

CHAPTER I

DISTRIBUTION OF WORKING FORCE

In the absence of any reliable data on the gross value of output originating from the small-scale manufacturing industries and the value of service rendered by the sectors 'other commerce and transport', 'professions and liberal arts' and 'domestic services' as also various costs incurred by these enterprises in the process of production of goods and services, it was necessary to adopt for these sectors a different approach than the one followed in respect of the commodity producing sectors¹. The contribution from these sectors has been estimated by measuring the total factor incomes accruing to all those persons engaged in them. This is done by multiplying the estimated working force by the corresponding figures of average earnings in the respective sectors. Estimation of the working force in these sectors is, therefore, absolutely essential for compilation of national income estimates for such sectors. Although the estimates of working force in the other sectors, where contribution is measured by the 'inventory' or 'value added' method, does not affect the incomes from those sectors, estimates of the size of the working force and its distribution by industrial origin is necessary for a proper accounting of the total commodity production available for consumption and investment, for analysis of the productivity per person in different branches of economic activity, for distribution of income by classes etc. An attempt is, therefore, made in this chapter to review the methods adopted by the NIC in estimating working force and to suggest certain modifications in these estimates in the light of other available material, more particularly figures of investment in the Second Five-Year Plan. These methods and base figures would, of course, have to be revised soon after the 1961 Census economic results become available in the desired form.

1.1. The term working force was used by the NIC to represent the economically active and semi-active persons as derived from the data provided by the 1941 and 1951 population censuses, and is based on the concepts of 'self-supporting persons' and 'earning dependants' ('partly dependants' in the 1941 Census) used in these censuses. These concepts are briefly summarised below.

| <i>Concept</i> | <i>1941 Population Census</i> | <i>1951 Population Census</i> |
|--|--|--|
| Self-supporting person | A person capable of maintaining himself on his own income obtained by pursuing one or more occupations | A person with sufficient income to support himself individually at his level of living |
| Earning dependant | Partly dependant—Any person in receipt of some regular income but insufficient to maintain himself | An economically semi-active person in receipt of regular income, no matter how small, but insufficient to maintain himself |
| 'Working force' in any sector of economic activity (formulated by National Income Committee) | Self-supporting persons and partly dependants by their 'principal means of livelihood' | Self-supporting persons by 'principal means of livelihood' plus earning dependants by their own means of livelihood, i.e. 'secondary means of livelihood' according to the 1951 Census |

¹ Other than 'small-enterprises', i.e. small-scale manufacturing industries falling outside the purview of the Indian Factories Act, 1948.

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It will be evident, therefore, that the concept of working force is based on the criterion of income from all sources (whether economically productive or not) and relates to the 'usual' rather than 'current' status. After making suitable adjustments such as elimination of persons living principally on income from non-productive sources, we may consider 'working force' as broadly equivalent to gainful employment by 'usual status' and 'principal activity'. However, in order to maintain the distinction between the census derived concept of gainful employment (based on usual earnings and including the economically semi-active persons) and other definitions of gainful employment (based on 'usual' or 'current status' on the criterion of 'major time spent' or 'priority scale') it would be desirable to retain this particular terminology of 'working force' in the subsequent discussions.

1.2. The method of projection of 'working force' by sectors adopted so far, is broadly indicated in paragraphs 2.7 to 2.40 of the Final Report of the NIC¹. There are five main stages of the projection, viz.; (i) estimation of 'working force' figures in five control groups² for 1941 and 1951 from the population census data; (ii) logarithmic extrapolation of these figures to the year of estimation; (iii) redistribution of each control group total to 1951 census occupational sub-divisions within it in proportion to self-supporting persons; (iv) regrouping of census sub-divisions according to the national income industrial classification; and (v) incorporation of current employment figures wherever available.

1.3. Two types of errors, which arise in the procedure of estimation described above, can be distinguished as (i) errors in the distribution of the 1951 'working force' to the different industrial classes due to allocation exclusively on the basis of self-supporting persons and (ii) errors in applying the 1941-51 decade growth rates of 'working force' in the five control groups to the subsequent period. The broad conclusions emerging from a critical examination of the above method of projection are (a) distribution of the census projected totals of 'working force', in each livelihood class among the census sub-divisions in proportion to self-supporting persons, leads to deviations from current figures since each livelihood class is not homogeneous, i.e. is not composed exclusively of seasonal industries or regular industries; (b) the projection leads to over estimation of 'working force' in regular industries and under estimation in seasonal and intermittent industries. The position regarding sectors offering part-time employment cannot be generalized; (c) the current estimates of 'working force' in regular industries are generally closer to the number of self-supporting persons rather than the total 'working force'; (d) as revealed by current data, employment seems to fluctuate much from year to year even in organised factory type industries and, therefore, the uniform growth rates derived from the census

¹ Further details of the method are given in two articles entitled 'Working force estimation for national income compilation' and 'A comparative study of the census based projections of working force and current estimates in certain sectors of economic activity' published in February and June 1960 issues of the Monthly Abstract of Statistics.

² These are the 1951 Census Means of Livelihood classes, viz. (i) agriculture, (ii) production other than cultivation, (iii) commerce, (iv) transport, and (v) other services and miscellaneous sources.

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based projections do not seem to be valid; (e) the observed rate of growth of 'public force' (e.g., police and posts and telegraphs) seems to be higher than the assumed one, the same is true of the census sub-division 'education' and (f) computation of national income by income method for certain sectors based on the census projection of 'working force' is, therefore, likely to smooth out, to some extent, the real variations in the national income that may be observed from year to year if the computations are based on current data on gainful employment.

1.4. In the light of the above conclusions, it is necessary to examine the currently available data on gainful employment, labour force etc., in order to improve the method of estimation of 'working force'. It would be appropriate to discuss the problem of estimation of working force in two parts, viz. (i) base year or benchmark distribution of 'working force' by industries used in national income compilation; and (ii) the rate of increase of the 'working force' in each of these industrial classes. Whereas reliable figures of the base year distribution of 'working force' by national income industries are important in judging the relative contribution of an industry towards aggregate national income, it is the current rates of increase of 'working force' in these industries which are important for measurement of relative changes in aggregate national income from year to year. For determining the benchmark distribution of the 1951 Census figures of working force we do not have any data besides the 1951 Census economic tabulations and hence only minor improvement can be effected in the method of distribution of the 1951 Census figures of 'working force'. On the other hand, current data for estimating the rates of increase of 'working force' in different industries are available from a number of sources whose adequacy and reliability are examined in a subsequent section.

2. *Revision of the bench-mark distribution of 'working force' by industries:* It emerges from paragraph 1.1 above that the method of redistribution of 'working force' in each control group to the different industrial classes on the basis of self-supporting persons in each class results in certain anomalies and distortions. For instance, this procedure entails the allocation of earning dependants whose own principal source of earnings are from 'professions and services' to such occupations as 'police' and 'government service'. As the industrial distribution of earning dependants by their *own* principal occupation, i.e. their 'secondary means of livelihood' according to the 1951 Census, is not given it is not possible to remedy this defect entirely. However, examination of the 1931 and 1941 Census tabulations of economic activity suggests that the proportion of earning dependants to total 'working force' was very low in such occupational sub-divisions as 'police' and 'government administration' compared to that for sectors like 'domestic services'. The anomalies involving the proportionate allocation of earning dependants to industries on the basis of number of self-supporting persons in those industries by principal activity can be removed on the assumption that there cannot be any significant number of earning dependants following such occupations as their principal avocation and at the same time not enough to support themselves. On examination of the census-cum indus-

trial classification we find that the following sub-divisions would come under the class providing principal occupations with self sufficient earnings :—

Commerce and transport

- (1) railways (excluding contract labour)
- (2) communications

Professional and other services

- (3) police
- (4) municipalities
- (5) state government
- (6) union government
- (7) non-Indian government

2.1. In order to avoid the anomalous situation of distributing a disproportionately large number of earning dependants to these occupations, it is assumed that the number of earning dependants in these classes within each control group is negligible, and the total earning dependants in each control group is allocated to other industrial classes within it in proportion to self-supporting persons in them. Though from the conceptual point of view these changes are important, they are not likely to affect to any great extent, the bench-mark distribution of 'working force' by industrial origin, since the number of persons engaged in these regular industries is not considerable. Table 1.1 shows the conventional and revised estimates of 'working force' in ten 'regular industries after elimination of earning dependants. The overall reduction in 'working force' engaged in these industries due to this adjustment works out at about half per cent of the total 'working force'.

2.2. In the conventional series persons returned under census sub-division 9.0, viz. 'services otherwise unclassified' (which accounts for a substantial number) were redistributed over sub-divisions of Census Livelihood Class VIII (except those

TABLE 1.1: WORKING FORCE IN CERTAIN 'REGULAR' INDUSTRIES BEFORE AND AFTER ELIMINATION OF EARNING DEPENDANTS

| census sub-division (1951) | industry group | 'working force' estimates obtained by allocating earning dependants (self-supporting plus earning dependants) | revised 'working force' estimates by eliminat- ing earning dependants (self-supporting persons only) |
|----------------------------------|---|---|--|
| (1) | (2) | (3) | (4) |
| 7.4 | railway transport | 664 | 579 |
| 7.5 | postal services | 157 | 118 |
| 7.7 | telegraph services | 29 | 22 |
| 7.8 | telephone services | 20 | 16 |
| 7.9 | wireless services | 6 | 4 |
| 8.4 | police (other than village watchmen) | 519 | 392 |
| 8.6 | employees of municipalities and local boards | 306 | 231 |
| 8.7 | employees of State Governments | 1105 | 833 |
| 8.8 | employees of Union Government | 687 | 519 |
| 8.9 | employees of non-Indian Governments | 12 | 9 |
| | total | 3505 | 2723 |

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pertaining to public administration) from which it might be presumed to have been drawn. The distribution was done in proportion to the number of self-supporting persons in each of these sub-divisions⁴ according to the 1951 Census. The Census tabulation plans make it clear that a person should be returned under 'services otherwise un-classified' only if he does not fall into any of the specific census divisions such as 'primary industries not elsewhere classified', 'mining and quarrying', 'processing and manufacture and construction and utilities'. Also in each division provision is made for persons 'otherwise unclassified'. Hence it is unlikely that persons engaged in occupations such as those provided by electric power and gas supply, domestic and industrial water-supply, transport and communications otherwise unclassified, storage and warehousing, medical and other services, educational services and non-Indian government service, would have been classified under 9.0. However, the Census sub-divisions 5.0, 5.1, 5.2 and 5.4, viz. construction and maintenance of (i) works otherwise un-classified, (ii) buildings, (iii) roads, bridges and other transport works, and (iv) irrigation and other agricultural works, may be exceptions to this observation as casual labour employed in construction and part-time household labour employed in agricultural works might have been classified under sub-division 9.0 either by mistake or due to lack of full information. Similarly, there are reasons to suspect that some scavengers might have been put under sub-division 9.0 instead of sub-division 5.7. On the whole, it seems more reasonable to suppose that the persons in sub-division 9.0 have been mostly drawn from sub-divisions 5.0, 5.1, 5.2, 5.4, 5.7 and 9.1 to 9.8. Therefore, we have reallocated sub-division 9.0 only to these sub-divisions in proportion to estimated 'working force' in them.

2.3. The estimates of 'working force' in 'agriculture' sector, as compiled at present, include livelihood class IV, viz. 'non-cultivating owners of land and agricultural rent receivers'. Examination of the instructions⁵ given to census enumerators reveals that persons belonging to means of livelihood class IV generally do not

⁴ The census sub-divisions included for this purpose were 5.0 (construction and maintenance of works—otherwise unclassified); 5.1 (construction and maintenance—buildings); 5.2 (construction and maintenance—roads, bridges and other transport works); 5.4 (construction and maintenance operations—irrigation and other agricultural works etc.); 5.5 (works and services—electric power and gas supply); 5.6 (works and services—domestic and industrial water supply); 5.7 (sanitary works and services including scavengers); 7.0 (transport and communications otherwise unclassified and incidental services); 7.5 (storage and warehousing); 8.1 (medical and other health services); 8.2 (educational services and research); 8.9 (employees of non-Indian governments); 9.1 (domestic services but not including services rendered by members of family households to one another); 9.2 (barbers and beauty shops); 9.3 (laundries and laundry services); 9.4 (hotels, restaurants and eating houses); 9.5 (recreation services); 9.6 (legal and business services); 9.7 (arts, letters and journalism); 9.8 (religious, charitable and welfare services).

⁵ The following instructions were given to the 1951 Census enumerators for filling up the question on livelihood: "Learn to distinguish between 'cultivation of land' and 'performance of labour necessary for cultivating the land'. The man who takes the responsible decisions which constitute the direction of the process of cultivation (e.g., when and where to plough, when and what to sow, where and when to reap and so on); it is this person who should be referred to as the cultivator, even though he does not perform any manual labour whatever. The man who ploughs or sows or reaps under the directions of some one else is not the cultivator but a cultivating labourer, a different thing altogether".

"The cultivator may be the owner of the land cultivated. In that case he is in category I, whether or not a labourer,....."

"Applying these principles, the answer depends on whether the minor, blind person or lady does or does not actually direct the process of cultivation. If the person does this, the answer is category I; otherwise, the answer is category IV". (Category I refers to livelihood class 'cultivators of land wholly or mainly owned' and category IV to 'non-cultivating owners of land and agricultural rent receivers').

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contribute any gainful work towards agriculture (directly or in a supervisory or managerial capacity). As persons in receipt of income from non-productive activities in non-agricultural sector such as income from non-agricultural property, pensions and remittances are excluded from the self-supporting persons in the 'working force', it seems desirable to exclude persons in livelihood class IV also from the 'working force' engaged in agriculture in order to secure uniformity of treatment. This also fits in with the international definition of 'gainful employment'. For this reason persons coming under means of livelihood class IV, viz. non-cultivating owners and agricultural rent receivers, have been excluded from the estimates of 'working force' in 'agriculture' sector. Similarly the number of earning dependants in the non-agricultural sector who live principally on income from non-productive sources have been estimated and eliminated from the 'working force'. Such an estimate has been made on the basis of data on the number of self-supporting males and females in livelihood class VIII with income principally derived from gainful and non-gainful activities.

2.4. The bench-mark estimates of 'working force' by industries, revised on the lines indicated above, are given in Table 1.2 along with the earlier estimates. Comparison of the two sets of estimates reveals that the most significant changes in industry-wise estimates occur in agriculture, construction, other commerce, public administration, professions and liberal arts and domestic services. The reduction in the 'working force' in agriculture is mainly accounted for by the elimination of livelihood class IV. The increases in the 'working force' employed in the sectors, construction, other commerce and domestic services, are mainly due to the revised procedure of reallocation of sub-division 9.0, viz. 'services otherwise unclassified', whereas the decreases in public administration and professions and liberal arts are due both to the elimination of earning dependants and the revised procedure of reallocation of census sub-division 9.0. Due to paucity of data it is not possible to make any further improvements in the bench-mark figures of distribution of 'working force' which have to be accepted as they are along with their limitations.

3. *Revision of the estimates of the rates of increase of working force in different sectors on the basis of current data* : There are, by and large, two main sources of current data which could be used for revising the estimates of the rates of increase of 'working force' in different sectors arrived at by the NIC from the 1941 and 1951 Census data on 'working force'. These are: (i) the data thrown up in the different rounds of the NSS and (ii) the figures of additional employment during the First and Second Five Year Plans provided by the Labour and Employment Division of the Planning Commission. In addition, there are also some data relating to employment in the public sector collected through the National Employment Service by the Directorate General of Employment and Training, employment in khadi and village industries estimated by the Ministry of Commerce and Industry, employment of direct and contract labour in principal ports published in the Indian Labour Journal etc. These data, though not comprehensive by themselves, provide useful ancillary information which could be utilized in conjunction with the data

*Distribution of working force***TABLE 1.3: COMPARISON OF CONVENTIONAL AND REVISED ESTIMATES OF WORKING FORCE BY INDUSTRIES: 1951-52^a**

(in 000)

| industry of origin | working force | |
|---|---------------|---------------------|
| | conventional | revised |
| (1) | (2) | (3) |
| 1. agriculture, livestock etc. | 104205 | 102298 ^b |
| 2. forestry | 350 | 350 |
| 3. fishery | 581 | 581 |
| 4. total agriculture, livestock, fishery etc. | 105136 | 103229 |
| 5. mining | 782 | 782 |
| 6. factory establishments ^c | 3436 | 3436 |
| 7. small enterprises | 9122 | 9078 |
| 8. construction | 2050 | 2243 |
| 9. total construction, mining, manufacturing etc. | 15400 | 15539 |
| 10. railways ^c | 1196 | 1180 |
| 11. communications ^c | 220 | 208 |
| 12. other transport | 1437 | 1491 |
| 13. organised banking and insurance | 147 | 147 |
| 14. other commerce | 8192 | 8391 |
| 15. total commerce and transport | 11192 | 11417 |
| 16. public administration | 4022 | 3370 |
| 17. professions and liberal arts | 6594 | 6291 |
| 18. domestic services | 3051 | 3384 |
| 19. total services | 13667 | 13045 |
| 20. grand total | 145395 | 143230 |

^a The census data relating to 1st March 1951 have been projected to 1st October, 1951, i.e. mid-financial year 1951-52, by the method used by the NIC.

^b Excludes means of livelihood class IV.

^c Based on current official figures.

either from the NSS or from the Plan statistics in arriving at detailed sector-wise estimates of the rates of change in 'working force'. From a detailed study it appears that at present the NSS figures, from round to round, do not provide a satisfactory basis for calculation of the rates of change of sectoral estimates of 'working force' for reasons discussed later. Hence the rates of increase of sectoral 'working force' have been determined almost entirely on the basis of figures of additional employment in the First and Second Five Year Plans as estimated by the Labour and Employment Division of the Planning Commission. Of the three alternative estimates of the rates of change of 'working force' based on three sets of assumptions, linking up the census concept of 'working force' with the concept of 'additional gainful employment', the series estimates of 'working force' for the entire period 1950-51 to 1960-61 have been prepared on the basis of the assumption, considered as most reasonable and realistic for each sector. It may also be pointed out in this connection that the industrial tabulations of the data collected in the 1961 Census, as and when they become available, would necessitate a further revision of the 'working force' series. However, utilization of these data is not expected to be simple and straightforward process. It is likely to throw up a number of major conceptual and practical problems since the concepts used for the questions on economic activity in the 1961 Population Census are very different from the 'means of livelihood' concept employed in the 1951 Census. The proposed classifications and tabulations are also different

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from those provided for the 1951 Census. Finally, we may mention that it would take at least about another year before the tabulations of the 1961 Census economic data become available. All these considerations underline the desirability of interim revision of the 'working force' estimates for the decade 1951-61 pending the availability and analysis of the 1961 Census economic data.

3.1. *NSS data on changes in gainful employment in different sectors*: If we recombine the fourth to thirteenth rounds of the NSS to represent the financial years 1952-53 to 1957-58, there appears to be a steep downward trend in gainful employment as a percentage to total population. The fall is as much as 8% in five years. Obviously, this does not seem to give a correct indication of current trends in gainful employment. This steep decline could be attributed mostly to changes in the concepts and definitions of gainful employment used in different NSS rounds and to the seasonality of the data and their sampling errors. In some rounds the information was collected on the basis of the 'usual status' whereas in others the 'current status' based on a specific reference period of the day or week preceding the date of enquiry was used. In certain rounds the data were obtained by using more than one concept; tabulations are not, however, available in respect of all of them. The distribution of gainful employment by sectors of economic activity also does not display any stability from round to round. Finally, the sampling errors appear to be too large to measure the small annual changes in gainful employment.

3.1.1. The possibility of estimating, from the NSS data, the rate of change in gainful employment in the specific sectors whose contribution to national income is estimated by the income approach, i.e. 'professions, liberal arts and domestic services', 'other commerce and transport' and 'small enterprises', has also been examined*. From this analysis it emerges that the NSS material, so far available, is not very useful for the purpose in view due to certain important limitations, viz. (a) the figures of employment given by the NSS fluctuate rather widely from round to round; (b) the proportion of households 'actively engaged' in such activities as transport operations to the total number of households in the sector, seems to be highly seasonal and as employment data are obtained only for 'operating households', with part of a year as reference period, these figures would be subject to considerable seasonal errors; (c) the NSS surveys generally do not extend beyond the household sector and, therefore, do not cover completely the corresponding national income sectors of economic activity; (d) the percentage distribution by mode of transport in the household transport sector and by the type of small-scale manufacturing industries in the small enterprises sector do not display much stability from round to round; (e) the sampling errors also appear to be quite large and do not allow us to estimate reliably the annual rate of change in employment; (f) the NSS figures of employment in any given industry may include not only persons with this industry as their principal means of livelihood but also those who have it as their secondary means. In

* Appendix 1.1 gives a summary statement of the data contained in the different rounds of the NSS and their utility for estimation of the rates of increase of the 'working force' in different sectors.

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view of these limitations no attempt has been made to use the NSS data for our purpose. However, the annual Sample Survey of Manufacturing Industries provides some useful data which have been utilized, among other things, for estimating employment in 'factory establishments'.

3.2. *Rates of change of 'working force' in different sectors on the basis of Plan statistics:* Another source available for revision of the estimates of the rates of change of the 'working force' in different sectors is the Plan statistics on additional employment generated in the First and Second Plans. In these publications¹, additional 'continuing' employment generated in the Plan period has broadly been estimated on the basis of investment expenditure on different programmes and approximate norms of investment requirements per unit of additional employment. Additional employment in 'construction' phase has, however, been estimated on the basis of increase in annual investment. These estimates generally relate to full-time gainful employment in the public and private sectors as it is difficult to estimate the additional part-time employment in different sectors generated by the investment expenditure in the Plan period. For the same reason it has not been possible to arrive at any firm estimate of additional employment in the 'agriculture' sector and, as such, the figures given for this sector are not reliable enough for our purpose. Also the norms used to calculate additional employment generated in each sector from investment figures are of a very rough and ready nature. Another major limitation of the employment data presented in the Plan documents is that 'direct employment' falling outside the activities covered in the employment calculations and relating mostly to trade and commerce is computed on the basis of the ratio worked out from the 1951 Census. This figure may not, therefore, be entirely in line with current trends. Finally, the utilization of Plan statistics of employment for calculation of national income gives rise to the problem of isolation of the employment component included in the public sector whose contribution to national income is estimated on the basis of data obtained from the analysis of accounts of public authorities undertaken by this Organisation.

3.2.1. The sector-wise estimates of additional employment are available only for the Second Plan period². For the First Plan period, we have estimated sector-wise employment on the basis of investment targets using the same norms as for the Second Plan with slight adjustments to allow for the general price level in the First Plan period.

3.2.2. As the industrial classification used for presenting Plan statistics is somewhat different from the classification adopted for national income compilation,

¹ These are given in the 'Second Five Year Plan' published by the Planning Commission, the 'Selected Plan Statistics' compiled by the Statistics and Survey Division, the 'Outlook on Employment' brought out by the Labour and Employment Division and the Directorate General of Employment and Training and the 'Progress of the First Five Year Plan' published by the Planning Commission.

² Additional employment in the plan period has been estimated from the figures of annual expenditure or expected outlay for those years for which such figures are available. For other years we have linearly interpolated the employment figures for each sector.

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we have made suitable adjustments on the former classification to bring it in line with the latter. In carrying out these adjustments we have also kept in view the components of employment in professions and services and construction which are included under 'communications', 'railways' and 'government services'.

3.2.3. The concept of gainful employment used in Plan statistics differs from the concept of 'working force' used for national income compilation in several respects. The main distinction between the two concepts is that the Plan statistics of employment relate only to full-time employment (additional man-years of gainful employment) whereas the census based concept of 'working force' includes economically semi-active persons, viz. 'earning dependants'. It is, therefore, necessary to establish some relation between the two before one could use the Plan statistics for estimating the rate of increase in 'working force'. We have been unable to establish any stable empirical relation between these two concepts on the basis of available data. The NSS, in some of its rounds, has used both the census derived concept of 'working force' (self-supporting persons plus earning dependants) and the concept of gainful employment which, however, has been defined in different ways in different rounds. The following table shows the estimates arrived at on the basis of these two concepts from the data collected in the fourth, ninth and tenth rounds of the NSS. The 'working force' does not seem to bear a constant ratio to gainful employment. In fact, this ratio is 1.01, 1.07 and 1.13 for fourth, ninth and tenth rounds of the NSS respectively and the variations in this ratio are mainly attributable to changes in the definition of the term 'gainful employment' from round to round.

TABLE 1.3: ESTIMATES OF WORKING FORCE AND GAINFUL EMPLOYMENT FROM NATIONAL SAMPLE SURVEY DATA

| (in lakh) | | | | |
|---------------|--|--|--------------------|---------------------------|
| NSS round no. | period of survey and relevant corresponding financial year | working force* (earning dependants plus earners) | gainful employment | col. (3) as % of col. (4) |
| (1) | (2) | (3) | (4) | (5) |
| 4th | April 1952-September 1952 (1952-53) | 1670 | 1648 | 1013 |
| 9th | May 1955-November 1955 (1955-56) | 1738 | 1624 | 1069 |
| 10th | December 1955-May 1956 (1955-56) | 1672 | 1480 | 1130 |

* The percentage coming under this category to total population has been taken from the NSS Reports and is given separately for rural and urban areas. These percentages have then been applied respectively to the rural and urban populations estimated at mid-financial year on the basis of the CSO population projections and the assumption that urbanization would be of the order of 40% in the decade 1951-61. The accuracy may need revision in the light of the final 1961-Census figures.

3.2.4. For estimating the rate of change of 'working force' from the Plan statistics on additional employment, the following three assumptions have been considered :-

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- A : Increase in 'working force' over the Plan period would be equal to the additional employment created in the final year of the Plan over the first year plus the backlog of unemployment at the beginning of the Plan. This assumption implies that the Plan, in addition to generating the target of additional employment, would succeed in absorbing all the backlog of unemployment at the beginning of the Plan period in the 'working force' at least as 'earning dependants'.
- B : Increase in 'working force' over the plan period would be equal to the additional employment created in the final year of the Plan over the first. This neglects completely the creation of any additional part-time employment.
- C : Increase in 'self-supporting' persons would be equal to the additional employment created in the final year of the plan over the first year and there would be proportionate increase in earning dependants. This assumption ignores the differentials in the rate of increase of full-time and part-time employment in different sectors.

3.2.5. It may be pointed out that the estimates of 'working force' based on the assumptions A and B set upper and lower limits respectively to the additions to the working force' as they involve the extreme assumptions that all backlog of unemployment would be absorbed in the category of earning dependants or that there would be no additions to the earning dependants. Hence the true rate of change of the 'working force' in different sectors may be expected to lie somewhere between these two assumptions. Assumption C, on the other hand, may be expected to give an intermediate rate between A and B for sectors offering mostly full-time employment while for sectors with a large proportion of earning dependants like construction and domestic services, assumption C may be expected to give a much higher rate than assumption B, since on this basis the rate of increase of employment of earning dependants is equal to that of self-supporting persons.

3.2.6. The current rates based on Plan statistics and using assumption B and C generally turn out to be much higher for the non-agricultural sectors excepting 'professions and services' and 'public administration' than the rates used in national income compilation so far. However, as observed in paragraph 3.2.5, we cannot compare the rates for the agricultural sector since the Plan estimates for this sector are not very satisfactory and relate, presumably, to full-time gainful employment and part-time or seasonal employment converted to equivalent full-time employment. As pointed out in the preceding paragraph, estimates based on assumptions A and B are likely to give the upper and lower bounds to these rates whereas assumption C is likely to give a higher than true rate for sector with a large proportion of economically semi-active persons. It, therefore, appears that of the three rates based on Plan statistics, it would be prudent to adopt the minimum rate for each sector, i.e. estimates based on assumption B, in view of the fact that the lowest rate is registered by all the three series based on the three assumptions A, B and C

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are generally larger than those implicit in the conventional series. Adoption of estimates based on assumption B could also be justified on the grounds that the adjustments made in estimates based on assumptions A and C for including the increase in 'earning dependants' are subjective and hence not entirely satisfactory. However, an exception has to be made for the sector 'small enterprises' in which creation of a sizeable amount of part-time employment is anticipated. For this sector the rates given by assumption C have been adopted on the assumption that part-time employment will increase at the same rate as full-time employment.

3.2.7. Table 1.4 gives, for the years 1950-51 and 1955-56 to 1959-60, the estimates of 'working force' revised on the basis of improved method of distribution of bench-mark data and the rates of increase of 'working force' obtained from Plan statistics. The conventional series is also presented to give a comparative picture.

3.3. *Future outlook:* The future outlook on the availability of data for improving the estimates of 'working force' (or gainful employment) by industrial origin is indicated here briefly. As mentioned in an earlier section, the chief limitation in using the available NSS data on gainful employment is the lack of uniform concepts and definitions from round to round. This is expected to be remedied by stabilizing the concepts and definitions in the employment and unemployment surveys of the fourteenth and fifteenth rounds, each of which has been designed to cover one complete year. These concepts and definitions have now been standardized, with minor modifications, for adoption in the sixteenth and subsequent rounds of the NSS. It is, therefore, hoped that more useful data would be thrown up from these surveys. Another prospective source of data is the Employment Market Information collected by the Directorate General of Employment and Training of the Ministry of Labour and Employment. The scope of these surveys is gradually being increased and when their coverage becomes stabilized, they may provide useful indicators, of the rate of growth of employment in different industries and occupations. The third and most important source of prospective data is, of course the 1961 Population Census. The concepts and definitions to be used for determining the economically active population in the 1961 census are different from the concept of means of livelihood employed in the last census. The proposed classifications and tabulations also show considerable departure from the 1951 pattern. We may expect a mass of useful data on gainful employment from these tabulations, which may necessitate an almost complete revision of the present basis of estimation of 'working force'. However, as indicated in paragraph 3, it may take about another two years before such a revision can be attempted.

TABLE 1.4: REVISED AND CONVENTIONAL ESTIMATES OF WORKING FORCE BY INDUSTRIAL ORIGIN FOR THE YEARS^a 1950-51 AND 1955-56 TO 1959-60 (In 000)

| Sector | revised series | | | | | | | | | | conventional series | | | | | | | | | |
|---|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) |
| 1. total of agriculture | 109299 | 104499 | 104789 | 106149 | 106609 | 106869 | 106640 | 111665 | 113216 | 114870 | 116607 | 118356 | 120000 | 121650 | 123300 | 124950 | 126600 | 128250 | 129900 | 131550 |
| 2. mining | 780 | 784 | 813 | 842 | 871 | 901 | 780 | 789 | 791 | 793 | 794 | 796 | 797 | 798 | 799 | 800 | 801 | 802 | 803 | 804 |
| 3. factory establishments | 8355 | 8482 | 8595 | 8644 | 8688 | 8732 | 8776 | 8820 | 8864 | 8908 | 8952 | 8996 | 9040 | 9084 | 9128 | 9172 | 9216 | 9260 | 9304 | 9348 |
| 4. small enterprises | 9053 | 9363 | 9526 | 9712 | 9882 | 10146 | 9541 | 9602 | 9663 | 9724 | 9785 | 9846 | 9907 | 9968 | 10029 | 10090 | 10151 | 10212 | 10273 | 10334 |
| 5. construction | 2175 | 2111 | 2206 | 2704 | 4008 | 2775 | 1990 | 2254 | 2427 | 2593 | 2611 | 2702 | 2702 | 2702 | 2702 | 2702 | 2702 | 2702 | 2702 | 2702 |
| 6. total of mining manufacturing etc. | 16363 | 16740 | 17140 | 18302 | 18924 | 18860 | 16270 | 16909 | 16917 | 16612 | 16192 | 16218 | 16244 | 16270 | 16296 | 16322 | 16348 | 16374 | 16400 | 16426 |
| 7. railways (including construction) ^b | 1168 | 1331 | 1416 | 1728 | 1771 | 1868 | 1178 | 1282 | 1319 | 1361 | 1396 | 1412 | 1428 | 1444 | 1460 | 1476 | 1492 | 1508 | 1524 | 1540 |
| 8. communications ^c | 185 | 274 | 294 | 310 | 327 | 344 | 195 | 274 | 292 | 310 | 327 | 344 | 361 | 378 | 395 | 412 | 429 | 446 | 463 | 480 |
| 9. organized banking and insurance ^d | 147 | 162 | 164 | 162 | 162 | 171 | 147 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 | 148 |
| 10. other commerce and transport | 9782 | 11160 | 11609 | 11868 | 12197 | 12501 | 9622 | 10022 | 10140 | 10261 | 10382 | 10503 | 10624 | 10745 | 10866 | 10987 | 11108 | 11229 | 11350 | 11471 |
| 11. total of government, transport and communications | 11282 | 12917 | 13376 | 14008 | 14466 | 14881 | 11053 | 11727 | 11900 | 12060 | 12220 | 12380 | 12540 | 12700 | 12860 | 13020 | 13180 | 13340 | 13500 | 13660 |
| 12. public administration | 3266 | 4557 | 4767 | 5047 | 5489 | 5739 | 3886 | 4749 | 4950 | 5121 | 5266 | 5412 | 5557 | 5702 | 5847 | 5992 | 6137 | 6282 | 6427 | 6572 |
| 13. professions and liberal arts | 6147 | 6807 | 6981 | 7095 | 7240 | 7385 | 6425 | 7462 | 7684 | 7944 | 8205 | 8466 | 8727 | 8988 | 9249 | 9510 | 9771 | 10032 | 10293 | 10554 |
| 14. domestic services | 3278 | 3616 | 3676 | 3725 | 3766 | 3815 | 2947 | 3002 | 3056 | 3109 | 3163 | 3217 | 3271 | 3325 | 3379 | 3433 | 3487 | 3541 | 3595 | 3649 |
| 15. total of other services | 12691 | 14979 | 15393 | 15677 | 16235 | 16683 | 12258 | 12712 | 12980 | 13247 | 13515 | 13783 | 14051 | 14319 | 14587 | 14855 | 15123 | 15391 | 15659 | 15927 |
| 16. total of non-agriculture sectors | 39236 | 44636 | 45908 | 48127 | 49625 | 50714 | 39651 | 42259 | 44077 | 44663 | 45250 | 45836 | 46423 | 47010 | 47596 | 48183 | 48770 | 49357 | 49944 | 50531 |
| 17. Grand total | 142265 | 149065 | 150897 | 152286 | 153244 | 154683 | 142221 | 144814 | 147292 | 149622 | 151856 | 154090 | 156324 | 158558 | 160792 | 163026 | 165260 | 167494 | 169728 | 171962 |

^a Based on plan statistics of additional employment and assumption Q for 'small enterprises' and assumption B for other sectors.
^b Mid-financial year estimates. ^c Based on current data. ^d Preliminary.

Distribution of Working Force