

CHAPTER 17 WORKING FORCE

17.1 The term 'working force' refers to the number of persons engaged wholly or partly in production of goods and services. Data on working force are required for estimation of domestic product in a number of unorganised sectors/ sub-sectors at all India/State level where 'product approach' cannot be followed mainly due to the absence of reliable data on value of production and the relevant items of intermediate consumption (generally referred to as inputs). These sectors/sub-sectors are: unregistered manufacturing, water supply, wholesale and retail trade, hotels and restaurants, transport by means other than railways, shipping and air, storage not elsewhere classified, business services, legal services, sanitary services, research and scientific services, religious and other community services, personal services, etc. The details of major/minor groups of NIC-1970 followed in the 1971 & 1981 population censuses for which this procedure is followed are shown in Appendix 17.1.

17.2 In other sectors of the economy also, in which contribution to domestic product is estimated by production approach, estimates of working force are useful to ensure that all productive activities are included in the output and to work out value added per worker generated within a sector. Hence, a complete distribution of all workers by detailed industrial classes is worked out for the base year. For other years, however, annual estimates of working force are prepared in respect of a few sectors in which production approach is not followed in the estimation of domestic product.

17.3 Current annual data on working force for various sectors of the economy are not available. Main source for data on working force are the decennial population census conducted by the office of the Registrar General of India (RGI) based on 20 per cent sample of all the households covered in the complete census at three digit level of NIC. Inter-censal growth rates are used for preparing annual estimates of working force. This requires that the census data collected at different points of time should be comparable. The NSS in its various rounds has collected data on employment and unemployment, but these have been compiled to three-digit level of NIC separately for main and marginal workers only in the 38th round of the NSS. Since information for earlier rounds are not available in such details, it is not possible to make use of these data for adjustment of 1981 census working force for working out the intercensal or post-censal estimates.

Main workers

17.4 During the population census, the information is collected inter-alia on "economic questions" through individual slips. Based on this information, the Office of the RGI compiles the estimates of working force in respect of main workers and secondary workers at three digit level of NIC-1970 separately for rural and urban as well as for male and female workers. The estimates of main workers are presented in more details, but those of secondary workers are available only by a few broad groups. For compilation of domestic product, the estimates of secondary workers in addition to main workers are required.

17.5 The estimates of main workers other than cultivators and agricultural labourers have been presented up to three-digit level of NIC both for 1971 and 1981 censuses.

17.6 The estimates of working force in the present series are based on 1971 and 1981 population censuses. In 1981 population census, the intention was to collect information regarding economic activity of the people in greater details so that the users have a variety of information. During 1971 census, information was collected in respect of workers and non-workers along with secondary work of these two categories of persons whereas in 1981

census information was collected regarding main workers, secondary work of main workers and marginal work of non-workers. The extracts of individual slips from 1971 and 1981 censuses showing 'Economic Questions' canvassed are given in appendix 17.2. According to 1981 census, main workers were those who worked for 183 days or more during the year. In this connection, the RGI states ".....the main workers of 1981 census can be expected to correspond to the workers of 1971.....". (Introduction to Tabulation Plan, Census of India, 1981, RGI). In 1981 census also, secondary and marginal workers were tabulated only by broad groups. Further, these categories of workers are not comparable from the two censuses. As such, while making use of detailed working force data up to three-digit level from these two censuses, inter-censal growth rates have been obtained taking into consideration only main workers from the two censuses. The adjustment for subsidiary and marginal workers in 1981 census main working force is explained in para 17.10.

17.7 The estimates of working force by detailed categories, which are available only in respect of main workers, are required for the mid-financial year 1980-81, i.e. as on 1.10.1980, for compilation of domestic product. Thus, this adjustment in respect of main workers can be done on the basis of average annual compound growth rate observed between 1971 and 1981 population censuses. However, 1981 population census was not conducted in the state of Assam due to disturbed conditions. As such the available all-India estimates from 1981 census need to be adjusted on this account. The working force for Assam as on 1.3.1981 has been estimated by the work participation method separately for rural and urban areas and added to the figures of 1981 census to obtain the all-India estimates. The method of estimating working force for Assam as on 1.3.1981 and that of all-India as on 1.10.1980 is given in Appendix 17.3. Appendix 17.4 presents a comparable picture of industrial sectors of domestic product at 3-digit level of NIC-1970 and NIC-1987. Table 17.1 presents a comparative picture of estimated main workers for mid-financial year of 1970-71 and 1980-81 for all-India at the 2-digit level of NIC-1970.

Subsidiary and Marginal Workers

17.8 The estimates of secondary workers in addition to main workers are necessary for compilation of the domestic product. In the case of 1971 population census, data on secondary work of the main workers and non-workers were published by RGI only by broad groups of cultivators, agricultural labour, household industry and a combined group of non-household industries consisting of trade, business and service.

17.9 In 1981 population census, the tabulation in respect of non-household industry of the secondary work of the main workers was further disaggregated into a few more industry groups, but only at one-digit level. On the other hand, in respect of marginal workers, the data have been published at the two-digit level. As such, the comparison of total working force available from two censuses is not feasible and is restricted only to main workers.

17.10 For adjustment of main workers used in compilation of domestic product, one requires estimates of subsidiary workers and marginal workers at two-digit level and three-digit level of NIC-1970. The NSSO Report on Employment and Unemployment of the 38th round (1983) provides distribution of main and marginal workers separately at two/three-digit level of NIC for rural and urban areas. The result is given in Table 17.2. With the help of these proportions, census subsidiary and marginal workers available at one-digit level have been allocated to the two and three-digit levels and added to census main workers as on 1.10.1980 to obtain the total estimates of the working force.

17.11 The population census presents the results of the working force in respect of total manufacturing (registered and unregistered) separately for household and non-household industries for rural and urban areas. In order to estimate the working force in the unregistered manufacturing, the whole of the working force in the household manufacturing is taken as

belonging to this sector, while the estimates for the non-household sector are obtained by subtracting from the census working force in this part the number of workers in the registered manufacturing as available from the ASI after due adjustment for non-responding factories. Generally, the ASI results are available without rural and urban break-up. However, for 1980-81 the ASI results were specially tabulated for a few items including workers separately for rural and urban areas on the basis of location code and these estimates have been used. Secto-wise estimates of main and marginal including subsidiary workers separately for rural and urban areas as on 1.10.1980 are given in Table 17.3.

17.12 It has been mentioned earlier that data on working force are required for estimation of domestic product in a number of industry groups. For some of these industries, the working force is used only for the base year. These industries include unregistered manufacturing, trade, hotels and restaurants and some of the transport activities. The estimates of working force for the base year in these industry groups are given in Table 17.4.

17.13 There are a number of other industry groups where the working force estimates are used not only for the bench mark year but also for other years. These industry groups along with the estimates of working force separately for rural and urban areas as on 1.10.80 are also given in Table 17.4. In these industry groups annual estimates of working force are to be obtained with the help of current physical indicators. Wherever, no such current physical indicators are available, use is made of the inter-censal growth rates for estimation purposes.

Use of Current Physical Indicators for Projection of Working Force

17.14 In extrapolating the working force, attempt is generally made to look for some physical indicators highly correlated with the activities, because the annual growth rates based on two consecutive population censuses with an interval of 10 years used for extrapolation may not hold good. Thus, in three groups of mechanised road transport viz., (i) passenger transport by tramway and bus-services, (ii) passenger transport by other motor vehicles and (iii) freight transport by motor vehicles, the bench mark working force estimates are projected on the basis of number of vehicles of these categories with which the working force is directly proportional. The number of vehicles by categories are compiled annually by the Transport Research Division of Ministry of Surface Transport and published in their publication 'Motor Transport Statistics in India'. Similarly, in the case of medical and health services the bench-mark working force estimates are projected on the basis of number of medical and para-medical personnel. The data on number of medical and para-medical personnel are published annually by the Central Bureau of Health Intelligence, Ministry of Health and Family Welfare in their publication "Health Statistics in India". In the present series efforts have been made to obtain the annual working force estimates for some more activities by using data on detailed physical indicators which have been used for projecting the 1980-81 working force for other years. These are discussed below.

17.15 The business services constitute the following categories of activities;

NIC-1970 Code	Description
823	Accounting, auditing and book-keeping services
824	Data processing and tabulated services
825	Engineering, architectural and technical services
826	Advertising and publicity services
827	Machinery and equipment rental and leasing
828	News agencies, as for example PTI, UNI, Reuter etc.
829	Business services, except machinery and equipment rental and leasing not elsewhere classified.

17.16 The bench-mark working force estimates for business services have been moved with a combined indicator based on number of Chartered Accountants in India (to take care of Group 823), number of architects in India (to take care of group 825) and Index of Industrial Production in respect of machinery (to take care of Group 827). These three indices were combined in the ratio of 1981 census working force in these three groups.

17.17 While examining the possibility of using certain appropriate physical indicator to move the bench-mark working force estimates of 1980-81 for future years, it was found that the indicator for legal services would be the number of advocates, which are available annually from the Bar Council of India. In the present series, this indicator has been used for projecting the 1980-81 census working force as on 1.10.1980.

17.18 For laundry, dyeing and dry-cleaning services a combined Index of Industrial Production of detergents comprising detergents of all kinds, soap of all kinds, fatty acids and glycerine has been used for projecting the estimates of working force as on 1.10.1980.

APPENDIX 17.1 : Major/minor groups of NIC for which census working force estimates are used in compilation of Domestic Product

Major and minor groups of NIC-1970	Description of Industry
(1)	(2)
Unregistered Manufacturing and Repair Services*	
20-21	Manufacture of food products
22	Beverages, tobacco and tobacco products
23-26	Textiles
27	Wood, wood products, furniture and fixtures
28	Paper and paper products, printing, publishing, etc.
29	Leather, leather and fur products
30	Rubber, plastic, petroleum and coal products
31	Chemicals and chemical products (except petroleum and coal)
32	Non-metallic mineral products
33	Basic metals and alloys industries
34	Metal products and parts except machinery and transport equipment
35	Manufacture of machinery except electrical machinery
36	Electrical machinery, apparatus, etc.
37	Manufacture of transport equipment and parts
38	Miscellaneous manufacturing industries
97	Repair services
Water works and supply	
42	Water works and supply
Trade, hotels and restaurants	
60-64	Wholesale trade
65-68	Retail trade
821	Purchase and sales agents and brokers
822	Auctioneering
69	Hotels and restaurants
Transport by other means and storage	
701	Tramway and bus services
702	Passenger transport by other motor vehicles
703	Freight transport by motor vehicles
704	Hackney carriages, bullock-carts, ekkas, tongas, etc.
705	Transport by animals like horses, elephants, mules & camels etc.

Continued..

APPENDIX 17.1 : Major/minor groups of NIC for which census working force estimates are used in compilation of Domestic Product

(Concluded)

Major and minor groups of NIC-1970	Description of Industry
(1)	(2)
706	Transport by men (including rickshaw-pullers, hand cart-pullers, porters, coolies, etc.)
708	Supporting services to land transport like operation of highway bridges, toll roads, vehicular tunnels, parking lots, etc.
710	Ocean and coastal water transport
711	Inland water transport
712	Supporting services to water transport like operation and maintenances of piers, docks, pilotage, lighthouses, loading and discharging of vessels, etc.
749	Storage n.e.c.
Business Services	
823-829	Business services
Other services	
830	Legal services
910	Sanitary services
922	Research and scientific services
930 & 931	Medical and health & veterinary services
940 to 949	Religious and other community services
960	Domestic services
961	Laundry, dry-cleaning and dyeing services
962	Hairdressing and beauty shops
963	Portrait and commercial photographic studios
969	Personal services n.e.c.
980	International and other extra-territorial bodies
990	Services n.e.c.

Note: n.e.c. stands for not elsewhere classified.

* - From the total population census working force for the manufacturing sector the working force covered under ASI is subtracted to arrive at the working force in the unregistered sector.

APPENDIX 17.2 : Economic questions canvassed during 1981 and 1971 population censuses

Questions of 1981 Population Census

- I. 14A Worked any time at all last year? Yes / No (H/ST/D/R/B/I/O)
14B If yes in above, did you work for major part of last year? Yes(1)/No(2)

- II. 15A Main activity last year? Yes in 14B(C/AL/HHI/OW)
No in 14B (H/ST/D/R/B/I/O)

If HHI/OW in 15A

- (i) Name of establishment
- (ii) Description of work
- (iii) Nature of industry, trade or service
- (iv) Class of worker

14 B Yes - Any other work any time last year?

15B Yes(C/AL/HHI/OW)/No

14B No - Work done any time last year? (C/AL/HHI/OW)

If HHI/OW in 15B

- (i) Name of establishment
- (ii) Description of work
- (iii) Nature of industry
- (iv) Class of worker

- III. 16 If No in 14A or 14B, seeking/available for work? Yes(1)/No(2)

Questions of 1971 Population Census

Q.16 Main Activity

- (a) Broad category (i) worker - (C,AL, HHI, OW)
(ii) Non-worker - (H, ST, R. D. B, I. O)
- (b) Place of work (Name of village/town)
- (c) Name of establishment
- (d) Nature of industry, trade, profession, service
- (e) Class of worker

Q.17 Secondary Work

- (a) Broad category (C, AL, HHI, OW)
- (b) Place of work (Name of village/town)
- (c) Name of establishment
- (d) Nature of industry, trade, profession or service
- (e) Description of work
- (f) Class of worker

The symbols used to indicate the various categories of workers are:

- C - Cultivators
- AL - Agricultural labour
- HHI - Household industries
- OW - Other work

Similarly those used to indicate various categories of non-workers are:

- H - Household duties
- ST - Students
- D - Dependent
- R - Retired persons or rentiers
- B - Beggars etc.
- I - Inmates of institutions
- O - Other non-workers

The criterion of classifying workers in 1981 census

Definition of work: "Work" may be defined as participation in any economically productive activity. Such participation may be physical or mental in nature. Work involves not only actual work but also effective supervision and direction of work.

Reference period: In all the questions, the reference period is one year preceding the date of enumeration. Certain types of work such as agriculture, household industry like gur making etc., are carried on either throughout the year or only during certain seasons or parts of the year, depending on the local circumstances. In such cases, what we are concerned with is the broad time-span of the agricultural seasons preceding the enumeration.

Explanation: There should be no confusion regarding these questions. What we are trying to find out is the number of workers and since workers can be full-time workers or seasonal or marginal workers, it is necessary to collect data that will give us the correct picture. This is what questions 14A and 14B and questions 15A and 15B seek to do. The detailed explanation and instructions for each of these questions are given separately but it will be useful if we look at these together to understand their purpose better.

Question 14A seeks to find out if a person has done any work at all during the last year or whether he or she did not work at all and if it is the latter, how the person spent his/her time as a non-worker. Then, question 14B seeks to find out who among the persons returning 'Yes' in question 14A had worked for the major part of the year. By major part of the year, it is intended to find out how many had worked for 183 days or more, or in other words, worked for 6 months or more. Those who have worked for 183 days or more will answer 'Yes' for question 14B. For them code '1' has to be recorded in the box. But those who have worked for less than six months or 183 days will say 'No' and for them code '2' is to be recorded in the box for this question. Question 15A seeks to elicit information on the main activity of the workers in question 14B, i.e., those for whom '1' has been recorded in the box. It will also elicit information about the main activity of the 'marginal workers' covered in question 14B, i.e., those who have returned 'No' and for whom '2' has been recorded in the box against question 14B.

The person may have worked for six months or 183 days or more in more than one activity. For example, he/she may have worked for 3 months in cultivation, one month in gur-making and 3 months as an agricultural labourer. In question 15A, he/she is required to indicate which of these three activities according to him/her was his/her main activity, i.e., in which capacity he/she spent more time. In the instant case, since the person has spent three months each in cultivation and as agricultural labourer, the choice as to which of these two would be his/her main activity should be left to him/her. Those who have returned 'No' for question 14B, i.e. those who have worked for less than six months or 183 days during the last year and for whom code '2' has been recorded in the box, will have to state whether according to them they were engaged mainly in household duties, or as student, or dependent or as retired person, rentier, or beggar or inmates of institutions, and if not in any of these categories, the person(s) should be put under 'Others' in question 15A.

In question 15B, details of secondary work or marginal work are sought to be obtained. Those who have worked for the major part of the year, i.e., those for whom '1' has been recorded in the box against question 14B, may have had secondary work and this should be entered in question 15B. Those who have not worked for the major part of the year and for whom code '2' has been recorded in the box against question 14B, must have done some marginal work and these details will be entered in the box against question 14B. It is important that probing questions are asked to elicit correct information in this question.

In question 16, it is proposed to ask all persons returning 'No' in question 14A, i.e., H/ST/D/R/B/I/O in question 14A or 'No' in question 14B, i.e., code '2' in question 14B, whether he or she has been seeking work or is available for work.

It will thus be seen that these questions on economic aspects have been so designed as to identify all the workers, regular or seasonal, and non-workers with reference to the activities during the last one year prior to the date of enumeration. It is very important to remember that the period referred to in question 14A, 14B, 15A and 15B is one year preceding the enumeration. Thus, if in some areas a person has been a cultivator or an agricultural labourer, or has worked in an industry etc., only in one season, i.e., for less than 6 months/183 days, he/she is not to be treated as a worker for question 14B. His/her economic activity will be reflected in question 15B. Thus all those returning 'Yes' in question 14A must be netted as 'Yes' in question 14B or in question 15B or both".

Criterion of Classifying Workers in 1971 Census

"Every person will be asked what his main activity is, that is, how he engaged himself mostly. For the purpose of this question, all persons will get themselves divided into two broad streams of main activity, namely, (1) as workers and (2) as non-workers according as the type of main activity that the person returns himself as engaged in mostly.

Definition of Worker: A 'worker' is a person whose main activity is participation in any economically productive work by his physical or mental activity. Work involves not only actual work but effective supervision and direction of work.

Reference period: The reference period is one week prior to the date of enumeration in the case of regular work in trade, profession, service or business. If a person had participated in any such regular work on any one of the days during this reference period and this has been returned as his main activity, the person will be categorised accordingly. A person who normally works but had been absent from work during this reference period on account of illness or travel, holiday, temporary breakdown, strike, etc., should be treated as engaged in regular work in which he would have otherwise been employed but for his temporary absence. Persons under training such as apprentices with or without stipends or wages should be considered as economically active and recorded as working. A person who has merely offered work but has not actually joined it is not to be treated as engaged in work.

There are certain types of work which are not carried on throughout the year, such as cultivation, livestock keeping, plantation work, some types of household industry, etc. A person's main activity should be ascertained with reference to such work in the last one year even if he was not economically active in the week prior to enumeration. It is likely that even when a person is engaged in some other work during the period of one week prior to the date of enumeration, the main activity of the person may be cultivation, agricultural labour or some other work attended to normally by him in the course of the year. Care must be taken to see that the main activity is properly ascertained in such cases. For example, a person's main activity may be agricultural labour and in the week prior to enumeration he may be engaged as a sugarcane factory labourer or as a road collie. He should be categorised for his main activity as agricultural labourer only as returned by him, as he engages himself mostly in that work and the other work should be treated as his subsidiary work.

A man or woman who is engaged primarily in household duties such as cooking for own household or performing one's own household duties, or a boy or a girl who is primarily a student attending an institution, even if such a person helps in the family economic activity, but not as full-time worker, should not be treated as a worker for the main activity. On the other hand, if a person is primarily engaged in some economic activity but at the same time

does attend to some household chores or attends a night school etc., he or she should be treated basically as a worker for the main activity and categorised accordingly.

A person who merely received an income, such as a rent-receiver or a pensioner who does not have to work for receiving the income, will not be treated as economically active unless the person is also engaged in some economic activity and if that activity is returned as the main activity of the individual.

Secondary Work: "This question should be asked of every person whether he has returned some work as his main activity against 16(a)(i) or had returned himself under any of the basically non-working categories against question 16(a)(ii). As was noted earlier, 16(a)(ii) will cover cases like persons performing household duties or students who may not be engaged in any other economically productive work at all, as also those who, though basically they are performing household duties or are students etc., for the purpose of their main activity, still participated in some other economic activity such as helping the household in several items of work as in cultivation or in household industry or in looking after the cattle or in attending to family business etc. but not to the extent as a full-time worker. Such participation will be considered as secondary work of these persons.

Ask each person if, besides what he had already returned as his/her main activity against questions 16(a)(i) or 16(a)(ii), he/she participated in any secondary work. A number of unpaid family workers participating in the household enterprises, who might have returned themselves mainly as 'H' or 'ST' or 'R' under question 16(a)(ii) for their main activity will be netted here for their economic activity which is subsidiary. Mere rendering of service for one's own home or production of goods for purely domestic consumption is not to be treated as economic activity. For example, a servant who works as a cook in his or her employer's home for wages will be considered economically active, but a housewife, even if she may work much more than a paid servant in having to cook for the family or looking after the household, will not be treated as economically active for the purpose of this classification. Similarly, women who may produce cloth on a loin loom at home for domestic consumption will not be treated as economically active unless the products are sold and the household derives an income. Participation in work that goes to augment the income of the household will only be treated as economic activity. A boy whose main activity is shown as student under 16(a)(ii) can have the secondary work of, say, cultivation, if he helped the head of the household in the family cultivation during some parts of the season. But if a girl student whose main activity is shown as 'ST' under 16(a)(ii) also helped in weaving cloth purely for domestic consumption on a loin loom at home, or helped in attending to household chores, she will not be treated as having any secondary work. Secondary work will be reckoned only if the person is engaged in some economic activity, even if marginal, in addition to whatever is the main activity under question 16. If a person whose main activity is shown as, say, a clerk in a Government office or a teacher under question 16, also attends to some cultivation by his direct supervision or undertakes some tuition, this will be shown as secondary work under question 17. Again, his main activity may be as agricultural labourer and subsidiary work as sugar factory labourer and so on and so forth".

APPENDIX 17.3 : Method of estimation of working force of Assam for 1981 and that of all-India as on 1.10.1980

For estimating the working force for the State of Assam for 1981, two alternative methods were tried, namely, (i) ratio method at 1-digit level of NIC and (ii) work participation method at overall ages for males and females separately for rural and urban areas. The main workers for 4 eastern States, namely, Meghalaya, Manipur, Nagaland & Tripura for the years 1981 & 1971 were compiled at 1-digit level of NIC, 1970 and also the working force for Assam in 1971. Using the growth observed between 1971 & 1981 in number of main workers in respect of 4 eastern states, main workers for Assam, 1981 was estimated by ratio method at

one-digit level of NIC. Thus work force (WF) Assam 1981 = WF(4 Eastern States) 1981 X WF Assam 1971 / WF(4 Eastern States) 1971

In estimating the main workers for Assam in 1981 utilising the work participation rates of these 4 eastern states, first work participation rates were estimated for rural and urban areas by sex in 1981 & 1971 with the help of combined population of these 4 states and corresponding main workers. Utilising the change in combined work participation rates of these eastern states during 1971 & 1981, the work participation rates for Assam in 1981 were estimated from those available for this state in 1971. Having estimated the work participation rates for rural and urban areas by sex and utilising the projected population of Assam in 1981 (Expert Committee on Population Projections), main workers were estimated for Assam as shown below:

(in thousand)						
All ages	Estimated work participation rates		Projected population 1981		Estimated main workers	
	Male	Female	Male	Female	Male	Female
Rural	48.87	6.68	9310	8540	4550	570
Urban	48.56	6.04	1158	890	562	54

The estimated main workers by using ratio method at one digit level of NIC and work participation rates are given in Table 17.5.

The estimated main workers for Assam in 1981 obtained using work participation rates were added to those for all-India (excluding Assam) to get estimates at all-India (including Assam) as on 1st March, 1981 for rural and urban areas by sex at aggregate level. The work participation method has been adopted as it utilised both estimated work participation rates as well as projected population of Assam for 1981. Further, the estimates obtained by this method are closer to those based on NSSO estimates available from 38th round - Employment & Unemployment Survey. As explained earlier, for the use in national income compilation, the estimates of working force are required as on 1st October, 1980 at 2-digit & 3-digit levels of NIC, 1970. Using the estimates of the main workers at all-India level as on 1st March 1981 obtained above and corresponding estimates of working force as on 1st April, 1971, annual compound growth rates have been worked out for rural & urban areas by sex at aggregate level with the help of relation:

$$P \text{ 1981} = P \text{ 1971} (1+r)^t$$

Where

P 1981 = estimates of main workers as on 1.3.1981

P 1971 = estimates of main workers as on 1.4.1971

t = 119/12 period between 1.4.1971 & 1.3.1981

r = average annual compound growth rate.

The estimates at the aggregate level obtained for rural and urban areas by sex as on 1.10.1980 have been distributed in proportion to the census main workers as on 1st March, 1981 at 1-digit level for all-India (excluding Assam) plus estimated main workers for Assam as on 1st March, 1981 at 1-digit level. These estimates obtained at one-digit level have been further distributed in proportion to the census main workers at 2-digit levels for all-India (excluding Assam) as on 1st March, 1981 to get the estimates for all-India (including Assam) as on 1st October, 1980 at 2-digit level. Similarly, the estimates at 3-digit level have been derived at all-India level including Assam. The estimates of main workers as on 1.10.70 and 1.10.1980 are given in table 17.1.

APPENDIX 17.4: Composition of industrial sectors of domestic product at three digit level of National Industrial Classification

Industry (1)	NIC-1970 (2)	NIC-1987 (3)
1. Agriculture and allied activities		
1.1 Cultivation	000 to 006	000 to 005
1.2 Agricultural labour)		
1.3 Other agricultural production	007, 008, 207h	006 to 009, 207.1h, 207.2h
1.4 Agricultural services	030 to 036 less 035	030 to 037 less 035
1.5 Plantations	010 to 019	010 to 019
1.6 Livestock production	020 to 029, 200h	020 to 029, 200h
1.7 Hunting and trapping	040	040
2. Forestry and logging		
2.1 Logging and production of fuel	051, 052	051, 052
2.2 Gathering of minor forest products	053 to 059	053 to 059
3. Fishing		
3.1 Ocean sea and coastal fishing	060	060
3.2 Inland water fishing	061	061
3.3 Other fishing and allied activities	062 to 069	062 to 069
4. Mining and quarrying		
4.1 Coal and lignite mining	100, 101	100 to 102
4.2 Crude petroleum and natural gas	110, 111, 707	110, 111 & 707
4.3 Metal ore mining	120 to 129	120,130 to 139, 140
4.4 Other mining	190 to 195,199	150 to 156, 159, 190, 191, 199
5. Manufacturing and repair services		
5.1 manufacturing		
5.1.1 (a) Non-household	200 to 389 (non-household part)	200 to 399 (non-household part)
5.1.2 (a) Household	200 to 389(non-household part) less 200h, 207h	202 to 399 (non-household part) less 200h, 207h
OR		
5.1.1 (b) Registered	ASI 200 to 389	ASI:200 to 399
5.1.2 (b) Unregistered	200 to 389 (less 200 to 389200h, 207h)	200 to 399 (less ASI 200 to 399, 200h, 207.1h, 207.2h)
5.2 Repair services	971 to 975, 979	971 to 975, 979
6. Electricity, gas and water supply		
6.1 Electricity	400, 401	400, 401
6.2 Gas	410	410
6.3 Non-conventional energy generation	Not defined	430, 431432, 439
6.4 Water supply and distribution	420	420
7. Construction	500 to 519, 035, 039, 050	500 to 519, 035, 039, 050

Continued..

APPENDIX 17.4: Composition of industrial sectors of domestic product at three digit level of National Industrial Classification

Industry (1)	NIC-1970 (2)	NIC-1987 (3)
8. Trade, hotels and restaurants		
8.1 Trade		
8.1.1 Wholesale trade	600 to 649, 821, 822	600 to 642, 649, 840, 890
8.1.2 Retail trade	650 to 689	650 to 689, 841
8.2 Hotels and restaurants	690, 691	690, 691
9. Transport, storage and communication		
9.1 Railways	700	700
9.2 Mechanised road transport		
9.2.1 Passenger transport by bus	701	701
9.2.2 Passenger and freight transport by other motor vehicles	702, 703	702, 703
9.3 Non-mechanised road transport		
9.3.1 Highway carriages and transport by animals	704, 705	704, 705
9.3.2 Transport by men	706	706
9.3.3 Other land transport	Not defined	709
9.3.4 Supporting services to land transport services	708	708
9.4 Water transport		
9.4.1 Ocean and coastal transport	710	710
9.4.2 Inland water transport	711	711
9.4.3 Supporting services to water transport	712	712
9.5 Air transport		
9.5.1 Air transport (of passenger and freight)	720	720
9.5.2 Supporting services to air transport	721	721
9.6 Other services incidental to transport	730	730
9.7 Storage and warehousing services		
9.7.1 Warehousing	740	740
9.7.2 Cold storage	741	741
9.7.3 Other storage	749	749
9.8 Communication		
9.8.1 Posts, telegraph and signal	750	750
9.8.2 Telephone communication	751	752
9.8.3 Courier activities other than post	Not defined	751
9.8.4 Communication not else where classified	759	759
10. Banking & insurance		
10.1 Banking		
10.1.1 Banks	800	800
10.1.2 Non-banking financial institutions	801, 810	801, 802, 810
10.1.3 Others	809	803, 804
10.2 Insurance		
10.2.1 Life	811	811
10.2.2 Others	819	812, 819
11. Real estate and business services		
11.1 Real estate	820	820
11.2 Business services	823 to 829	850 to 854, 891 to 899
12. Public administration & defence services	900 to 903	900 to 903

Continued..

APPENDIX 17.4: Composition of industrial sectors of domestic product at three digit level of National Industrial Classification

Industry	NIC-1970	NIC-1987
(1)	(2)	(3)
13. Other services		
13.1 Education and research services		
13.1.1 Education	920, 921	920, 921
13.1.2 Research & scientific services	922	922
13.2 Medical and health services	930, 931	930, 931
13.3 Religious and community services	940 to 949	940 to 949
13.4 Legal services	830	830
13.5 Recreational and cultural services	950 to 956, 959	950 to 959
13.6 Personal services	960 to 963, 969	960 to 964, 969
13.7 Sanitary services	910	910
13.8 International and other extra-territorial bodies	980	980
13.9 Services not elsewhere classified	990	990

TABLE 17.1: Estimated main workers for all-india as on 1.10.1970 and 1.10.1980 by industry divisions/major groups

('000)

NIC-1970 code	Description of Industry	Estimated Number of Workers					
		Rural		Urban		Total	
		1.10. 1970	1.10. 1980	1.10. 1970	1.10. 1980	1.10. 1970	1.10. 1980
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cultivators	7635	91959	1615	2407	77973	94366
	Agricultural Labourers	44182	52748	1842	2740	46024	55488
	Sub-total	120540	144707	3457	5147	123997	149854
0	Agriculture, hunting, forestry & fishing	3789	4903	513	740	4302	5643
00-04	Agriculture (other than cultivation)	3211	3938	361	515	3572	4453
00,01	Agriculture production, plantation	1364	1671	138	187	1502	1858
02	Livestock production	1744	2012	172	231	1916	2243
03*	Agriculture services	95	243	50	94	145	337
04	Hunting, trapping	etc.	8	12	1	3	9
15							
05*	Forestry & logging	130	201	17	31	147	232
06	Fishing	448	764	135	194	583	958
1	Mining & quarrying	603	840	312	606	915	1446
10	Coal mining	256	363	196	405	452	768
11	Crude, petroleum and natural gas	7	8	13	15	20	23
12	Metal ore mining	86	108	51	73	137	181
19	Other mining	254	361	52	113	306	474
2 & 3	Manufacturing & repairs	7993	11551	8841	13471	16834	25022
20-21	Food products	859	1230	657	1022	1516	2252
22	Beverages, tobacco products	834	1181	459	635	1293	1816
23	Cotton textiles	1050	1542	1682	2202	2732	3744
24	Wool, silk and synthetic fibre	109	144	167	312	276	456

Continued..

TABLE 17.1: Estimated main workers for all-india as on 1.10.1970 and 1.10.1980 by industry divisions/major groups

('000)

NIC-1970 code	Description of Industry	Estimated Number of Workers					
		Rural		Urban		Total	
		1.10. 1970	1.10. 1980	1.10. 1970	1.10. 1980	1.10. 1970	1.10. 1980
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
25	Jute, hemp & mesta textiles	79	94	265	328	344	422
26	Textile products(including wearing Apparel)		970	1382	835	1391	1805
2773							
27	Wood, wood products, furniture & fixtures	1242	1584	578	797	1820	2381
28	Paper & paper products, printing, publishing etc	69	129	348	498	417	627
29	Leather, leather and fur products	317	243	225	243	542	486
30	Rubber, plastic, petroleum & coal products	28	75	142	252	170	327
31	Chemical & chemical products	108	200	340	553	448	753
32	Non-metallic mineral products	937	1301	390	523	1327	1824
33	Basic metal and alloys	84	162	274	492	358	654
34	Metal products and parts except machinery and transport equipment	396	514	447	625	843	1139
35	Manufacture of machinery except electrical machinery	147	174	398	648	545	822
36	Electrical machinery, apparatus etc.	35	70	221	372	256	442
37	Transport equipment and parts	56	80	316	436	372	516
38	Miscellaneous manufacturing industries	431	426	489	740	920	1166
97	Repair services	242	1020	608	1402	850	2422
4	Electricity, gas and water supply	206	457	308	560	514	1017
40	Electricity	180	384	267	477	447	861
41	Gas & steam	2	11	7	4	9	15
42	Water works & supply	24	62	34	79	58	141
5	Construction	1281	2167	1163	2005	2444	4172
50	Construction	1010	1758	958	1706	1968	3464
51	Activities, allied to construction	85	98	151	198	236	296
035	Soil conservation	11	16	6	8	17	24
039	Land cleaning, drainage etc	101	127	26	45	127	172
050	Conservation of forests	74	168	22	48	96	216
6	Wholesale and retail trade, hotels, restaurants	3408	4678	5533	7712	8941	12390
60-64	Wholesale trade	218	245	620	667	838	912
65-68	Retail trade	2781	3802	4212	6076	6993	9878
69	Restaurants & hotels	409	631	701	969	1110	1600

TABLE 17.1: Estimated main workers for all-india as on 1.10.1970 and 1.10.1980 by industry divisions/major groups

('000)

NIC-1970 code	Description of Industry	Estimated Number of Workers					
		Rural		Urban		Total	
		1.10. 1970	1.10. 1980	1.10. 1970	1.10. 1980	1.10. 1970	1.10. 1980
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
7	Transport, storage and communication	1187	1996	3119	4185	4306	6181
70-73	Transport	1009	1659	2811	3698	3820	5357
70	Land	943	1582	2579	3414	3522	4996
71	Water	57	58	182	188	239	246
72	Air	6	7	35	47	41	54
73	Services incidental to transport	3	12	15	49	18	61
74	Storage and warehousing	9	18	31	55	40	73
75	Communications	169	319	277	432	446	751
8	Financing, insurance, real estate etc.	187	377	788	1419	975	1796
80	Banking	105	224	355	719	460	943
81	Insurance	6	14	73	110	79	124
82	Real estate and business services	50	89	244	402	294	491
83	Legal services	26	50	116	188	142	238
9	Community, social and personnel services	7503	8320	7521	10111	15029	18431
90	Public & defence services	2168	2262	2706	3592	4874	5854
91	Sanitary services	102	88	215	270	317	358
92	Education, scientific and research services	1792	2494	1331	1985	3123	4479
93	Medical & health services	398	637	534	813	932	1450
94	Communication services	273	332	220	300	493	632
95	Recreational and cultural services	93	118	178	255	271	373
96	Personal services	1845	1509	1406	1509	3251	3018
98	International and other territorial bodies	10	1	7	7	17	8
99	Services n.e.c.	827	879	924	1380	1751	2259
	Sub-total(Including division 0 to 9)	26162	35289	28098	40809	54260	76098
	Grand total (including cultivators and agricultural labourers)	146702	179996	31555	45956	178257	225952

* Excluding 035, 039 and 050 which have been accounted for under division 5.

TABLE 17.2 : Percentage distribution of persons of age 5 and above usually working (both main and marginal) by usual industry group

NIC-1970 codes for major and minor groups	Main workers		Marginal workers	
	Rural	Urban	Rural	Urban
(1)	(2)	(3)	(4)	(5)
0	80.0	12.56	90.38	46.71
1	0.53	1.09	0.06	0.21
20	0.56	1.67	0.43	1.17
21	0.33	0.93	0.26	0.76
22	0.88	1.89	0.83	3.59
23	0.83	4.07	0.91	3.38
24	0.10	0.90	0.11	1.14
25	0.07	0.80	0.12	0.29
26	1.02	3.44	1.35	8.56
27	1.05	1.89	0.71	0.86
28	0.06	1.03	0.03	1.50
29	0.15	0.56	0.04	0.38
30	0.03	0.46	0.01	0.30
31	0.12	1.25	0.04	1.03
32	0.88	1.34	0.48	1.62
33	0.10	1.32	0.01	0.37
34	0.21	1.37	0.04	0.32
35	0.21	0.82	0.03	0.08
36	0.04	0.76	0.01	0.14
37	0.04	0.76	-	0.04
38	0.21	1.51	0.19	0.76
40	0.13	0.81	-	0.10
41	-	0.02	-	-
42	0.03	0.10	-	0.01
50	1.80	4.63	0.26	1.10
51	0.05	0.24	0.07	0.27
60	0.15	1.28	0.02	0.40
61	0.01	0.23	-	0.08
62	0.02	0.20	0.05	0.17
63	0.01	0.14	-	0.08
64	0.02	0.40	-	0.05
65	2.26	7.69	1.10	5.66
66	0.16	1.63	0.02	0.76
67	0.33	2.04	0.24	1.08
68	0.23	2.17	0.11	2.44
69	0.49	2.59	0.16	1.65
700	0.16	1.89	0.02	0.05
701	0.11	0.75	0.01	0.09
702	0.08	0.81	-	0.18
703	0.21	1.40	0.01	0.21
704	0.10	0.32	-	0.02
705	0.11	0.19	0.01	0.09
706	0.29	1.92	0.03	0.76
708	0.01	0.09	-	-

TABLE 17.2 : Percentage distribution of persons of age 5 and above usually working (both main and marginal) by usual industry group

NIC-1970 codes for major and minor groups (1)	Main workers		Marginal workers	
	Rural (2)	Urban (3)	Rural (4)	Urban (5)
710	-	0.13	-	0.04
711	0.01	0.05	-	-
712	0.01	0.20	-	0.03
730	0.01	0.10	-	-
75	0.09	0.56	0.01	0.13
800	0.08	1.14	0.01	0.09
801	0.02	0.08	-	0.03
809	0.01	0.13	-	-
81	0.01	0.20	0.01	0.05
820	-	0.11	-	8.02
821	0.04	0.43	0.01	0.15
822	-	-	-	-
823	0.01	0.13	-	0.11
824	-	0.01	-	0.02
825	-	0.04	-	-
826	-	0.03	-	-
827	-	0.05	-	0.08
828	-	0.01	-	0.01
829	0.02	0.10	0.01	0.05
830	0.01	0.32	-	0.01
90	1.30	8.97	0.04	0.62
910	0.08	0.46	0.03	0.17
920	0.16	0.51	0.01	0.60
921	1.00	3.10	0.17	2.20
922	-	0.15	0.01	0.03
930	0.25	1.73	0.07	0.56
931	0.02	0.06	-	0.06
94	0.19	0.67	0.11	0.35
95	0.07	0.53	0.06	0.44
960	0.36	2.35	0.23	1.54
961	0.56	0.83	0.32	1.27
962	0.40	0.55	0.13	0.17
963	-	0.09	-	0.11
969	0.22	0.65	0.19	0.88
97	0.32	2.25	0.07	0.38
98	-	0.01	-	-
99	0.17	0.26	0.02	0.18
Total	100.00	100.00	100.00	100.00
Estimated number of persons('000)	203830	51875	28292	3391

Source: Table 55 of Report on the third Quinquennial Survey on Employment and Unemployment Survey Results –All India (June,87) Relating to 38th Round (Jan-Dec 83) of NSSO

- indicates nil or negligible

TABLE 17.3: Rural and Urban workers as on 1.10.1980

('000)

Industry	Total		Rural		Urban	
	Main	Margin al	Main	Margin al	Main	Margin al
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Agriculture	154307	40431	148645	39404	5662	1027
2. Forestry & logging	232	109	201	105	31	4
3. Fishing	958	93	764	92	194	1
4. Mining & quarrying	1446	81	840	77	606	4
5. Manufacturing	25022	2910	11551	2475	13471	435
5.1 Registered	5672		1499	-	4173	-
5.2 Unregistered	19350	2910	10052	2475	9298	435
6. Construction	4172	525	2167	465	2005	60
7. Electricity, gas & water supply	1017	2	457	-	560	2
8. Transport, storage & communication	6181	183	1996	132	4185	51
8.1 Railways	1395	31	450	20	945	2
8.2 Transport by other means & storage	4035	133	1227	88	2808	45
8.3 Communication	751	19	319	15	432	4
9. Trade, hotels & restaurants	12584	1003	4713	804	7871	199
10. Banking & insurance	1067	21	238	15	829	6
11. Real estate & business services	297	11	54	5	243	6
12. Public administration	5854	32	2262	19	3592	13
13. Other services	12815	845	6108	674	6707	171
Total	225952	46246	179996	44267	45956	1979

- Indicates nil or negligible

TABLE 17.4: Estimated number of main and total workers engaged at all-India level as on 1st october, 1980

('000)

NIC-1970 major/ minor groups	Description of Industries	Number of main workers			Total workers*		
		Rura l	Urba n	Total	Rura l	Urba n	Tota l
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A: Prepared for 1980-81							
20-21	Food products	749	492	1241	1054	515	1569
22	Beverages, tobacco products	1013	440	1453	1380	501	1881
23-26	Textiles	2862	2988	5850	3962	3218	7180
27	Wood and wood products	1603	713	2316	1917	728	2645
28	Paper and paper products	91	317	408	104	343	447
29	Leather and leather products	236	202	438	254	208	462
30	Rubber, plastic, petroleum & coal products	48	149	197	52	151	203
31	Chemical & chemical products	120	295	415	138	312	450
32	Non-metallic mineral products	1147	381	1528	1359	409	1768
33	Basic metals and alloys	64	147	211	68	153	221
34	Metal products and parts (except machinery and transport equipment)	482	504	986	500	509	1009
35	Machinery (except electrical)	124	411	535	137	412	549
36	Electrical machinery	39	185	224	43	187	230
37	Transport equipment and parts	32	111	143	32	112	144
38	Other manufacturing industries	425	689	1114	510	701	1211
39	Repairs services	1017	1274	2291	1017	1274	2291
	Total unregistered manufacturing	10052	9298	19350	12527	9733	22260
42	Water works & supply	62	79	141	62	79	141
600-649	Wholesale trade	245	667	912	278	679	957
821-822	Purchase & sales agents and auctioneering	35	159	194	40	162	202
650-689	Retail trade	3802	6076	9878	4493	6234	10727
690-691	Restaurants & hotels	631	969	1600	706	995	1701
704	Hackney carriage	84	101	185	84	102	186
705	Transport by animals	42	32	74	54	35	89
706	Transport by men	340	929	1269	386	953	1339
708	Supporting services to land transport	5	6	11	5	6	11
710,712	Ocean and coastal transport	35	177	212	35	179	214
711	Inland water transport	23	11	34	23	11	34
B: Prepared for 1980-81 and subsequent years							
701	Tramway and bus services	271	475	746	283	478	761
702	Other motor vehicles	107	378	485	107	384	491
703	Freight transport	283	548	831	295	555	850
749	Storage (n.e.c.)	6	26	32	6	26	32
823-829	Business services	50	222	272	50	222	272
830	Legal services	50	188	238	53	192	245

TABLE 17.4: Estimated number of main and total workers engaged at all-India level as on 1st october, 1980

('000)

NIC-1970 major/ minor groups	Description of Industries	Number of main workers			Total workers*		
		Rura l	Urba n	Total	Rura l	Urba n	Tota l
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
910	Sanitary services	88	270	358	102	273	375
922	Research and scientific services	22	88	110	27	88	115
930	Medical and health services	575	777	1352	607	788	1395
940-949	Religious and other community services	332	300	632	388	307	695
950-953 & 955-959	Recreational and cultural services (excluding T.V and radio & broadcasting)	116	239	355	139	246	385
960	Domestic services	339	688	1027	450	718	1168
961	Laundry, dry-cleaning and dyeing services	549	265	814	702	290	992
962	Hair dressing and beauty shops	481	225	706	542	229	771
963	Portrait and commercial photo studios	11	52	63	11	54	65
969	Other personal services	129	279	408	219	297	516
980-990	International and other extra-territorial bodies and services n.e.c	880	1387	2267	890	1390	2280

*Total workers=main+ subsidiary+ marginal workers.

Note: n.e.c. stands for 'not elsewhere classified'

TABLE17.5: Estimates of mainworkers for AssAM

Main workers division	ASSAM 1971(actual)				ASSAM, 1981(estimated)			
	URBAN		RURAL		URBAN		RURAL	
	Males	Females	Males	Females	Males	Females	Males	Females
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A -Estimates based on Ratio Method at Division level								
Cultivators	19807	2690	2279696	108157	64693	29943	2602219	151788
Agri.labourer	5493	254	379850	20401	11810	1547	539090	41791
Sub-total (1)	25300	2944	2659546	128558	76503	31490	3141309	193579
Divisions								
0	7108	908	248877	189640	24321	3572	574093	499304
1	5075	52	9041	463	127105	6968	53814	1358
2&3	62214	3168	86091	18570	104913	7778	149305	29670
4	4604	20	5630	20	15306	208	32768	600
5	15365	306	24923	638	41755	2093	53996	2091
6	96417	1313	118856	2247	155029	2586	176272	2763
7	60062	1013	42203	288	94713	1599	69582	289
8	10176	145	3661	41	19268	630	7750	176
9	94394	12719	275000	22516	140846	30080	380558	56112
Total(2)	355415	19644	814282	234423	723256	55514	1498138	592363
Total(1)&(2)	380715	22588	3473828	362981	799759	87004	4639447	785942
B-Estimates based on work participation rates of 4 eastern States at overall ages								
Total					562179	53726	4549699	570465

Source: (i) Census of India 1971, India, SeriesI, Part IIB (i) and B(iii), General Economic Tables (Table B –IV Parts A, B,C &D).