

Constructing an Input-Output Table for Odisha for 2013-14

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Abstract

This study focuses on construction of regional input-output table for the Indian state of Odisha. From 2011-12 onwards, Government of India is publishing all-India Supply-Use tables instead of Input-Output tables. Using an all-India input-output table generated from the Supply-Use table, this is an attempt to make a state level Input-Output table, and describe the economic structure of Odisha. The table, covering 61 sectors for intermediate use and the components of final demand, is useful for regional planning and policy design. Constructing regional Input-Output table for an Indian state is not easy because of gaps in data availability. The table construction uses detailed available state-specific data on different sectors.

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1. Introduction

Input-output framework enables us to capture the complex inter-industry relationships of an economy. The theory roots back to Leontief (1934, 1941), where the fundamental purpose was to analyze the interdependence of industries in an economy. Input-Output table captures the flow of products from each industrial sector to each of the sectors, itself and others; and is used for analyzing variety of issues including the impact of exogenous shocks on demand, estimating output or income or employment multiplier or analyzing structural decomposition, or generating extended input-output matrices involving energy consumption, environmental degradation. The I-O tables are added to National Income and Product Accounts to construct social accounting matrices (Pradhan et al. 1999 and 2006).

India is a country of much diversity across regions, in terms of geography, climate, natural resources, infrastructure, production processes, cultures and practices or tastes and preferences. National Input-Output table represents the average data of production and consumption of the country, but the production structure or consumption pattern can vary widely across states. For example, the share of Mining and Quarrying in Jharkhand is 9% of the Total Net State Value Added (NSVA) by economic activity (at constant prices, 2011-2012) while for Tamil Nadu, the share is only 1% (RBI 2017-18). Relative importance of various sectors in the economy may also be significantly different in a particular region depending on the level of development in the specific region. Share of agriculture and allied sectors in NSVA is 37% in Madhya Pradesh while the share is only 10% in Maharashtra in 2017-18. National input-output coefficients can't capture these diversities and the flow of commodities across sectors in a specific region. State level Input-Output models can provide us insights about the structure of the state's economy, interactions between sectors and are extremely useful in planning.

Construction of state input-output table requires sector-specific information on flow of commodities and services and detailed information on production and consumption structure of the particular state. Data is needed at a much disaggregated level, and the major challenge is unavailability of state-specific disaggregated level data. Early studies in this area include Mathur & Hashim (1967), Mathur (1971), Venkatramaih (1979), Alagh et al (1980), Saluja and Sharma (1991, 1992). In later years, attempts to build a regional input-output table include Swaminathan (2008), Dhal and Saxena (2005), Goswami (2005) Singh (2011). But all these

regional tables were prepared based on National Input-Output table. But 2011-12 onwards, Government of India publishes Supply-Use table at national level instead of national Input-Output tables. Though basic purpose of supply-use table is also to capture the flow of goods and services across different sectors, the structure and composition of the table is different from that of input-output table. This is the first attempt to prepare input-output table for a state in recent years using the information obtained from supply-use table.

In this study, regional (state) parameters are utilized along with the nationally available information. The advantage of use of non-survey approach is that it can utilize the commonly available and reliable datasets rather than depending on data generated from surveys, which is often found to be expensive affair and is not representative of the whole regional economy. Like other non-survey approaches, the study relies on two main economic assumptions on the homogeneity of adopted technology and preferences.

The remaining part of the paper is divided into 5 subsections. Section 2 describes Input-Output technique. Section 3 discusses about preparing Input-Output table from Supply-Use table for India. Section 4 explains the methodology of construction of state level Input-Output table for Odisha. Section 5 describes some analytical aspects of the Input-Output Table for Odisha. Concluding remarks are provided in Section 6.

2. Input-Output Technique

Input-Output transaction matrix is a commodity \times commodity matrix and the entries are generally in monetary value. Each entry in Input-Output transaction matrix represents flow of commodity in monetary terms from one sector to another. Let us assume that the economy is categorized into 'n' number of sectors. The total output (production) of sector i is denoted by ' X_i ' and the total final demand for sector i 's product by ' F_i ', then an equation is generally written accounting for the way in which sector i distributes its product through sales to other sectors and to final demand as:

$$X_i = \sum_{j=1}^n X_{ij} + F_i$$

where $i=1,2,\dots,n$ and ' X_{ij} ' is intermediate demand for output of sector i and ' F_i ' is the sum of output consumed by all the components of the final demand from the sector i .

With the proportionality assumption, one can write

$$X_{ij} = a_{ij}X_j$$

where a_{ij} is the output of the sector i used as input by sector j for producing one unit, known as structural or technical coefficients.

Therefore, the above equation is written as

$$X_i = \sum_{j=1}^n a_{ij}X_j + F_i$$

Hence, the complete $n \times n$ system is written in matrix notation as:

$$(I - A) X = F$$

Where ' I ' is $n \times n$ identity matrix, ' A ' is Input-Output Coefficient Matrix with $(n \times n)$ dimension, ' X ' is the output vector and ' F ' is the final demand vector. Matrix ' A ' is obtained by dividing each column of the flow matrix by the total output of the purchasing sector.

Results for the linear equations are solved as:

$$X = (I - A)^{-1} F$$

The matrix $(I - A)^{-1}$ is called Leontief inverse or matrix multiplier. Each coefficient of this matrix represents the amount of output of sector i required directly and indirectly for one unit of final demand for sector j . The important assumptions made are: *a*) each sector produces a single homogenous output with a single input structure, *b*) production function is of fixed proportion (Leontief) type. The system is viable under the Hawkins-Simon Conditions. The constraints are as follows: *a*) all diagonal elements of matrix $(I-A)$ are strictly positive, and, *2*) all principal minors of $(I-A)$ are positive.

The multipliers for this I-O table will be provided in a follow up paper.

3. Input-Output Table and Supply-Use Table

Input-output table is a square matrix presentation of the volume of inter-industry transaction of goods and services for an economy, which describes how the output from one sector may become an input to another industrial sector. The number of producing sector and number of sectors absorbing intermediate consumption are same. The latest Input-Output table published by Government of India for the year 2007-08 contains 130 sectors. On the other hand, Supply-Use table framework contains two matrices: the Supply table and the Use table. The Supply and Use tables for the year 2012-13 were compiled at a level of disaggregation of 140 products and 66 industries. The supply table is an industry X commodity table, where the rows represent the industries and the columns display the commodities produced by these industries. The Use table is a commodity x industry table. The rows in the Use table represent the commodities or products while the columns display the industries as well as the final users of the products of these industries. The Supply-Use table is published by Government of India from 2011-12 onwards to avoid the statistical discrepancies between production side and the expenditure side.

The Input-Output matrix, which has several uses in economic analysis, can be generated from the Supply-Use table. In the paper, the Input-Output Table for India is used from Singh and Saluja (2018), which has generated a 130×130 Input-Output Matrix for India for the year 2013-14 from the Supply-Use table. The Supply table is available at basic price while the Use table is at the purchaser price, while Input-Output table is generally presented at basic price. The 140 sector commodity structure of the Supply-Use table is converted into a 130-sector structure through mapping each commodity with the structure of the 130 sector input–output table of all-India 2007-08 (CSO 2012). To concord the sectors, some sectors in Supply-Use table were needed to be split and the components in the Use table were converted from purchaser’s price to basic prices. Output, value added and components of final demand were adjusted from NAS, 2015. For detailed methodology, please see Singh and Saluja (2018). This national level Input-Output matrix is instrumental in preparation of state-level Input-Output matrix for Odisha.

4. Methodology of construction of Input-Output Table for Odisha

In this study, the symmetric Input-Output table for the state of Odisha has been constructed for the year 2013-14. The economy of Odisha is very different from rest of India in some sectors, while it is similar in some other sectors. The inter-relationship between the sectors is an important economic characteristic that we need to capture in analyzing the regional economy, its relative strength and weakness and for assessing the impact of economic activities. State level Input-Output table offers better understanding of the state level production, supplies and technologies, which can be used for better understanding of the implementation of the policies.

To prepare the input-output table at the state level, we first need to decide the number of the sectors in the input-output table. And the data on sector specific values of output, input structure and estimates of sector-wise consumption of various components of final demand for the state are collected from various sources, wherever feasible. The state-level input-output table is prepared keeping in view of the principal products from the state, where significant sectors are separated from other sectors and small sectors are clubbed with other sectors. For the preparation of Input-Output table for Odisha, we have classified the economy into 61 sectors, among which 11 sectors come under agriculture, forestry & fishing; 5 under mining & quarrying; 27 under manufacturing; and rest 18 sectors include construction, electricity & water supply & services. The details of data sources, assumptions made, methods for making the state-level input-output matrix is now discussed. In the Appendix, however, we have provided a matrix of 25 sectors, aggregated from these 61 sectors.

Producing sectors

Agriculture, forestry & fishing (11 sectors)

In the Input-Output table for Odisha, agriculture is classified into 8 sectors, which are paddy, other cereals, pulses, sugar cane, oil seeds, cotton, horticulture & floriculture and other agricultural products. The other allied sectors are animal husbandry, forestry and fishing. The data on crop-wise estimate of value of output is provided by the Directorate of Economics and Statistics, Odisha for the year 2013-14. Since the production of wheat is not very high in Odisha

as compared to other agricultural products, we have clubbed it in the sector “other cereals” along with jowar, bajra, maize, ragi, small millets and other cereals. The principal inputs in agriculture are: seed, manure, fertilizer, insecticide, electricity, diesel oil. The gross value of these inputs for Odisha has been provided by the Directorate of Economics and Statistics, Odisha. The distribution of the first four inputs across different sectors in agriculture has been obtained from the Cost of Cultivation data for Odisha for 2012-13 and it is assumed to remain same for 2013-14. The data in Input-Output Table is in Basic price, which is the price actually received by the producers of the commodities and consists of only the cost of material inputs and factor cost. But the data provided in the Cost of Cultivation study is in purchasers’ prices, which is inclusive of taxes, trade and transport margin. To make a uniform set of prices for the Input-Output table, the input data from Cost of Cultivation is converted to Basic prices. Rest of the inputs including electricity and diesel oil in agriculture sector are calculated using the distribution of inputs in Input-Output table 2013-14. The input coefficients thus obtained are pro-rata adjusted with the value of principal inputs and value of output. For animal husbandry, forestry and fishery, sector-wise data on gross value of output and gross value added have been taken from the data provided by the Directorate of Economics and Statistics, Odisha. The difference between gross value of output and gross value added gives the total input including indirect tax for the sector, which is distributed across the sectors using the 2013-14 input coefficients.

Mining (5 sectors)

Mining and quarrying is classified into 5 sectors: Coal & lignite, Crude oil & gas, Iron ore, Bauxite and Other mining. The aggregate gross value of output and gross value added has been provided by the Directorate of Economics and Statistics, Odisha. The distribution of value-added for different items are obtained by making use of item-wise distribution of gross value added provided by CSO for Odisha for the year 2013-14. This distribution is also used to calculate item-wise value of output for Odisha using the data provided by Directorate of Economics and Statistics, Odisha. The difference between gross value of output and value added gives the value of input for each item, which is distributed across different sectors using the distribution of input coefficients obtained from 2013-14 All India input-output table.

Manufacturing sector (27 sectors)

In the Input-Output table for Odisha, manufacturing sector is classified into 27 sectors. Manufacturing industries are divided into two parts: organized and unorganized manufacturing. For most of the sectors, both for organized and unorganized components at 2 digit level (as per National Industrial Classification 2008), the data on value of output and gross value added have been obtained from CSO for Odisha. For eight sectors, we needed data at more disaggregated level, which is also obtained from CSO. Unorganized sectors forms 8% of the gross value of output and 11% of the gross value added for manufacturing sector in Odisha. The data on aggregate value of output and gross value added for manufacturing sector is obtained from the Directorate of Economics and Statistics, Odisha. A concordance between the NIC code and the sectors according to our definition is prepared and the sectors are clubbed or separated suitably to match our classification of industries. The aggregate value of output and gross value added for manufacturing industry is obtained from the Directorate of Economics and Statistics, Odisha. With these aggregate data and the distribution of gross value of output and gross value added obtained from CSO, the input distribution is generated with the help of data from other sources. The detailed methodology and assumptions in the process is described below.

In case of sugar, Odisha's share in All-India sugarcane production is obtained from Statistical Yearbook, India, 2016. The share of Odisha in All-India sugarcane production is used with the input structure of sugar industry for All-India (2013-14) to get the input structure of sugar industry for Odisha. Gross value added and indirect tax for sugar industry are also similarly calculated using Odisha's share on All-India value. For Edible oil industry, share of Odisha in total Oilseeds production is taken from Statistical Yearbook, India, 2016 and is multiplied to the input used in edible oil industry for All-India (2013-14). The input structure, gross value added and indirect tax is thus obtained for Edible Oil industry for Odisha. For the Fertilizer sector, Odisha's share in All-India production of fertilizer is calculated (Source: Indian Fertilizer Scenario, 2014) and the share is used to calculate the input structure of the sector for Odisha from the All-India Input-Output table 2013-14. For cement, the share of Odisha in All-India production is calculated and the share is used to calculate the input structure of the sector for Odisha from the All-India Input-Output table 2013-14. Apart from the value of output of their own sectors, repair and installation of machinery and equipment are divided among the

machinery sectors i.e. non-electrical machinery, communication equipment, electronic equipment, other electrical machinery, transport equipment and miscellaneous manufacturing. For these sectors, data for gross value of output and value added including data on repair and maintenance obtained from CSO is used along with the distribution of inputs as provided in All-India Input-Output table for 2013-14 to find out the input structure of these industries. For rest of the sectors, the estimates of gross output and gross value added for organized and unorganized components for Odisha are obtained from CSO and input data by using All-India Input-Output table for 2013-14.

Services sector including construction, electricity and water supply and transport (18 sectors)

Data on gross value added for these sectors are provided by Directorate of Economics and Statistics, Odisha. For construction, the data on both gross value of output and gross value added were available from Directorate of Economics and Statistics, Odisha. The data on input is derived and the All-India Input-Output table for 2013-14 with some data from CSO is used to derive the input structure for construction. The gross value added data for electricity and water supply provided by Directorate of Economics and Statistics, Odisha is not separate for the two while our sectoral classification is separate. The gross value added data obtained from CSO is used to separate these sectors. The data on gross value added for health and education sector are kept as separate sectors. The data on gross value added for these two sectors have been provided by the Directorate of Economics and Statistics, Odisha. The input structure of 2013-14 all-India Input-Output table has been used to obtain the input structure for these sectors for Odisha. The data are pro rata adjusted to match the GVA values provided by Directorate of Economics and Statistics, Odisha.

Final Demand

Private final consumption expenditure (PFCE): Data from the NSSO Consumption Expenditure Survey, 2011-12 is used to get the PFCE estimates for Odisha. Sector-wise expenditures are estimated for Odisha and all India. Sector-wise estimates of Odisha are divided by the corresponding all India estimates and then multiplied sector-wise estimates of PFCE obtained from CSO at the all India level to get the PFCE estimates for Odisha at factor cost. It is well known that the estimates from the NSSO vary from the estimates given by the National

Accounts. This method assumes that the differences at Odisha state level and at national level are of the same proportions for different sectors.

Government final consumption expenditure (GFCE): The share of Odisha and All-India gross value-added from public administration obtained from National Accounts are used to calculate the total government expenditure of Odisha for 2013-14. The value of GFCE for rest of the sectors is distributed according to the structure of GFCE data for All-India obtained from CSO.

Gross Fixed Capital Formation (GFCF): Odisha's share in all-India GFCF is assumed to be same as the share of Odisha in All-India GFCF from construction. All-India GFCF from construction is obtained from National Accounts Statistics. For rest of the sectors in GFCF, the distribution of GFCF data for all-India as obtained from CSO has been used.

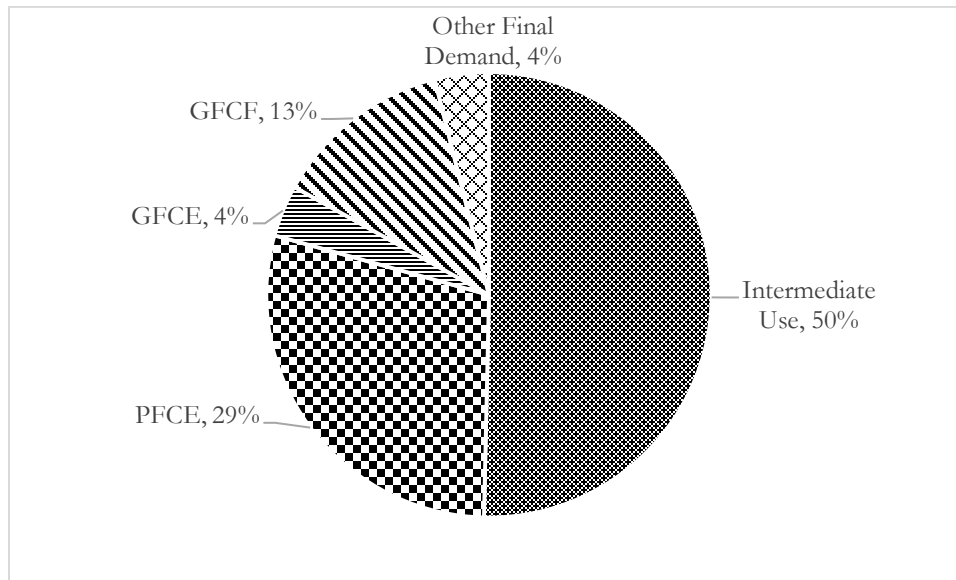
Other Final Demand: Other final demand consists of net export and change in stock. Other final demand, in our study, is a balancing entry and cannot be considered as actual change in these two factors.

5. Some analytical aspects

To explore some analytical aspects, the 61-sector Input-Output table is aggregated into four sectors, i.e. Primary sector consisting of Agriculture, Forestry & Fishing (sectors 1 to 11) and Mining and Quarrying (sectors 12 to 16), Secondary sector consisting of Manufacturing (sectors 17 to 43), Infrastructure services sector consisting of Construction (sector 44) and Electricity, gas & water Supply (sectors 45 & 46), and Other services sector consisting of Transport, storage & communication (sectors 47 to 53), Trade, hotels & restaurants (sectors 54 & 55), Financing, insurance, real estate & business services (sectors 56 & 57) and Community, social & personal services (sector 58 to 61).

Results show that 50% of total output are used as intermediate input in Odisha, while the other 50% of total output is used for meeting final demand, i.e. 29% as Private Final Consumption Expenditure (PFCE), 4% as Government Final Consumption Expenditure (GFCE), 13% as Government Fixed Capital Formation (GFCF) and 4% as other final demand which consists of change in stock (CIS), Export and Import etc. (Figure 1).

Figure1: Composition of Total Output in Odisha



Source: Author's own estimation

Comparative analysis shows that both for Odisha and India, primary sector provides small share of input as a percentage of output. Input demand for primary sector to itself is lower in Odisha as compared to India, while it is higher for Odisha as compared to India in secondary, infrastructure services and other services (Table 1). Input demand for secondary sector to itself is 28% of total output for Odisha while the same for India is 32%. As a whole, reliance on primary sector as input is low, both in Odisha and India. As compared to that, Odisha economy relies more on secondary sector as provider of input, followed by services sector. Similar pattern is followed in India, though the extent of dependence differs.

If we concentrate on intermediate demand, for Odisha, the consumption of sector's own input is 8% for primary sector while it is 48% for secondary sector. Though former share is same for Odisha and India, later share is lower for Odisha (48%) as compared to India (53%). For Odisha, the rest of the intermediate use of primary sector has been shared by the secondary sector (78%), infrastructure services (8%) and other services (6%). The same for India is 81%, 7% and 4% respectively. Major part of the secondary sector products are used in secondary sector itself (48%), infrastructure services (27%) and other services (18%) in Odisha. While for India,

secondary sector provides inputs to other sectors at 24% for infrastructure services and 18% for other services.

Table1: Pattern of technological difference (% of total output) (2013-14)

		Primary	Secondary	Infrastructure Services	Other Services
Primary	Odisha	5%	53%	5%	4%
	India	7%	80%	7%	4%
Secondary	Odisha	4%	28%	16%	11%
	India	3%	32%	15%	10%
Infrastructure Services	Odisha	4%	11%	11%	11%
	India	3%	9%	3%	23%
Other Services	Odisha	4%	25%	11%	11%
	India	3%	10%	9%	12%
Total Input	Odisha	4%	25%	11%	11%
	India	4%	27%	10%	12%

Source: Author's own estimation

Intermediate supply of infrastructure services has been largely to 'other services' (49%) and to secondary sector (29%) in Odisha. Similar pattern is followed in India, 60% to 'other services' and 24% to secondary sector. The output of 'other services' is used by all the sectors; 11% to primary, 30% to secondary, 30% to infrastructure and 30% to other services in Odisha.

Table: Pattern of intermediate demand in Odisha and India (2013-14)

		Primary	Secondary	Infrastructure Services	Other Services	Total Intermediate Demand
Primary	Odisha	8%	78%	8%	6%	100%
	India	8%	81%	7%	4%	100%
Secondary	Odisha	6%	48%	27%	18%	100%
	India	5%	53%	24%	17%	100%
Infrastructure Services	Odisha	12%	29%	10%	49%	100%
	India	7%	24%	9%	60%	100%
Other Services	Odisha	11%	30%	30%	30%	100%
	India	10%	29%	26%	35%	100%

Source: Author's own estimation

6. Conclusion

The input-output table for Odisha consists of 61 producing sectors and 4 components of final demand. However we report here a 25 sector table which is an aggregate of the 61 sector table. The state level I-O table is prepared using data obtained from Bureau of Statistics, Government of Odisha, published Government sources and other academic publications. A number of assumptions are made to arrive at the state-level I-O table since availability of detailed data at state level is a challenge. Since Input-Output table captures an array of information about the economy, the table can be utilized to evaluate the effect of any exogenous change in demand on output or income or to assess the effect of any supply bottleneck. One major critic of Input-Output table is on the reliability and quality of data. The paper has adjusted the available data suitably in the input-output framework. Availability of data and knowledge about the economy play a major role in constructing a table. The challenges in arranging the data and the procedure of estimation are explained in detail in the paper, which will assist in constructing regional IO table at state level.

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Appendix

Table A1: Sector classification in 61 sector Input-Output table for Odisha

Sl. No	Sector	Sl. No	Sector
1	Paddy	32	Drug and pharmaceuticals
2	Other cereals	33	Cement
3	Pulses	34	Non-metallic mineral Products
4	Sugar Cane	35	Iron & Steel
5	Oil Seeds	36	non-ferrous metals
6	Cotton	37	Metal Products
7	Horticulture & Floriculture	38	Non-electrical machinery
8	Other agricultural products	39	Communication equipment
9	Animal services & livestock	40	Electronic equipment
10	Forestry	41	Other Electrical machinery
11	fishing and aquaculture	42	Transport Equipment
12	Coal & lignite	43	Miscellaneous manufacturing
13	Crude Oil & gas	44	Construction
14	Iron Ore	45	Electricity
15	Bauxite	46	water supply
16	Other mining	47	Railways
17	Sugar	48	Road Transport
18	Oil	49	Air Transport
19	Other food products	50	Water transport
20	beverages	51	services incidental to transport
21	tobacco products	52	Storage
22	textile	53	Communication
23	Readymade garments	54	Trade
24	Furniture and fixture	55	Hotel & Restaurants
25	Wood Products	56	Bank & Insurance
26	Paper products	57	Real Estate & Ownership of dwelling
27	Leather Products	58	Education
28	Rubber & Plastic products	59	Health
29	Coke & Petroleum Products	60	Other Services
30	chemicals and chemical products	61	Public administration
31	Fertilizers		

Table A2: Concordance between 25 sector and 61 sector classification

25 sector classification		Concordance with 61 sectors
1	Agriculture	sector 1 to 8
2	Animal husbandry	sector 9
3	Forestry	sector 10
4	Fishery	sector 11
5	Fuel minerals	sector 12 & 13
6	Non-fuel minerals	sector 14 to 16
7	Manufacturing food and beverages and tobacco	sector 17 to 21
8	Textiles and leather	sector 22 & 23
9	Wood and paper products	sector 24 to 26
10	Rubber, plastic, coke and petroleum products	sector 27 to 29
11	Chemical and chemical products	sector 30 to 32
12	Non-metallic minerals products	sector 33 & 34
13	Metals and metal products	sector 35 to 37
14	Manufacturing of electrical and non-electrical goods	sector 38 to 41
15	Transport equipment	sector 42
16	Miscellaneous products	sector 43
17	Construction	sector 44
18	Electricity and water	sector 45 & 46
19	Transport, storage and communication	sector 47 to 53
20	Trade, hotel and restaurant	sector 54 & 55
21	Banking and insurance	sector 56
22	Real estate dwelling and other services	sector 57
23	Education	sector 58
24	Health	sector 59
25	Public administration	sector 60 & 61

Table A3: 25-sector Input-Output Table for Odisha (in Rs. Lakh). This 25 sector table is generated from the 61 sector table which was originally constructed.

	1	2	3	4	5	6	7	8	9	10	
	Agriculture	Animal husbandry	Forestry	Fishery	Fuel minerals	Non-fuel minerals	Manufacturing food and bev. and tobacco	Textiles and leather	Wood and paper products	Rubber, plastic, coke and petro. products	
1	Agriculture	98872	124049	0	0	0	0	609843	37755	4402	8410
2	Animal husbandry	83017	217270	0	1755	0	0	86297	5024	4	13120
3	Forestry	0	349	7874	0	0	0	1375	178	89208	13823
4	Fishery	0	254	0	10242	0	0	31050	0	0	0
5	Fuel minerals	0	177	0	0	1	4	1745	8041	16543	3269702
6	Non-fuel minerals	0	0	0	2400	1	0	0	0	243	37
7	Manufacturing food and bev. and tobacco	0	87468	0	4367	0	0	73042	0	0	87
8	Textiles and leather	22	160	1255	4985	3802	3244	643	42890	2149	3133
9	Wood and paper products	952	1391	6405	820	18674	33063	1295	1183	113610	5728
10	Rubber, plastic, coke and petro. products	188703	2044	11719	7720	30528	54843	29477	12611	29514	385410
11	Chemical and chemical products	102658	933	0	6545	24	6	14504	31632	38733	124228
12	Non-metallic minerals products	0	1	0	0	0	0	855	224	3863	16093
13	Metals and metal products	2088	439	12893	1084	130	128	2915	2231	18033	10625
14	Manufacturing of electrical and non-electrical	19350	564	2305	0	12014	22735	3638	1238	2204	14475
15	Transport equipment	11188	147	2372	9285	6163	10752	1220	437	1149	4199

16	Miscellaneous products	496	324	2355	0	3536	7009	5977	772	2664	3768
		1	2	3	4	5	6	7	8	9	10
		Agriculture	Animal husbandry	Forestry	Fishery	Fuel minerals	Non-fuel minerals	Manufacturing food and bev. and tobacco	Textiles and leather	Wood and paper products	Rubber, plastic, coke and petro. products
17	Construction	115943	1874	2732	0	8954	14629	1148	262	956	41456
18	Electricity and water	58594	1749	11990	413	70218	109299	15178	1652	18699	163983
19	Transport, storage and communication	27653	20877	36409	3152	15177	57906	28346	14337	22614	91509
20	Trade, hotel and restaurant	70018	82516	11135	5663	14113	37625	128140	17274	35879	99543
21	Banking and insurance	114500	804	608	394	2215	79744	7194	4089	19507	4178
22	Real estate dwelling and other services	35	0	0	0	1484	2152	0	0	0	0
23	Education	102	0	261	0	1512	2605	0	0	0	526
24	Health	0	0	1	0	0	0	0	0	0	0
25	Public administration	1580	759	6261	92	25446	47057	4076	1597	2789	33934
	Input cost	895772	544149	116577	58917	213992	482801	1047958	183427	422761	4307968
	GVA	3647377	743054	608335	359788	897064	1998625	232110	104163	189394	408334
	Tax	-129300	-6215	1897	88	2392	-703	-65800	542	18824	109462
	Total Output	4413849	1280988	726809	418792	1113449	2480723	1214268	288132	630980	4825764

	11	12	13	14	15	16	17	18	19	20	
	Chemical and chemical products	Non-metallic minerals products	Metals and metal products	Manufacturing of electrical and non-electrical	Transport equipment	Miscellaneous products	Construction	Electricity and water	Transport, storage and communication	Trade, hotel and restaurant	
1	Agriculture	24603	0	40	116	4	9	52747	85732	8945	87201
2	Animal husbandry	76474	0	0	0	0	23	2513	867	0	218266
3	Forestry	7366	114	1125	492	8	104	109531	150	0	5907
4	Fishery	135	0	0	0	0	0	4	197	0	3673
5	Fuel minerals	104772	53700	362548	14601	34	84	11017	199928	0	12246
6	Non-fuel minerals	392	181318	472039	2521	24	794	85043	4570	0	6093
7	Manufacturing food and bev. and tobacco	8460	0	0	0	0	3	24	429	0	99397
8	Textiles and leather	7736	1026	4477	1034	54	34	2194	14505	4384	10703
9	Wood and paper products	1900	1213	5076	3420	152	91	70645	93550	85294	32147
10	Rubber, plastic, coke and petro. products	120840	37395	581429	43036	6645	513	139161	525122	868779	179128
11	Chemical and chemical products	394004	13429	76838	9929	254	227	132717	3519	1	49487
12	Non-metallic minerals products	1542	46028	20752	4054	78	76	464719	558	0	2318
13	Metals and metal products	5576	22610	2447350	128236	4333	1315	1136588	8824	112	39224
14	Manufacturing of electrical and non-electrical	4179	5090	53818	86821	1009	325	19352	119754	149501	15977
15	Transport equipment	1417	1851	13799	5712	1155	25	610	200527	14614	11624
16	Miscellaneous products	5702	4716	35372	10887	396	5855	12962	19893	8987	7164

	11	12	13	14	15	16	17	18	19	20	
	Chemical and chemical products	Non-metallic minerals products	Metals and metal products	Manufacturing of electrical and non-electrical	Transport equipment	Miscellaneous products	Construction	Electricity and water	Transport, storage and communication	Trade, hotel and restaurant	
17	Construction	1965	1768	179691	17468	270	45	193	55904	137711	76370
18	Electricity and water	17936	4084	430470	49052	412	361	86927	191698	646626	170088
19	Transport, storage and communication	24777	88598	226837	15095	601	632	259144	185153	93589	149420
20	Trade, hotel and restaurant	55568	79875	404091	26612	1359	399	412112	245520	180051	124347
21	Banking and insurance	2169	63278	67855	2010	33	173	83982	99004	143585	123226
22	Real estate dwelling and other services	0	0	0	0	0	0	177848	0	59427	9919
23	Education	15	0	0	0	0	0	56	7222	13061	1622
24	Health	0	0	0	0	0	0	28	0	0	0
25	Public administration	2977	3169	279417	3991	496	68	37507	398371	167671	32890
	Input cost	870503	609263	5663021	425089	17314	11158	3297629	2460999	2582338	1468435
	GVA	359028	345277	2629506	149248	21490	12708	2158547	663043	1999575	2714466
	Tax	27021	11576	291859	19587	992	98	124135	87481	81405	13690
	Total Output	1256553	966115	8584386	593924	39796	23964	5580310	3211522	4663318	4196591

		21	22	23	24	25					
		Banking and insuranc e	Real estate dwelling and other services	Educatio n	Health	Public administr ation	PFCE	GFCE	GFCF	Other Final Demand	Total Product OP at Basic
1	Agriculture	0	0	0	0	46241	2069801	0	0	1155078	4413849
2	Animal husbandry	0	0	0	3590	44754	625454	0	11055	-108495	1280988
3	Forestry	0	0	0	0	8	480580	0	0	8618	726809
4	Fishery	0	0	0	0	1	613242	0	0	-240006	418792
5	Fuel minerals	0	0	0	0	130	10728	0	0	-2952553	1113449
6	Non-fuel minerals	0	0	0	0	28	0	0	0	1725221	2480723
7	Manufacturing food and bev. and tobacco	0	0	0	0	48474	2516320	0	0	-1623802	1214268
8	Textiles and leather	502	2364	3555	211	2321	1933798	0	12454	-1775507	288132
9	Wood and paper products	5240	6155	28639	791	10758	108377	0	66159	-71750	630980
10	Rubber, plastic, coke and petroleum products	33162	22896	52396	2019	52622	1080301	0	43292	284455	4825764
11	Chemical and chemical products	0	0	0	89147	4419	511652	0	0	-348334	1256553
12	Non-metallic minerals products	0	0	0	0	44	55893	0	0	349017	966115
13	Metals and metal products	0	34	222	1308	2105	30637	0	0	4705347	8584386
14	Manufacturing of electrical and non- electrical	3702	2146	1995	434	12262	54542	0	1341132	-1356637	593924
15	Transport equipment	2587	2077	2114	225	23320	366325	0	638122	-1293220	39796
16	Miscellaneous products	4436	1138	3876	8059	1495	65870	0	152110	-351853	23964

	21	22	23	24	25						
	Banking and insurance	Real estate dwelling and other services	Educatio n	Health	Public administr ation	PFCE	GFCE	GFCF	Other Final Demand	Total Product OP at Basic	
17	Construction	8993	85210	18175	212	174988	0	0	4633393	0	5580310
18	Electricity and water	122933	52604	42455	10373	61045	310015	0	0	562669	3211522
19	Transport, storage and communication	24964	10764	20027	8260	128037	1133141	0	0	1976300	4663318
20	Trade, hotel and restaurant	29401	7023	16423	20278	46526	749429	0	0	1295673	4196591
21	Banking and insurance	68108	15801	79241	16027	31514	0	0	0	347292	1376531
22	Real estate dwelling and other services	0	717	0	0	2377	1420011	0	0	566718	2240688
23	Education	4522	519	14437	86	4281	407223	142465	84231	773806	1458554
24	Health	954	0	0	30184	4	480355	51516	0	5605	568647
25	Public administration	48111	42003	37982	12649	59380	822739	1856342	146348	-1483713	2591988
	Input cost	357614	251453	321535	203852	757133	15846435	2050323	7128297	2149929	54746639
	GVA	1022176	1986779	1133685	361674	1829720					
	Tax	-3259	2456	3333	3121	5135					
	Total Output	1376531	2240688	1458554	568647	2591988					

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