

Indian National and State Income Data

Some Aspects

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This paper is devoted to a general survey of the state income studies available to us at the present time. Its purpose is not to test the accuracy of the national income estimates at the state or national level, but to identify areas where improvement is needed through comparison of national and state income data.

We place principal emphasis on the nature and type of discrepancies and the direction of differences in estimates rather than their magnitude. We are primarily concerned with inconsistencies, gaps, double counting, lack of explanation of the assumptions and omissions in income estimates. Above all, our aim is to improve the presentation of material so as to enhance the usefulness of the reports and to avoid any misuse of the findings by attempting to explain fully the validity of the data which form the basis of estimation.

We also hope to indicate how the inclusion of basic data in the reports can help other research workers on state incomes to duplicate the procedures adopted by some states and to show how this will aid efforts to reconcile national aggregates derived from state income estimates with those compiled at the national level.

[The preliminary findings of this study, based on the national and state income data then available to us, were presented at the Fourth Indian Conference on Research in National Income held at Gokhale Institute of Politics and Economics, Poona, in December, 1962. In the present, revised version, use is made of all the additional and revised state income estimates and income series now available. In the summer of 1964, one of the authors, Mahinder Chaudhry, visited the Central and State Income Units in India for collection of data and discussions with the officials engaged in the compilation of income data. The financial support for the held work received from the Research Centre in Economic Development and Cultural Change, University of Chicago, is gratefully acknowledged. We are grateful to the Planning Commission, New Delhi, particularly to Asoka Mehta and Tarlok Singh, for the help received in the preparation of this study. A word of thanks is also due to the National and State Income Units who made available the needed documents and also spared time for discussions. Of course, the responsibility for the views expressed is entirely ours.]

WE shall, first, compare the aggregate of State income estimates with national estimates compiled by the Central Statistical Organisation. The national totals will be subsequently apportioned among States and compared with the official State income estimates, wherever the required details are available. Finally, we shall attempt to indicate those areas in which the State income estimates need to be revised and how the methods of estimation may be improved.

The income estimates in this paper relate to 1955-56, i.e., April 1, 1955 to March 31, 1956. This choice has been dictated by the fact that the largest number of State income estimates were available to us for this period.

In this study, India has been divided into 17 units (14 States designated under the States Reorganisation Act of 1956, and six centrally administered territories which have been grouped into three units: Delhi, Himachal Pradesh, and Other Union Territories).

For reason of space this article is being printed in two parts. Detailed discussion of the areas in which state income estimates need to be revised and of how the methods of estimation may be improved will appear in the second part to be published next week.
— Ed.

This last group includes Andaman and Nicobar Islands, Laccadive, Minicoy and Amindivi Islands, Manipur, and Tripura. Himachal Pradesh and Delhi are treated separately, since economic data are collected and published for these territories separately. For the Other Union Territories we have no information as to whether independent income studies are either in progress or under publication. For these regions data computed by us were used wherever this was necessary.

II

Comparison of National Totals with Corresponding Aggregates of State Income Estimates

In comparing the various measures of national income during 1955-56 for India as a whole and the different sectors of the economy, emphasis is intended on the nature rather than the extent of the differences to be observed in the various income estimates. It has not been possible to extend this exercise to the point of reconciling the State and national income data, since all the details needed for such analysis were not available in the State reports at our disposal. But given the limitations of reports available to us we shall try to indicate what attempts need to be made in order to reconcile the different measures of national income totals.

Three sets of national income estimates for the year 1955-56 are compared: (1) A conventional series compiled by the Central Statistical Organisation (CSO) and published annually;¹ (2) a revised series, also compiled by the CSO, published more recently;² (3) a series obtained by aggregating the findings of State reports compiled by various State Statistical Agencies. The currently available estimates, included in group (3), cover 99.32 per cent, of the population and 95.17 per cent of the area of the country. The actual data and the estimates for sectors and subsectors, as well as the State total, are presented in Table 1,

In terms of availability of "firm" State income data for the year 1955-56, the sources used in compiling Table 1 can be classified as follows:

(1) "Firm" figures, that is, estimates pertaining to the fiscal year 1955-56: This group includes 15 States covering 94 per cent of the population and 89 per cent of the area of the country, i.e. Andhra Pradesh, Assam, Bihar, Bombay (Maharashtra and Gujarat), Jammu and Kashmir, Kerala, Madhya Pradesh, Madras, Orissa, Punjab, Rajasthan, Uttar Pradesh, West Bengal, Delhi, and Himachal Pradesh.

(2) "Contiguous" figures, that is, estimates for a period close to 1955-

Table 1 : State Income Estimates Based on Local Data

(Millions of rupees)

Economic Sectors and Subsectors	Andhra Pradesh	Assam	Bihar	Gujarat	Kashmir	Kerala	Madhya Pradesh	Madras	Maharashtra	Mysore	Orissa	Punjab	Rajasthan	Uttar Pradesh	West Bengal	Delhi	Himachal Pradesh
	(1955-56) (1)	(1955-56) (2)	(1955-56) (3)	(1955-56) (4)	(1955-56) (5)	(1955-56) (6)	(1955-56) (7)	(1955-56) (8)	(1955-56) (9)	(1956-57) (10)	(1955-56) (11)	(1955-56) (12)	(1955-56) (13)	(1955-56) (14)	(1955-56) (15)	(1955-56) (16)	(1955-56) (17)
(1) AGRICULTURE AND ALLIED	3,996	1,371	3,619	1,885	337	1,700	3,859	3,721	3,316	3,046	2,442	2,972	1,893	7,023	2,217	51	163
(2) Agricultural Crops	2,667	1,258a	2,863	1,565	193	1,513	3,015	2,892	2,718	2,619	2,156	2,144	1,500	5,107	1,878	26	83
(3) Animal Husbandry	1,276	63	635	287	105	107	722	753	504	361	160	802	478	1869	233	23	61
(4) Forestry	22	26	23	25	38	25	117	12	36	36	69	24	4	44	10	neg	19
(5) Fisheries	31	24	98	8	1	55	5	64	58	30	57	2	1	3	96	2	neg
(6) MINING, MANUFACTURING, AND SMALL ENTERPRISES	783	693	1,265	1,160	155	354	626	1,563	2,454	625	278	744	729	2,148	2,195	307	27
(7) Mining	56	43	262	40	neg	20	94	10	52	58	47	6	30	neg	115	5	neg
(8) Factory Production	214	465b	728	721	6	120	194	620	1,628	258	56	183	41	336	1,596	138	3
(9) Small Enterprises	513	185	275	399	149	214	338	933	774	309	175	555	658	1,812	484	164	24
(10) COMMERCE, TRANSPORT, AND COMMUNICATIONS	1,233	321	852	929	69	629	801	1,454	2,285	618	415	1,272	810	2,525	1,674	527	19
(11) Communication Services	45	6	21	17	d	c	19	c	39	16	d	22	d	f	d	16	1
(12) Railways	84	33	236	192	nil	35	147	c	267	75	d	95	d	84	158	45	nil
(13) Banking and Insurance	38	3	84	82	1	35	33	93	342	38	18	27	c	c	102	c	neg
(14) Other Commerce & Transport	1,066	279	511	638	68	559	602	1,361	1,637	489	397	1,128	810	2,441	1,414	466	18
(15) OTHER SERVICES	1,452	282	857	787	119	639	1,149	1,268	1,987	702	574	930	1,023	2,693	1,403	577	47
(16) Professions and Liberal Arts	637	65	316	355	55	286	d	490	753	212	199	435	447	f	392	123	4
(17) Domestic Services	50	84	44	102	6	27	d	77	91	18	58	48	e	f	140	315	2
(18) Government Services	524	117	172	157	29	146	883	240	487	149	124	345	395	f	445	47	22
(19) Residential Property	241	16	325	173	29	180	266	461	656	323	193	102	181	f	426	92	19
(20) TOTAL	7,464	2,667	6,593	4,761	680	3,322	6,435	8,006	10,042	4,991	3,709	5,918	4,545	14,389	7,489	1,462	256

Notes : neg = Negligible, less than .5 million; nil = 0.

(a) Includes industrial component of tea industry, (b) Excludes industrial component of tea industry, (c) Included in line 14, (d) Included in line 18, (e) Included in line 16, (f) Included in line 15.

Sources:

- Col 1: 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 3.
- Col 2: Government of Assam, Department of Economics and Statistics, "State National Income of Assam 1950-51" (Shillong: 1960), p 3.
- Col 3: Government of Bihar, Directorate of Statistics, "State Income of Bihar, 1959-60, (Patna, 1963), p.9.
- Col 4: Government of Gujarat, Bureau of Economics and Statistics, "State Income Estimates 1955-56 to 1960-61, Gujarat State, (Ahmedabad: 1964), p 63.
- Col 5: Government of Jammu and Kashmir, State Statistical Bureau, "Estimates of State Income 1950-51 and 1955-56 to 1958-59," (Srinagar: 1961), p 4.
- Col 6: Government of Kerala, Directorate of Statistics, "Regional Income of Kerala, 1955-56 to 1957-58," (Provisional), (Trivandrum: 1960), p 2.
- Col 7: Government of Madhya Pradesh, Directorate of Economics and Statistics, "Estimates of State Income of Madhya Pradesh 1950-51 to 1958-59," (Bhopal: 1961), p 2.
- Col 8: Government of Madras, Director of Statistics, "Madras State Income Estimates 1950-51 to 1959-60," Typewritten. The summary tables made available to us by G D Nandagopal, Director of Statistics, Madras.
- Col 9: Government of Maharashtra, Bureau of Economics and Statistics, "Report on the State Income of Maharashtra 1955-56 to 1958-59," *Quarterly Bulletin of Economics and Statistics*, (Bombay), II, (July-Sept, 1961), pp 76-77.
- Col 10: Government of Mysore, Department of Statistics, "State Income of Mysore 1956-57 to 1960-61," Typewritten. The report made available to us by MA Wali, Director of Statistics, Mysore.
- Col 11: Government of Orissa, Bureau of Statistics and Economics, "State Income of Orissa 1951-52 to 1958-59, (Cuttack: 1961), pp 6
- Col 12: Government of Punjab, Economic and Statistical Organization, "State Income of Punjab 1952-53 to 1956-57", (Chandigarh: 1962), pp 4-5.
- Col 13: Government of Rajasthan, Directorate of Economics and Statistics, "State Income Estimates of Rajasthan 1954-55 to 1962-63," (Typewritten). The summary table of estimates made available by K L Baraya, Director, Evaluation Organisation, Cabinet Secretariat, Jaipur, D O No PA/EVA/65, dated February 10, 1956.
- Col 14: Government of Uttar Pradesh, Arthik Bodhy Sankhya Nideshak, "Estimates of National Income of Uttar Pradesh 1948-49 to 1959-60," (Typewritten). The summary tables of findings made available by D P Octania, Training Officer, Lucknow.
- Col 15: Government of West Bengal, State Statistical Bureau, "State Income of West Bengal 1955-56," (Calcutta: no date), p. 27.
- Col 16: Mahinder D. Chaudhry and Bert F. Hoselitz, 'State Income of Delhi of State, 1951-52 and 1955-56', *Economic Development and Cultural Change*, Vol XI, Number 3, Part II (April, 1963,) p 12.
- Col 17: Himachal Pradesh Administration, Directorate of Economics and Statistics, "State (National) Income of Himachal Pradesh for 1950-51 to 1960-61, (Simla: 1963), p 69.

56: This group includes only the state of Mysore, which contains 5.38 per cent of the population and 6.30 per cent of the area of the country.

(3) A residual group of States and territories for which no direct or derived income data are available: Other Union Territories—this group contains less than one per cent of the national population.

In order to obtain 1955-56 income estimates for group (2) above, we have made extrapolations from the available income data for three years, from 1956-57 to 1958-59. The 1955-56 figures were thus estimated by deflating the 1956-57 income estimates in each subsector of the State economy (Table 1, col 16) by the average annual growth rate of each sector experienced over the period.

For territories included in group (3), shares based on allocation from national income during 1955-56 have been used.³ The total income of these regions makes up less than one per cent of the national income of India during 1955-56,

The income estimates, both at the national and at the State level, measure net domestic product at factor cost. The national income of a country is equal to the country's net domestic product at factor cost plus or minus, as the case may be, the net balance of income earned from, or paid to, foreign countries. Since in 1955-56 the net amount of income earned from abroad by India was nil, both sets of national income estimates are made up of the identical item.⁴

A comparison of national income estimates made at the central level with that obtained by aggregating independent State income estimates based on local data, shows substantial divergences in the total reached, mainly for two reasons:

One is the presence of variations in definition and scope of individual sectors and subsectors making up the national or State income total. Although the classification of economic activities into different sectors and subsectors employed in most State reports is the same as that used in the national accounts of India, some variations have been observed. For example, while in some of the State reports Banking and Insurance also comprises non-organised banking activities, these activities are included elsewhere in national estimates. Because of the lack of detailed break-

downs in most State reports, we could not make adjustments in the State income data to make them strictly comparable with the corresponding national totals.

The second serious difficulty was the lack of detailed information on the composition of the various subsectors of economic activity, particularly as regards the working force. If extensive working force data had been included in the State reports, it would have been possible to determine the scope of economic activity included in each subsector.

In some State reports, income estimates for various subsectors, especially for "services", are grouped together and no details are provided as to the contribution of each component activity. For example, in some reports "professions and liberal arts, domestic services, and government administrations" are combined in a single service sector. In these cases, the estimated income for a larger sector had to be allocated by us among the various component subsectors. In these cases we assumed that the shares of each subsector form the same proportion of the total for that sector as may be found in the corresponding estimates based on the allocation of the national totals. (See Table 4),

These limitations must be borne in mind in assessing the comparison attempted here. In Table 3, the three sets of estimates are compared and their differences in absolute terms and percentages are noted. In the first two columns the conventional and revised national estimates for 1955-56 are presented and each series is compared with the State aggregates presented in column 3. The data presented in this column are based on the 1955-56 data drawn from Tables 1 and 2, to which amounts for Other Union Territories, equal to the shares of these territories derived from the allocation method (see column 18 in Table 4), have been added.

If the conventional national income estimates are assumed to be a relatively accurate measure of the level of economic activity in the country, then the aggregated State income data fall short by just 7 per cent. This is not likely to raise any serious doubts about the validity of the State estimates, since the national estimates themselves are reported to be subject to an over-all margin of error of "about 10 per cent for the aggregate domestic product."⁵ But closer analysis suggests that behind this over-all difference of 7 per cent there are much

larger differences at the sectoral and subsectoral levels which mutually offset each other when the sectoral data are totalled up. For example, in Agriculture and Allied Products, the sectoral difference is only 3.4 per cent, but for Agricultural Crops (a subsector of the former) the aggregated State estimates are lower by 7.5 per cent, and the difference in the evaluation of livestock products (another subsector of Agriculture and Allied Products) is 20 per cent. Similarly, the estimates of the value of output by forestry (a third subsector) differ by 23 per cent. Further differences between the conventional national income estimates and the aggregates of State income data can be found in columns 4 and 5 of Table 3.

Table 2: State Income of Mysore, 1956-57
Estimates Adjusted to 1955-56
(Millions of rupees)

Economic Sectors and Subsectors	Average Annual Growth Rate 1956-57 to 1960-61	Adjusted 1955-56
(1) AGRICULTURAL AND ALLIED	8.45	2,789
(2) Agricultural Crops	9.05	2,382
(3) Animal Husbandry	2.42	352
(4) Forestry	25.69	27
(5) Fisheries	8.33	28
(6) MINING, MANUFACTURING, AND SMALL ENTERPRISES	10.76	558
(7) Mining	4.74	55
(8) Factory Production	11.92	227
(9) Small Enterprises	10.92	276
(10) COMMERCE, TRANSPORT, AND COMMUNICATIONS	8.33	567
(11) Communication Services	4.69	15
(12) Railways	6.00	71
(13) Banking and Insurance	9.87	34
(14) Other Commerce and Transport	8.69	447
(15) OTHER SERVICES	7.66	648
(16) Professions and Liberal Arts	7.78	196
(17) Domestic Services	4.17	17
(18) Government Services	16.44	125
(19) Residential Property	3.71	310
(20) TOTAL	8.62	4,562

Source : Estimates of income for 1956-57 have been projected backward according to the average annual growth rates over the four year period, 1956-57 to 1960-61. For 1956-57 income data see Table 1, Col 10, and, for 1956-57 to 1960-61 estimates see *Mysore Report*.

In the same Table we also present a comparison between the revised national income estimates and the aggregates of State income estimates. According to the revised series which are based on fresh data made available by National Sample Surveys and other research studies, the national income of India during 1955-56 is estimated to have been Rs 92,071 million, as compared with Rs 99,773 million in the conventional estimates.

This downward revision of the national income estimate for the year 1955-56 has reversed the picture presented by the earlier comparison of the national and state aggregate estimates of national income. The aggregated state income estimate is higher by Rs 503 million, or .5 per cent, than the revised national estimates. The largest differences may be observed in two subsectors, namely (1) commerce, transport and communication, and (2) other services.

A very large difference also is found in the evaluation of animal husbandry products. Despite the fact that the

nationally computed figure for this subsector has been revised upward from Rs 7,040 million in the conventional estimate to Rs 8,132 million in the revised estimate, the aggregated state reports estimate stands at the higher figure of Rs 8,447 million. We must cite another example, where the aggregated state reports estimate is much lower in comparison to both national estimates: the contribution of railway services to national income. The revised estimates of national income show Rs 2,200 million for this subsector, whereas the aggregated State reports estimate comes to only Rs 1,723 million. It is highly likely that the national estimates for this subsector possess much greater accuracy since the railway system of India cuts across state boundaries and railway accounts are kept on a regional or national basis. This facilitates the estimation on the national level and hence the state estimates which, by necessity, are based on the estimation of each state's share in the national total, may be wrong. This point is discussed in greater detail below.

III

Allocation of National Income Estimates Among States and Comparison with State Income Estimates

We shall now turn to another method of analysis, the apportionment of various sectors and subsectors of national income estimates among the states. The results of this process of analysis are presented in Table 4. The allocated shares of each sector and subsector of national income for each state are compared with the corresponding official state estimates. Attempts at apportionment of national income totals among states have been made by various scholars and organizations, among them: B Natarajan, K N Raj, Ravi Verma, and the Indian Institute of Public Opinion.⁵ These findings were not used in this paper for various reasons: (1) the studies do not relate to the period of 1955-56; (2) the regional units adopted by them do not coincide with those being used by us; (3) in some cases the principles by which allocations were made are not stated clearly in these publications:

Table 3: Comparison of National Income Estimates and State Report Aggregates

(Millions of rupees)

Economic Sectors and Subsectors	Conventional National Income Estimates	Revised National Income Estimates	Aggregate of State Reports	Difference of Col 1 and Col 3		Difference of Col 2 and Col 3	
	(1)	(2)	(3)	amount	percent	amount	percent
(1) AGRICULTURAL AND ALLIED	45,173	44,733	43,616	1,557	3.4	1,117	2.5
(2) Agricultural Crops	36,860	34,730	34,073	2,787	7.5	657	1.9
(3) Animal Husbandry	7,040	8,132	8,447	-1,407	-20.2	-315	-3.9
(4) Forestry	725	1,338	560	165	22.7	778	58.1
(5) Fisheries	548	533	536	12	2.2	-3	-0.6
(6) MINING, MANUFACTURING, AND SMALL ENTERPRISES	18,500	16,257	16,130	2,370	12.8	127	0.7
(7) Mining	1,000	777	838	162	16.2	-61	-7.8
(8) Factory Production	7,800	6,440	7,317	483	6.2	-877	-11.2
(9) Small enterprises	9,700	9,040	7,975	1,725	17.8	1,065	11.0
(10) COMMERCE, TRANSPORT, AND COMMUNICATIONS	18,800	15,600	16,658	2,142	11.4	-1,058	-6.78
(11) Communication Services	500	500	458	42	8.4	42	8.4
(12) Railways	2,500	2,200	1,723	777	31.1	477	21.7
(13) Banking and Insurance	900	730					
(14) Other Commerce & Transportation	14,900	12,170	14,477	1,323	8.4	-1,577	-12.9
(15) OTHER SERVICES	17,300	15,481	16,237	1,063	6.1	-756	-4.9
(16) Professions & Liberal Arts	5,600	4,600					
(17) Domestic Services	1,400	1,680	7,432	-432	-6.2	-1,152	-18.3
(18) Government Services	5,700	5,500	4,545	1,155	20.3	955	17.4
(19) Residential Property	4,600	3,701	4,260	340	7.4	-559	-15.1
(20) TOTAL	99,773	92,071	92,574	7,199	7.2	-503	-0.5

Sources: Col 1: Government of India, Central Statistical Organisation, Estimates of National Income 1948-49 to 1960-61, (Delhi: 1961), Table 2, p 2.

Col 2: Government of India, Central Statistical Organisation, "National Income Statistics: Proposal for a Revised Series of National Income Estimates for 1955-56 to 1959-60", (Calcutta: 1961), Table 16, p 175.

Col 3: Tables 1 and 2, and Col 18 of Table 4, of this study.

and (4) in general the findings are only rough approximations. In order to obtain a reliable set of regional income data based on uniform methodology and assumptions, we have used a detailed allocation of national totals among 17 units made by one of the authors of this paper.⁷ The national income of Rs 92,071 million for the fiscal year 1955-56 (according to the "revised series" compiled by the CSO) is allocated among states on the basis of appropriate economic indicators available. For purposes of allocation, the national totals are initially divided into various economic sectors and subsectors. (Table 4) and, in turn, each subsector total is further divided into a feasible number of homogeneous economic units.

The national income originating in the agricultural crops subsector, for example, is divided into 33 units consisting of one or two crop groups; similarly, in the animal husbandry subsector, the national totals are divided into 25 such units. Each unit national total is allocated among states with reference to the suitable available allocator for that unit. The output of rice for each state, for example, evaluated on the average prices of rice in that state, forms the basis of allocation for the national totals for rice. In some cases, where price data by state are not available, the basis of allocation is the physical output of the product concerned. For forestry, fishery, and mining, the gross value of annual output in each state, as reported in the official publications, is the basis of allocation. The national income from factory production subsector is subdivided in the four groups:

- (1) The factories covered by the annual census of Manufacturing industries. The value added data according to this survey classified by states are available, and form the basis of allocation.
- (2) Tea industry: In view of the fact that the tea industry is not covered by the above survey and is localized in two or three states, it is treated separately. The state wage bill for the tea industry, taken as a percentage of the corresponding national wage bill of all the national workers engaged in tea industry, forms the basis of allocation.
- (3) Income from electricity: the basis of allocation in this group is the state distribution of electricity generated in each state as published by the Water and Power Commission.
- (4) All the factory workers not

covered in any of the above three groups: With the help of employment data and average annual earnings per factory worker, by state, and following the procedure adopted for Group (2) above, we have allocated the national totals for this group among states. For allocation purposes, the small enterprises subsector is divided in the following seven industrial groups: (1) textile and tailoring; (2) leather and leather products; (3) wood, glass, stone and ceramics; (4) metals manufactures and engineering; (5) chemicals; (6) food, drink, and tobacco; and (7) other industries.

For a given state, the number of workers, rural and urban taken separately, in each of the industrial groups are multiplied by the corresponding rural and urban national average net-value-added per worker engaged in the small enterprises. Similarly, for a given state, the number of workers, rural and urban separately, engaged in the construction subsector are multiplied by the corresponding national average of value added per rural and urban worker respectively. Combined annual value added by the total workers in each state is taken as a percentage of the aggregated similar total for all the states together.

The national totals for this subsector are allocated among states according to the respective shares obtained above. In the professions and liberal arts, and domestic services subsectors, in each state the total workers engaged are divided into the following nine industrial groups separately for rural and urban areas: (1) medical and other health services; (2) educational services; (3) letters, arts, and science; (4) legal services; (5) religious and charitable services; (6) sanitary services; (7) barber and beauty shops; (8) laundries and laundry services; and, (9) domestic services. With the help of state employment data, and assuming the differences in rural and urban average earnings in each of the above groups to be the same as estimated in the National Sample Survey report,⁸ the national totals are allocated among states following the procedures adopted for the construction subsector.

In the other subsectors, where national totals are based on income approach, namely, other transport, other commerce, railways, communication services, and government services, the procedures of allocation analogous to the above are followed. Income from Banking and Insurance subsector is allocated with reference to the percentage

share of each state in the national total of loans and deposits of commercial banks. Income from the residential property subsector is allocated on the basis of the number of urban and rural houses in each state; while allocating urban property income account has also been taken of the size-composition of the urban centers.

The preceding explanation of the principles of allocation used gives only a very rough and approximate indication of the complex computations which were actually made to determine the share of income of each state in each of the subsectors. The procedures followed are described in full detail in M D Chaudhry's publication. The allocated shares are, nevertheless, approximations which facilitate comparison between the two sets of state income estimates. The objective of suggesting allocated shares is not to propose "better" income estimates for the states, but rather to make a general enquiry into the state findings and to point out inconsistencies and limitations of state reports, on the assumption that the national estimates may serve as control figures. At the same time, it is also possible that the aggregates of state income estimates may indicate the need for new appraisals and some revision of existing assumptions and bases of estimation in some sectors of subsectors of national income.

In general, it is reasonable to argue that the state income data, especially if they are based on local data obtained through direct surveys, are likely to present a more realistic picture of the state economy than the allocated shares from national income estimates. But a survey of the state income reports shows that some of the state estimates are not based on systematically collected local data, but either on national averages or on very slender empirical evidence. This holds particularly for those sectors in which the income approach is employed to estimate state income.

Any differences observed in the two sets of measures of state income estimates, either for all the sectors or for any one sector, are taken as indicators of the need to examine more closely the underlying method of estimation, the sources of information used, and to question the validity of the allocator. Even if the income estimates arrived at by the two methods are fairly close to each other, there may be significant differences on the sectoral

Table 4: National Income, by State, 1955-56: Allocation Method

* (Millions of rupees)

Economic sectors and subsectors	India	Andhra Pradesh	Assam	Bihar	Bombay	Kashmir	Kerala	Madhya Pradesh	Madras	Mysore	Orissa	Punjab	Rajas- than	Uttar Pradesh	West Bengal	Delhi	Hima- chal Pradesh	Other Territories
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) AGRICULTURAL AND ALLIED PRODUCTS	44,733	3,809	1,414	3,390	6,323	374	1,438	4,068	3,135	2,613	1,467	3,105	2,434	7,441	3,359	49	232	172
(2) Agricultural crops	34,730	2,919	1,230	2,379	5,171	187	1,264	3,230	2,580	2,087	1,132	2,227	1,730	5,511	2,841	21	108	113
(3) Animal husbandry	8,132	804	112	838	805	88	103	621	471	421	185	757	685	1,773	377	25	50	17
(4) Forestry	1,338	12	68	68	262	98	33	211	16	90	92	30	19	148	78	—	74	39
(5) Fishery	533	74	4	105	85	1	38	6	68	15	58	1	—	9	63	3	—	3
(6) MINING, MANUFACTURE, AND SMALL ENTERPRISES	16,527	1,134	527	1,084	3,493	71	601	873	1,431	893	334	444	552	2,145	2,344	295	12	24
(7) Mining	777	63	37	245	63	—	11	85	13	58	61	1	29	1	110	—	—	—
(8) Factory establishments	6,440	169	401	594	2,127	6	184	148	518	156	45	131	39	415	1,381	113	3	10
(9) Small enterprises	6,350	621	59	126	873	55	299	483	629	411	158	203	349	1,379	613	72	8	12
(10) Construction	2,690	281	30	119	430	10	107	157	271	268	70	109	135	350	240	110	1	2
(11) COMMERCE, TRANSPORTATION AND COMMUNICATIONS	15,600	1,080	269	779	3,058	71	641	792	1,473	700	254	803	623	2,200	2,402	411	13	31
(12) Communication services	500	33	8	37	89	2	18	21	56	20	9	45	5	60	84	11	1	1
(13) Railways	2,200	138	88	131	443	—	24	164	160	60	38	75	85	367	390	36	1	—
(14) Banking and insurance	730	24	3	14	239	2	21	16	57	26	2	28	13	43	144	97	—	1
(15) Other commerce	10,240	746	149	524	1,957	52	427	507	1,038	519	187	557	474	1,461	1,380	228	8	26
(16) Other transportation	1,930	139	21	73	330	15	151	84	162	75	18	98	46	269	404	39	3	3
(17) OTHER SERVICES	15,481	1,312	264	863	2,639	134	567	928	1,370	791	444	855	744	2,545	1,575	379	24	47
(18) Profession and liberal arts	4,600	409	54	242	738	40	169	206	437	205	117	247	261	895	465	100	4	11
(19) Domestic services	1,680	84	41	103	301	20	65	62	102	41	94	63	72	308	292	25	2	5
(20) Government services	5,500	498	106	224	971	43	217	412	472	330	118	388	259	776	459	196	10	21
(21) Residential property	3,701	321	63	294	629	31	116	248	359	215	115	157	152	566	359	58	8	10
(22) TOTAL (LINES 1+6+11+17)	92,071	7,335	2,474	6,116	15,513	650	3,247	6,661	7,409	4,997	2,499	5,117	4,353	14,331	9,680	1,134	281	274

Source: Column (1) Government of India, Central Statistical Organisation, "National Incomes Statistics Proposals for a Revised Series of National Income Estimates for 1952-56 to 1950-60" (Delhi, 1961), table 16.1, p 75; Columns (2) through (18) based on allocation of national totals.

For detailed method of allocation and supporting data see: Mahinder D Chaudhry, "Regional Income Accounting in an Underdeveloped Economy; A Case Study of India." (Calcutta: Firma K L Mukhopadhyay, 1965, in press), Table 4.

and subsectoral levels which compensate one another when all sectoral figures are added up. Therefore, in order to make the comparison more meaningful and to appraise the state estimates in greater detail, each sector and subsector has been analyzed separately. But as a result of the difficulties, of finding detailed information in the state reports on some subsectors, and because of the lack of uniformity among income reports concerning the scope of economic activities included in the various subsectors, we are often forced to combine some of the subsectors. An example is provided by the combination of the following activities into one single sector: professions and liberal arts and domestic services.

The estimated national income (revised series) during 1955-56, as compiled by the Central Statistical Organization, is allocated among 17 administrative units (Table 4). The comparison here, however, is confined to 16 states only; the other centrally administered Union Territories are excluded for lack of information. The exclusion of this group does not materially alter the comparison since these areas accounted only for less than one per cent of the national income during 1955-56. For 15 out of the 16 states, income estimates based on local data for the year 1955-56 are available, and for Mysore state, data have been adjusted to 1955-56. The detailed reports for Rajasthan, Madras, Mysore, and Uttar Pradesh are, in the process of publication and only summary tables of findings (in some cases, along with brief notes of methods of estimation) were available to us, and hence had to be used for purposes of analysis.

Broadly speaking, the allocations of national income totals among states reflect to a reasonable degree the differences in the agricultural-industrial mix of the various state economies. In seven states—Andhra Pradesh, Bombay, Kashmir, Kerala, Madhya Pradesh, Rajasthan, and Uttar Pradesh—the differences between the income estimates obtained by the allocation and direct state estimate approaches are less than 5 per cent; and in five states—Assam, Bihar, Madras, Mysore, and Himachal Pradesh—the differences range from 7 to 9 per cent. If Delhi, largely a city, is excluded because it is the seat of the central government and accounts for only one-fifth of one per cent of the national total population, wider discrepancies are observed

only in three states; Punjab (16 per cent), West Bengal (23 per cent), and Orissa (48 per cent). The Orissa state, with a difference of 48.4 per cent, is the only case in which the state report claims the state income to be higher than the corresponding allocated share by such a wide margin. It should be noted that serious discrepancies may be found in the *Orissa Report*, particularly in the evaluation of agricultural production which are at least partially responsible for this difference.

Among the states whose own estimates are lower than their allocated share, two states, Bombay and Madhya Pradesh, differ by less than 5 per cent; two others—Mysore and Himachal Pradesh—differ 8.9 per cent, and West Bengal differs by 23 per cent. It should be noted here that it is surprising that West Bengal, one of the economically most highly developed states in the country, should have, according to the state's own estimates, a level of economic development below that of the national average. It must be remembered that in West Bengal the share of the urban population of 26.8 per cent is not only the highest among states⁹, but almost twice the proportion of the nation as a whole. West Bengal also employs, next to Bombay, the largest number of factory workers, and harbored during 1955-56 one-fifth of the total industrial labour force in the country. A detailed examination of the state estimate of West Bengal, however, reveals that there are omissions, particularly in the estimate of the size of the working force in several subsectors, and other doubtful assumptions which explain this wide difference.

The seven states in which the difference between the allocated shares of national income and the corresponding state estimates are less than 5 per cent account for 64 per cent of India's area of 56 per cent of its population. In addition, this group represents a fair sample of the cross-section of the country's economy—Bombay may be described as representative industrial areas; Uttar Pradesh, Andhra Pradesh, and Rajasthan are chiefly producers of agricultural products; and Kerala may be described as a comparatively underdeveloped region. Therefore, it may be assumed that the allocators adapted to determine state distribution of the national income do not appear to contain built-in bias.

(To be continued)

Notes

¹ India, Central Statistical Organisation, "Estimates of National Income 1948-49 to 1960-61". (Delhi: Manager of Publications.)

² India, Central Statistical Organisation, "National Income Statistics: Proposal for a Revised Series of National Income Estimates for 1955-56 to 1959-60", (Calcutta: 1961), Table 16, p 175.

³ For detailed magnitudes see Table 4, col 18.

⁴ "National Estimates", Table 2, p.2.

⁵ See Government of India, Ministry of Finance, Department of Economic Affairs, "Final Report of the National Income Committee", Delhi: Manager of Publications. 1954, (hereinafter cited as NIC Final Report), p 146.

⁶ B Natarajan, "An Essay on National Income and Expenditure in India" (Madras: Economic Advisor to the Government of Madras, 1949); K N Raj, "Some Features of the Economic Growth of the Last Decade in India," *The Economic Weekly*, XIII (February 4, 1961), 253-71; Ravi Verma, "Estimates of State Income by Allocation Method," a paper submitted at the Third Indian Conference on Research in National Income, held at Bombay, November, 1961; Indian Institute of Public Opinion. "The Regional Distribution of Income 1950-51 to 1955-56," *Quarterly Economic Report of the Indian Institute of Public Opinion*, III (Sept-Oct, 1956), 18-33.

⁷ See Mahinder D Chaudhry, "Regional Income Accounting in An Underdeveloped Economy: A Case Study of India". (Calcutta: Firma K L Mukhopadhyay, 1965, in press).

Government of India, Cabinet Secretariat, "The National Sample Survey Number 14: Report on Some Characteristics of the Economically Active Population", (Delhi: 1959).

⁹ N J Nanporia, (ed) "The Times of Indian Directory and Year Book 1160-61", (Bombay: Bennet Cofenun & Co, Limited, 1961), pp 9-11.