

ESTIMATION OF LINKAGES
BETWEEN
ORGANIZED AND UN-ORGANIZED SECTORS OF INDIAN ECONOMY

SYNOPSIS

In partial fulfillment of the requirements

for the degree of

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Our aim is to incorporate institutional categorization of organized and unorganized sectors of production within the inter-industry framework. In its approach it resembles dualistic models of development economics.

Incorporation of the organized and unorganized dualism in the existing inter-industry framework of India implies its partition in accordance with the categorization. We propose methods to estimate partitioned matrix with rows and columns distinguished by institutional categorization. Starting from an aggregated input-output table (at the order of 27 by 27 in our case), the steps followed in splitting are summarized below:

1. Splitting the row of gross value added as per the shares of organized and unorganized sectors
2. Calculating value added (organized) per unit of gross value of output [=1-input-output ratio(organized)]
3. Estimating gross value of output (organized) & gross value of output (unorganized) by either
 - a. Method 1 i.e. by calculating gross value of output (organized) obtained from the division of gross value added (organized) by value added per unit of gross value of output (organized). Thereby, obtaining gross value of output (unorganized) as a residual. Or,
 - b. Method 2 i.e. by calculating gross value of output (organized) [and gross value of output (unorganized)] and by dividing gross value added (organized) [gross value added (unorganized)] by value added per unit of gross value of output (organized) [gross value of output (unorganized)]. Data for the calculation of gross value of output (unorganized) by Method 2 is taken from an additional statement published in National Accounts Statistics (NAS) by Central Statistical Organization.
4. Estimating organized and unorganized inputs by either
 - c. Method 1 i.e. by calculating organized inputs by subtracting gross value added (organized) from estimated gross value of output (organized). Obtaining

unorganized inputs as a residual by subtracting estimated organized inputs from total inputs. Or,

- d. Method 2 i.e. by calculating organized inputs [and unorganized inputs] as a subtraction of gross value added (organized) [gross value added (unorganized)] from estimated gross value of output (organized) [estimated gross value of output (unorganized)].
5. Incorporating additional information available from NAS in the input output table. Thus, updating the aggregated matrix by RAS method.
6. Splitting the columns of updated input-output table as per the organized and unorganized shares in national income per industry.
7. Splitting the rows as per shares of organized and unorganized segments in the value of output.

RAS updated matrix once split looks like below:

$$A = \begin{bmatrix} O & O_1 \\ U_1 & U \end{bmatrix} \quad \dots (1)$$

With the availability of such institutionally categorized data, it is possible to apply Miyazawa type multipliers to estimate inter-industry linkages within and between blocks based on institutional characteristics.

In Miyazawian linkage view each institution exhibits three types of effects:

- 1) an institution's own impact on itself, calculated by its 'internal matrix multiplier'. For the organized sector such an internal multiplier is given by (say) $B = (I - O)^{-1}$, whereas for the unorganized sector it is given by $T = (I - U)^{-1}$. \dots (2)

2) inter-institutional propagation effects between organized and unorganized sectors are given by the following four sub-matrix multipliers:

$$B_1 = U_1 B \dots \text{unorganized sector's input in organized sector induced by internal propagation of organized sector's industries} \quad \dots (3)$$

$B_2 = BO_1$...internal propagation in organized sector's industries induced by organized sector's inputs in unorganized sector ... (4)

$T_1 = O_1T$...organized sector's inputs in unorganized sector induced by internal propagation in unorganized sector's industries ... (5)

$T_2 = TU_1$...internal propagation in unorganized sector's industries induced by unorganized sector's inputs in organized sector. ... (6)

3) an institution's impact on or from the other institution given by its 'external matrix multiplier' takes the form $L = (I - B_2T_2)^{-1}$, in case external impacts are being measures in terms of induced effects on outputs, or $K = (I - T_2B_2)^{-1}$ in case external impacts are measured in terms of induced impacts on inputs. ... (7)

Such a decomposed view of external matrix multipliers in terms of inter-institutional matrix multipliers reveals industries playing major role in defining macro-patterns of an economy as observed. We employ both Leontief and Ghoshian multipliers to estimate backward and forward linkages. Application of 'Miyazawa's multipliers' to a partitioned matrix distinguished on the basis of organized and unorganized categorization (refer to Table 1) has enabled us to make following observations.

Backward linkages calculated from Leontief inverse show that impetus imparted by unorganized segment to the organized segment (calculated to be equal to 1.1382) is found to be greater than the impetus imparted by organized segment to the unorganized segment (which equal 1.1201). Lower internal propagation ratio corresponding to the modal range of unorganized segment (=0.1 to 0.3) suggests higher dependency of unorganized segment on the organized segment for its sales thereby implying multipliers or linkages 'within' unorganized sector of lower order than 'between' (refer to Tables 3 and 4). This pattern of higher dependence of unorganized segment on the organized segment for its sales is more prominent in some of the industries such as beverages and tobacco products, agriculture, forestry and logging and fishing as these are the only industries falling in the intersection of groups C3, E2 and E3 in Tables 3 and 4.

Organized sector in Leontief case is found to have higher linkages due to its sales to the unorganized segment rather than its increased purchases from the latter as the value of B_2 (= 0.5529 on an average) is higher than that of T_2 (= 0.2443 on an average). Similar situation is revealed by comparison of B_1 and T_1 . Thus, increase in demand from the unorganized segment has the ability to boost the organized segment.

Calculation of forward linkages in Ghoshian case reveal higher propagation of organized segment due to increased 'input' availability per unit from the unorganized segment than the propagation which organized segment gets via its 'sales' to unorganized segment as values of B_1 are higher than B_2 . Seventeen industries responsible for this observation are those of mining, food products, beverages and tobacco products, textile products, paper and printing etc., rubber, petroleum products etc., chemical and chemical products, non-metallic products, basic metals, metal products and machinery, electrical machinery, transport equipment, other manufacturing, electricity, gas and water supply, railway transport services, communication, and banking and insurance. Result indicates that the increase in efficiency and production of unorganized segment is likely to boost organized segment.

Table 1: Institutionally partitioned inter-industry transactions table as per organized-unorganized classification*

(figures in Rs. Lakhs)

o	011	021	031	041	051	061	071	081	091	101	111	121	131	141	151	161	171	181	191	201	211	221	231	241	251	261	271
011	98649.93	1.44	0.00	0.00	497559.88	12249.15	63438.49	50.07	2303.57	8162.75	21571.01	17319.78	33.58	60.47	61.74	414.19	217.09	441.46	11015.94	157.18	0.00	8912.16	0.00	42076.32	0.00	2697.12	0.00
021	48.78	67.96	0.00	0.00	310.77	3844.12	17.40	4004.21	42778.41	0.00	92.37	1699.64	7.02	4.73	109.34	123.54	40.57	43.40	8390.86	24.66	3.15	0.00	0.00	0.00	0.00	0.00	0.00
031	0.00	0.00	0.01	0.00	126.22	0.00	0.00	0.00	0.07	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00	0.00
041	1.55	0.00	0.00	16706.82	10403.96	2219.70	22498.23	442.19	62383.03	186.97	8925247.35	462533.37	98440.01	1511776.03	38223.15	3091.37	10260.72	85.37	0.00	1356637.73	6047.39	0.34	0.00	642.33	0.00	312.85	0.00
051	31727.26	0.00	6.49	0.00	1315377.32	352208.04	3549.59	38.14	14402.90	125.61	4116.80	336748.60	272935.59	368926.33	18209.23	33168.54	2354.95	110241.05	595502.11	698.35	0.00	1609.34	0.00	188247.38	0.00	10.16	0.00
061	0.00	0.00	0.00	0.00	1566.54	136549.30	3.27	1.36	47.76	8.90	654.15	32010.24	259.03	1010.26	0.00	241.38	0.74	103.08	0.00	26.83	0.00	12.98	0.00	37933.29	2537.89	0.34	0.00
071	10956.67	265.53	40.90	42.80	20405.65	13117.58	1321971.07	630.69	16990.57	4241.40	37822.52	64301.69	6982.87	2102.17	13791.85	36147.93	10298.07	11805.85	11557.76	1007.20	428.56	20186.80	434.08	5842.73	4137.38	11121.20	0.00
081	28.69	3.36	0.35	3385.81	15252.95	1246.39	4340.55	437.15	17136.34	148.26	2949.80	32957.51	3687.24	1383.08	6857.07	10120.78	3681.47	3415.69	36423.17	647.03	23.82	160.10	243.17	1467.29	1551.99	5584.31	0.00
091	558.18	558.84	0.00	4076.17	159215.33	44052.57	46520.73	1762.64	1674538.34	947.72	31904.71	147404.70	28385.90	9296.85	23927.95	75587.68	12700.64	15382.15	11914.64	40315.23	6189.78	59818.87	16531.86	62602.96	204441.36	52551.21	0.00
101	0.00	0.00	0.00	0.00	0.00	0.00	10762.07	21.75	151.28	60090.07	1241.59	7996.15	127.30	0.00	163.09	6723.39	4021.27	2595.65	0.00	49.44	0.00	395.20	0.00	0.00	0.00	0.00	0.00
111	61414.87	3345.13	55.65	109006.43	257301.06	91618.43	194056.10	3074.57	157002.08	5703.29	1271073.98	1288544.83	247353.25	423899.13	126325.89	432274.72	240230.97	88630.71	511109.94	1112133.72	120173.07	1786485.52	24024.57	85207.21	103676.63	26347.54	0.00
121	227996.97	30.68	3.14	213544.99	207081.62	89323.95	451489.77	4577.35	409393.99	18273.38	1539991.02	6728804.85	61453.17	177248.69	78308.56	475992.55	179810.84	83255.71	178918.20	51590.35	207.61	42849.23	0.00	1586.52	1.39	506542.01	0.00
131	4.44	1.67	0.00	29580.81	18629.16	1326.12	755.76	51.81	5991.65	46.42	2917.40	14734.93	200201.49	25971.90	7686.80	95556.55	11804.72	2306.91	1238678.14	36.05	254.59	6629.84	0.00	1031.03	3.80	853.94	0.00
141	0.00	17.33	2.62	594.93	1331.47	120.20	1035.60	2172.06	10310.26	160.33	31453.12	81020.55	23863.01	3926001.11	1927182.05	2555375.75	1153216.20	38024.92	1580581.85	1379.75	221.09	252.47	0.00	844.34	0.00	10.02	0.00
151	7825.27	294.66	1.52	199138.22	77684.08	12237.64	108142.98	1202.33	18237.06	2736.38	40045.19	75092.03	14646.58	229467.45	551005.35	605234.64	527432.63	52682.71	174373.28	91750.10	4304.66	59381.32	3190.31	31241.61	23327.32	10282.88	0.00
161	17.68	69.39	0.00	100.63	3610.06	0.00	1613.29	58.08	9775.70	4.55	633.49	11699.01	283.19	7556.51	70759.23	1418610.61	140117.16	53165.64	127960.33	171390.25	7874.36	26472.67	156208.29	3130.59	41255.65	59568.23	0.00
171	1404.62	1795.20	33.28	29986.46	4388.69	0.00	0.00	122.78	1.54	0.00	621.64	48.59	268.76	678.99	13548.23	3115.23	1184454.20	2987.78	5567.44	17196.37	913744.05	177118.86	7226.85	1194.48	66755.59	55351.39	0.00
181	55.40	812.05	0.00	8008.74	8238.09	128.73	23311.13	14.57	20941.42	2524.90	12668.96	79126.84	6417.87	9789.39	45340.68	112552.95	36519.47	836096.94	99936.53	122125.20	173808.01	54103.18	10013.32	27770.85	39233.46	256299.03	0.00
191	14068.95	1450.85	0.00	72004.19	66945.63	1935.35	48551.63	111.15	32205.34	507.14	10605.43	54376.36	73524.61	10537.38	59516.26	81750.74	10129.52	5319.44	169339.00	111084.69	210114.23	21565.73	18533.00	19539.04	58185.75	214168.66	0.00
201	71120.44	300.59	0.00	200482.19	223717.83	40841.03	340030.72	2397.73	240457.13	7865.15	437961.79	717742.92	262584.06	980453.47	149969.81	337673.20	326574.74	36261.13	368717.00	3823562.11	554444.21	87975.51	89160.16	124504.92	230931.02	75299.82	0.00
211	17528.44	878.00	1.03	30190.71	57004.01	9425.68	12988.85	477.54	37917.96	2047.50	321993.04	142020.59	77904.37	559818.15	50771.90	52833.85	46456.82	106425.00	106717.05	436750.54	268598.76	24173.02	6611.95	7445.84	77234.61	16577.75	0.00
221	26939.77	2218.88	5.44	34616.45	169139.18	22757.45	156381.43	1301.60	105635.82	7360.59	71485.28	226229.43	41933.38	116822.29	38238.31	108962.35	56246.95	41195.34	179228.01	88320.20	11079.88	74650.93	7850.71	106089.88	70326.32	60203.76	0.00
231	1591.63	639.29	0.00	7414.71	28383.82	3467.28	30866.57	386.73	13277.95	869.91	41176.25	48604.42	12898.48	83851.55	25016.50	525207.90	58513.12	44170.63	19776.41	70318.61	4254.64	128646.22	90981.87	33578.26	335232.90	103391.26	0.00
241	51773.24	378.89	2.80	14018.68	421456.18	34810.27	164501.42	1922.06	70638.24	11687.71	95219.13	279028.37	48528.20	321018.78	47450.56	121504.87	88407.80	15122.83	254471.56	177834.66	14277.72	127179.89	8295.89	50582.04	67842.34	76448.00	0.00
251	33070.36	715.20	8.26	132581.25	424353.83	72716.83	314977.75	4178.96	173909.95	16176.04	543915.02	604138.00	63808.63	335700.71	324573.82	528785.79	730163.56	280499.78	688391.77	715938.05	46187.03	168916.56	11358.91	454553.88	1693923.39	308627.62	0.00
261	2992.29	2133.97	0.00	28128.23	69219.99	11427.95	102449.74	721.59	25559.55	3326.98	27649.42	62908.29	7856.94	15876.62	94497.42	208974.13	179196.74	22223.51	869.53	12768.49	34219.81	108553.49	5009.14	23718.39	33466.38	530696.82	0.00
271	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(Figures in Rs. Lakhs)

Table 1 Continued...

O ₁	010	020	030	040	050	060	070	080	090	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270
010	1116043.60	8.93	0.00	0.00	428541.80	5470.82	59735.60	489.89	148.82	19570.94	5895.31	1491.79	23.76	10.71	40.99	124.89	27.02	321.55	16410.19	5.62	0.00	31058.58	0.00	175367.74	0.00	3909.24	0.00
020	551.84	422.22	0.00	0.00	267.66	1716.89	16.38	39175.29	2763.62	0.00	25.24	146.39	4.97	0.84	72.59	37.25	5.05	31.61	12499.66	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
030	0.00	0.00	19.69	0.00	108.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.15	0.00	0.00
040	17.48	0.00	0.00	1834.32	8960.79	991.38	21185.02	4326.18	4030.14	448.27	2439250.69	39838.90	69645.07	267648.90	25376.72	932.16	1276.98	62.18	0.00	48463.97	0.00	1.17	0.00	2677.13	0.00	453.46	0.00
050	358935.95	0.00	12391.58	0.00	1132917.25	157306.08	3342.40	373.12	930.47	301.16	1125.11	29004.82	193098.49	65315.71	12089.28	10001.52	293.08	80296.67	887105.26	24.95	0.00	5608.49	0.00	784586.57	0.00	14.73	0.00
060	0.00	0.00	0.00	0.00	1349.24	60986.78	3.08	13.31	3.09	21.33	178.78	2757.10	183.26	178.86	0.00	72.78	0.09	75.08	0.00	0.96	0.00	45.25	0.00	158100.23	278.48	0.49	0.00
070	123954.69	1649.66	78100.52	4.70	17575.11	5858.68	1244807.96	6170.41	1097.64	10169.14	10336.81	5538.43	4940.30	372.17	9156.54	10899.91	1281.63	8599.07	17217.32	35.98	0.00	70350.28	190.16	24351.61	453.98	16119.23	0.00
080	324.56	20.86	664.16	371.74	13137.17	556.67	4087.19	4276.90	1107.06	355.47	806.17	2838.70	2608.67	244.86	4552.48	3051.78	458.17	2487.90	54258.73	23.11	0.00	557.93	106.53	6115.45	170.30	8093.98	0.00
090	6314.75	3471.94	0.00	447.54	137130.08	19675.12	43805.33	17244.84	108180.42	2272.23	8719.49	12696.26	20082.67	1645.94	15886.00	22792.42	1580.63	11203.95	17748.95	1440.20	0.00	208466.64	7242.31	260919.65	22432.77	76168.47	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	10133.89	212.75	9.77	144071.37	339.32	688.72	90.07	0.00	108.28	2027.35	500.46	1890.60	0.00	1.77	0.00	1377.25	0.00	0.00	0.00	0.00	0.00
110	694797.05	20782.54	106274.87	11968.34	221610.03	40919.38	182729.10	30080.13	10142.83	13674.15	347381.76	110984.89	174999.31	75048.24	83868.98	130346.49	29897.48	64556.26	761388.26	39729.41	0.00	6225839.12	10524.73	355130.74	11376.14	38188.50	0.00
120	2579368.93	190.59	5998.48	23446.12	178356.68	39894.61	425136.43	44782.66	26448.13	43812.08	420876.20	579565.13	43477.34	31380.59	51989.81	143528.99	22378.01	60641.26	266530.16	1842.99	0.00	149328.05	0.00	6612.38	0.15	734189.12	0.00
130	50.21	10.39	0.00	3247.82	16045.06	592.28	711.65	506.89	387.08	111.29	797.32	1269.15	141640.04	4598.13	5103.34	28813.76	1469.13	1680.29	1845229.21	1.29	0.00	23104.77	0.00	4297.19	0.42	1237.71	0.00
140	0.00	107.68	5010.65	65.32	1146.78	53.68	975.15	21250.40	666.08	384.41	8596.07	6978.46	16882.78	695069.82	1279474.77	770538.34	143521.29	27696.34	2354555.01	49.29	0.00	879.84	0.00	3519.09	0.00	14.52	0.00
150	88528.57	1830.65	2909.46	21864.34	66908.28	5465.68	101830.70	11763.06	1178.17	6560.71	10944.26	6467.82	10362.27	40625.54	365817.77	182500.16	65640.61	38372.69	259759.71	3277.64	0.00	206941.81	1397.62	130210.31	2559.64	14904.14	0.00
160	199.96	431.09	0.00	11.05	3109.29	0.00	1519.12	568.21	631.54	10.91	173.13	1007.66	200.35	1337.83	46977.74	427762.48	17438.01	38724.45	190619.44	6122.67	0.00	92256.34	68432.02	13047.84	4526.86	86339.03	0.00
170	15890.73	11153.15	63545.84	3292.36	3779.92	0.00	0.00	1201.23	0.10	0.00	169.89	4.18	190.15	120.21	8994.80	939.35	147408.96	2176.22	8293.68	614.32	0.00	617253.00	3165.95	4978.39	7324.90	80227.08	0.00
180	626.79	5045.10	0.00	879.32	7095.36	57.50	21950.47	142.52	1352.88	6053.69	3462.40	6815.35	4540.56	1733.14	30102.12	33938.79	4544.96	608990.91	148873.06	4362.75	0.00	188547.68	4386.65	115744.68	4304.98	371483.42	0.00
190	159164.51	9013.78	0.00	7905.68	57659.39	864.38	45717.68	1087.47	2080.57	1215.91	2898.44	4683.54	52017.74	1865.57	39513.42	24650.81	1260.65	3874.54	252260.27	3968.34	0.00	75155.81	8118.97	81435.75	6384.56	310419.08	0.00
200	804597.82	1867.51	0.00	22011.90	192685.24	18240.76	320183.21	23458.23	15534.28	18857.40	119694.01	61820.60	185774.91	173582.13	99566.40	101820.70	40643.23	26411.65	549268.90	136591.36	0.00	306591.56	39059.45	518917.66	25339.40	109140.61	0.00
210	198302.24	5454.82	1968.62	3314.78	49096.81	4209.78	12230.69	4672.04	2449.62	4909.06	88000.00	12232.51	55116.36	99111.71	33707.96	15931.32	5781.69	77517.16	158973.84	15602.30	0.00	84242.14	2896.58	31033.15	8474.73	24028.02	0.00
220	304774.21	13785.39	10386.65	3800.71	145677.36	10164.12	147253.48	12734.29	6824.40	17647.68	19536.77	19485.58	29667.34	20682.53	25386.78	32856.09	7000.11	30005.60	266991.68	3155.11	0.00	260155.87	3439.25	442166.57	7716.71	87260.18	0.00
230	18006.40	3971.74	0.00	814.10	24446.61	1548.59	29064.89	3783.56	857.80	2085.69	11253.38	4186.39	9125.52	14845.30	16608.70	158369.21	7282.14	32172.72	29460.45	2512.03	0.00	448327.55	39857.51	139949.11	36784.15	149856.75	0.00
240	585719.55	2353.97	5337.88	1539.18	362994.69	15547.25	154899.52	18804.52	4563.45	28022.35	26023.18	24033.26	34333.09	56834.03	31502.88	36638.12	11002.62	11015.07	379080.20	6352.89	0.00	443217.45	3634.28	210818.29	7444.15	110804.81	0.00
250	374130.71	4443.37	15772.52	14556.73	365490.40	32477.39	296592.58	40885.00	11235.13	38783.51	148650.79	52035.59	45143.80	59433.36	215487.69	159448.07	90871.09	204308.62	1025480.76	25575.88	0.00	588668.27	4976.13	1894511.79	185869.38	447329.22	0.00
260	33852.31	13257.88	0.00	3088.33	59618.27	5104.04	96469.78	7059.69	1651.23	7976.75	7556.53	5418.41	5558.69	2810.84	62737.75	63013.27	22301.58	16187.02	1295.32	456.14	0.00	378305.10	2194.41	98854.64	3672.17	769199.44	0.00
270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(Figures in Rs. Lakhs)

Table 1 Continued...

U ₁	011	021	031	041	051	061	071	081	091	101	111	121	131	141	151	161	171	181	191	201	211	221	231	241	251	261	271
010	1116043.60	16.25	0.00	0.00	5628980.52	138576.69	717690.57	566.48	26060.69	92346.64	244036.53	195941.63	379.90	684.10	698.46	4685.84	2456.02	4994.33	124625.27	1778.22	0.00	100824.85	0.00	476016.67	0.00	30512.93	0.00
020	303.05	422.22	0.00	0.00	1930.73	23882.68	108.08	24877.26	265772.86	0.00	573.86	10559.49	43.64	29.40	679.28	767.53	252.04	269.63	52130.55	153.19	19.55	0.00	0.00	0.00	0.00	0.00	0.00
030	0.00	0.00	19.69	0.00	241028.64	0.00	0.00	0.00	124.81	0.00	0.00	23.05	0.00	0.00	0.00	19.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1443.25	0.00	0.00	0.00
040	0.17	0.00	0.00	1834.32	1142.30	243.71	2470.19	48.55	6849.33	20.53	979945.55	50783.75	10808.20	165985.11	4196.70	339.42	1126.57	9.37	0.00	148951.74	663.97	0.04	0.00	70.52	0.00	34.35	0.00
050	12518.41	0.00	2.56	0.00	518999.47	138968.32	1400.54	15.05	5682.86	49.56	1624.34	132868.60	107690.34	145564.75	7184.69	13087.08	929.18	43497.06	234963.21	275.54	0.00	634.99	0.00	74275.48	0.00	4.01	0.00
060	0.00	0.00	0.00	0.00	377.10	32870.25	0.79	0.33	11.50	2.14	157.47	7705.53	62.35	243.19	0.00	58.10	0.18	24.81	0.00	6.46	0.00	3.13	0.00	9131.33	610.92	0.08	0.00
070	4136.49	100.24	15.44	16.16	7703.78	4952.30	499085.91	238.11	6414.48	1601.26	14279.20	24275.92	2636.26	793.64	5206.86	13646.99	3887.85	4457.08	4363.42	380.25	161.80	7621.16	163.88	2205.82	1561.99	4198.61	0.00
080	134.56	15.75	1.63	15880.68	71542.01	5846.03	20358.78	2050.41	80375.80	695.40	13835.67	154582.95	17294.52	6487.14	32162.20	47470.21	17267.46	16020.87	170838.19	3034.82	111.72	750.91	1140.57	6882.15	7279.40	26192.49	0.00
090	252.37	252.67	0.00	1843.00	71987.71	19917.95	21033.91	796.96	757126.67	428.50	14425.41	66647.64	12834.42	4203.48	10818.80	34176.25	5742.48	6954.89	5387.09	18228.15	2798.65	27046.53	7474.72	28305.34	92436.23	23760.53	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	12629.34	25.52	177.52	70515.94	1457.01	9383.52	149.39	0.00	191.39	7889.93	4718.98	3046.01	0.00	58.02	0.00	463.77	0.00	0.00	0.00	0.00	0.00
110	10924.67	595.04	9.90	19390.40	45769.52	16297.37	34519.31	546.91	27928.02	1014.52	226102.61	229210.38	43999.97	75404.50	22471.24	76894.38	42733.04	15765.91	90917.83	197829.82	21376.76	317785.63	4273.57	15156.92	18442.32	4686.78	0.00
120	27706.69	3.73	0.38	25950.46	25165.01	10854.84	54866.03	556.25	49750.46	2220.62	187143.10	817699.20	7467.92	21539.65	9516.23	57843.66	21851.01	10117.42	21742.53	6269.37	25.23	5207.13	0.00	192.80	0.17	61556.10	0.00
130	2.34	0.88	0.00	15620.19	9837.16	700.26	399.08	27.36	3163.90	24.51	1540.54	7780.80	105716.68	13714.50	4059.02	50458.77	6233.50	1218.17	654085.70	19.04	134.44	3500.90	0.00	544.44	2.01	450.92	0.00
140	0.00	3.64	0.55	125.05	279.87	25.27	217.68	456.55	2167.16	33.70	6611.26	17030.05	5015.87	825222.67	405082.50	537125.17	242399.36	7992.62	332229.14	290.01	46.47	53.07	0.00	177.48	0.00	2.11	0.00
150	3777.75	142.25	0.74	96136.49	37502.97	5907.88	52207.39	580.44	8804.17	1321.02	19332.32	36251.62	7070.82	110778.31	266004.78	292184.66	254624.76	25433.24	84180.90	44293.52	2078.13	28667.08	1540.16	15082.28	11261.56	4964.19	0.00
160	35.24	138.34	0.00	200.63	7197.52	0.00	3216.48	115.79	19490.21	9.07	1263.02	23324.80	564.61	15065.72	141075.57	2828341.77	279357.28	105998.50	255119.72	341707.73	15699.44	52779.65	311438.82	6241.59	82253.06	118763.61	0.00
170	108.68	138.91	2.57	2320.24	339.58	0.00	0.00	9.50	0.12	0.00	48.10	3.76	20.80	52.54	1048.31	241.04	91648.47	231.18	430.79	1330.59	70701.97	13704.77	559.19	92.42	5165.29	4282.88	0.00
180	21.31	312.34	0.00	3080.44	3168.66	49.51	8966.28	5.60	8054.80	971.17	4872.93	30434.95	2468.54	3765.34	17439.61	43291.80	14046.67	321592.15	38439.09	46973.63	66852.65	20809.98	3851.47	10681.64	15090.56	98581.58	0.00
190	20958.19	2161.29	0.00	107262.92	99727.30	2883.04	72326.20	165.58	47975.53	755.47	15798.65	81003.16	109527.85	15697.29	88659.95	121782.12	15089.70	7924.25	252260.27	165480.21	313002.14	32125.95	27608.17	29106.84	86677.92	319041.94	0.00
200	2540.68	10.74	0.00	7161.94	7992.00	1458.99	12147.12	85.66	8589.99	280.97	15645.57	25640.35	9380.44	35025.32	5357.46	12062.90	11666.42	1295.38	13171.89	136591.36	19806.74	3142.80	3185.12	4447.76	8249.68	2689.98	0.00
210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220	93884.13	7732.71	18.95	120637.11	589444.08	79308.93	544983.77	4536.04	368137.11	25651.39	249123.67	788401.59	146136.34	407121.55	133259.17	379729.95	196018.65	143564.32	624603.29	307792.80	38613.00	260155.87	27359.45	369719.51	245084.75	209807.99	0.00
230	697.26	280.06	0.00	3248.25	12434.44	1518.95	13522.08	169.42	5816.83	381.09	18038.57	21292.72	5650.59	36733.84	10959.28	230084.06	25633.54	19350.35	8663.69	30805.31	1863.88	56357.58	39857.51	14710.03	146859.45	45293.84	0.00
240	215783.02	1579.17	11.65	58427.74	1756565.57	145083.94	685617.04	8010.85	294409.49	48712.62	396858.91	1162948.00	202258.19	1337957.67	197766.75	506413.92	368470.31	63029.68	1060598.94	741187.94	59507.39	530066.55	34576.00	210818.29	282756.60	318623.69	0.00
250	3628.72	78.48	0.91	14547.76	46563.13	7979.01	34561.61	458.55	19082.64	1774.95	59682.24	66290.34	7001.54	36835.48	35614.56	58022.15	80118.76	30778.44	75535.26	78557.84	5067.97	18534.73	1246.38	49876.90	185869.38	33864.83	0.00
260	4337.07	3093.01	0.00	40769.46	100328.43	16563.83	148492.10	1045.88	37046.37	4822.18	40075.46	91180.17	11387.96	23011.80	136965.89	302890.05	259730.28	32211.07	1260.31	18506.83	49598.68	157338.96	7260.32	34377.76	48506.64	769199.44	0.00
270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00

(Figures in Rs. Lakhs)

Table 1 Continued...

U	010	020	030	040	050	060	070	080	090	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	
010	12625993.33	100.98	0.00	0.00	4848167.17	61892.27	675799.15	5542.16	1683.60	221409.41	66694.65	16876.84	268.77	121.12	463.71	1412.95	305.66	3637.74	185651.28	63.52	0.00	351371.05	0.00	1983965.44	0.00	44225.87	0.00	
020	3428.47	2623.15	0.00	0.00	1662.91	10666.68	101.77	243387.46	17169.76	0.00	156.83	909.51	30.88	5.21	450.98	231.44	31.37	196.39	77657.63	5.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
030	0.00	0.00	37602.34	0.00	207594.81	0.00	0.00	0.00	8.06	0.00	0.00	1.99	0.00	0.00	6.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6015.24	0.00	0.00	0.00	
040	1.92	0.00	0.00	201.40	983.85	108.85	2326.00	474.99	442.49	49.22	267816.99	4374.10	7646.67	29386.45	2786.23	102.35	140.21	6.83	0.00	5321.09	0.00	0.13	0.00	293.94	0.00	49.79	0.00	
050	141622.91	0.00	4889.26	0.00	447007.44	62067.19	1318.79	147.22	367.13	118.83	443.93	11444.23	76189.56	25771.18	4769.99	3946.23	115.64	31682.11	350019.08	9.84	0.00	2212.90	0.00	309568.97	0.00	5.81	0.00	
060	0.00	0.00	0.00	0.00	324.79	14680.78	0.74	3.21	0.74	5.13	43.04	663.69	44.11	43.05	0.00	17.52	0.02	18.07	0.00	0.23	0.00	10.89	0.00	38058.01	67.03	0.12	0.00	
070	46796.82	622.80	29485.42	1.77	6635.16	2211.84	469954.39	2329.52	414.40	3839.17	3902.47	2090.93	1865.12	140.51	3456.88	4115.06	483.85	3246.42	6500.08	13.58	0.00	26559.46	71.79	9193.50	171.39	6085.52	0.00	
080	1522.29	97.86	3115.18	1743.62	61618.19	2611.00	19170.44	20060.23	5192.53	1667.29	3781.26	13314.53	12235.65	1148.50	21352.80	14313.99	2148.99	11669.18	254493.57	108.41	0.00	2616.91	499.66	28683.75	798.75	37963.76	0.00	
090	2855.15	1569.81	0.00	202.35	62002.07	8895.92	19806.17	7797.09	48912.76	1027.37	3942.43	5740.49	9080.19	744.20	7182.70	10305.38	714.67	5065.76	8025.02	651.17	0.00	94256.22	3274.54	117972.35	10142.76	34438.85	0.00	
100	0.00	0.00	0.00	0.00	0.00	0.00	11892.16	249.66	11.47	169068.35	398.20	808.22	105.69	0.00	127.06	2379.10	587.29	2218.63	0.00	2.07	0.00	1616.21	0.00	0.00	0.00	0.00	0.00	
110	123592.67	3696.86	18904.51	2128.97	39420.69	7278.87	32504.42	5350.75	1804.24	2432.40	61793.35	19742.34	31129.42	13349.82	14918.88	23186.44	5318.26	11483.47	135438.12	7067.19	0.00	1107471.72	1872.17	63171.77	2023.62	6793.09	0.00	
120	313450.60	23.16	728.95	2849.22	21674.30	4848.08	51663.52	5442.09	3214.04	5324.14	51145.80	70430.03	5283.46	3813.44	6317.92	17441.96	2719.43	7369.26	32389.33	223.96	0.00	18146.67	0.00	803.55	0.02	89220.28	0.00	
130	26.52	5.48	0.00	1715.01	8472.61	312.75	375.79	267.66	204.40	58.77	421.03	670.18	74793.22	2428.05	2694.83	15215.15	775.78	887.28	974375.83	0.68	0.00	12200.51	0.00	2269.14	0.22	653.57	0.00	
140	0.00	22.63	1053.21	13.73	241.05	11.28	204.97	4466.71	140.01	80.80	1806.84	1466.83	3548.66	146099.65	268938.18	161962.69	30167.34	5821.61	494913.81	10.36	0.00	184.94	0.00	739.69	0.00	3.05	0.00	
150	42738.28	883.77	1404.58	10555.28	32300.82	2638.62	49160.05	5678.76	568.78	3167.27	5283.48	3122.42	5002.52	19612.49	176603.14	88104.26	31688.83	18524.90	125402.28	1582.32	0.00	99903.77	674.72	62860.67	1235.70	7195.16	0.00	
160	398.67	859.49	0.00	22.03	6199.13	0.00	3028.74	1132.87	1259.13	21.76	345.18	2009.01	399.46	2667.28	93661.43	852847.48	34766.87	77206.51	380045.74	12207.03	0.00	183935.22	136435.70	26014.01	9025.39	172137.65	0.00	
170	1229.56	862.99	4916.93	254.75	292.48	0.00	0.00	92.95	0.01	0.00	13.15	0.32	14.71	9.30	695.98	72.68	11405.93	168.39	641.73	47.53	0.00	47760.64	244.97	385.21	566.77	6207.66	0.00	
180	241.08	1940.52	0.00	338.22	2729.12	22.11	8442.92	54.82	520.37	2328.46	1331.76	2621.42	1746.46	666.63	11578.33	13054.05	1748.15	234239.22	57261.79	1678.07	0.00	72522.04	1687.26	44519.46	1655.84	142885.53	0.00	
190	237103.56	13427.62	0.00	11776.91	85893.82	1287.65	68104.54	1619.98	3099.37	1811.31	4317.74	6976.96	77489.58	2779.09	58862.19	36721.72	1877.96	5771.81	375786.09	5911.55	0.00	111957.81	12094.64	121312.89	9510.92	462423.88	0.00	
200	28743.12	66.71	0.00	786.34	6883.41	651.63	11438.09	838.01	554.94	673.65	4275.90	2208.45	6636.55	6200.98	3556.87	3637.40	1451.92	943.52	19621.86	4879.53	0.00	10952.55	1395.34	18537.60	905.21	3898.89	0.00	
210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
220	1062127.38	48041.60	36197.10	13245.32	507680.46	35421.61	513173.20	44378.54	23782.81	61501.53	68084.96	67906.57	103389.62	72077.90	88472.05	114502.33	24395.12	104568.46	930456.60	10995.46	0.00	906634.05	11985.68	1540934.94	26892.45	304098.65	0.00	
230	7888.28	1739.95	0.00	356.64	10709.62	678.41	12732.80	1657.51	375.79	913.71	4929.90	1833.98	3997.72	6503.46	7275.97	69378.68	3190.17	14094.28	12906.09	1100.48	0.00	196404.17	17460.85	61309.17	16114.47	65649.52	0.00	
240	2441190.42	9811.01	22247.49	6415.06	1512906.91	64798.59	645597.75	78374.37	19019.78	116792.91	108460.68	100166.99	143095.12	236875.63	131299.26	152702.14	45857.26	45909.15	1579948.89	26477.89	0.00	1847263.27	15147.12	878658.74	31026.07	461817.66	0.00	
250	41052.29	487.56	1730.67	1597.27	40104.22	3563.65	32544.26	4486.19	1232.80	4255.60	16311.03	5709.72	4953.50	6521.45	23644.85	17495.78	9971.03	22418.20	112523.08	2806.37	0.00	64592.89	546.02	207879.37	20394.92	49084.16	0.00	
260	49066.01	19216.16	0.00	4476.27	86411.56	7397.87	139824.66	10232.42	2393.31	11561.61	10952.54	7853.53	8056.84	4074.07	90932.98	91332.32	32324.23	23461.69	1877.46	661.13	0.00	548320.73	3180.61	143281.31	5322.50	1114888.50	0.00	
270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00

*The four block tags namely, O, O₁, U₁ and U, given in the first cell of Table 1 are the same as explained in equation (1) given on page 2. The first two codes 01,...,27 in the first column of Table 1 signify the industries listed per code in Table 2 and the third digit denotes organized and unorganized segments of each industry.

Table 2: Codes of the industries

Code	Industry
01	Agriculture
02	Forestry and logging
03	Fishing
04	Mining
05	Food products
06	Beverages and tobacco products
07	Textile products
08	Wood and wood products, furniture, fixtures etc
09	Paper and printing etc.
10	Leather and fur products
11	Rubber, petroleum products etc.
12	Chemical and chemical products
13	Non-metallic products
14	Basic metals
15	Metal products and machinery
16	Electrical machinery
17	Transport equipment
18	Other manufacturing
19	Construction
20	Electricity, gas and water supply
21	Railway transport services
22	Transport by other means and storage
23	Communication
24	Trade, hotels and rest.
25	Banking and insurance
26	Other services
27	Public administration & defence

Table 3: Degree of dependence of the industries of unorganized segment

Group A	Group B	Group C			Group D		Group E		
0.9-0.8	0.9-0.7	0.9-0.5			0.7-0.4		0.5-0.1		
		0.9-0.8	0.8-0.7	0.7-0.5	0.7-0.5	0.5-0.4	0.5-0.4	0.4-0.3	0.3-0.1
		C1	C2	C3	D1	D2	E1	E2	E3
			Wood and wood products, furniture, fixtures etc	Textile products				Beverages and tobacco products	Agriculture
			Transport by other means and storage	Paper and printing etc.					Forestry and logging
			Trade, hotels and rest.	Chemical and chemical products					Fishing
				Metal products and machinery	Mining				
				Electrical machinery					
				Transport equipment					
				Other manufacturing					
				Construction					
				Electricity, gas and water supply					
				Railway transport services					
				Communication					
				Banking and insurance					
				Other services					

Table 4: Degree of dependence of the industries of organized segment

Group A	Group B	Group C			Group D		Group E		
0.9-0.8	0.9-0.7	0.9-0.5			0.7-0.4		0.5-0.1		
		0.9-0.8	0.8-0.7	0.7-0.5	0.7-0.5	0.5-0.4	0.5-0.4	0.4-0.3	0.3-0.1
		C1	C2	C3	D1	D2	E1	E2	E3
			Other services	Trade, hotels and rest.	Banking and insurance			Agriculture	Forestry and logging
								Non-metallic products	Fishing
								Other manufacturing	Mining
								Electricity, gas and water supply	Food products
									Beverages and tobacco products
									Paper and printing etc.
									Leather and fur products
									Chemical and chemical products
									Basic metals
									Electrical machinery
									Transport equipment

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