11	12	13	14	15
1				7.15				563.68	0.72
2				13.45				242.59	10.66
3			0.03	0.84				6.95	3.89
4								3.63	
5				0.01				52.28	20.81
6			0.01					0.03	
7	29.69							3.74	0.01
8		1.01							
9			98.77	104.17	0.08			226.75	478.38
10	580.62	1578.43	108.23	3.28				344.02	1.59
11				0.01	4.62			0.33	50.07
12						75.88		7.27	
13							3.81		0.05
14				6.09		7.86		109.61	496.44
15									15.76
16				0.29	0.21			0.01	
17	0.01	0.01	0.07		0.25	30.61	0.24	0.55	7.70
18									
19	0.04	0.04	0.01		0.13	4.12	5.96	14.06	6.03
20	0.03	0.03			0.07		0.30	2.05	15.12
21	0.35	0.37	0.02		0.15		0.60		0.25
22	154.59	554.99	7.54		5.73	68.94	194.95	10.37	265.82
23	335.84	928.05	28.31	0.07	0.04	2.95	271.84	5.48	203.58
24							30.48	0.03	5.87
25	4.27	34.57	0.23	0.03	0.23	0.95	40.85	2.43	27.46
26	0.28	0.30	0.07		2.97	42.79	243.57	4.24	16.87
27	0.40	0.41	0.09		0.58		137.67	0.24	2.05
28	0.02	0.03			0.07		0.08	0.06	
29	1.96	5.35	0.27		5.01	95.23	18.35	0.30	
30	0.10	0.11	0.03		5.86		5.55	0.80	0.25
31									
32	65.98	127.18	10.61	0.10	8.58		145.82	12.81	23.57
33	135.45	429.09	27.16		1.41		429.92	41.20	244.94
34	45.25	86.93	14.76	3.04	9.89	11.31	26.23	12.81	71.21
35	158.59	303.13	14.84	9.68	22.43	45.48	131.42	52.96	315.45
36	33.47	31.16	11.23						
37	16.23	16.89	2.83		23.20		63.88	24.65	76.09
38	550.96	331.18	61.52	164.01	18.72	109.94	154.38	628.36	1480.92
39	804.74	1444.75	150.10	2.16	24.56	181.28	911.88	340.29	1247.40
40					5.27		0.93	15.47	96.94
41									
42	4.05	38.73	3.01		26.24		98.60	11.68	94.64
Total	2922.92	5912.74	539.74	314.38	166.30	677.34	2917.31	2741.73	5280.54
GVA	107.71	3.74	5007.90	13125.91	1116.95	379.23	36.59	370.34	37.66

Contd..

Input Industry Flows at Factor Cost for Punjab Economy, 2006-07 (Contd.)

Code	16	17	18	19	20	21	22	23	24
1				0.11	0.01	0.13		0.07	
2					10.30				
3							0.01	0.55	
4	470.88	2.52	0.31			0.01		0.26	
5								0.37	
6									
7								0.04	
8									
9	0.37	29.01	83.60	0.17	22.44	0.04	112.23	45.23	0.63
10	0.11	16.28	943.57	7.84				13.94	0.20
11	0.04			148.88	268.39	0.84	0.12	2.20	0.07
12					0.02				
13		0.01		0.01	0.11		14.29	0.90	1.68
14	0.48	0.15	0.32	0.07	5.87	0.68	0.15	18.87	0.45
15							0.01	0.25	0.01
16	776.42	1365.76	30.49	8.08	10.83	3.16	4.57	3.66	4.43
17	4.56	43.83	2.89	0.46	1.16	3.34	1.53	3.16	2.57
18		5.21	278.55	0.12		0.30	0.33	1.91	0.24
19	2.16	7.96	4.06	15.86	58.01	19.09	1.79	15.77	16.27
20	0.21	1.70	0.40	0.85	65.79	144.94	1.10	4.45	5.84
21					12.69	85.00		1.99	0.02
22	5.13	19.92	8.90	5.06	35.03	29.22	277.73	287.99	179.08
23	3.34	43.37	17.87	5.68	54.61	77.65	269.64	1114.22	28.36
24	0.01	0.19	0.12	0.16	2.15	2.61	1.24	4.73	249.57
25	1.64	7.42	2.34	0.75	1.34	1.41	6.03	20.53	7.58
26	0.09	14.17	19.71	54.24	23.22	64.41	27.55	10.55	147.09
27	2.01	20.84	2.19	1.26	7.17	0.20	3.99	1.37	7.20
28		0.14		0.05		4.27	0.08	1.43	0.11
29				0.38			0.13	0.01	0.35
30	1.20	18.97	15.68	0.16	0.21	31.73	2.58	15.20	12.57
31		0.60		0.02			0.08	0.49	3.73
32	8.11	25.03	2.91	0.74	4.99	82.27	26.58	35.66	219.23
33	157.31	112.14	72.63	27.07	394.45	255.33	342.48	529.47	1388.66
34	1.63	7.55	7.77	5.58	70.71	22.83	274.50	77.51	392.59
35	69.81	48.98	65.93	14.18	109.30	220.48	84.16	276.31	161.79
36									
37	21.02	69.53	27.24	14.09	76.74	24.10	91.48	104.90	217.47
38	167.30	545.03	551.12	101.68	450.72	494.31	342.88	1011.94	947.82
39	219.45	491.03	408.77	133.09	530.85	1016.11	1067.57	1295.87	879.35
40	3.33	22.16	6.37	3.28	0.51	9.93	8.43	37.65	10.68
41									
42	41.16	63.51	51.55	10.85	26.01	108.46	26.19	55.99	53.01
Total	1957.77	2983.01	2605.29	560.77	2243.63	2702.85	2989.45	4995.44	4938.65
GVA	1841.09	126.27	325.38	245.11	112.64	76.53	638.39	1137.22	345.97

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Input Industry Flows at Factor Cost for Punjab Economy, 2006-07 (Contd.)

Code	25	26	27	28	29	30	31	32	33
1									
2									
3									
4				0.22			0.06		
5									0.01
6									
7									
8									
9	0.08	0.17	0.05	0.77	1.18	2.54	0.04	41.92	0.39
10	0.26	0.10	0.14	1.37		30.01		40.97	
11	0.10	0.01	0.38	0.26	0.13	0.30		14.15	0.04
12									
13	2.99	0.05		0.07	0.01		0.08	0.25	0.60
14	0.26	0.02	0.01	0.10	0.07	0.17			0.02
15	0.01								
16	0.40	0.07		0.15	5.28	20.00	0.87		0.01
17	0.38	0.18	0.78	3.16	0.66	1.31	0.16	0.51	0.04
18	0.04	0.02	0.05	2.76	7.02	1.29	0.58		0.01
19	4.08	4.62	14.50	9.51	6.12	19.62	1.44	24.46	0.58
20	0.72	0.41	0.57	4.03	0.50	1.17	0.09	0.12	0.39
21			0.05	0.27		0.01		0.37	1.03
22	107.03	8.75	9.59	109.04	32.82	23.58	1.83	36.96	79.05
23	32.46	2.94	6.67	93.86	17.91	17.43	0.73	8.21	2.04
24	11.05	0.77	1.48	44.48	0.96	3.32	0.38	150.10	0.01
25	298.94	77.57	67.14	300.07	57.02	2.11	0.40	33.68	0.04
26	1933.17	554.97	615.81	1202.79	996.17	222.34	8.80	921.13	4.33
27	157.11	26.60	233.34	198.84	248.44	70.35	0.56	13.81	43.24
28	4.16	0.81	5.24	222.17	11.60	6.62	1.10	5.45	7.22
29	6.67	0.10	1.48	1.42	271.80	4.57	0.02	0.70	2.19
30	7.82	7.41	16.95	30.92	36.81	1.33	46.09	24.47	55.65
31	4.70	1.14	2.29	12.81	0.32	207.93	837.46		0.01
32	39.80	10.83	32.33	82.43	16.95	9.72	1.91	83.09	47.23
33	1550.63	88.15	69.97	297.83	277.32	22.80	18.15	144.36	2677.70
34	883.95	34.40	20.26	43.50	41.74	41.83	55.65	102.74	256.01
35	156.71	13.42	16.73	153.72	39.76	35.13	15.12	76.88	37.49
36									
37	344.01	22.93	84.85	1809.14	180.07	0.11	153.64	32.29	114.43
38	1979.06	120.40	110.76	611.60	312.73	81.85	20.30	485.44	370.44
39	1752.81	189.29	672.71	1989.35	1594.93	521.95	481.32	716.90	1033.26
40	76.83	2.47	38.21	157.73	24.17	8.54	10.06	0.15	4.40
41									
42	32.07	10.74	75.19	178.81	193.33	11.46	12.51	0.41	7.21
Total	9388.30	1179.34	2097.53	7563.18	4375.82	1369.39	1669.35	2959.52	4745.07
GVA	619.59	1637.64	659.47	69.11	538.71	324.95	863.99	3862.19	4692.48

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Input Industry Flows at Factor Cost for Punjab Economy, 2006-07 (Contd.)

Code	34	35	36	37	38	39	40	41	42
1		0.45			76.64		0.04		3.24
2		0.04			132.93		0.04		2.74
3									
4					0.01				
5					1.38				
6					0.02				
7									
8									
9		107.70			81.62		0.72		1.11
10					89.93		0.54		2.03
11	0.01								
12					0.13				
13									
14		1.00	0.04		45.22				
15					0.18	0.01			
16	1.22	1.50			0.37		1.39		0.84
17	0.01	1.11	0.51	0.06	0.30	0.21	0.11		0.43
18		0.30							
19	0.06	0.08	9.98	0.82	1.12	1.78	1.59		2.01
20	0.10	1.54	0.69	0.28	0.19	1.85	0.48		0.17
21	0.42	5.95	0.13	1.91	2.84	5.27	0.46		1.08
22	23.87	453.97	3.04	5.86	7.16	9.17	0.18		1.74
23	0.03	6.95	1.59		0.15		1.12		24.98
24	0.08	2.81	0.21		0.25		0.21		0.05
25	0.01	0.01	0.10		0.03				
26	1.19	86.33	6.58	6.76	5.06	5.55	15.08		4.61
27	2.73	52.01	13.50	2.55	2.79	0.51	0.04		0.72
28	0.72	3.88	0.01	16.56	0.25	2.92	3.14		1.83
29	162.53	86.51	0.67	2.96	0.29	10.65	3.59		5.57
30	147.29	43.10	11.09	21.60	11.43	6.21	13.71		73.90
31						7.69			
32	144.29	48.54	19.94	32.53	19.90	32.54	181.79		35.20
33	694.51	57.43	403.65	116.59	36.54	47.34	67.12		25.73
34	518.06	167.60	14.20	15.10	5.98	4.95	1.03		1.91
35	12.09	140.86	7.71	11.00	53.58	32.04	8.69		21.12
36		1279.77			28181.50				
37	15.41	717.47		1063.74	104.75	548.36	214.28		121.39
38	64.27	970.69	18.70	49.65	214.34	137.92	108.00		148.49
39	128.08	678.45	149.07	42.44	877.63	1916.20	168.93		392.67
40	1.98	137.28	10.37	7.94	19.51	15.94	465.69		76.60
41									
42	47.96	127.57	7.61	7.03	9.97	8.43	122.93		124.92
Total	1966.92	5180.90	679.39	1405.38	29983.99	2795.54	1380.90		1075.08
GVA	2359.90	2430.16	17741.29	6682.05	24348.55	24016.50	5574.47	5742.33	9139.82

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Input Industry Flows at Factor Cost for Punjab Economy, 2006-07

Code	IIUSE	PFCE	GFCE	GFCF	CIS	EXP	IMP	TFUSE	GVOUT
1	2838.76	3548.26	633.26		-117.51	5530.03	10.21	9583.83	12422.59
2	2173.38	1821.71	410.88		39.48	5065.45	0.02	7337.50	9510.88
3	77.31	156.27	11.95		21.64	71.85	0.68	261.03	338.34
4	613.52	815.63	75.00			1180.60		2071.23	2684.75
5	182.76	369.37	56.19		191.45			617.01	799.77
6	13.65	27.60	2.73		13.75	2.04		46.12	59.77
7	35.44	71.61	16.33		45.98	9.89	24.19	119.62	155.06
8	1.01	2.05	0.13		1.24			3.42	4.43
9	1458.53	2947.80	312.80		2636.28	4476.78	5449.55	4924.11	6382.64
10	5134.64	7562.44	646.50		2947.43	1685.78	209.59	12632.56	17767.20
11	490.99	747.26	25.24		-3.88	3.04	21.45	750.21	1241.20
12	83.30	217.85	9.10		2.15	137.99	3.18	363.91	447.21
13	24.91	32.51	1.01		0.08	2.27	11.11	24.76	49.67
14	697.76	1290.79	58.05		963.04	1701.76	1857.46	2156.18	2853.94
15	16.23	43.55	2.22		32.43	40.91	26.01	93.10	109.33
16	2240.01	1712.77	120.04		163.56	2020.77	355.44	3661.70	5901.71
17	114.64	220.34	11.91	1.63	20.74	253.36	36.92	471.06	585.70
18	298.73	300.38	19.14		-2.57	425.78	100.55	642.18	940.91
19	273.86	286.40	11.10	1.69	7.58	7.04	41.77	272.04	545.90
20	256.21	411.61	10.39		-21.20	37.27	183.55	254.52	510.73
21	121.56	52.92	4.77		92.75	18.58	55.90	113.12	234.68
22	3335.85	804.17	79.33		0.07	6.04	325.00	564.61	3900.46
23	3905.08	376.08	90.67		3.06	341.56	258.67	552.70	4457.78
24	513.49	643.08	20.82		6.41	81.56	241.78	510.09	1023.58
25	1033.84	1244.29	41.92	6.00	6.02	12.11	283.30	1027.04	2060.88
26	7263.45	648.96	175.95	502.57	19.91	303.17	263.17	1387.39	8650.84
27	1257.27	708.86	56.40	1023.45	91.75	196.42	561.41	1515.47	2772.74
28	300.03	170.44	13.51	162.09	42.17	48.98	72.81	364.38	664.41
29	692.80	757.22	47.02	988.82	7.32	247.89	429.42	1618.85	2311.65
30	667.37	799.47	27.06		6.30	152.15	322.00	662.98	1330.35
31	1079.27	704.88	52.60	726.96	2.65	2840.27	2820.41	1506.95	2586.22
32	1723.04	4318.20	222.81	4690.78				9231.79	10954.83
33	11616.44	1107.85	1260.60					2368.45	13984.89
34	3500.43	678.75	98.07	196.50		477.76		1451.08	4951.51
35	3145.18	1739.55	650.33	449.10		997.11	117.14	3718.95	6864.13
36	29655.96	148.29	168.73					317.02	29972.98
37	6425.59	975.80	168.58			2423.41	1481.64	2086.15	8511.74
38	14958.46	9640.59	662.14	288.87		9596.25	1715.29	18472.56	33431.02
39	25273.72	5295.36	619.59			335.00	241.00	6008.95	31282.67
40	1278.87	5313.10	129.33			31.41	223.00	5250.84	6529.71
41			5742.33					5742.33	5742.33
42	1722.06	4888.74	241.11	807.73		5331.62	817.61	10451.59	12173.65
Total	136495.40	63602.80	13007.64	9846.19	7220.08	46093.90	18561.23	121209.38	257704.78
GVA	152186.88	-	-	-	-	-	-	-	-