Indian National and State Income Data—II

Some Aspects

Mahinder D Chaudhry
Bert F Hoselitz

This paper attempts a general survey of the state income studies available with the objective of identifying, through comparison of national and state income data, areas where improvement is needed. It is primarily concerned with inconsistencies, gaps, double counting, lack of explanation of the assumptions and omissions in state income data.

In the first part of the article, published fast week the aggregate of stale income estimates was compared with national estimates compiled by the Central Statistical Organisation and the national totals were apportioned among the Slates and compared with the official state income estimates. In what follows an attempt is made to indicate in some detail the areas in which the state income estimates need to be revised and how the methods of estimation may be improved.

IV

Agriculture and Allied Products

THE difference in the value of agricultural and allied production between the revised national estimate and the corresponding, aggregate of sidle estimates for India as a whole is only 2.5 per cent (see Table 3, p 1518), hut the two estimates differ by a wider margin at the sub-sectoral level. Orissa and West Bengal, where the differences are largest, are discussed in detail.

Orissa, The state report evaluates Orissa's agricultural production during 1955-56 at Rs 2,156 million, whereas the allocated share from the national estimate is Rs 1,132 million. The following two factors appear to be responsible for most of the difference between the two estimates: (1) Output of paddy (uncleaned rice) has been evaluated at the price of rice in the state report.[10] If paddy is evaluated at paddy prices, the average prices would have to be much lower than 'hose now employed in the state report, and if rice output is evaluated at rice prices, output figures of rice have to be reduced from 5,054 thousand tons accounted for in the stale estimate to 2,129 thousand tons." If this over-estimate is corrected the state estimate of the value of agricultural production will be much lower than at. present, since rice is one of the major agricultural, products of the slate and accounted for 54 per cent of the gross value of agricultural production in 1955-56. '2 (2) The deductions of the cost of seed, manure, and marketing charges, etc, which were made to estimate the net value of the agricultural products in the Orissa Report. This is the lowest ratio among all state or national income studies (Table 6).

West Bengal. Against West Bengal's allocated share of Rs 2,891 million of the value of agricultural production from the national estimates of income, the corresponding state estimate is Rs 1,826 million. Even if the estimated agricultural component of the tea industry [13] is added to the state figure, the total does not exceed Rs 1,878 million. The probable reason for this difference appears to be that, according to the state report, the deductions made from the gross, value of agricultural production for the cost of seeds required, dung manure, other chemicals and fertilizers, maintenance and repair of farms and implements, fencing, marketing, depreciation, and value of services rendered by livestock, to arrive at net value amount to 37,8 per cent of the total gross value of agricultural crop output (Table 6). This proportion is double that for all-India and many other states. A detailed examination of various items deducted for netting the value of agricultural production reveals that the estimate for the cost of feed for livestock required on farms in West Bengal appears to be out of all proportion to the corresponding figures in other national and state income studies. A comparison of these figures will be found in column (3) of Table 6, and it will be noted that, the estimate of West Bengal is between two and three times as large, proportionally, as that of any other state.

Animal Husbandry, In a predominantly agricultural economy, like that of India, the cultivation of land and the production of livestock products, particularly milk and milk products, are very closely associated. The line of demarcation between these two subsectors drawn for income estimation purposes becomes blurred at limes, particularly when estimates are made for the cost of feed for livestock required on the farms for purposes of cultivation and for livestock needed for the production of milk and other commodities. If these two sub-sectors of agricultural production are combined, omitting the estimate for allied primary products the difference for all-India between the aggregate of slate income estimates and the national estimate comes to 0.8 per cent. But for purposes of analysis these two subsectors must be treated separately.

The aggregate slate income estimates of the value of the output in the animal husbandry subsector is larger by 20 per cent than the corresponding national estimate. Among individual stales the two estimates differ, from 14 per cent for Orissa to 60 per cent for Madras. Such wide differences as this last one may be explained partly by the fact That there are very wide differences among the state reports in the netting ratios, i e, in the deductions made from the gross value of animal husbandry production for the cost of feed of animals not used for f i e l d services, and the cost of other materials used, as well as depreciation. For instance, Assam, with a netting ratio of 16.1 per cent, is at the lowest end, and West Bengal with one of 84.4 pet-cent is at the top end (Table 6). Another probable reason is that the national estimates of the value of output in the animal husbandry sector are under-estimates. As many as ten state estimates are larger by a significant margin than the corresponding allocated shares. West Bengal would be added to this group, if it is considered that the netting ratio in the "West Bengal Report" is so high that the estimate of the net value of income in animal husbandry is much lower than it would be, if a more modest netting ratio had been adopted.

Forestry. According to the revised estimates the national income from the forestry subsector is Rs 1,338, as compared with the conventional series estimate of Rs 725 million. The aggregate of state estimates falls short of the revised national totals by Rs 778 million, or 58 per cent. It appears that the state estimates are not based on the additional data collected through the State Forest Departments which form the basis of estimation of the revised national totals.

fishery. The sum of state income estimates in this subsector is fairly close to that of the revised national totals, but. for some of the individual stales, particularly the maritime states of Kerala, Mysore, and West Bengal, the differences between the allocated shares from the national totals and the direct state estimates are significant. The CSO publication provides the slate breakdown of net value of marine and inland fishing which could help in the revision of state estimates for this subsector.

V

Mining, Manufacturing and Small Enterprises

The sum of state income estimates is almost identical to the revised national totals in this sector of the economy. At the .subsectoral levels, however, the two measures differ significantly. The chief source of the differences between the two sets of measures lie in the estimates relating to the small enterprises. But all the three subsectors, mining, factory production and small enterprises are examined separately.

Mining. The two principal producers of minerals in India are Bihar and West Bengal; the differences between the allocated shares and the state-report estimates are 7 per cent in the former and 5 per cent in the latter. In West Bengal, the probable reasons for the difference appear to be compiiratively higher rate of deductions for netting to arrive at the net value of the minerals. As in the case of netting ratios for livestock products, those employed by West Bengal in the held of mining are more than twice as high as the all-India average and approximately three times as high as those of several other states (Table 6, Col 5). At times, significant differences have been noticed in the data available with the state agencies and those published by the central organizations. MysDre slate's estimate, for example, of the gross value of minerals of Rs 58 million, "based on the data available in the Department of Mines and Geology. Mysore state", [14] differs from the corresponding estimate of Rs *97* million published by the Indian Bureau of Mines. [15]

Factory Production. For purposes of national income estimation, the manufacturing and processing activities are divided into two subsectors: (1) factory production covering organized industrial units; and (2) small enterprises composed of unorganized smaller handicraft type units and one-man units of independent workers. A factory, according to the Indian Factories Act, 1948, covers establishments employing ten or more workers using power, or twenty or more workers without the aid of power.

The aggregate of state estimates relating to income arising in factories is higher by 14 per cent than the national totals. Since it is one of the most organized sectors of the economy, the available data are comprehensive and relatively accurate. The national totals are based on census-type survey and arc expected to possess greater reliability than the corresponding state estimales. If details were available of all the industrial groups included in the state reports, it would have been possible to identify the sources of the above differences.

Small enterprises. The aggregate of slate estimates of income arising in the small enterprises subsector differs from the national estimate for 1955-56, by about 12 per cent; for individual states differences range from 3 0 per cent in" Bombay to 108 per cent in Assam. The chief sources of these differences appear to be the following: (1) The average value added per worker differs rather widely between states and also between states and the corresponding all-India average (Table 7); (2) The scope of the subsector, i e, the occupational subdivisions included in it, is not uniform, at least in some state estimates, and does not correspond exactly to the coverage of the national estimate. The major difference, as will be discussed below and as can be seen from Table 7, is the inclusion or exclusion of construction activities. In the allocation procedure the scope of each subsector is identical with that of the national estimate. In addition to differences in the over-all scope of the small enterprise subsector, there arc differences in its composition among industries. For example, in Delhi and Punjab 3 per cent of the small industry working force is in "food, drink and tobacco processing", whereas the share of the labour force of this industrial branch in Orissa is 25 per cent. Similarly the hare of workers in textiles ranges from 18 per cent in Bihar to 40 *per* cent in Bombay, and that of workers in metal industries from 6 per cent

Table 5: Comparison of State Income Estimates Based on Local Data with Allocated Shares from National Totals, 1955-56

(Millions of rupees)

	State	Allocated share (1)	State report estimates (2)	Difference of Col 1 — Col 2 amount (3)	Difference of Col 1 — Col 2 percent (4)
(1)	Andhra Pradesh	7,335	7,464	-129	-1.7
(2)	Assam	2,474	2,667	-193	-7.8
(3)	Bihar	6,116	6,593	-477	-7.8
(4)	Bombay	15,513	14,803	+710	+4.6
(5)	Gujarat	......	4,761	......	......
(6)	Maharashtra	......	10,042	......	......
(7)	Kashmir	650	680	-30	-4.6
(8)	Kerala	3,247	3,322	-75	-2.3
(9)	Madhya Pradesh	6,661	6,435	+226	+3.4
(10)	Madras	7,409	8,006	-597	-8.0
(11)	Mysore	4,997	4,562	+435	+8.7
(12)	Orissa	2,499	3,709	-1,210	-48.4
(13)	Punjab	5,117	5,918	-801	-15.6
(14)	Rajasthan	4,353	4,545	-192	-4.4
(15)	Uttar Pradesh	14,331	14,389	-58	-0.4
(16)	West Bengal	9,680	7,489	+2,191	+22.6
(17)	Delhi	1,134	1,462	-328	-28.9
(18)	Himachal Pradesh	281	256	+25	+8.9
(19)	Other Union Territories	274	n a.	......	......
(20)	INDIA	92,071	92,574	-503	-0.5

Notes: n a = Not available.
a Includes an allocated share for Other Union Territories.

Sources: Col 1: Table 4, line 20.
Col 2: Tables 1 and 2.

in Rajasthan to 21 per cent in Bihar.[17] At the same time, productivity in the various industries, at least on the national level, varies greatly. For example, productivity per worker in the "metal and industrial engineering" group is 55 per cent greater than in the "food, drink and tobacco" group and 41 per cent greater in "leather and its products" than in "textiles and tailoring", 18 Because of the absence of detailed data on these matters in most state reports, we could nor take account, of variations in the value added in small enterprises among states, and this, in turn, is partly responsible for the wide differences observed between some state estimates and allocated shares of national income estimates in this subsector.

Table 6: Associated-Cost Deductions from Gross Value to Estimate Net Value in the Various Subsectors, by State

(Percentage)

	States	Years	Agricultural Crops (1)	Cost of Feed for Livestock[a] (2)	Animal Husbandry (3)	Mining (4)
(1)	India: Final Report	50-51	17.8	28.7	39.9	13.3
(2)	India: Initial series	55-56	17.2	n.a.	37.9	11.9
(3)	India: revised series	55-56	17.5	21.7	23.8	21.1
(4)	Andhra Pradesh	55-56	34.0	28.6	28.6	10.9
(5)	Assam	52-53	15.0	n. a.	16.1	n. a.
(6)	Bihar	55-56	18.9	n. a.	26.6	19.7
(7)	Bombay	54-55	26.0	27.2	32.1	8.5
(8)	Gujarat	55-56	18.0	n. a.	56.5	n. a.
(9)	Maharashtra	55-56	21.7	n. a.	33.7	n. a.
(10)	Kashmir	55-56	22.0	n. a.	39.8	n. a.
(11)	Kerala	55-56	15.9	21.7	44.3	n. a.
(12)	Madhya Pradesh	55-56	18.9	27.4	29.7	13.8
(13)	Mysore	56-57	26.0	n. a.	37.5	10.8
(14)	Orissa	55-56	10.8	n. a.	50.0	20.3
(15)	Punjab	54-55	25.2	30.3	30.7	n. a.
(16)	Uttar Pradesh	55-56	21.3	38.5	25.0	n. a.
(17)	West Bengal	55-56	37.8	74.1	84.4	31.5
(18)	Delhi	55-56	20.0	n. a.	40.0	n. a.
(19)	Himachal Pradesh	55-56	25.0	14.0	15.5	4.5
(20)	British India	31-32	24.3	31.4	...	...
(21)	United Provinces	31-32	...	39.5	...	...
(22)	Undivided Punjab	39-40	20.3	...	...	...

Notes: n.a. = not available.
a. Included in the animal husbandry subsector.

Sources:
Line 1: "NIC Final Report", Table 8, p. 45; Table 10, p. 51; Table 15, p. 69.
Line 2: and 3: "National Income Statistics", Table 2. 11, p 47; Table 3.4, p 63; Table 16.2, p 176; Table 6.4, p 96; Table 2.7, p 37 ; Table 3.4, p 63;and, Table 6.4, p 96.
Line 4: "Andhra Pradesh Report", pp 3, 11, 14, and 24.
Line 5: "Assam Report", Table 7, p 4; and Table 9, p 17.
Line 6: "Bihar Report", pp. 32-33; 54-55; 88-89.
Line 7: "Bombay Report", Table 8, p 64; Table 9, p 65; and Table 7.4, p 85.
Line 8: "Gujarat Report", p 17; and, Table 3.2, p 26.
Line 9: "Maharashtra Report", Table 6, p 74; and Table 7, p 75.
Line 10: "Kashmir Report", Table 3, p 10; and Table 4, p 17.
Line 11: "Kerala Report", Table 4, p 11; and Table 5, p 11.
Line 12: "Madhya Pradesh Report", Table 6, p 74; and Table 7, p 75.
Line 13: "Mysore Report".
Line 14: "Orissa Report", Table A-2, pp 28-29; Table A-4, p 33; and, Table A-7, pp 38-39.
Line 15: "Punjab Report", Table 3, p 20; and, Table 5, p 32.
Line 16: "Uttar Pradesh Report".
Line 17: "West Bengal Report", Table 2.8, p 45; Table 3.16, p 61; and, Table 7.4, p 85.
Line 18: "Delhi Report". Tables 4.1 and 5.1, pp 36 and 40 respectively.
Line 19: "Himachal Pradesh Report", Table 3.3, p 85; Table 4.1, p 89; and, Table 7.1, p 97.
Line 20: V K R V Rao, "The National Income of British India, 1931-32", (London: Macmillan and Co, 1940), p 81.
Line 21: Shri Gopal Tiwari, "Economic Prosperity of the United Provinces", (Bombay: Asia Publishing House, 1951), Table 50, p 114.
Line 22: Punjab Board of Economic Enquiry, "A Statistical Analysis of the Economic Conditions of the Punjab, 1939-49", p 12.

If the figures in the stale reports of value added per worker assumed to be accurate measures of economic performance in the small enterprises subsector, then the corresponding national average of value added per worker needs revision, because only the three stales of Kashmir. Punjab, and Delhi in which value added is higher than the national average (Table 7) cannot compensate for the states with figures well below the national average. On the other hand. if the national estimate is assumed to provide an accurate measure, then the corresponding state estimates need reappraisal. In view of the very wide difference in the two estimates, it is probable that both sets of estimates require extended further investigation and surveys. However, some state estimates themselves arc based on somewhat unreliable and limited empirical information, as is in cheated quite clearly in some of the reports.

For example, the "Orissa Report" stales that figures for value added in the small enterprise subsector has been computed from findings of the National Sample Survey, 19 a series of scattered data which does not form a sufficieutly large sample for any findings relating to the slate alone. In Assam a very rough estimate, essentially a barely informed guess was made,[20] and in Andhra Pradesh, earnings data were collected on an "a*d hoc* basis in respect of a few units in the state,"[21] The "West Bengal Report" frankly admits that the difficulty of estimating value added in this subsector has been due to the absence of regular statistics which would have been relevant,[22] and the Punjab Report states that earnings data were collected "by personal inquiries from eleven centres".[23] Similarly, in Madhya Pradesh data on value added and earnings of workers were taken from available scattered information derived from a few "small scale and cottage industry surveys carried out in the different regions of the State".[24] It is clear that all these methods of collection of data can scarcely be said to provide reliable and definitive figures for a slate income estimate.

As we already mentioned earlier one of the most serious sources for variations in stale and national estimates in this subsector is the treatment of construction. But in some slates, eg, in West Bengal, the difficulties are even enhanced by inadequate attention to working force estimates in construction. According to the slate estimate, there were only 40,000 workers engaged in construction activities in West Bengal in 1955-56,[25] whereas, according to the 1951 census, there were 104,599 self-supporting persons engaged in construction in the state,[26] If the earning dependents who derive income from construction are added to the number of self-supporting persons, and, if the 1931 figure of total employment (self-supporting persons plus earning dependents) is projected to 1955-56, the likely employment in West Bengal in this subgroup would come to approximately 130,000 workers. It is not clear from the state report whether and where the remaining workers arc included. If the income for this group has not been estimated or accounted for, then this would partly explain the wide difference observed between the allocated and the- direct state estimates.

The growing importance of construction activities and their manifold forms of organization and varying kinds of technology is increasingly recognized and so is another important problem, that of the great difference in the value added and in earnings in small industry- in urban and rural areas. It is very satisfying to see that these distinctions are clearly made in a new publication of the National Income Division of the Central Statistical Organization. This group is following the recommendations of the United Nations in classifying construction separately, and the small enterprise estimates of state income reports would greatly profit if they also adopt, ed this procedure, A review of the

Table 7: Value Added Per Worker in Several Suhsectors, by State

State	Year	Small Enterprises		Construction		Communication Services		Other Transportation		Other Commerce	
		Per Worker (rupees)	All India 100	Per Worker (rupees)	All India 100	Per Worker (rupees)	All India 100	Per Worker (rupees)	All India 100	Per Worker (rupees)	All India 100
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) India	1955-56	678	100	720	100	1825	100	1067	100	1095	100
(2) Andhra Pradesh	1955-56	537[a]	79	n.a.	...	n.a.	...	563	53	1540	141
(3) Assam	1952-53	582[a]	86	n.a.	...	n.a.	...	962	90	1365	125
(4) Bihar	1955-56	197	29	720	100	n.a.	...	748	70	1133	103
(5) Bombay	1954-55	699[a]	103	n.a.	...	1356	74	1131	106	1093	100
(6) Gujarat	1955-56	642	95	771	107	1671	92	1239	116	1039	95
(7) Maharashtra	1955-56	623	92	n.a.	...	1444	79	1312	123	1392	127
(8) Kashmir	1955-56	847[a]	125	n.a.	...	n.a.	...	743	70	1134	104
(9) Kerala	1955-56	310	46	n.a.	...	n.a.	...	1052[b]	98	1340	122
(10) Madhya Pradesh	1955-56	656[a]	97	n.a.	...	864[c]	47	991	93	1531	140
(11) Orissa	1955-56	275[a]	40	n.a.	...	n.a.	...	989	93	1450	132
(12) Punjab	1954-55	850[a]	125	n.a.	...	n.a.	...	n.a.	...	1825[d]	167
(13) West Bengal	1955-56	515	76	1315	183	n.a.	...	1201[c,e]	113	1492	136
(14) Delhi	1955-56	1065	157	851	118	2106	115	1482	139	1962[f]	179

Notes: n.a.—Not available; a.—Includes construction workers;
b—Represents average annual earnings; c—Represents average annual earnings for the entire sector of other services;
d—Includes communication services; e—Includes banking and insurance; f—Includes other transport.

Sources:

Line 1: "National Income Statistics", Table 8.2, p 114; Table 9.2, p 120; Table 1.4, p 13; Table 11.2, p 134; and, Table 11.1, p 134.
Line 2: "Andhra Pradesh Report", pp 31, 42, and 48.
Line 3: "Assam Report", Table 8, p 7; Table 18, p 24.
Line 4: "Bihar Report", pp 102, 113, and 125.
Line 5: "Bombay Report", Tables 4 and 7, pp 61 and 71; Tables 5 and 19, pp 62 and 71; Tables 6 and 19, pp 61 and 71.
Line 6: "Gujarat Report", Table 8.1, p 42; Table 9.1, p 43; Table 10.1, p 44; Table 13.1, p 54; and Table 12.2, p 50.
Line 7: "Maharashtra Report", Tables 4 and 9, pp 72 and 76.
Line 8: "Kashmir Report", pp 33, 39, and 41.
Line 9: "Kerala Report", Table 13, p 17; Table XV, p 20; Tables 14 and 15, pp 19-20.
Line 10: "Madhya Pradesh Report", Table 17, p 108; Table 22, p 130; Table 20, p 126 and, Table 21, p 128.
Line 11: "Orissa Report", Table A-9, pp 44-45; Table A-11, p 49.
Line 12: "Punjab Report", Table 13, p 57; Table 17, p 63.
Line 13: "West Bengal Report", p 13; Table 9.4 and 12.1, pp 106 and 113; and, Table 12.2, p 114.
Line 14: "Delhi Report", Table 8.1, p 56; Table 9.2, p 64; Table 12.2, p 79; and, Table 11.2, p 71.

pertinent figures relating to the year 1955-56, based on the revised national income estimates published by the Central Statistical Organizations, shows that the national average of value added in construction was Rs 720, and in small enterprises Rs 678. But this last figure is further broken down into a rural and an urban portion, the former showing an amount of Rs 355 and the latter of Rs 636.[27] These are very wide differences which appear to indicate that average earnings in rural small enterprises are of the same order of magnitude as average wages of rural labourers, whereas in the urban areas they approximate the earnings of industrial and other urban workers. These differences indicate, however, that only a good deal of further research and study, not only of the occupational composition of the workers in small enterprises, but also of their residence in rural and urban centres will yield more reliable and accurate data for state income estimates,

VI

Commerce, Transportation and Communication

The over-all difference between the aggregate of state estimates of income arising in 1955-56 in the commercial, transportation and communication sector and the corresponding national estimate is 7 per cent, The aggregate state estimates are lower than the national estimate at the subsectoral levels: and the greatest difference of 22 per cent is encountered in the railways subsector.

Railway. It is surprising that, despite the availability of ample statistical information, there is such a wide gap in the aggregate of state estimates and the corresponding national estimates. The "NIC Final Report" states, on this point, that "for railways, apart from the Railway Budget and financial accounts relating to railways, the annual reports of the Railway Board provide a wealth of statistics relevant or national income purposes."[28] In view of the comprehensive statistical coverage of the national railway system, one is inclined to accept the national estimates as having greater validity than the state reports. Hence the difference of 22 per cent between the aggregate of state estimates and the national estimate as well as the differences between the allocated shares of national income and the direct state estimates by themselves must be attributed to varying underlying assumptions and sources of estimation in the state reports. In some cases the proportion of route mileage in a state has been used, in others a combination of the two measures for the apportionment of wage and salary income, on the one hand, and surplus derived from railway operations, on the other, has been employed. West Bengal used the first principle of apportionment,[29] Punjab and Bombay, the second,[30] and Andhra Pradesh and Mysore the combined measure.[31] A procedure not too different from the last was employed in the "Delhi Report", only that there the amount of wages and salaries of railway workers was obtained from local sources, to which was added the share of total surplus earned by the railways on the basis of the proportion of the state railway wage bill to that of aII-India.

In the light of this evidence, it is clear that lack of uniformity in the method of estimation on the state level is the likely reason for the less than full apportionment of the total

Table 8: Income from Residential Property

	State	Year	Rental Income as % of Total State Income	Urban Houses as % of Total Houses (1951 Census)	Average Annual Gross Rental Per House (Rs) Rural	Urban
(1)	India: Conventional series	1955-56	4.6	16.0	50a	246a
(2)	India: Revised series	1955-56	4.0	16.0	n. a.	n. a.
(3)	Andhra Pradesh	1955-56	3.2	14.4	n. a.	n. a.
(4)	Assam	1955-56	0.6	3.9	16b	n. a.
(5)	Bihar	1955-56	4.9	6.4	n. a.	n. a.
(6)	Bombay	1954-55	6.6	27.4	52	303
(7)	Gujarat	1955-56	3.6	25.6c	n. a.	n. a.
(8)	Maharashtra	1955-56	6.5	27.9c	n. a.	n. a.
(9)	Kashmir	1955-56	4.1	15.5d	50	246.
(10)	Kerala	1955-56	5.4	11.4	n. a.	n. a.
(11)	Madhya Pradesh	1955-56	4.1	10.7	37	46
(12)	Madras	1955-56	5.8	19.6	n. a.	n. a.
(13)	Mysore	1956-57	4.7	19.7	n. a.	n. a.
(14)	Orissa	1955-56	5.2	4.0	73	217
(15)	Punjab	1954-55	1.9	17.8	116	148
(16)	Rajasthan	1955-56	4.0	16.5	n. a.	n. a.
(17)	Uttar Pradesh	1955-56	n. a.	12.8	n. a.	n. a.
(18)	West Bengal	1955-56	6.3	24.9	45	n. a.
(19)	Delhi	1955-56	6.8	82.7	40e	350
(20)	Himachal Pradesh	1955-56	7.5	4.5	105	326

Notes: n.a. = Not available.
a Figures relate to 1950-51.
b Figures relate to 1952-53.
c Figures relate to 1961 census urban population.
d Figures relate to 1955-56.
e Net rental value.

Sources: Col 1 and 2: Table 1, except
Line 1: Table 3;
Line 6: Bombay Report, Table 20, p. 72;

Col 3: Government of India, Census Commissioner, "Census of India: Paper No. 1, 1957, General Population Tables", (Delhi, 1957), Table A-1, p 6, except
Lines 7 and 8: *Ibid*, "1961 Census: Final Population Totals", (Delhi, 1962), Table 1, pp 4-5;
Line 9: "Kashmir Report", pp. 50-51.

Col 4 and 5: Line 1: "NIC Final Report", Table 27, p. 101.
Line 4: "Estimates of State National Income of Assam, 1948-49 to 1952-53", Table 28, p 29.
Line 6: "Bombay Report", Table 18, p 70.
Line 9: "Kashmir Report", pp 50-51.
Line 11: "Madhya Pradesh Report", Table 23, p 138.
Line 14: "Orissa Report", Table A-14, pp 56-57.
Line 15: "Punjab Report". Table 21, p 79.
Line 18: "West Bengal Report", Table 14.8, p 127.
Line 19: "Delhi Report", p 108.
Line 20: "Himachal Pradesh Report", Appendix 14.2, pp 114-15

national income earned in the railway sector. 'For example, the West Bengal estimates based on proportionate railway mileage within the state boundaries are not, perhaps, using the best possible allocation for the surplus because: (1) the railway traffic of passengers and goods is comparatively heavy for a small state such as West Bengal, due to the state's large mining and industrial complex and to the fact that. Calcutta is an important import and export centre for the eastern part of India; (2) the number of railway workers employed in West Bengal was estimated by assuming that it bore the same ratio to all-India railway employment as the ratios of railway mileage; and by this procedure comes to 65, 000 persons.[32] According to the 1951 census, there were over 93,000 railway workers in the state of West Bengal. If this 1951 figure were to be projected for a likely increase by 1955-56, the stale estimates of lire railway working force differs considerably from what may be assumed to nave been actual employment. It is not dear from the "West Bengal Report" where the other approximately 40,000 workers and their incomes are counted;[31] (3) another piece of evidence of the probable underestimation by the "West Bengal Report" of the contribution of railways to slate income is a comparison with Bombay. According to the .1951 census, the number of railway workers in Bombay state is very close to that of West Bengal, but the Bombay estimates of income from railways in 1955-36 are Rs 459 million as compared with West Bengal's estimate of Rs 158 million (see Table 1, p 1516). According to this line of reasoning, the Uttar Pradesh estimate of an income of Rs 84 million for its 96,000 railway workers, according to the 1951 census[35]– again, almost the same number as in West Bengal and Bombay appears also to he too low.

Communication Services. The state aggregate of estimated income from this subsector, which includes the activities of Posts and Telegraph Departments and Overseas Communication service, falls short of the corresponding national totals by Rs 42 million, or 8.4 per cent. The principal reason for this difference appears to be the omission of state share of operaling surpluses of these undertakings. From the available data of value added per worker for the five states, all except one are well below the national average (Table 7, col 5); even Maharashtra figure is 20 per cent below the national index. It may be recalled here that Maharashtra is the highest urbanized state in India. In some states, c g, Andhra Pradesh and Madhya Pradesh, the basis of estimating income in communications is the same as ours, i e, by using the estimated number of persons engaged in communication services in each state. But in other states, such as Bombay, Punjab and Delhi, the estimates of total earnings were obtained by the use of local employment and average annual earnings data and the share of each state of the estimated national surplus earned by the communication services was apportioned in accordance with the number of employees. Separate income estimates for communication services are not presented in the "West Bengal Report" and the "Kerala Report", which appear to have included them with all or part of the transport sectors,[36] The average earnings per worker in these two reports are derived from surveys conducted in each state. Since it is not stated explicitly in the state reports that the state's share in the estimated national surplus from these services is taken into account this omission probably crept in.

Organized Banking and Insurance and other Commerce and Transportation. The aggregate of slate income estimates in these subsectors are higher than the corresponding national estimate by Rs 1,577 million, or 13 per cent. In the case of other commerce subsector, which accounts for over three-fourths of the total income in this group, the estimated value added per worker in all the slates, except one, is significantly higher than the corresponding national estimate (Table 7, Col 9). The detailed examination of the methods of estimation and the sources of data in the various state reports reveals that much remains to be done before any serious confidence can be placed in them. The slate estimates, in general, rely heavily on national estimates of annual earnings because of paucity of local data. For example, in Andhra Pradesh[37] the earnings data reported in the NIC Final Report were used, and the same data were used in Madhya Pradesh[38] and Bihar[39] for non-taxed income in the other transport and commerce subsector.

In Punjab a curious method has been used; "the contribution to State Income from this sector has been based on the ratio of average earnings (annual) per engaged person in all sectors except this on the one hand and only this sector on the other, at the Union (national) level The per head average earnings in all other sectors taken together in the Punjab, have been multiplied by this ,ratio to get the average per head earnings in this sector." It is observed that the average annual earnings per worker engaged in this subsector obtained for Punjab arc not only the highest among all states in India but also 67 per cent higher than the corresponding national average (Table 7, Col 9). How much confidence can be placed in the findings of income estimates in this subsector in the Punjab Report remains an open question.

In Mysore some information available in the State Department of Labour relating to industrial and plantation labour was utilized. These data also included several establishments engaged in transport and commercial undertakings.-'" In the Kerala Report nothing is said on the method by which average earnings in this subgroup were estimated, and the Bombay, Delhi, Himachal Pradesh, Orissa and West Bengal data are based on local data collected through various surveys and investigations. The Bombay, Delhi, and, Orissa estimates, as also the Madhya Pradesh estimates, as pointed out earlier, distinguish between taxed–and non-taxed incomes in this sector. Hence, we see That a great variety of procedures was used.

We shall now turn to a brief discussion of some of the problems arising in using these different methods of estimation. The procedure used by the "Mysore Report" very likely produces misleading results, since the data available in the Department of Labour are probably obtained from highly organized industrial, transport and commercial companies, whereas a large share of the persons engaged in economic activities subsumed under this subsector fall into non-organized trade and transport. Within the non-organized part of this subsector, which is made up of hawkers, peddlers, street vendors, petty traders, rickshaw drivers and a multitude of similar self-employed persons, there is a large amount of underemployment, there are many earning dependents, and there are varying levels of low annual earnings, which differ greatly from those of the labor force in organized industry and commerce. Hence, the application of data collected in a survey of organized firms is likely to produce too high a level of income for this subsector. In the "Kerala Report", in which, as we mentioned earlier, no explanation of the method of estimation is given, average earnings of employers are estimated to have been four times, and of independent workers twice, those of employees and earning dependents., On the other hand, the "Bombay Report" states that "the average income of an employer (or independent worker) engaged in trading activities ... is about 20 per cent higher than the average earnings Survey."[41] It is likely that, on the basis of this evidence from an actual survey, though carried out in another state, the Kerala estimate is too high. This impression is confirmed by the fact that, in the small enterprise subsector, average earnings in Kerala are only 46 per cent of the national average, whereas in this sector, which is composed largely of small and unorganized traders, it is 122 per cent of the national average (Table *7).*

In two states, the 'difference between the state estimate for the income earned in this subsector and the allocated share of national income is relatively large, In West Bengal the independent; estimale is more than 21 per cent lower and in Delhi it is more than 28 per cent higher than the allocated share. The reasons for these discrepancies may be explained as follows: the "West Bengal Report" accounts for the annual earnings of 94,000 workers in the communication and transportation subgroup whereas, according to the 1951 census there were 232,000 self-supporting workers engaged in transport other than railways in West Bengal.[42] If the 1951 census figures of the working forces are projected to 1955-56 at a rate of growth of 16 per cent, which is the rate estimated in the "West Bengal Report", and if additions are made to account for the earning dependents who derive their income from activity subsumed under this subsector, the probable employment in the subsector in 1955-56 may have been nearly 300,000. The wide difference between the allocated share and the "West Bengal Report" estimate for other commerce and transport appears to be due mainly to this serious difference in the estimate of the working force, In Delhi the difference between the two estimates may be due (1) to the limitations of the taxed income data which form the basis of part of the state income estimate, *(2)* to the fact that Delhi, the commercial and financial hub of the northwestern part of India, and a heavily urbanized area, has a higher level of average earnings than other states in India, and (3) to the inclusion in the state income estimate of the banking and insurance subsector, thus yielding a figure which contains economic activities additional to that resulting from the allocation method. If banking and insurance were excluded, the difference between the two estimates would be lower by approximately 10 per cent.

VII

Other Services

For purposes of analysis, the sector covering all other services may be divided into two parts: (1) government services, professions and liberal arts, and—domestic services; and (2) income from residential property. The reasons for combining the three subsectors in the first group are as follows: (1) there is no conceptual uniformity in the delineation of the scope of govern ment services and professions and liberal arts in several state reports. The workins force estimates for the professions and liberal arts subsector are obtained from the census records, and, according to the 1951 census economic classification scheme, those government employees classifiable under other occupational subdivisions arc excluded from the group of govern mental employees. Government employees engaged in medical or educational services, for example, are classified under professional subdivisions. instead of being included in the group of government employees. (2) If government employment data arc obtained directly from local sources, and the working force estimates for professions and liberal arts are obtained from the census figures, adjustments have to be made cither in the census data or in the data obtained from local sources in order to avoid double counting, since many professional people employed by the government would otherwise be counted twice, (3) Some of the state reports, such as those of Madhya Pradesh and Uttar Pradesh, have not attempted separate estimates for these subsectors and have treated them collectively.

In view of these limitations, it is desirable to combine, for purposes of comparison, the three subsectors of government service, liberal arts and profession, and domestic services. The method of income estimation for these subsectors in several state reports is identical with that adopted for the allocation of national income among states. For either all or part of the workers, income estimates are made on the basis of the number of workers engaged in these services in each state. The aggregate of state income estimates and the national estimates for the three subsectors oilier only by 1.2 per cent. But inspection of Tables 1 and 4 yields the result that, in some states. the differences between the estimate based on allocation of national income and that produced by direct estimation in the slate reports is large, in fact, they are among the largest, proportionally, of any subsectors. The explanation of these wide divergences tends to show clearly one important weakness of the method of allocating shares of national income among states on the basis of a rather inflexible formula. For the allocation method docs not take account: of differences in earning levels in different states, which, in some cases, may be substantial, especially in professional and related services. In addition, as concerns the government services subsector, some differences may be due, at least in part, to the fact that the state estimates are based on available local data for 1955-56; whereas the allocation of shares among slates was done on the basis of data published in the 1951 census. These findings suggest one important point about the nature and validity of national income estimates, in general. They show that the difficulties in the economic sectors in which the income approach has to be used tends to produce much less reliable data than in the economic sectors in which the production approach can be employed. For, although the differences laid bare by the comparisons are probably due more to the short-comings of the allocation method than to the direct estimates at the state level, quite a few of the state estimates in this field were made by procedures very similar to the allocation method: and even where direct estimates were made, a large number of points could only be approximated, which implies a high degree of inaccuracy. The result of this is that improvement of state income estimates depends, to a considerable extent, on improvement of estimates in those sectors of economic activity in which the income approach must be applied.

A few further shortcomings of some state estimates relating to these subsectors may be noted: (1) The state estimate of West Bengal does not include the annual income of defence personnel stationed within the state boundaries;[13] This omission is probably due to the fact that the employment data of defence personnel are nor published separately in the census reports for security reasons. But this difficulty has been overcome in other state income studies by using the 1951 census data in which army, navy and air force personnel have been included in the census occupational division 8.8, Employees of the Union Government.[44] (2) No account has been taken of house-rent allowances paid to government employees.[45] (3) Since the government employment data have been obtained by direct enquiry from local .sources and the working force estimates for the professions and liberal arts and domestic services subsectors were obtained from the 1951 census, it is hoped that in the West Bengal Report the necessary adjustments were made to avoid double counting.

The estimates of average earnings in professions and liberal arts and in domestic services are based, according to the "Punjab Report", on "personal inquiries from ten urban centres and some forty-five villages." This sample is of limited validity for providing reliable data applicable to the entire state, a fact which is recognized by the authors of the Punjab Report themselves.[46] (2) The estimates of the income of army and air force personnel were made on "the basis of the ratio between the total population in the State and the Indian Union."[47] It is probable that this ratio results in too low an estimate, in view of the fact that the number of troops stationed in Punjab is likely to he rather large because of its propinquity to West Pakistan and the Ladakh area in Kashmir state.

VIII

Income from Residential Property

The national estimates of the actual or imputed annual rental value of residential property are made separately for urban and rural dwellings, In the case of urban houses estimates are made ".. . on the basis of average rental per house and on the basis of municipal collection of house tax and an assumed relationship between taxes paid and the gross rental."[48] From the estimated gross rental value of urban residential property, deductions are made for cost of repairs and maintenance and municipal taxes collected to arrive at the net contribution by this subsector to total national income.[49] The estimates of annual rental value of rural houses are made differently, i e. "on the basis of rural interest rate,"[50] The gross annual rental value of rural residential property is taken as 10 per cent of the estimated current value of all .the rural houses; deductions are made for annual costs of repair and maintenance to arrive at the net annual rental value. There appears to be an element of double counting in this procedure of estimation of the contribution of residential property to national income. In general, the houses in India, and, indeed, in any predominantly agricultural economy, are used not only for residential purposes, but also as work places. This is particularly true of rural houses, where the same struo ture is used as a cattle shed, a storage place for agricultural products, a store, or as a workshop in which cottage and handicraft products are manufactured. To the extent to which a house is put to other than residential uses, there is double counting, since the contribution of the structure has already been estimated in other sectors, depending upon the nature of the use. The difficulties of obtaining the necessary statistical information to avoid this type of double counting are doubtless great, but the fact remains that double counting is there.

The method of estimating the contribution to national income of urban houses by using the relationship between the municipal taxes collected and the gross annual rental value is not without limitations. The basis of taxation may differ from one municipality to another. In some places taxes may be based on (1) a flat rate on the rental value: or (2) a flat rate on the capital value; or (3) on different rates on different capital value groups. Another difficulty may arise because of "underestimation due to underassessment of the value of property and poor collection of tax—both understood to be general features of the municipal house tax." [51] The "Bombay Report", highlighting the limitations involved in this procedure, says, "it may be stated here that the receipt of taxes has no direct relation with the letting value because in case of a number of municipalities the actual collection of taxes falls short of actual demand of taxes due to heavy arrears, The correct procedure would be to estimate the letting value on the basis of the annual demand of taxes."[52] The procedure followed by the state estimates is, in general, identical with that of the national estimates. The number of rural and urban residential houses, which forms the basis of estimation, is taken, like the national estimates, from the 1951 census. In general, the state estimates of the rental value of rural residential property are based on the national average as estimated in the "NIC Final Report", after making adjustments for changes from one year to another; whereas the estimates of urban property in some of the reports, e g, those of Bombay, West Bengal, Delhi and Orissa, are based on local data, particularly data relating to municipal taxes, The limitations of some state estimates for which the necessary information on their underlying assumptions is available, are discussed below.

A few general remarks on the likely share of this item in the total state income may be useful. The share of rental value will be greater in more heavily urbanized states than in less urbanized ones.[53] The share of rental value, other things being equal, will be the higher the lower the general level of income in a given state, and the share of rental value, again other things being equal, will be the higher the better the duality and size of the residential structures. These three factors, i e, degree of urbanization, level of average earnings and the size and quality of structures will affect the share of the gross rental value of residential properties in a state income. Their net value will also depend upon the magnitude of the netting ratio applied. Finally, if the estimated rental value in 1955-56 is based upon data from the 1951 census or other figures relating to a different year, the estimate for 1955-56 will also depend upon the price index employed. In the analysis of various state estimates of rental value of rural and urban residential houses all these factors will be considered, wherever their impact is discernible.

According to the findings of the "Assam Report", the income from residential property is only 0.6 per cent of the total state income in 1955-56, This ratio is remarkably low compared with the corresponding national average of 4 per cent. In Orissa, where the percentage of urban houses is almost the same as in Assam (4,0 per cent as against 3.9 per cent, see Table 8), the ratio of income from residential property in 1955-56 is 5.2 per cent. Even if we allow that the Orissa figures may be somewhat overestimated, a point which will be discussed below, they nevertheless indicate that the Assam estimates are probably too low. Some of the underlying assumptions in the state report supply most likely grounds for such a low percentage of income from residential property in Assam: (1) The state estimate does not include the annual rental of "25 per cent of rural houses in the plains and the rural houses in the hills,"[54]—on the assumption that these houses have no rental value. On the other hand, the national estimates of income from rural residential property include the imputed rental value of all the houses recorded in the 1951 census. (*2)* The annual cost of repairs and maintenance of the rural houses is assumed to have been 42 per cent of the imputed annual gross rental value[55] as against a national average of 28 per rent.[56] The "Assam Repor', recognizing the unrelible basis of this estimate, says the "imputation of rental value of rural house property has-been very roughly made in view of the absence of any data directly bearing on the rental value of rural houses."[57]

The income from residential property in Kerala constituted, according to the stale estimates. 5.4 per cent of the total slate income in 1955-56. In explaining the basis of its income estiinalc in this sector, "the Kerala Report" says that, "the net value of houses in Kerala is estimated from all-India figures in pruportion to the number of occupied houses,"[58] but does not specify whether the separate estimates have been made for rural and urban houses. In the held of the rental value of residenlial properties, as in so many other areas [small enterprises, non-organized commerce and transport, domestic services and others), the separate treatment of urban and rural data is highly desirable. As we shall show, this reasoning applies with full force to the estimate of the rental value of residential properly, According to the 1951 census, the percentage or urban houses to the total number of occupied houses in Kerala was 11.4, whereas the corresponding all-India percentage was 16.0 (Table 8). We .suspect that the omission, to take account of this difference in the share of urban and rural houses, has resulted in the state estimates of income from residential property being rather high, and perhaps ton high. It should be pointed nut that in allocating national income in this subsector among states, account is taken of the proportion of rural and urban houses as well as composition of city-size in each state.

In Madhya Pradesh and in Andhra Pradesh the state estimates were obtained with the help of the national average of the gross rental values of urban and rural houses as estimated In the "NIC Final Report" for 1950-51. Adjustments for 1955-56 values vere made on the basis of changes in the wholesale price indices of food articles.[59] The estimated gross rental value per rural house in 1955-36 in Madhya Pradesh was Rs 37, whereas the all-India average was Rs 50 in 1950-51 (Table 8). No changes were made in the average annual rental value of urban houses and the national average of 1950-51 was assumed, in the Madhya Pradesh Report, to hold for 1955-56, The implied assumption is that there exists a direct relationship between the price of food and the rental value, of a rural house, but no such relationship is assumed bet ween prices and the rental value of urban houses. The national estimates show that income from residential property during the period from 1950-51 to 1955-56 increased by 15 per cent, from Rs 4,000 million to Rs 4.600 million,[60] But, according to the "Madhya Pradesh Report'', Estimates of the rental value of rural houses declined from *Rs* 286 million to Rs 266 million, or by 7 per cent during the same period, 61

The stale eslimales of income from urban residential property in Orissa are computed "on the basis of information received from *soma* municipalities in the State for the purpose."[62] According to the "Drissa Report". income from urban houses increased by 43 per cent[63] from 1951-52 to 1955-56 as against an increase of only 12 per cent in the national estimates.[64] It is probable that the information furnished by "some" municipalities, which forms the basis of estimation, does not provide fully accurate data for the entire stale. The estimates of the rental value of rural residential properly arc made by adopting the national average during 1950-51, "after being duly adjusted on the basis of change in the annual rental income per urban house during the corresponding period."[65] In the relatively low-income state of Orissa the national average is inflated by 46 per cent[66] whereas in the economically more advanced ante, comparatively, of Madhya Pradesh, the same figure is deflated by 26 per cent for purposes of stale income estimation."

Punjab is, comparalively, one of the more economically developed states in India, and. apart from Delhi, has the highest per capita income in the country. Yet, the income from residential property, according to the state estimate, constitutes only 1.9 per cent of the total stale income in 1954-55. This is, excluding Assam, the lowest percentage (Table 8). The cuiidition of rural housing in Punjab is better than in other states, since the "Punjab Report" itself estimates the average value of a rural house to be Rs 1,447 in 1954-55[65] as against a national average of Rs 877 in 1950-51.[89] The perentage of urban houses to the total number of houses is also greater than the national average (Table 8). Hence, the main reasons for the low ratio of income from residential propery exhibited in the "Punjab Report" are not the pour quality of housing or the low propunion of urban residential properly, but appear to be the following: according to the "Punjab Report" the gross rental value per rural house was taken In be 8 per cent of its current value,[79] whereas the national estimates are based on gross rental value of 10 per cent.[71] Deductions for the current year's depreciation from the estimated gross rental value of rural residential properly amount to 54,4 per rent, pr 4.4 per cent of the value of all rural houses. Additional deductions for repairs and maintenance amount to 20 per cent of the gross rental value of rural houses. In other words about three-fourths of the estimated annual gross rental value is deducted to arrive at the net contribution of rural residential property to total slate income. Similarly, from the estimaled gross rental value of urban residential property, 43.6 per cent is deducted for depreciation: and 10 Per cent for repairs and maintenance. For these reasons, the average annual net rental value of urban houses is considerably below that computed in other stile reports (Table B. Hence, Punjab data in this subsector are lower because of netting procedures and not because of poor housing or a preponderance of rural residences.

IX

Conclusions and Suggestions

This survey of state income reports may be cencluded by suggesting same improvements of estimation procedures and presentation of findings, The general impression gained from the reports available to US is char the main objective of most studies is the determination of a single, often doubtful and little supported, figure of global state income. The details of how this global estimate is reached appear to be lost sight of in many cases. Though we do not wish to dispute the importance of this objective, we believe that the state income estimates may nrnperly perform other functions at the present state of planning and economic activity in India. In the first place, any slate income study will reveal, if properly made, the economic; structure of a slate, the areas of economic activities in which it is strong and those in which it is weak. In addition, any state income study, if properly presented, will provide a guide for similar studies in other states. New approaches to income estimation made in one state may exert an influence on procedures used in others, with the .result, that the over-all set of practices in the estimation of slate income by all states will be improved. If this improvement takes place, it will also help the general estimation procedures of national income.

Lack of Detail. The usefulness of state income studies lies in the methods of estimation used, the explicit identification of underlying assumptions, and the sources of the statistical information which form the bases of the estimates. The lack of exposition of these details does not permit. the reader to appraise the methods used and the validity of the data employed, Adequate comparison of state estimates either with one another, or with corresponding national totals, is very much limited in the absence of these details. If all the underlying detailed estimates were available in the central and the state income studies, it would he possible to identify the sources of any differences between the two measures of national income, one compiled on a national scale by the CSC), and the other arrived at by aggregating the incomes of all Indian states. The improvement of the income accounts at the central and state levels may be viewed as a two-way traffic: the central estimates, at least of Physical annual output, may serve as control figures, and the state data of prices (assuming they reflect an accurate picture of local economic conditions) may serve to check the national valuations arrived at. in the CSO's estimates. It is not suggested that either the central or the state findings are more accurate, but, in an attempt to reconcile the two estimates, one may find ways to improve both sets of figures. With the currently available information from the state reports, it is not possible even to check whether the data of annual physical out nut of agricultural crops in the national and the aggregate of state reports are the same or not.

Basic Data, The basic data of such items as annual production, prices, employment, and average annual carnings employed in a state report, should be included, preferably in an appendix, even if these data arc obtained from standard documents such as the "District Census Handbooks" or "State Statistical Abstracts". These documents are not readily available to other research workers,

Netting Ratios. Another source of under- or over-estimation in the state reports appears to be arbitrary and not well supported netting ratios applied to the evaluation of agricultural crop output, livestock production, and production in the mining subsectors. We have discussed some of the problems which arise in these subsectors in earlier part of the paper (Table 6). Though some netting ratios employed in some state reports may be based on inadequate samples, it is possible also that some of the ratios employed in the national estimates need refinement. This is an area of research in which substantial progress is still required.

Distribution of National Totals among States, In some subsectors such as railways, communication services, and organized banking and insurance, in which statistics are available on the national level, and separate accounts by states are not normally maintained, it is necessary to apportion national totals among component states. The basis of allocation of national totals will depend upon the availability of relevant information, As revealed by the state reports available to us, most slate reports have adopted different-bases of allocation. This had the result, in the case of railways for example, that the value of output of Rs 2,200 million by railways, is reduced to an aggregate income derived from the state reports of only Rs 1,723 million. Similarly, the two measures of income from communications services differ by about 8 per cent.[72] These examples show that there remains need in the co-ordination between central and slate agencies engaged in national income compilation work. Regardless of what basis of allocating national totals among states is used, a common procedure would ensure talistical uniformity among state and national data. At: the same time, it is important to consider carefully which formula of allocating national totals is the best, since the adequacy of the" formula selected will enhance the accuracy and reliability of state income totals.

Sectors and Subsectors. Frequently the state reports mention the lack of required data for state income estimation purposes, particularly average annual earnings of various groups of workers, for example, those engaged in transport, commerce, and other services. The slate income estimates for these subsectors are obtained either by using national averages derived from the "NIC Final Report", sometimes adjusted to local economic conditions, or by making use of locally available data. Some of the more enterprising state agencies have made efforts to collect fresh data for state income purposes. Whenever, because of lack of local data, use is made of national figures, the attempt should be made to form as many homogeneous subgroups of economic activity within each subsector as possible. This can be done by making the most extensive use of data available in census records, The present method, used in some state reports, of treating one large group, such as "other services, including construction workers, professions and liberal arts, domestic services, and government services", fails to reflect even the regional differences in the averages of earnings data upon which their estimates are based. We particularly wish to point out that the recent publication of revised national estimates (CSO) does not include the average earnings of all those sub-groups which are mentioned in detail in Appendix Table 12.1. For example, under the medical and other health services group, there are seven or eight other subgroups for which average annual earnings data are not published.[13] We further wish to add that greater realism would be injected in the national and state income accounts, if attempts were made to obtain separate income estimates for urban and rural workers engaged in non-agricultural occupations. No novelty is claimed for these suggestions, since some stale reports arc already employing them and we merely wish to stress the need of a fuller use of this approach in all state and national income reports.

Improvement of Classification of Sectors of Economic Activity. The currently used classification of economic activities in national and state income estimation studies needs a thorough reappraisal to suit the growing needs of economic planning in the country. The recent introduction in the revised national income series of a separate subsector of construction under the sector mining, manufacture and small enterprises, is a move in that direction. But other changes, espedaily in the very cumbersome services sector are needed. In particular, the workers engaged in personal services, such as barbers, cleaners, and washermen need not be combined with highly skilled professional workers engaged in medicine, education, journalism, and others, because the two groups have nothing in common. Separate subgroups, one under the heading of Personal Services, and the other of Professional Services should be formed. Similarly, the Commerce, Transport and Communication sector may be divided into the following distinct economic groups: (1) Whole-sale and Retail Trade; (2) Finance, Insurance and" Real Estate; (3) Transport—rail, road, water, and air; and (4) Communications and Public Utilities. These Changes, as well as others, may often be difficult: to make, but they are not impossible.

Time Lag in the Publication of Statu Income Reports, In general, there appears *to* be a three to five year Jag in the publication of the state income data, and some of the studies have even taken a longer time; and still some (e g Madras, Mysore and Rajasthan) have not been published. As a result of these prolonged delays, these otherwise valuable findings are becoming to have chiefly an historical interest rather than forming an underpinning of economic planning. In this context, a well-known authority commented thus:

> In national accounting, as in any other field, the statistician has a responsibility to ensure that his data reflect and do not distort, reality. At the same time, he must avoid being perfectionist. Information should not be withheld merely because it is approximate.[74]

(Concluded)

Notes

10 Government of Orissa, Bureau of Statistics and Economics, "State Income of Orissa 1951-52 to 1958-59". (Cuttack: 1961) Table A-l, p 26. Hereafter cited as "Orissa Report".

11 Government of India, Central Statistical Organization, "Statistical Abstract, India, 1955-56" Delhi; Manager of Publications, 1957), Table 143, p 482.

12 "Orissa Report", Table A-l, p 26.

13 See "NIC Final Report", Tables 7 and 36, pp 36 and *66* for the ratio of the agricultural component of the tea industry.

14 Government of Mysore, Department of Statistics, "State Income of Mysore 1956-57 to 1960-61," (typewritten), p 6. The report made available to us by M A Wali, Director, Mysore. Hereafter cited as "Mysore Report",

15 "Statistical Abstract, India, 1956-57", Table 165, p 598.

16 See K S Srikantan, "Working Force Estimation for National Income Compilation," *Monthly Abstract of Statistics,* XIII (Feb, 1960), Table 10, p xii.

17 See M D Chaudhry, *op cit,* Table 2.4, which is computed from data published by the "Census of India, 1951".

18 See "NIC Final Report", Table 18, p 71.

19 "Orissa Report", p 19,

20 Government of Assam, Department of Economics and Statistics, "Estimate of Slate National Income of Assam, 1948-49 to 1952-53", Shillong, 1955, p 22. Hereafter cited as "Assam Report".

21 Government of Andhra Pradesh, Bureau of Economics and Statistics, "Revised Estimates of State Income of Andhra Pradesh from 1952-53 to 1958-59", (Hyderabad, November, 1960), p 29. Hereafter cited as "Andhra Pradesh Report",

" Government of West Bengal, State Statistical Bureau, "State Income of West Bengal 1955-56", (Calcutta, no date), p 14, Hereafter cited as "West Bengal Report".

23 Government of Punjab, Economic and Statistical Organization, "State Income of the Punjab 1952-53 to 1954-55", (Chandigarh, 1959), p 54. Hereafter cited as "Punjab Report".

24 Madhya Pradesh, Directorate of Economics and Statistics, "State Income of Reorganized Madhya Pradesh, 1950-51 to 1956-57", (Bhopal, 1960), p 101. Hereafter cited as "Madhya Pradesh Report".

25 "West Bengal Report", Table 12. 1, P 113.

26 Government of India, Ministry of Home Affairs, "Census of India, 1951", Vol 1, (Delhi, Manager of Publications, 1954), Table B-I1I, pp 290-99, This comprises Census groups 5,0 to 5.4 inclusive.

27 See "C S O National Income Statistics", *op* cit, Table 8.2, p 114, Table 8.4, p 116, and Table 9.2, p 120.

28 "NIC Final Report", p 97,

29 See "West Bengal Report", p 15.

30 Government of Bombay, Bureau of Economics and Statistics, "Report on State Income of Reorganized Bombay State 1954-55," Quarterly Bulletin of Economics and Statistics, (July, 1959), 111, No 2, p 41, Hereafter cited as "Bombay Report"; "Punjab Report", p 73.

31 See "Mysore Report", p 6; and Andhra Pradesh Report," p 55.

32 "West Bengal Report", Table 11.3, P 112.

33 "Census of India, 1951", Vol 1, Table B-III, p 336.

34 It may be that the employees of the Chittaranjan Locomotive Works may have been included in the 1951 census totals of railway workers. But, even if this was the case, it does not account for a differential of some 40,000 or more persons,

35 "Census of India, 1951," Vol I, Table B-III, p 336.

36 See "West Bengal Report", Table 12.1, p. 113; and Government of Kerala, Directorate of Statistics, "Regional Income of Kerala, 1955-56 to 1957-58", (Provisional), (Trivandrum, I960), Table 15, p 20. Hereafter cited as "Kerala Report".

37 See "Andhra Pradesh Report", P 36.

38 See "Madhya Pradesh Report", p 121.

39 Government of Bihar, Directorate of Statistics, "State Income of Bihar", 1959-60, (Patna, 1963), p 123, Hereafter cited as "Bihar Report".

42 See "Mysore Report", p 6.

43 "Bombay Report", p 46.

42 "West Bengal Report", Table 121, p 113, and "Census of India, 1951", Vol I, Table **B-III,** p 326, The census data for transport other than railways includes occupational census subdivisions 7.0, 7.1, 7.2, 7.3, and 7.5.

43 "West Bengal Report", Table 13.1, p 115.

ween gas, and by-products, thereby reducing the cost of production and distribution of gas by a substantial amount Moreover, the Committee did not provide for normal increases in the cost of wages and salaries based on incremental scales. Furthermore although the Company had placed before the Committee the demand of the workers for increase in salary scales and other benefits, the Committee, unfortunately, did not see its way to provide for the same. The Committee, also, made no provision for payment of bonus. Most important of all, the Committee denied the Company the benefit of automatic adjustment of price to significant changes in costs, which is, in practice, enjoyed by the electricity companies and other public utility concerns and which is so important in a period of fast-rising inflationary costs. In this connection, it may be mentioned that although the Advisory Committee's recommendations had been submitted to the Government by 31st October, 1963, the Government sanctioned the recommended price fifteen months later (January 1965) without taking into account the cost increases which had taken place in the interval and about which submissions were duly made to the Government, Consequently, the revised price had already become inadequate by the date when the Government sanctioned it. In the intervening period of two years and three months that have elapsed after the examination of the cost of production and distribution of gas by the Committee, there have been further substantial increases in costs due to inflationary factors. On the other hand, (here has been a sizable reduction in the realisations from the sale of coke and by-products. In consequence, the revised price of gas has proved to he inadequate to absorb the post-inquiry cost increases and eliminate the Company's losses, not to speak of providing for a minimum return on the capital invested, which must be considered also as an essential component of fair price.

It is, however, only fair and proper to acknowledge that the Gas Advisory Committee, in assessing the requirements of fixing a fair price for gas, had been guided largely by certain traditional ideas and principles of fixing a fair price. In that context and within the limitations imposed thereby, the Committee had tried its very best to he fair to the Company and to the consumers. In offering our comments on certain aspects of the determination of the new gas price, we only want to say that some of the current practices on the subject of fixing fair price for purposes of control are outmoded and have increasingly proved to be inadequate and unsuitable for economic price formation, particularly in the context of an expanding national economy and in the setting of a highly dynamic world economy. Many independent thinkers in our country and abroad have commented rather strongly on the inadequacy and unsuitability of the current principles and procedures for the determination of control prices for the basic industries and services. Thus, for instance, the Raj Committee has drawn pointed attention to the inadequacy of the return provided for capital invested in the steel industry by relating such return to the original block. It has strongly urged that, from the economic point of view and in the interest of an expanding economy, the return on capital should be related to the replacement value of the fixed assets, For a similar reason, the National Council of Applied Economic Research has urged that it should be made legally obligatory to allow depreciation on the basis of the replacement cost of the fixed assets. In view of such authoritative criticism, in many quarters, of the current principles of price formation, it is suggested that the policy of control prices should be fully reviewed and re-oriented so as to bring it nearer to the principles of price formation in a free economy and thereby make it more suitable for the requirements of an expanding and dynamic economy.

Urgent Necessity of an Increase in Gas Prices

The Company's cumulative losses at the close of 1964 Accounts amounted to Rs 24.78 lakhs, being nearly one-half of the paid-up capital of Rs 40 lakhs and free reserves of Rs 12.61 lakhs, taken together. As explained before, the revised price has already proved inadequate to absorb the cost increases, eliminate the Company's losses and provide for a reasonable return on the capital invested. In his situation, the Company cannot provide adequately for normal repairs and replacements, maintain the high quality of its service and carry out its legitimate and much-needed expansion programme. The Company, therefore, proposes to submit a Memorandum to the Government with an earnest request for an early and adequate increase in the price of gas.

Recent Increases in Some Control Prices at Short Intervals

As mentioned earlier, a period of over two years has already elapsed since the Gas Advisory Committee formulated its findings' and recommendations regarding the revised price of gas. In a markedly inflationary situation, a period of two years is certainly a sufficiently long interval for a revision of a control price like that of gas. Indeed, there are many recent, precedents where the prices of basic commodities and services have been revised at short intervals, This would be seen from the table below. It may also be noted that the price of coking coal was increased in 1961, 1962, 1963 and 1964. In 1965, its price has been already raised thrice– in January, May and June, respectively. In all these cases of frequent price revisions, increases were sanctioned to meet significant cost increases. Thus, for instance, the latest increase (dated

Recent Increase in the Rate of Certain Basic Services

Items	Date	Amount of increase Rs P	Date	Amount of increase Rs P	TOTAL Amount of increase Rs P	TOTAL Interval (months)	TOTAL % of increase
Bus fare in Calcutta (lowest stage — 7 paise)	29.4.64	0.01	1.2.65	0.02	0.03	9	43%
Tram fare in Calcutta (lowest stage — 6 paise)	29.4.64	0.01	26.7.65	0.01	0.02	15	33%
Bus fare in Delhi (lowest stage — 5 paise)	1.4.63	0.02	7.4.64	0.03	0.05	12	100%
Tata Hydro-Electric charges	1.7.62	11%	1.5.63	26%	—	10	37%

26.7.65) in the fare of the Calcutta Tramways Company was specifically sanctioned to meet increased costs of (a) Rs 14.5 lakhs annually on account of increase in clearness allowance, (b) Rs 6 lakhs annually on account of the increase in the cost of electric power, and (c) Rs 3.50 lakhs on account of increased costs of renewals and replacement. It may, also, be pointed out that the important electric companies, such as the Tata Hydro Electric Companies in Bombay and the Calcutta Electric Supply Corporation, frequently and almost automatically raised their rates for electricity on account of increases in the pit-head price of coal and freight thereon. It may also be mentioned that the West Bengali State Electricity Board has recently increased the rates for electricity for many categories of consumers, with effect from 31st August, 1965. This proposed enhancement of rates is intended to cover increases in its Costs and eliminate its huge losses. The different rates for the several categories of domestic, industrial and bulk consumers were adjusted variously. Thus, for instance, the lowest rate for domestic power was raised by 44 per cent, the lowest rate for industrial power by 70 per cent, and the lowest rate for bulk consumption by 57 per cent. It is only fair that such frequent and semi-automatic adjustment of control price for gas should also be ade by the Government to cover significant: cost increases and eliminate the heavy cumulative losses sustained by the Bombay Gas Co.

Payment of Bonus Act

The Bonus Commission of 1964, which has taken an exceedingly generous attitude on the question of bonus payment, basically relates bonus payment to the earning of extra-normal profits. The Commission states:

> "It is difficult to define in rigid terms the concept of bonus, but it is possible to urge that once profits exceed a certain base, labour should legitimately have a share in them. In other words, we construe the concept of bonus as sharing by the workers in the prosperity of the concern in which they are employed/'

This definition accords, by and large, with the practices and conventions of the business world. In the widely accepted sense of the term, a bonus is an extra-normal or above-average reward to workers, in the event of abnormal or above-average or surplus profits being earned by the business unit concerned. It is most inequitable and realistic that the Payment of Bonus Ordinance, as also the Act which is to replace it, makes it obligatory for an industrial unit to pay a minimum bonus to its employees, even though it may have sustained a loss in the 'elated accounting year, instead of making any profit, not to speak of a surplus profit. And, what is even more unrealistic, the obligation to pay the minimum bonus would remain intact even though the unit concerned may have ' sustained losses over a number of consecutive years. This provision of the Bonus Law becomes all the more inequitable and unrealistic in the case of a public utility company, such as the Bombay Gas Co, because the price of its product or service is so rigidly controlled by the Government that it is allowed to earn only a minimum rate of return on its employed capital and that, for over a number of consecutive years, it may actually sustain heavy losses. It is obvious that the effect of the provision for minimum bonus payment by a loss-sustaining company would be that it would be made to suffer a heavier loss on account of the bonus payment. In other words, the erosion of its capital through ordinary business losses would be aggravated by the imposition of this further loss through the operation of the Bonus Law. In this view of the matter, for the loss-sustaining companies, this particular provision of the Bonus Law becomes confiscatory or expropriatory in character, in as much as it has the effect of taking away a part of the capital of the Company to make extraordinary payment, by way of bonus, to the employees. This provision for the payment of minimum bonus, even by loss-sustaining companies, runs counter to all prevalent ideas and conventions relating to bonus payment, which had been evolved through many pioneering experiments by progressive industrialists and through the learned judgments of the highest Law Courts and the Industrial Tribunals. I am certain that this provision of the Act is wholly irrational and arbitrary and is entirely unworkable. And I suggest that this provision of the Act be suitably amended at an early date.

Serious Deterioration of Discipline Among the Employees

We regret to report that there is a serious deterioration in the state of discipline among the workers and the staff over the past one year. There have been many and frequent cases of breach of discipline, some of them being of a grave nature involving show of defiance and even threat of violence. This unfortunate trend had originated with the presentation of demands by the Workers' Union and the Staff Association, respectively, in 1963 and 1964, claiming revision of pay-scales, gratuity, dearness and other allowances, leave and certain other fringe benefits. On the Company's expressing its inability to meet the demands, the Government referred the dispute to the Industrial Tribunal constituted by Shri M R Meher. The Tribunal, after duly considering the evidence tendered by the Company and the employees, respectively, gave its decision in April, 1965, rejecting practically all the demands of the employees with some minor exceptions, eg, those relating to gratuity, retirement age and sick leave. During the pendency of the Tribunal's proceedings, however, and even after the announcement of the Tribunal's Award, the employees indulged in frequent acts of gross breach of discipline, which interfered seriously with the working of the Company smoothly and efficiently. From June last, again, the employees started indulging afresh in gross breaches of discipline over the issue of payment of bonus for 1962, 1963 and 1964, when they attempted to force the management to pay the bonus. The claim for bonus payment for 1962 and 1963 was outside the purview of the Payment of Bonus Ordinance, because there was no pending dispute regarding bonus payment for those years. Hence, that claim had no basis whatsoever. As regards the claim for payment of bonus for 1964, the Company, in view of its having sustained substantial losses for three consecutive years, including the year 1964, and the expected losses in 'he ensuing years, had applied to the Government under Section 36 of the Bonus Ordinance for exemption from the payment of bonus and submitted a petition to the High Court for the issue of a Writ. At the same time, however, the Company agreed to pay the amount of the minimum bonus of 4 per cent as an advance, in two equal instalments, namely, in the first week of September and on the eve of the ensuing Diwali, respectively, subject to the condition that, in case the High Court decided in favour of the Company's contention, the amount would be refunded. Incidentally, the Hon'ble High Court, in considering the issue of an interim injunction, was pleased to observe that the Company's offer was very fair. The employees, however, in spite of the Government's appeal to them, ignored the Company's offer, and, without giving any notice, went on an illegal strike from 1st September, leading to a complete shut-down of the plant for a week and consequent cessation of gas supplies for public-lighting and for several thousand domestic and industrial consumers. In view of the Emergency in the country, the Government: appealed to the management to restore industrial peace by paying the entire amount of minimum bonus at in early date, strictly as an advance. The Company accepted the Government's suggestion and the strike was called off. The normal supply of gas was fully restored from the morning of 7th September. We regret that, due to the above circumstances over which we had no control, complete cessation of gas supplies caused hardship to our consumers and the general public. In this connection, however, we would like to observe that, unless the growing trend towards indiscipline is curbed, it would be impossible to conduct the Company's operations with normal efficiency. The Company would, therefore, invite the Government's kind attention to the need of discouraging indiscipline and illegal actions on the part of the workers.

Expansion Programme

As mentioned in the Directors' Report, the Company has already completed a programme of giving 1000 new gas connections. The Company is now actively exploring the ways and means of implementing a further substantial programme of giving 4000 new gas connections which is estimated to entail a capital expenditure of Rs 30 lakhs. The Company proposes to raise the amount through a medium-term Bank loan, for which negotiations are in progress. The servicing of the proposed loan would involve a recurring expenditure of Rs 4 lakhs to Rs 5 lakhs per year. Consequently, in addition to the substantially increased costs of production and distribution of gas. referred to in earlier paragraphs, the Company would also have to meet this recurring expenditure on account of the service charges including repayment of the proposed loan and the Company's enormous current losses would increase further to that extent. In this situation, for the Company to be able to carry on its operations efficiently and implement its expansion programme, it will be unavoidable to ask for an upward revision of gas price at a very early date.

Plant and Machinery

During the year, the Company added plant, machinery and equipment, worth Rs 1,57,889, including Rs 28,304 for plant and machinery under construction and not completed at the close of the year.

The Fertiliser and Chemicals Travancore Ltd

Shri K Sreenivasa Karayalar, reviews activities

A DDRESSING the Twentyfirst Annual General Meeting held at the Registered Office, Udyogamandal, on 30th September 1965, Shri K Sreenivasa Karayalar said:

Gentlemen,

I am glad to welcome you to this, the 21st Annual General Meeting of the Company and to present to you the accounts of the Company and the Report of the Directors for the year ended 31st March, 1965.

As in the past few years, the company had to face a severe power cut ranging from 32% to 70% in the first three months of the year under review. This cost the Company a loss of production of the order of Rs. 10 million. In November last year an tinfortunate explosion occurred in the Ammonia Synthesis Plant due to the failure of a high pressure pipeline. In addition to causing the death of three of the company's loyal workers, the accident also resulted in one of the ammonia stream going out of production for the rest of the year. The high pressure pipe that failed was a special chrome molybdenum alloy. New pipelines were ordered immediately from abroad. They arrived a few weeks ago and the ammonia stream would be back in production in a few days. The families of the workers who lost their lives were granted liberal assistance. On account of this explosion the company lost Rs. 7.5 million worth of production during the year. In addition to these setbacks, there was also a shortage of imported raw materials in the last quarter of the year on account of the critical foreign exchange situation. Depreciation also went up on account of the need for making an extra allowance for the third shift working. The total depreciation charged for the year amounted to Rs. 6.74 million as against Rs. 5.63 million in the previous year.

Another difficulty arose on account of the arbitrary fixation by the Government of India of the retention price for ammonium sulphate, the major product of your Company. The price fixed for both 1963-64 and the year under review were well below the fair price the Company was entitled to, The matter was represented to the Government of India for reconsideration. Their decision is awaited.

As a result of all these adverse factors, the company incurred a net loss of Rs. 4.88 million. This loss can be made up as the new plants installed during the third stage of expansion will be going into production shortly.

In these circumstances, it has not been possible to recommend any dividend for the year.

The current year also started badly as the ammonia stream referred to earlier continued to be out of commission awaiting the arrival of the special high pressure pipes, Power shortage also affected production adversely in June/July, Yet the company was hopeful of making up these losses in production as the new plants installed during the third stage of expansion were being got ready for commissioning. It was at this time that the Employees' Association decided to go on a strike.

For some months in the past, the Employees' Association had been taking a belligerent attitude. The Association started interfering with disciplinary proceedings initiated in the normal course. The Association leadership also carried on a systematic campaign advising the employees not to carry out the instructions issued by their superiors. Things came to a. head when the new plants installed during the third stage of expansion