CHAPTER XII

INCOME FROM PROFESSIONS AND LIBERAL ARTS AND DOMESTIC SERVICES

In this chapter the revised estimates of net income from (i) professions and liberal arts and (ii) domestic services are presented along with a critical review of the methods of estimation followed so far and as described by the NIC[1] and the revisions now suggested. These revisions are based mostly on additional data that have become available since the publication of the Final Report of the NIC. A few methodological changes have also been made in preparing the revised series; their details have been discussed in the subsequent paragraphs of this chapter. A comparison has been made between the conventional and the revised series and the discrepancies explained at the end of the chapter.

2. The activities considered in this sector include (i) medical and other health services, (ii) educational services (including services of non-profit research and scientific institutions), (iii) legal services, (iv) other business services (e.g. accounting, auditing and book-keeping services, engineering and technical services, recreation and entertainment services etc.). (v) services of religious organisations and nonprofit welfare institutions, (vi) scavenging services, (vii) barbers, (viii) laundries and laundry services and (ix) domestic services. Persons engaged in similar services and operated by government have, however, been excluded in order to avoid double counting. Income originating in this sector has been estimated by 'income approach' which consists of-multiplying-the 'average net earnings' per person by the total estimated number of persons engaged in the sector. While estimating the 'average net earnings' per person, all factor incomes have been taken into account. Estimates have been built up separately for each of the above specified broad sub-groups[2], which are then aggregated to arrive at the total net income from the sector.

3. As stated above, the revised series presented here has been prepared on the basis of latest available data with suitable modifications in the earlier methods of estimation with a view to eliminating some major limitations arising from certain inadequacies in the data then available and utilized for the purpose. These limitations and the methodological changes proposed here are described below.

3.1. *Problems associated with the estimation of net earnings by intensity of employment in principal occupation and income from secondary occupation*[3] : In preference to an 'equivalence scale' the NIC adopted the method of estimating

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[1] Paras 2.171 to 2.197 of the Final Report.

[2] For further details on composition of these sub-groups reference may please be made to Appendix 12.1.

[3] These problems are discussed briefly in the Final Report of the NIC, pp. 11-12.

Income from Professions and Domestic Services

income generated in this sector as the product of the working force (including economically semi-active persons) and the earnings of self-supporting persons from principal occupation, on the tacit assumption that the overestimation involved in evaluating the per worker net earnings of earning dependants (economically semi-active persons) as equal to those of self-supporting persons (i.e. economically fully active) would counterbalance the underestimation involved in neglecting secondary incomes from the occupation. However, due to paucity of data on earnings by intensity of employment in principal occupations and earnings from secondary occupations, it has not been found possible to verify this assumption empirically nor to depart from the basic procedure of estimation of income generated in these sectors as the product of the working force and the average per worker net earnings of self-supporting persons from principal occupation.

3.2. *Heterogeneity of industry groups :* In view of the heterogeneity of the industry groups adopted, it becomes necessary to weight net earnings observations relating to each homogeneous industry sub-group according to the proportion of persons engaged in it. In the conventional series, however, such an adjustment was made only for the industry group 'medical and other health services'.

3.3. *Over-representation of urban earnings observations :* No adjustment had been made to correct for over-representation of urban earnings observations in some of the occupation groups—an adjustment necessary in view of the large rural-urban differentials in per worker earnings.

3.4. *Wide time-span and small number of observations used :* Earnings observations used related to the rather wide period 1934–53 although some attempt was made to correct the figures of earnings relating to other years by those in 1948-49. Also the total number of observations used for estimation was only about 634[4] and in some industry groups the number of observations used were too few to yield any reliable estimate of average earnings per worker.

3.5. *Low rate of increase of nomial earnings per worker :* No uniform procedure was followed for adjusting the 1948-49 per worker net earnings to subsequent years. Broadly, some tentative adjustments were made on the basis of the earnings of factory employees (drawing less than Rs. 200 per month) and daily wage rates of rural skilled workers. However, the increase over the entire period 1948-49 to 1958-59 comes to only 7 per cent as against an increase in the daily wage rates of rural skilled workers of the order of 12 per cent per decade and an increase in the average salary per teacher in recognised schools of the order of 30 per cent per decade[5].

3.6. *High rate of increase of working force :* The rate of increase of working force in this sector, as extrapolated from the 1941 and the 1951 Population Censuses,

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[4] The NIC estimate for 1948-49 is based on only 380 earnings observations whereas in preparing the estimates for years subsequent to 1951-52, 254 additional observations obtained through the NSS (7th round) were also incorporated.

[5] Details about these three indicators are given in paragraph 4.3.

comes to as much as 39 per cent per decade compared to the rate of growth of the total working force of the order of 15 per cent per decade.

4. *Revised method of estimation* : The different steps involved in the preparation of the revised series at current prices are : (i) collection and screening of earnings data relating to different principal occupations from all readily available sources. (ii) preparation of estimates of average earnings per worker for thirty fairly homogeneous industry groups separately for rural and urban areas from these different sources. (iii) preparation of indicators of changes in nominal earnings over the period 1950-51 to 1959-60 and backward and forward projection of these point estimates of per worker earnings in rural and urban areas by industry groups to the different years 1950-51 to 1959-60. (iv) construction of a suitable weighting diagram for combining the average earnings per worker thus derived into ten broad industry groups and (v) estimation of the working force[6] and the contribution to national income on the revised basis from each of the ten broad sub-sectors. These steps are discussed further in the following paragraphs.

4.1. The principal sources of primary data[7] are (i) the RPC surveys on urbanisation. (ii) agro-economic surveys sponsored by the DESAg. (iii) data on the salaries paid to the staff employed by government medical institutions. (iv) data on the wages and salaries of teachers employed in recognized schools, and (v) the special reports of the Labour Investigation Committee published in various issues of the Indian Labour Gazette (now Indian Labour Journal). In addition. data from the 4th and 5th rounds of the NSS have been supplied in processed form by the Indian Statistical Institute. In screening the primary data the concepts involved in the procedure of estimation have been clearly kept in view and only the earnings observations relating to full-time workers from principal occupations have been taken into account. In using observations pertaining to rural areas. care has been taken to impute payments in kind also. As far as possible. those observations relate to net earnings and include all factor incomes.

4.2. Thirty detailed industry groups[8] have been used and the simple averages of 'per worker earnings' have been obtained separately for rural and urban areas from each source of data. The consistency of the estimates from these independent sources has been checked and the estimates further screened. Estimates from different sources have then been pooled together on the basis of the number of observations entering each estimate to yield finally the average per worker net earnings in each industry group in rural and urban areas. These estimates relate to different time periods. For a few industry groups for which direct estimates were not available on a sufficient number of observations. the average earnings relating to some similar occupation group has been used.

6 The method of revision of the estimates of working force is discussed in Chapter I.
7 Further particulars of various sources of primary data are given in the bibliography.
8 A list of these detailed homogeneous industry groups is given in Appendix 12.1.

Income from Professions and Domestic Services

4.3. For projecting the single point estimates of average earnings per worker to the period 1950-51 to 1959-60, all the available indicators of trends in per worker earnings and consumer prices in rural and urban areas have been examined[9]. It was finally decided to use the following indicators[10] for the different occupation groups in rural and urban areas :—

(i) half the rate of change in the graduated index of earnings of factory employees drawing less than Rs. 200 per month, to be used on urban non-white-collar occupations[11];

(ii) three-quarters the rate of change in the graduated index of salaries of teachers in recognized institutions, to be used on rural and urban white-collar occupations[12];

(iii) full rate of change in the graduated index of rural skilled workers, to be used on rural non-white-collar occupations[13].

On this basis the point estimates have been projected to the entire period 1950-51 to 1959-60. However, in order to avoid extreme fluctuations in average per worker net earnings from year to year, these indicators have been smoothened out before application by fitting a straight line by the method of least squares.

4.4. The next step is to prepare suitable weighting diagrams for combining these per worker earnings into corresponding all-India figures for the ten sub-sectors. The weighting diagram for each of these groups has been prepared on the basis of census tabulations[14] of self-supporting persons in rural and urban areas by industrial status and by detailed industry groups at all-India level. Wherever necessary, the latter figures have been broken up into rural and urban figures on the basis of suitable assumptions and the information provided by the rural and urban tabulations by industrial status. These weighting patterns have been used to obtain average all-India net earnings per worker for each of the ten sub-sectors.

4.5. Lastly the revised series[15] of 'working force' in 'professions and liberal arts' and 'domestic services' has been to estimate the income contribution of each

9 In this connection the utility of the following indicators has been studied : (i) index of earnings of factory workers (ILJ), (ii) middle class consumer price index (ILJ), (iii) consumer price index of low paid employees (ILJ), (iv) earnings of rural skilled workers (Agricultural Wages in India), (v) earnings of teachers (Education in India), (vi) consumer price index of rural population (ILJ), (vii) consumer price index (general and miscellaneous) of factory workers (ILJ), (viii) average basic salary of control government employees (CSO), and (ix) wages and salaries of persons other than workers employed by factories (CMI).

10 Indicators used are reproduced in Appendix 12.2.

11 This index has been compiled from the figures of earnings per person drawing less than Rs. 200/- p.m. and employed in factories and published on calendar year basis in the ILJ. The index has then been graduated by fitting a straight line by least squares method in order to eliminate extreme fluctuations. The industry sub-groups on which this index has been applied are indicated in Appendix 12.1.

12 This index has been compiled from average salary per teacher (including professors etc.), in recognized schools derived from figures of the total number of such persons and their total salaries as given in Education in India. This index has also been graduated. The occupation sub-groups, on which this index has been applied, are shown in Appendix 12.1.

13 This index has been compiled from primary data relating to the daily wage rates of blacksmiths, carpenters and cobblers in about 60 rural centres published in the Agricultural Wages in India. The index is a chain index based on wage relatives averaged over the year and over the centres. The index has been graduated by fitting a straight line by least squares method in order to eliminate extreme fluctuations. The occupation sub-groups on which this index has been applied are given in Appendix 12.1.

14 The data utilized are given in (i) part II-C of the Census of India, 1951, Economic Tables and (ii) Paper No. 7 of the Census of India, 1951 (Subsidiary Tables).

15 The method of revision of the estimates of 'working force' is discussed in Chapter I. These figures exclude employment in government sector.

National Income Statistics

sub-sector. In preparing these estimates it has been assumed that the 1950-51 pattern of distribution of working force in these sectors to the different industry groups within them has remained unchanged in the subsequent years. Table 12.1 gives the revised estimates of working force, earnings per worker and total net income from these two sectors for the years 1955-56 to 1959-60.

5. *Comparison of the revised series with the conventional series :* It would be useful to compare the levels of income shown by the revised series with that published in the 'Estimates of National Income : 1948-49 to 1959-60'. Such a comparison is made in Table 12.2. It is evident that the total contribution in 1958-59 from 'professions and liberal arts' according to the revised series is Rs. 517 crores as against Rs. 661 crores of the conventional series and for 'domestic services' it is Rs. 184 crores as against Rs. 171 crores. Thus for these two sectors taken together the revised income falls short of the conventional estimate by Rs. 131 crores in absolute terms. The extent to which the differences in two factors, viz. (a) average of net earnings per worker for the two sectors and (b) the number of workers, contribute to the overall differences in the two estimates is revealed by figures in Table 12.2. The conventional figures of earnings per worker are generally a little less but closer to the revised urban estimates of earnings per worker, lending further support to the view that urban quotations of earnings were over-represented in the calculations for earlier series. The downward revision by the aggregate net income from these two sectors is mainly accounted for by the reduction in the average all-India earnings per worker due to proper rural/urban weightage and the larger weightage assigned to occupations of lower productivity on the basis of the distribution of working force. On the whole, it appears that the revised estimates may be closer to reality in view of the better statistical base for earnings data (4,634 earnings observations relating to post-1952-53 period) and the system of weightage adopted to secure proper representation of working force for rural and urban areas and different industry groups.

5.1. For the two sectors taken together, the revised calculations show that the working force has grown at the rate of about 21 per cent per decade while average net earnings per worker have increased at the rate of about 20 per cent and the contribution towards national income at about 45 per cent per decade. The rate of growth of working force in the revised series has been obtained on the basis of additional employment generated as a result of plan investment[16] whereas the conventional estimates are projections on the basis of census economic data of the 1941 and 1951 Population Censuses and appear to be on the high side compared to the growth in the working force in other sectors. The rate of growth in earnings per worker registered by the revised series appears to be more in line with the movement in indicators of prices which show an increase of the order of 17% per decade whereas the corresponding rate shown by the conventional series seems to be on the low side.

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[16] Details given in Chapter I.

Income from Professions and Domestic Services

TABLE 12.1 : INCOME FROM 'PROFESSIONS AND LIBERAL ARTS' AND 'DOMESTIC SERVICES' : 1956-56 to 1969-60

(at current prices)

(1)	number of persons engaged (000)					per head earnings (Rs.)					total income (Rs. crores)				
	1955 -56	1956 -57	1957 -58	1958 -59	1959 -60*	1955 -56	1956 -57	1957 -58	1958 -59	1959 -60*	1955 -56	1956 -57	1957 -58	1958 -59	1959 -60*
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
professions and liberal arts															
1. medical and other health services	545	557	568	580	592	1475	1505	1530	1556	1590	80	84	87	90	94
2. educational services	553	564	576	588	600	895	938	961	985	1008	50	53	55	58	61
3. letters, arts and science	804	919	932	951	970	900	910	934	951	971	80	84	87	91	94
4. legal services	307	314	321	327	334	1668	1712	1742	1772	1817	51	54	56	58	61
5. religious and charitable services	940	959	979	999	1019	498	502	510	519	527	47	48	50	52	54
6. sanitary services—scavengers	824	841	859	878	894	470	473	481	490	497	39	39	41	43	44
7. barbers and hair dressers	1304	1332	1359	1387	1415	430	434	440	448	454	56	58	60	62	64
8. laundries—washermen	1440	1471	1501	1532	1562	397	401	407	414	420	57	59	61	63	66
total	6807	6961	7095	7240	7386	676	689	701	714	728	460	479	497	517	538
domestic services															
1. private motor drivers and cleaners	86	87	89	90	92	1123	1133	1154	1174	1195	10	10	10	10	11
2. cooks, gardeners and other domestic servants	3529	3588	3646	3708	3766	449	454	460	469	475	158	163	166	174	179
total	3615	3675	3735	3798	3858	465	470	477	480	482	168	173	176	184	190

* Preliminary.

TABLE 12.2: COMPARISON OF THE 'REVISED' ESTIMATES WITH THE 'CONVENTIONAL' ESTIMATES OF NET INCOME FROM 'PRO-FESSIONS AND LIBERAL ARTS' AND 'DOMESTIC SERVICES': 1955-56 TO 1959-60

(at current prices)

	working force ('000)					net earnings per person (Rs.)					total net income (Rs. crores)				
	1955 -56	1956 -57	1957 -58	1958 -59	1959 -60*	1955 -56	1956 -57	1957 -58	1958 -59	1959 -60*	1955 -56	1956 -57	1957 -58	1958 -59	1959 -60*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
professions and liberal arts															
(i) revised	6807	6951	7065	7240	7380	676	689	701	714	728	460	479	497	517	538
(ii) conventional	7402	7184	7043	8325	8576	749	789	789	801	801	383	388	620	661	687
domestic services															
(i) revised	3615	3675	3735	3706	3868	465	470	477	480	492	168	173	178	184	190
(ii) conventional	3602	3626	3762	3884	4021	411	416	428	438	436	144	151	161	171	177

* Preliminary.

National Income Statistics