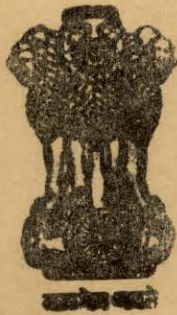


THE NATIONAL SAMPLE SURVEY

NUMBER 11

REPORT ON
THE SAMPLE SURVEY OF MANUFACTURING
INDUSTRIES, 1949 AND 1950

WITH A FOREWORD BY
P. C. MAHALANOBIS



Issued by

The Cabinet Secretariat : Government of India

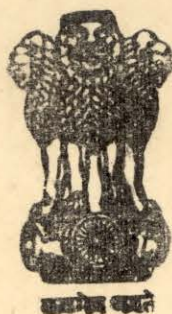
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THE NATIONAL SAMPLE SURVEY

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REPORT ON THE SAMPLE SURVEY OF MANUFACTURING INDUSTRIES, 1949 AND 1950

FOREWORD

0.1 The National Income Committee*, which was set up by the Government of India in 1949, found that the coverage of the Indian Census of Manufacturing Industries (which had been initiated annually from 1946 under the Industrial Statistics Act of 1942) was incomplete in many respects. It did not cover Part B and Part C States ; and excluded 34 out of 63 groups of industries into which all factories were divided for the purposes of the Census. Further, although by that time a larger number of establishments should have been considered as factories according to the 1948 Factories Act, the Census had been working on the basis of the older definition of factories according to the 1934 Act. The difference was indeed large. Under the 1948 Act there were about 28,000 factories in the country in 1949 but according to the older definition there were only about 17,000 factories ; and the Census was covering between 6,500 and 7,000 factories only.

0.2 The National Income Committee felt that it was very important for its work to have fairly reliable estimates of the contribution of the manufacturing industries to the national income as early as possible. On the recommendation of the Committee, the Government of India agreed to a quick survey on a sample basis being carried out by the Directorate of Industrial Statistics with the technical collaboration of the Indian Statistical Institute. For immediate needs, it was decided to have a sample survey of factories, as defined under the 1934 Act, in the first instance. The size of the sample was 1742 ; and information on a brief schedule was collected directly by investigators who visited the sample factories. The survey started in January 1951 and was completed in June next.

0.3 The survey was arranged in two instalments, and preliminary estimates based on the first instalment of the data, processed by the Indian Statistical Institute, were furnished to the Committee by April 1951, within four months from the commencement of the survey. The final estimates on the full material were made available within six months after the completion of the survey.

* consisting of Professor P. C. Mahalanobis (Chairman), Professor D. R. Gadgil and Dr. V. K. R. V. Rao (Members), and Dr. R. C. Desai and later Sri Mani Mohan Mukherjee (Secretary) -

National Sample Survey

0.4 The field schedule, which has been reproduced at the end of the report, was simple and was designed to supply information on the number of persons engaged, wages and salaries paid, and the net value added which are of basic importance for studying the trend of industrial activities and the growth of national income.

0.5 This survey had demonstrated the feasibility of using the sampling method on a 'voluntary' basis by the method of interview by investigators and its capacity to supply useful results quickly and at a low cost. Since then a Sample Survey of Manufacturing Industries with coverage of factories, in accordance with the 1948 Act, is being carried out every year, and it is intended to publish the results regularly in future.

29 August 1958

P. C. MAHALANOBIS

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REPORT ON THE SAMPLE SURVEY OF MANUFACTURING INDUSTRIES, 1949 AND 1950

*This report on the Sample Survey of Manufacturing Industries, 1949 and 1950 was prepared by the Indian Statistical Institute and is being published in the form in which it was submitted to the Government of India. The views contained in the report are not necessarily those of the Government of India.**

CHAPTER ONE

INTRODUCTION

1.1. This report presents results of the Survey of Indian Manufactures undertaken for the first time on a sampling basis and covers the calendar years 1949 and 1950.

1.2. The Survey was conducted to collect certain statistics for the use of the National Income Committee and make them available within a very short period.

1.3. For the purpose of the Census of Manufacturing Industries (CMI), the industries have been divided into 63 groups. The census of manufactures covers only 29 out of these 63 groups. This report, however, gives estimates in respect of all the groups of Indian industries, except Railway workshops, repair shops and locomotive shops (CMI-58), and arms, ammunition and explosives (CMI-59) which were excluded from the present survey. The estimates in the report relate to the details of number of sample factories covered, fixed and working capital, employment, wages and salaries, materials consumed, products manufactured and value added by manufacture.

1.4. The work of planning the survey began in December 1950. As the National Income Committee wanted estimates by April 1951 for their preliminary report it was decided to divide the samples roughly into two equal parts. The field work in respect of the first part started by the middle of January 1951 and was

*The draft report (Number D. 10) was submitted to the Government of India in November 1956.

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completed by the third week of March. Preliminary estimates of the contribution of manufacturing industries to national income were furnished to the National Income Committee by April 1951.

1.5. After the survey of the first part was over, the field work in the second part was taken up by the same set of investigators. The establishments included in this part were covered by the middle of June 1951. Final estimates were made available to the National Income Committee by the end of the year and all the particulars based on both the parts taken together were analysed and the tables completed by February 1952.

CHAPTER TWO

COVERAGE OF THE SURVEY

2.1. The National Income Committee set up by the Ministry of Finance, Government of India, wanted statistics relating to manufacturing industries for estimating the contribution from large scale industries to national income. The figures for two calendar years, namely, 1949 and 1950 were wanted and a view was expressed that it would be convenient if some provisional figures could be made available by April 1951.

2.2. Although the Directorate of Industrial Statistics, Ministry of Commerce and Industry, Government of India, was conducting annual census of manufacturing industries, the lag between the completion of analysis and the years to which the data related was about 2 to 3 years. Therefore, when these figures for 1949 and 1950 were wanted by the National Income Committee, the years for which the CMI figures were available went up to only 1948. The chance of obtaining figures relating to 1949 or 1950 on the basis of complete census by April 1951 was very remote indeed. The figures given in the censuses of manufactures were wanting in another respect also. The censuses were covering only 29 out of 63 groups of industries located in part A States, some of the important part B States and a few part C States. For national income purposes, larger coverage, both in respect of industries and in respect of geographical area, was naturally considered desirable.

2.3. Accordingly, a special inquiry on a random sampling basis to cover all the 63 industries in all States was planned and arrangements were made to obtain the analysed results quickly. The Government of India, at the instance of the Chairman of the National Income Committee, sanctioned a scheme for this sample survey as an experiment. The Director of Industrial Statistics was made responsible for the organisation of the survey.

2.4. The questionnaire included the following groups of items and altogether there were 37 different items for each of the years in respect of each establishment :

- (i) value of fixed capital which included land and building, plant and machinery and other fixed assets;
- (ii) value of working capital which included stocks of fuel and raw materials, stocks of products and by-products and partly finished products and cash in hand and at banks;
- (iii) rent of fixed assets secured on lease;
- (iv) duration of working period;
- (v) labour employed with various breakdowns, and wages and salaries paid to them;

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- (vi) value and quantity of input which included value of fuels, electricity, raw materials, chemicals and work done by other concerns; and
- (vii) value and quantity of output which included the value of products and by-products, and work done by the factory for customers.

2.5 The definitions used for the items were the same as those used for the Census of Manufactures.

2.6. As in the case of Census of Manufactures this survey was limited to manufacturing establishments employing 20 or more workers and using power. But the scope of the survey was extended to all States of the Indian Union and to all factories which come under Section 2(j) of the Factories Act, 1934 except two Government-run industries*, *i.e.*, CMI-58 and CMI-59. The aggregate of all such manufacturing establishments was 17,377 exclusive of two industries mentioned above, according to the lists available with the Chief Inspectors of Factories of the different States.

* Some data in respect of these two industries are available from the Railway Board and the Chief Statistical Officer, Army Headquarters respectively.

CHAPTER THREE

SAMPLING DESIGN AND ORGANISATION OF WORK

3.1. The frame for sampling consisted of a classified list of factories in India. Every manufacturing establishment in India employing 10 or more workers with power and 20 or more workers without power is required to be registered under the Indian Factories Act 1948. These establishments are registered with the Chief Inspectors of Factories of different States. The frame for the present survey was, however, restricted only to establishments employing 20 or more persons using power because no list was easily available which included the smaller establishments. While collecting the lists from the Chief Inspectors of different States the names and addresses of occupiers and the number of workers employed in establishments were also collected.

3.2. For convenience, a few of the 61 industries actually surveyed were further sub-divided and the total number, taking account of the sub-divisions, came to 69. Within each of these 69 industries, the establishments were classified into a number of groups according to the number of workers employed. For a number of industries which showed marked concentration in particular areas, establishments falling under any size-class were further grouped according to States. Thus, there were altogether 589 strata into which the establishments were classified.

3.3. Sample establishments were selected at random with equal probability from each of these strata and the total of samples was 1,885. The samples were allocated to the different strata in proportion to the total number of workers employed. Although the overall sampling fraction was approximately 1 in 9, the fraction between the different strata varied considerably. In eight industries, because the number of establishments was very small, all units were included in the sample. These eight industries are shown in Table (3.1).

TABLE (3.1) : LIST OF INDUSTRIES WITH THE NUMBER OF ESTABLISHMENTS IN EACH OF THEM

industry	c.m.i. number	number of establishments
(1)	(2)	(3)
1. sugar : gur and jaggery refineries	5(b)	7
2. aluminium, copper and brass : primary producers	22(a)	3
3. iron and steel : primary producers	23(a)	5
4. sewing machines	25	6
5. producer gas plants	26	3
6. electric lamps	27	10
7. turpentine and resin	37	2
8. petroleum refining *	39	1

* return not received

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3.4. The total sample was then divided roughly into two equal parts. The establishments under each part were scattered as widely as possible but the two parts were in effect not comparable sub-samples. After the survey of the first part was over, the second part was taken up by the same set of investigators. The first part of the sample was utilised to obtain preliminary estimates of certain major items quickly as the National Income Committee wanted the estimates by April 1951.

FIELD ORGANISATION

3.5. The staff employed for the survey under the Director of Industrial Statistics consisted of (i) an Officer on Special Duty, (ii) six Regional Research Officers and (iii) thirty-two Investigators. India was divided into seven regions for the field work. The work in Assam region was placed under the Statistics Authority, Assam. The remaining six regions were under the six Regional Research Officers. Each region was further divided into a number of investigator areas.

3.6. The field work began in the middle of January 1951. The establishments included in the first part of the sample were surveyed by the third week of March. The survey of the establishments of the second part was then taken up and was completed by the middle of June 1951.

SCRUTINY AND ANALYSIS OF DATA

3.7. It was arranged that the Indian Statistical Institute would analyse the data and that before sending the completed schedules to the Institute, the Office of the Director of Industrial Statistics would scrutinise the returns.

3.8. The schedules completed by the Investigators were forwarded to the Head Office at Simla after scrutiny by the Regional Research Officers. These were further scrutinised by the Officer on Special Duty and the Director of Industrial Statistics and, where necessary, the returns were referred back to the Regional Research Officers for correction of errors or omissions noticed. The returns were then sent to the Indian Statistical Institute for analysis.

3.9. Although it was arranged at first that the work of analysis should start straightaway without further scrutiny, some checking was, however, found necessary in the tabulation stage when some minor defects such as disagreement between the components and the sub-totals, ambiguous entries etc., were discovered.

3.10. In addition, the scrutiny of the tabulated results also constituted an important part of the analysis work; where the tabulation consisted of building up roughly 45,000 estimates some broad and suitable criteria for checking individual estimates had to be adopted. The estimates were, therefore, studied in the light of a number of criteria some of which were (i) ratio of fixed to working capital; (ii) per-hour earning of a worker in different establishments of the same industry and (iii) ratios between the excess of value of output over input and labour charges on the one hand and the total capital employed on the other.

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3.11. For both the years 1949 and 1950 the ratios were worked out for each industry. From the central tendency and scatter of these ratios the doubtful cases were noticed easily and both the computation sheets as well as the completed schedules were scrutinised again.

3.12. Although 1746 establishments were surveyed, the total schedules for analysis stood at 1742 after scrutiny and rejections. For each establishment, the number of items of information collected was 37 for each year, that is 74 in total for the two years. The estimates in respect of these 74 characters were obtained for each of the 589 strata. Besides, summary estimates in respect of the industries and of the different States were made for each of the 74 characters.

3.13. As already stated, the establishments in the first part of the sample were surveyed by the third week of March and the completed schedules after scrutiny were sent to the Indian Statistical Institute by the 31st of March 1951. The main results based on this part were furnished to the National Income Committee by the first week of April 1951 as required by them. The figures of both the parts were taken up for analysis when the whole survey was over. The tabulation of all the details was completed and the tables were passed on to the National Income Committee by the end of February 1952.

Cost

3.14. The budget estimate of the cost of this sample survey was just below a lakh of rupees. Round figures of the actual cost under different broad headings are given below.

Planning	Rs. 10,000
Field work	Rs. 80,000
Processing and analysis	Rs. 25,000
	<hr/>
	Rs. 1,15,000

3.15. It should be noted that in the budget estimates the cost of processing, analysis etc., was estimated at only Rs. 3,000 and this was a clear underestimate. The Indian Statistical Institute undertook to do the analysis in any case without regard to the cost which amounted to Rs. 25,000 approximately. Thus, although the budgeted figure was roughly Rs. 93,000, the actual cost was Rs. 1,15,000.

CHAPTER FOUR

RELIABILITY OF ESTIMATES

4.1. There are scarcely any data available in published form which can be used to test the reliability of the results of the survey in an exact way. For any proper comparison the coverage of the figures must be the same. Results of 1949 and 1950 Census of Manufactures have since been published by the Directorate of Industrial Statistics. The census was restricted to 29 groups of industries. The number of factories covered was 6758 and 7099 in 1949 and 1950 respectively. The coverage of the sample survey was 7928 factories in both the years, so far as these 29 groups of industries were concerned. Because of this reason of wider coverage of the sample survey, even the estimates for 29 groups of industries are not strictly comparable with the census results. But this factor should make the census results lower than the sample estimates. In Table (4.1) comparative figures are indicated in respect of eight important items of information for the *29 groups of industries* covered by the census.

TABLE (4.1) : COMPARISON BETWEEN SAMPLE SURVEY AND CENSUS RESULTS : 1949 AND 1950

item	unit	1949			1950		
		sample survey	census	per cent difference	sample survey	census	per cent difference
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. fixed capital	Rs. crore	316	228	38.6	346	258	34.1
2. working capital	„	386	282	37.0	375	356	5.0
3. total invested capital	„	702	510	37.6	721	614	17.4
4. emoluments of labour	„	197	177	11.1	184	172	7.1
5. value of input	„	803	687	15.7	833	726	13.4
6. value of output	„	1130	976	15.8	1164	1028	13.2
7. 'workers' per day	lakh	17	15	13.3	16	15	6.7
8. man-hours	crore	1122	969	15.8	1156	1023	13.0
9. factories covered	number	7928	6250	26.8	7928	6605	20.0
10. sample size	„	1013	—	—	1013	—	—

4.2. It will be seen from the above table that in all cases the sample estimates are greater than the census results and that the gap between the results is smaller in 1950 than in 1949. The factory coverage of the census in 1950 was much larger than in 1949, but still smaller than the survey. The divergence thus appears to decrease with the decrease in the gap between factory coverage of the census and the sample survey. The survey results are reasonably higher than the census results. There is, however, rather a large discrepancy regarding fixed capital. It is a difficult field

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for collection of information, whichever be the method of collection. No definite observation on the merits of either of the results is possible, unless a factory-to-factory comparison, at least in the case of the sample factories, is made. But such details of the census data are not available with the NSS.

4.3. As mentioned earlier, the field inquiry was done in two parts. In the first part 798 sample establishments from 61 industries including their sub-groups were covered and in the second part 944 establishments were covered from 68 industries including the sub-groups. Because the samples in the two parts were not always scattered over common strata or even industries, the two half samples were not strictly comparable sub-samples. Hence, the estimated results got from the two parts of the sample are not comparable either. Since, however, due to time programme of analysis, the results of the two parts are available separately, a comparison between the two sets of figures may be of some interest. The figures are given in Table (4.2).

TABLE (4.2): ESTIMATES OF SELECTED ITEMS AS OBTAINED FROM THE TWO PARTS OF THE SAMPLE

item	sample estimates : Rs. (crore)						per cent difference	
	first part		second part		combined		1949	1950
	1949	1950	1949	1950	1949	1950		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. fixed capital	530.88	566.76	544.02	596.28	538.00	582.76	- 2.44	- 5.07
2. working capital	577.91	587.77	487.90	459.19	530.05	518.20	16.98	24.81
3. amount received by labour	267.78	263.91	261.91	244.63	264.60	253.36	2.22	7.61
4. value of input	1149.59	1195.12	1007.90	1072.63	1072.82	3128.69	12.16	10.85
5. value of output	1777.21	1815.58	1398.25	1495.60	1571.39	1642.18	24.12	19.49
6. sample size	798	798	944	944	1742	1742		

4.4. It will be seen that in 3 of the 5 cases the agreement is not good. But it is not possible to analyse the reason of such disagreements because the two parts are not strictly comparable.

CONCLUDING REMARKS

4.5. The extent to which the respondents gave correct information is not known. The method of collection of data was that the investigator would visit the establishments or the owners and complete the schedules there. As the complete addresses of the sample units were available, there were no difficulties in locating the establishments. The main difficulties in obtaining data were, in the first place, that the owners did not maintain statistical records of production and employment in the way these were wanted in the questionnaire and secondly, that in some cases

the owners were unwilling to furnish these particulars to a Government agency because they were suspicious of the motives of the survey. Where the records were incomplete the investigators obtained the estimates from the owners of the establishments. In regard to the second type of difficulty the investigators had to explain the purpose of the survey to the owners and to impress on them that these returns were not meant for income-tax purposes. Of the 1,885 samples selected 1,746 were actually surveyed. The proportion not surveyed was 7.4%.

4.6. It may be noted that this problem of non-response and deliberate furnishing of inaccurate data is not a problem limited to sample surveys only but also common to censuses. The actual method of collecting data in the Censuses of Manufactures is by mailing questionnaires with the system of the field staff of the State Statistics Authorities assisting the occupiers of factories in filling the returns completely and accurately where necessary. The method followed in the sample survey was that the investigator had to visit the selected establishments in every case with a view to minimising non-response.

4.7. In addition, as the sample size was only a fraction of the total establishments in the country, the number of schedules completed during the survey was considerably small. These completed schedules could, therefore, be scrutinised by the Regional Research Officers and then by the Officer on Special Duty and ultimately, in some cases, by the Director of Industrial Statistics. Wherever it was found necessary, the schedules were referred back to the investigators so that correct data might be obtained after clearing up the inconsistencies with the owners of the establishments. Thus it is reasonable to say that the data obtained are reliable.

CHAPTER FIVE

SUMMARY RESULTS

5.1. The tabulated results give the estimates for 37 items for the years 1949 and 1950 arranged by industries. A summary of some of the results is given in this chapter. It may be mentioned in passing that the figures relate entirely to manufacturing industries and hence exclude other branches of productive activity such as trade, transport, commerce, mining etc. They also exclude particulars of small scale manufacturing establishments, not covered by Section 2(j) of the Factories Act of 1934.

5.2. The All-India estimates of the value of fixed and working capital, rent paid by establishments, amount received by labour, value of raw materials, value of input, value of output and the difference between the values of input and output are given in Table (5.1). The value of fixed capital, that is, the value of land and buildings, plant and machinery and other fixed assets amounted to Rs. 538 crore in 1949 and Rs. 583 crore in 1950. The values were based on the original costs of the fixed capital plus the cost of improvements made less the amount written off as discarded. The rents paid for using fixed capital on lease amounted to less than 1 per cent of the value of fixed capital owned by the establishments. The totals of fixed and working capital employed by the manufacturing industries were

TABLE (5.1): ESTIMATES OF VALUE OF SOME SELECTED ITEMS RELATING TO MANUFACTURING INDUSTRIES OF INDIA IN 1949 AND 1950

item	Rs. (crore)	
	1949	1950
(1)	(2)	(3)
1. fixed capital	538.00	582.76
2. working capital	530.05	518.20
3. rent	3.55	3.60
4. amount received by labour	264.60	253.36
5. value of raw materials	1014.23	1067.32
6. value of input	1072.82	1128.69
7. value of output	1571.39	1642.18
8. difference (7-6)	498.57	513.49
9. sample size	1742	1742

Rs. 1068 crore in 1949 and Rs. 1101 crore in 1950. The amounts received by labour including workers and other employees amounted to Rs. 265 crore in 1949 and Rs. 253 crore in 1950. The values of raw materials used were Rs. 1014

crore and Rs. 1067 crore in 1949 and 1950 respectively. The difference between the values of output and input, that is, the value added by manufacture gross of depreciation amounted to Rs. 499 crore in 1949 and Rs. 513 crore in 1950.

TABLE (5.2): A FEW SELECTED ITEMS RELATING TO MANUFACTURING INDUSTRIES IN 1949 AND 1950

item	1949 (crore)	1950 (crore)
(1)	(2)	(3)
1. number of working days	0.34	0.35
2. total number of workers employed per day	0.24	0.23
3. total number of persons other than worker employed per day	0.03	0.03
4. total labour employed per day	0.27	0.26
5. man-hours worked by workers	519.66	493.36
6. electricity consumed (kwh)	198.20	202.73
7. sample size	1742	1742

5.3. The total number of working days of all manufacturing establishments was estimated at 0.34 crore for 1949 and 0.35 crore for 1950. The total number of workers employed per day was estimated at 0.24 crore in 1949 and 0.23 crore in 1950. When the employees other than the workers are taken into consideration the total of labour employed amounted to 0.27 crore in 1949 and 0.26 crore in 1950. The total quantity of electricity in kwh consumed by the manufacturing establishments was estimated to be 198 crore and 203 crore in 1949 and 1950 respectively.

PARTICULARS BY INDUSTRY-GROUPS

5.4. The particulars for six most important groups of industries in India judging from their value of output are given below as a matter of interest. The figures for the two years are shown separately in Table (5.3).

5.5. It will be seen that the six industry groups in order of their importance are (1) manufacture of textiles, (2) manufacture of food and beverage, (3) manufacture of chemicals and chemical products, (4) manufacture of basic metals, (5) ginning, pressing, decorticating and similar services to agricultural products, and (6) manufacture of machinery excluding electrical machinery and appliances. The lighter industries have thus much predominance in the pattern of our manufacturing activities.

Manufacturing Industries, 1949 and 1950

TABLE (5.3): ESTIMATES OF SELECTED ITEMS FOR SOME INDUSTRY GROUPS IN
1949 AND 1950

industry group	number of sample units	fixed capital Rs. (crore)	working capital Rs. (crore)	number of workers (thousand)	value of input Rs. (crore)	value of output Rs. (crore)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1949						
1. basic metals	51	51.89	42.93	93	47.86	82.48
2. chemicals and chemical products	135	50.93	48.37	1,17	183.95	211.08
3. food and beverage	243	87.52	75.47	2,65	190.26	290.46
4. ginning, pressing and similar services to agricultural products	160	26.77	7.43	1,38	61.31	64.91
5. machinery excluding electrical machinery	147	31.11	28.98	1,48	29.28	57.55
6. textile	521	123.37	205.81	11,71	388.11	577.20
7. total (1 to 6)	1,257	371.59	408.99	19,32	900.77	1283.68
8. total of all industries	1,742	538.00	530.05	24,24	1072.82	1571.39
1950						
1. basic metals	51	56.10	43.60	91	55.64	90.14
2. chemicals and chemical products	135	52.31	50.37	1,06	181.79	215.44
3. food and beverage	243	96.40	70.30	2,71	201.63	317.43
4. ginning, pressing and similar services to agricultural products	160	26.55	5.88	1,41	61.53	66.47
5. machinery excluding electrical machinery	147	35.43	28.85	1,55	32.41	62.76
6. textile	521	134.44	200.80	10,85	398.92	570.87
7. total (1 to 6)	1,257	401.23	399.80	18,49	931.92	1323.11
8. total of all industries	1,742	582.76	518.20	23,37	1128.69	1642.18

5.6. Table (5.4) shows the value of fixed capital per employed worker and the value of output per employed worker in the six groups of industries. The figures for all the industries grouped together are also given. The value of fixed capital per worker was highest in the basic metal industries. Next in order of ranking the groups are: chemical and chemical products industries, food and beverage industries, machine manufacturing industries, ginning, pressing and similar industries, and textile industries. It may be noted that this ratio for all industries was higher than the ratio for the first six groups of industries taken together.

5.7. The value of output per worker was, however, highest in the chemical and chemical products industries. In order of ranking, the other industries are food and beverage, basic metals, textile, ginning, pressing and similar servicing, and

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lastly manufacture of machinery. The productivity of workers of all industries taken together was roughly of the same order as that of the first six industry groups.

TABLE (5.4): ESTIMATES OF FIXED CAPITAL AND OUTPUT PER WORKER FOR SOME INDUSTRY GROUPS IN 1949 AND 1950

industry group (1)	estimates per worker (Rs.)			
	fixed capital		output	
	1949 (2)	1950 (3)	1949 (4)	1950 (5)
1. basic metals	5,580	6,165	8,869	9,905
2. chemicals and chemical products	4,353	4,935	18,041	20,325
3. ginning, pressing and similar services to agricultural products	1,940	1,883	4,704	4,714
4. food and beverage	3,303	3,557	10,961	11,713
5. machinery excluding electrical machinery	2,102	2,286	3,889	4,049
6. textile	1,054	1,239	4,929	5,261
7. total (1 to 6)	1,923	2,170	6,644	7,156
8. total of all industries	2,219	2,494	6,483	7,027

5.8. When compared between the two years, the value of fixed capital per worker increased to some extent from 1949 to 1950 in all the groups except in ginning, pressing and similar industries. The value of output per worker also increased in varying extent from 1949 to 1950. Without going into the detailed tables of individual industries it is difficult to indicate as to how much of this increase was due to price variation and how much due to increase in quantity.

PARTICULARS BY TEN MAJOR INDUSTRIES

5.9. The sample survey of manufacturing industries, as stated earlier, covered 61 industries. The total number of establishments for which estimates have been made was 17,377. Out of these, factories belonging to the ten major manufacturing industries number 3050. Their distribution along with the samples taken in each case is as in Table (5.5).

5.10. The ten major industries for selective review are cotton textile, jute, iron and steel, tea, sugar, chemicals, paper and paper board, tobacco, cement, and paints and varnishes. The number of factories covered by these ten industries was about 18 per cent of the total number of factories in all the industries, but accounted for 55.14 and 54.68 per cent of the total invested capital in all industries in 1949 and

Manufacturing Industries, 1949 and 1950

TABLE (5.5) : TOTAL NUMBER OF FACTORIES AND THE NUMBER OF
SAMPLE FACTORIES (RELATING TO TEN MAJOR MANU-
FACTURING INDUSTRIES) IN 1949 AND 1950

	industry	total number of factories	number of sample factories
	(1)	(2)	(3)
1.	cement	17	11
2.	heavy chemicals	210	27
3.	cotton textile	755	302
4.	iron and steel	203	22
5.	jute textile	104	100
6.	paper and paper board	52	15
7.	paints and varnishes	48	8
8.	sugar	431	89
9.	tea	1080	78
10.	tobacco	150	19
11.	total (1 to 10)	3050	671
12.	total of all industries	17,377	1742

1950 respectively. Table (5.6) sets out the position of these major industries of India with regard to their size as measured by capital outlay and the extent to which they own fixed assets in comparison with the position of all industries.

5.11. It will be seen that cotton textile, iron and steel, and jute by themselves make for about 34 per cent of the total capital outlay in all industries. An observation of the figures of fixed capital for the ten industries, in the following table brings out an upward trend in the fixed capital investment in these industries in 1950 over 1949. This is a sign of development of these industries. The figures of working capital for these major industries, however, indicate in 1950 a falling tendency as compared to those of 1949, the only notable exception being tea industry where working capital rose in 1950 by 19 per cent over that in the previous year. In so far as the rented fixed assets are concerned the year 1950 appears to have been marked with an effort on the part of these industries to reduce rent payments on fixed assets—from Rs. 58 lakh in 1949 to Rs. 51 lakh in 1950—by owning more fixed assets. The amount of rent paid on fixed assets for all industries recorded a slight increase from Rs. 3.55 crore in 1949 to Rs. 3.60 crore in 1950. Exceptions in this regard are paper and paper board, tea and cement industries, even though the first two of these otherwise effected an increase in their working capital.

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TABLE (5.6) : ESTIMATES OF FIXED AND WORKING CAPITAL AND RENT PAID ON FIXED ASSETS (IN TEN MAJOR MANUFACTURING INDUSTRIES) IN 1949 AND 1950

industry	fixed capital	working capital	Rs. (crore)	
			total invested capital	rent paid on fixed assets
(1)	(2)	(3)	(4)	(5)
1949				
1. cement	10.74	5.91	16.65	0.03
2. chemicals	18.14	12.18	30.32	0.08
3. cotton textiles	79.53	150.82	230.35	0.11
4. iron and steel	43.67	24.20	67.87	0.02
5. jute textiles	26.74	38.93	65.67	0.09
6. paints and varnishes	0.72	1.98	2.70	0.01
7. paper and paper board	15.08	6.39	21.47	0.00
8. sugar	20.66	37.55	58.21	0.11
9. tea	50.80	23.02	73.82	0.09
10. tobacco	6.40	15.44	21.84	0.04
11. total (1 to 10)	272.48	316.42	588.90	0.58
12. percentage to total of all industries	50.65	59.70	55.14	16.34
13. total of all industries	538.00	530.05	1068.05	3.55
1950				
1. cement	10.70	5.53	16.23	0.04
2. chemicals	17.91	12.17	30.08	0.08
3. cotton textiles	88.30	146.96	235.26	0.10
4. iron and steel	47.75	23.34	71.09	0.02
5. jute textiles	28.62	37.53	66.15	0.05
6. paints and varnishes	0.55	1.61	2.16	0.01
7. paper and paper board	17.93	6.24	24.17	0.00
8. sugar	26.69	30.59	57.28	0.09
9. tea	53.00	27.40	80.40	0.09
10. tobacco	6.83	12.39	19.22	0.03
11. total (1 to 10)	298.28	303.76	602.04	0.51
12. percentage to total of all industries	51.18	58.62	54.68	14.17
13. total of all industries	582.76	518.20	1100.96	3.60

Manufacturing Industries, 1949 and 1950

5.12. The gross income of 61 industries was Rs. 1571 crore in the year 1949 and Rs. 1642 crore in the year 1950. They are distributed in Table (5.7).

TABLE (5.7) : PRODUCTION ACCOUNT OF 61 MANUFACTURING INDUSTRIES
IN 1949 AND 1950

item	Rs. (crore)	
	1949	1950
(1)	(2)	(3)
A. Value of production		
1. products and by-products	1529.48	1601.95
2. work done for other concerns	41.91	40.23
3. total (1 + 2)	1571.39	1642.18
B. Value of input		
4. raw materials and chemicals etc.	1014.21	1067.16
5. fuels, lubricants etc.	51.31	53.63
6. work done by other concerns	7.30	7.90
7. total (4 to 6)	1072.82	1128.69
C. Depreciation estimated @ 7%	37.66	40.79
D. Value added by manufacture (net of depreciation)		
8. salaries, wages and other benefits received by labour	264.60	253.36
9. balance available for other purposes	196.31	219.34
10. total (8 + 9)	460.91	472.70

5.13. The figures of depreciation on fixed assets were not collected separately in this survey. However, the Income Tax Manual, Part II, 1954, in accordance with section 10(2)vi of the Income Tax Act, 1922, prescribes a general rate of depreciation on fixed assets at 7 per cent of the value of such assets. Worked on this basis the amount of depreciation on fixed assets comes to Rs. 37.66 crore in 1949 and Rs. 40.79 crore in 1950. Thus, the value added by manufacture, net of depreciation, comes to Rs. 460.91 crore in 1949 of which Rs. 264.60 crore or about 57.4 per cent were shared by wages and salary earners. In the following year (1950), the value added, net of depreciation, comes to Rs. 472.70 crore of which Rs. 253.36 crore, or about 53.6 per cent went to wages and salary earners.

5.14. The comparative values in the ten major industries as against those in all the industries, in respect of the components of the gross income and gross expenditure are examined later in details under the separate section devoted to these items. The comparative gross income in the ten major industries was Rs. 860 crore in 1949, and Rs. 883 crore in 1950, forming respectively 54.7 and 53.8 per cent of the gross income of all industries.

INPUT

5.15. *Cost of materials* : The questionnaire called for data on the quantity and purchase value of each material consumed during the year. Only materials, which were purchased, have been included. Materials made in the factory have not been included. The purchase value of the quantity of material purchased during the year has been taken as equal to the cost of material landed at the factory, *i.e.*, any expense incurred in transporting the materials to the factory have been added to the payment made to the seller of the material unless transport was carried out by the factory's own staff. If any duty was paid by the factory, it has also been added to the amount paid to the seller. Particulars relating to goods, which were not subjected to any manufacturing process but were merely bought and re-sold in the same condition as received, have been excluded. The total amount paid to other firms or factories for work done on materials given out to them plus transport and any other charges incurred on these goods have been included.

5.16. *Fuel and electric energy used* : The quantities of the several kinds of fuel (coal, coke, fuel oil and gas) used, the quantity of electric energy purchased and the quantity of water used by manufacturing establishments have been reported together with the cost of each. Fuel, electricity etc., produced in the factory have not been included. If any electricity generated (or coal gas produced) is sold to any person or transferred to allied concerns, such electricity (or coal gas) has been regarded as a product.

5.17. The All-India figures of costs in all industries are shown in Table (5.8). It would appear that the total costs in all industries recorded an increase of Rs. 56

TABLE (5.8) : ESTIMATES OF COST ITEMS

items of cost	Rs. (crore)	
	1949	1950
(1)	(2)	(3)
1. raw materials	1014.21	1067.16
2. fuels etc.	51.31	53.63
3. work done for the factory by others	7.30	7.90
4. total	1072.82	1128.69

crore or 5.2% in 1950 over the previous year. Of the total cost the cost of raw materials formed on an average 94.5 per cent.

Manufacturing Industries, 1949 and 1950

5.18. The increase or decrease in the costs of materials etc., for each of the ten major industries is shown in Table (5.9).

TABLE (5.9): INCREASE OR DECREASE IN COSTS OF MATERIALS ETC. IN 1950 OVER 1949

Rs. (lakh)				
industry	raw materials and chemicals	fuel, lubricants and electricity	work done for the factory by other concerns	total input
(1)	(2)	(3)	(4)	(5)
1. cement	+ 141.28	+ 22.79	+ 0.44	+ 164.51
2. chemicals	+ 187.19	+ 24.29	- 0.25	+ 211.23
3. cotton textile	+1345.53	+ 26.71	- 25.19	+1347.05
4. iron and steel	+ 89.67	+ 29.23	- 1.64	+ 117.27
5. jute textile	- 775.13	- 21.91	+ 4.03	- 793.02
6. paints and varnishes	- 42.51	- 0.10	—	- 42.60
7. paper and paper board	+ 98.18	+ 39.23	- 1.34	+ 136.07
8. sugar	+ 98.90	- 9.46	+ 0.87	+ 90.31
9. tea	+ 311.38	+ 24.47	+ 7.88	+ 343.73
10. tobacco	+ 386.19	+ 0.01	- 1.39	+ 384.81
11. total	+1840.68	+135.26	- 16.59	+1959.36

5.19. For the ten major industries these costs as compared to those for all the industries were slightly lower at 49.27 per cent in 1950 compared to 50.01 per cent in 1949. Industry-wise, the raw materials and chemicals consumed were on the increase in 1950 compared to the previous year, paints and varnishes and jute textiles being exceptions.

5.20. The fuel cost of the ten major industries in 1949 and 1950 as a percentage of corresponding figure for all the industries, however, remained more or less stationary at 60 per cent. Here again in sugar, paints and varnishes, and jute textile industries, the fuel cost in the latter year was lower. The other seven industries exhibited an increase in their fuel costs.

5.21. The cost of work done by other concerns for 10 industries compared to the corresponding item for all industries declined from 42 per cent in 1949 to 37 per cent in 1950. In cotton textile industry, in particular, where the work done for the industry by other concerns generally covers quite a few processes, the cost on this account was lower by Rs. 25.19 lakh in the latter year, indicating thereby the industry's capacity to complete many such processes by itself. Paper and paper board, iron and steel, and chemicals were other industries in order of precedence which effected economy in 1950 over the year 1949 in respect of payments for work done for them by other concerns. In the jute and tea industries, on the other hand, the cost of work done for them by other concerns showed an increase in the latter year.

PRODUCTS AND BY-PRODUCTS

5.22. The value of products and by-products in all industries was Rs. 1529.48 and Rs. 1601.95 crore in 1949 and 1950 respectively which meant an increase in the latter year by 4.7 per cent. On the other hand, the value of work done for others in all industries was 4 per cent lower in 1950 than that in the previous year. This is shown in Table (5.10).

TABLE (5.10) : ESTIMATES OF OUTPUT FOR ALL INDUSTRIES IN 1949 AND 1950

item	Rs. (crore)	
	1949	1950
(1)	(2)	(3)
1. products and by-products	1529.48	1601.95
2. work done for others	41.91	40.23
3. total	1571.39	1642.18

5.23. As a percentage of all industries' total, the value of products and by-products for the ten major industries in the year 1950 registered a nominal decline over the year 1949 although in absolute terms these items for the ten major industries showed an increase of 2.7 per cent in 1950 over the previous year. The following table presents the percentage increase or decrease in the value of products and by-products as well as that in the value of work done by the factory for others in 1950 over the year 1949.

TABLE (5.11) : PERCENTAGE INCREASE OR DECREASE IN THE VALUE OF OUTPUT IN 1950 OVER 1949—TEN MAJOR INDUSTRIES

industry	products and by-products	work done for others
(1)	(2)	(3)
1. cement	+37.14	+23.45
2. chemicals	+18.53	+30.20
3. cotton textile	- 4.00	+ 8.84
4. iron and steel	- 1.15	+20.83
5. jute textile	+ 2.41	+28.51
6. paints and varnishes	-22.54	—
7. paper and paper board	+18.23	—
8. sugar	+ 6.41	-45.22
9. tea	+16.25	-59.73
10. tobacco	+11.65	-18.31

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5.24. It is evident from the above that the value of products and by-products was on an increase in the year 1950, in order of precedence, in the cement industry, chemicals, paper and paper board, tea, tobacco, sugar and jute textiles while it was lower in respect of paints and varnishes, cotton textiles and iron and steel industries.

5.25. The work done by factory for customers is a source of revenue to the industry. The value of such work done in the ten major industries as a percentage of this work for all industries recorded an increase of 0.3 per cent in 1950 over 1949. For these ten industries themselves, the year 1950 recorded a rise in value in this sphere of the order of 9.2 per cent over that in the year 1949. The percentage increase in value in the year 1950 compared to the previous year was 30.20 in chemicals, 28.51 in jute, 23.45 in cement, 20.83 in iron and steel and 8.84 in cotton; the percentage decrease in value was of the order of 59.73 in tea, 45.22 in sugar, 18.31 in tobacco.

VALUE ADDED BY MANUFACTURE

5.26. In our survey the concept of 'net value of production' has not been used. We have used a similar concept, 'value added by manufacture'. This measures the increase in the total value of commodities by the manufacturing process and is calculated by subtracting the cost of materials, supplies, containers, fuel, purchased electric energy, contract work, and the depreciation of fixed assets from the total value of products and work done by the industry for customers.

5.27. The figure thus calculated is somewhat larger than the net value of production because many miscellaneous expenses, such as commission on sales, insurance and advertising, have not been taken into account. Therefore, it must not be inferred that when wages and salaries and undistributed profits are deducted from these values added by manufacture the whole of the residue is available for non-wage factor payments. The relevant figures are given in Table (5.12).

TABLE (5.12): VALUE ADDED BY MANUFACTURE IN 1949 AND 1950
—ALL INDUSTRIES

item	Rs. (crore)	
	1949	1950
(1)	(2)	(3)
1. value of input	1072.82	1128.69
2. depreciation estimated @7%	37.66	40.79
3. value of output	1571.39	1642.18
4. value added (net of depreciation)	460.91	472.70

5.28. The value added by manufacture in all industries stood at Rs. 460.91 and Rs. 472.70 crore in the year 1949 and 1950 respectively, marking an increase of 2.56 per cent in the latter year. The corresponding figures for ten major industries are given in Table (5.13).

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TABLE (5.13) : VALUE ADDED BY MANUFACTURE IN 1949
AND 1950—TEN MAJOR INDUSTRIES

item	Rs. (crore)	
	1949	1950
	(1)	(2)
1. value of input	536.56	556.15
2. depreciation estimated @7%	19.07	20.88
3. value of output	860.15	883.33
4. value added (net of depreciation)	304.52	306.30

5.29. The table above discloses that the value added by manufacture in the ten major industries in comparison with that for all the industries recorded a decline of 1.3 per cent in 1950 over the previous year. The comparative total value added by manufacture for these ten industries alone, however, showed a rise of 0.58 per cent in 1950 over the year 1949.

5.30. It would be of interest to have an idea of the value added per worker in all industries as well as in the ten major industries in 1949 and 1950. The value added per worker for all industries was Rs. 1901 in 1949 and Rs. 2023 in 1950 as against Rs. 2108 and Rs. 2247 respectively for the ten industries.

INVESTMENT

5.31. *Capital structure* : All particulars under this head are as they were on the 31st December 1949 or 1950 or the date on which the factory last closed accounts. 'Value' in all the headings specified under the item 'productive capital employed' should be taken to mean value according to the books of the factory on the date to which the particulars furnished under this item relate. For items of fixed capital, these are the original cost plus the cost of improvements made less amount written off. In case a factory occupies only a portion of any building or any piece of land, particulars relating to only that portion had been included. In the case of any item of fixed capital which had been leased or rented, the rent paid had been shown separately. In calculating this rent any lump sum consideration that was originally paid for securing the items of fixed capital in question either on lease or on rent, the present book value of the amount originally paid had been included in the amount of the rent.

5.32. The invested capital in all industries stood at Rs. 1068.05 and Rs. 1100.96 crore in 1949 and 1950 respectively showing a rise of about 3 per cent in the latter year. Compared to this, the fixed capital in all industries was Rs. 538.00 and Rs. 582.76 crore during 1949 and 1950, recording a rise of 8.32 per cent in the latter year. The comparative figures for working capital were Rs. 530.05 and

Manufacturing Industries, 1949 and 1950

Rs. 518.20 crore during 1949 and 1950 respectively showing a decline of 2.24 per cent in the latter year. This is brought out in Table (5.14).

TABLE (5.14) : ESTIMATES OF FIXED AND WORKING CAPITAL
FOR ALL INDUSTRIES IN 1949 AND 1950

		Rs. (crore)	
item	1949	1950	
(1)	(2)	(3)	
1. fixed capital	538.00	582.76	
2. working capital	530.05	518.20	
3. total	1068.05	1100.96	

5.33. The total capital investment in the ten major industries comprised, as already observed, 55.14 and 54.68 per cent of the capital invested in all the industries taken together during the years 1949 and 1950 respectively. On the other hand, the fixed capital invested in these ten major industries comprised respectively 50.65 and 51.18 per cent during 1949 and 1950 of the total fixed capital outlay in all the industries. The working capital invested in these industries formed 59.70 and 58.62 per cent during the year 1949 and 1950 respectively of the total working capital in all the industries. While it would be needless to repeat here the table giving figures of fixed, working and invested capital, for the ten major industries, it would be no doubt instructive to observe the relationship between working capital and total capital invested in Table (5.15).

TABLE (5.15) : WORKING CAPITAL AS PERCENTAGE OF
INVESTED CAPITAL IN 1949 AND 1950—TEN
MAJOR INDUSTRIES

industry	1949	1950
(1)	(2)	(3)
1. cement	35.52	34.07
2. chemicals	40.16	40.44
3. cotton textile	65.48	62.47
4. iron and steel	35.65	32.83
5. jute textile	59.29	56.73
6. paints and varnishes	73.44	74.72
7. paper and paper board	29.74	25.82
8. sugar	64.51	53.40
9. tea	31.19	29.04
10. tobacco	70.70	64.47
11. all industries	49.63	47.07

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5.34. The year 1950 is marked by a general tendency in all these industries for the working capital to be lower as compared to the previous year. During the year 1949, the proportion of the working capital to invested capital was the highest at 73.44 per cent in the paints and varnishes industry followed by 70.70 per cent in tobacco, 65.48 per cent in cotton textile, 64.51 per cent in sugar and 59.29 per cent in jute textile industry.

5.35. The output as a percentage of the invested capital in all industries was of the order of 147 in 1949 and 149 in 1950. As against this the value added for all industries as per cent of the invested capital was broadly 43 per cent of the invested capital for both the years. Table (5.16) shows the output and value added as percentages of invested capital.

TABLE (5.16) : GROSS AND NET RATIOS OF OUTPUT TO INVESTED CAPITAL
IN 1949 AND 1950

industry	percentage of invested capital			
	output		value added*	
	1949	1950	1949	1950
(1)	(2)	(3)	(4)	(5)
1. cement	74.28	104.50	28.78	47.71
2. chemicals	75.57	90.33	34.98	42.42
3. cotton textile	165.56	155.63	56.86	43.23
4. iron and steel	85.51	80.78	37.71	33.10
5. jute textile	220.32	224.00	50.71	67.40
6. paints and varnishes	166.83	161.60	58.55	46.45
7. paper and paper board	63.75	66.97	20.62	22.91
8. sugar	163.37	176.62	50.32	59.42
9. tea	124.91	133.32	73.42	81.58
10. tobacco	161.69	205.08	44.61	51.90
11. total (1 to 10)	146.06	146.72	51.71	50.88
12. total of all industries	147.14	149.12	43.15	42.93

5.36. The value added as a percentage of the invested capital is markedly higher in the ten major industries. Among these industries the highest output expressed as a percentage of invested capital is recorded in order of precedence in jute, tobacco, and sugar industries whereas the value added as percentage of the invested capital is the highest in tea, jute and sugar industries.

LABOUR AND THEIR EARNINGS

5.37. According to the Census of 1951 the total population of India was 3613 lakh for the year 1951. The Census Report observes that there is a recurring net annual increase in our population of 1.3 per cent or 44 lakh. Applying this

*net of depreciation

Manufacturing Industries, 1949 and 1950

annual rate of increase to the population figure for 1951, we arrive at a population figure of 3525 lakh for the year 1949, the corresponding figure being 3569 lakh for the year 1950. Table (5.17) gives the figures of total population, aggregate self-supporting working population, and the self-supporting working population in industries.

TABLE (5.17) : TOTAL AND WORKING POPULATION COMPARED TO THE WORKING POPULATION IN INDUSTRIES*

(lakh)

year	total population	working population			
		total	industries	manufacturing industries	ten major industries
(1)	(2)	(3)	(4)	(5)	(6)
1949	3,525	1,009	89	27	16
1950	3,569	1,021	91	26	15

5.38. The 1951 Census enumerated the total working population in the country at 1044 lakh of persons or 28.62 per cent of the total population. Out of this, 334 lakh persons or 9.24 per cent were reported to be engaged in non-agricultural occupations. The workers engaged in industries of all types and sizes (*i.e.*, in processing and manufacturing) including such establishments as are covered by the Factories Act were, however, returned at 92 lakh in 1951 or 2.54 per cent of the total population. Applying the percentage of working population to total population in 1951 to the total population figures for 1949 and 1950, we arrive at the figures of total working population for these years as shown in the table above. Similarly, the workers engaged in industries during the years 1949 and 1950 have been arrived at by applying the percentage of workers engaged in industries in 1951, *i.e.*, 2.54 per cent to the total population figures of the years 1949 and 1950.

5.39. Taking the proportion of self-supporting working population to total population and that of the self-supporting working population in industries to the total population as obtained in the Census figures for 1951, the working population works out to be 1009 lakh in 1949 and 1021 lakh in 1950. The working population in industries, on the same basis of calculation, comes to 89 lakh in 1949 and 91 lakh in 1950. These figures are broadly comparable to the figures of persons employed in all industries, as well as in the ten major industries, as estimated in our survey. The figures of total working population in the 61 organised industries as given by our survey were 27 lakh or 30 per cent in 1949 and 26 lakh or 29 per cent in 1950. The working population in the ten major industries was 16 lakh in 1949 and 15 lakh in 1950. When compared to the working population in organised industries alone, the figures of persons employed in the ten major industries comprised 58 per cent and 57 per cent in 1949 and 1950 respectively. Coming to individual industries we find that iron and steel, cotton textile and jute between them employed 45 per cent of the total workers in all the industries.

* Only self-supporting persons are included in working population.

5.40. The duration of work in organised industries is governed by the Factories Act, 1948, both in regard to perennial factories which work all the year round and the seasonal factories which work during a particular season like the sugar industry which works during the period sugar-cane is available. The total working days in all industries showed an increase in the year 1950 of the order of 1.8 per cent over the year 1949, the actual figures being 34,34,000 in 1949 as against 34,96,000 in 1950.

5.41. Out of the total working days for all industries, those in the ten major industries formed broadly 20 per cent during both the years. Total man-hours worked for all the industries stood at 519.66 crore and 493.36 crore in 1949 and 1950 respectively. Out of these, the man-hours worked in the ten major industries accounted for 62 and 59 per cent in 1949 and 1950 respectively. The maximum man-hours worked during the two years were in cotton textile, jute and iron and steel industries in the descending order.

5.42. In this survey each manufacturer was asked to report the average number of employees per day receiving pay within the calendar year. The employees were classified into two broad groups, namely, (i) wage earners and (ii) others. 'Employees' include all administrative, technical and clerical staff working within the factory area and all those engaged in effecting delivery of the output. But persons employed in any retail sales organisation maintained by the factory and those engaged in sale of goods which were not subjected to any manufacturing process but merely bought and re-sold have been excluded. The personnel of the central administrative offices outside the factory area have also not been included.

5.43. *Wage earners and wages*: Wage earners in manufacturing plants are, generally speaking, those who perform manual work using tools, operating machines, handling materials and products and care for plant and its equipment. They comprise of both time-workers and piece-workers. Worker does not include a person solely employed in a clerical capacity in any room or place where no manufacturing process is carried on.

5.44. The average number of persons employed per day has been worked out by dividing the aggregate number in attendance on all working days by the total number of working days during the year. In reckoning attendances, attendances by *badli* or substitution and temporary as well as permanent employees have been counted. Total attendances have been arrived at by taking the aggregate of daily attendances in respect of all working days. Absence for a few hours only has not been considered. Total attendances on any day are the total of the attendances in each shift during that day. Days on which the factory was closed and days on which the manufacturing processes were not carried on have not been treated as working days.

5.45. The total amount of wages paid to workers in all industries inclusive of other benefits stood at Rs. 213.40 crore in 1949 and Rs. 199.64 crore in 1950 thus recording a decrease of approximately 6.0 per cent in the latter year. This is shown in Table (5.18).

Manufacturing Industries, 1949 and 1950

TABLE (5.18) : ESTIMATES OF WAGES AND SALARIES PAID
Rs. (crore)

item	1949	1950
(1)	(2)	(3)
1. wages (inclusive of benefits for workers)	213.40	199.64
2. salaries (inclusive of benefits for persons other than workers)	51.20	53.72

5.46. The total salaries paid to persons other than workers in all industries recorded an increase of 5 per cent in 1950 over the previous year.

5.47. The wages bill inclusive of other benefits in respect of all the workers per working day in the ten major industries was of the order of 65.5 per cent of the total wages including benefits for all industries during the years 1949 and 1950. The highest absolute wage inclusive of other benefits was recorded in cotton textile, followed by that in jute, iron and steel, sugar and tea, the first three alone accounting for about 86 per cent of the wages bill for the ten major industries, and to about 57 per cent of the wages bill for workers for all industries. The rates of remuneration for workers and for persons other than workers are set out in Table (5.19).

TABLE (5.19) : ESTIMATES OF WAGES AND SALARIES FOR WORKERS AND PERSONS OTHER THAN WORKERS IN 1949 AND 1950

industry	workers				other than workers				average earnings per employed person per working day	
	wages including benefits		average earning per worker per day		wages including benefits		average earnings per person per day		per employed person per working day	
	Rs. (crore)	Rs.	Rs.	Rs.	Rs. (crore)	Rs.	Rs.	Rs.	Rs.	Rs.
(1)	1949	1950	1949	1950	1949	1950	1949	1950	1949	1950
1. cement	1.59	1.57	2.60	2.76	0.36	0.44	5.18	6.62	2.87	3.17
2. cotton textile	89.18	76.06	4.15	4.26	10.30	10.09	8.22	8.92	4.37	4.52
3. heavy chemicals	3.10	2.99	3.90	3.55	1.40	1.91	8.00	9.57	4.63	4.71
4. iron and steel	8.69	10.29	6.56	7.30	3.34	2.97	11.18	8.65	7.40	7.56
5. jute textile	25.24	22.60	3.20	3.09	3.07	3.13	7.15	7.86	3.40	3.34
6. paints and varnishes	0.23	0.15	2.66	2.26	0.13	0.13	5.76	5.81	3.31	3.17
7. paper and paper board	1.94	1.70	2.87	2.09	0.68	1.22	7.20	10.99	3.40	3.16
8. sugar	6.37	6.09	7.43	5.85	2.31	2.37	10.40	9.41	8.04	6.55
9. tea	4.46	5.71	1.97	2.42	2.19	2.32	6.07	6.18	2.53	2.94
10. tobacco	1.38	1.46	2.47	2.31	0.44	0.54	5.74	6.03	2.87	2.77
11. total (1 to 10)	142.18	128.62	4.37	4.16	24.22	25.12	8.00	8.27	4.68	4.53
12. total of all industries	213.40	199.64	4.45	4.25	51.20	53.72	8.91	9.22	4.92	4.80
13. per cent to total of all industries	66.63	64.42	98.20	97.88	47.30	46.76	89.79	89.70	95.12	94.38

National Sample Survey

5.48. The highest absolute salaries including benefits for persons other than workers are in cotton textile, jute, iron and steel, sugar and tea. The first three of these account for 69 per cent of the total salaries for the ten major industries and about 33 per cent of the total salaries including benefits for all industries for employees other than workers.

5.49. The average earnings per worker per working day in all industries were Rs. 4.45 in 1949 and Rs. 4.25 in 1950 whereas for persons other than workers the corresponding figures were Rs. 8.91 in 1949 and Rs. 9.22 in 1950. Thus in all industries the average earnings for workers per working day dropped in 1950 by about 5 per cent whereas the earnings increased by 3 per cent for persons other than workers. The overall average earnings per working day for all employed persons recorded, however, a nominal fall in 1950 of the order of 2 per cent.

5.50. In the ten major industries the average wages per worker per working day were Rs. 4.37 in 1949 and Rs. 4.16 in 1950. The average earnings per worker per day in the ten major industries as compared to those in all industries were of the order of 98 per cent, the maximum average earning per worker being in iron and steel, sugar, cotton textiles and jute textile industries in descending order.

5.51. The rate of earnings for workers and for persons other than workers in all industries were Rs. 4.92 in 1949 and Rs. 4.80 in 1950. The comparative average earnings in the ten major industries were Rs. 4.68 in 1949 and Rs. 4.53 in 1950.

5.52. Table (5.20) shows the number of workers in relation to total wages and value of input and output. The total number of workers in all

TABLE (5.20): NUMBER OF WORKERS IN RELATION TO TOTAL WAGES AND VALUE OF INPUT AND OUTPUT IN 1949 AND 1950

industry	number of workers (thousand)		amount received by workers Rs. (crore)		value of input Rs. (crore)		value of output Rs. (crore)	
	1949	1950	1949	1950	1949	1950	1949	1950
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. cement	18.54	16.15	1.59	1.57	6.83	8.47	12.37	16.96
2. chemicals	31.09	31.08	3.10	2.99	11.04	13.15	22.92	27.17
3. cotton textiles	778.46	711.07	89.18	76.06	244.79	258.26	381.33	366.15
4. iron and steel	65.00	63.22	8.69	10.29	29.38	30.55	58.04	57.43
5. jute textile	302.47	283.44	25.24	22.60	109.51	101.58	144.68	148.17
6. paints and varnishes	3.09	2.38	0.23	0.15	2.87	2.45	4.50	3.49
7. paper and paper board	24.46	28.96	1.94	1.70	8.21	9.57	13.69	16.18
8. sugar	100.95	102.05	6.37	6.09	64.36	65.27	95.10	101.17
9. tea	97.14	98.61	4.46	5.71	34.45	37.88	92.20	107.19
10. tobacco	24.08	25.89	1.38	1.46	25.12	28.97	35.32	39.42
11. total (1 to 10)	1445.28	1362.85	142.18	128.62	536.56	556.15	860.15	883.33
12. total of all industries	2424.00	2337.00	213.40	199.64	1072.82	1128.69	1571.39	1642.18
13. per cent to total of all industries	59.62	58.32	66.63	64.42	50.01	49.27	54.74	53.79

Manufacturing Industries, 1949 and 1950

industries comprised 2424 and 2337 thousand during 1949 and 1950 respectively. The amount received by workers in these two years stood for all industries at Rs. 213.40 and Rs. 199.64 crore. The total value of input was Rs. 1072.82 crore in 1949 and Rs. 1128.69 crore in 1950 whereas the respective values of output were Rs. 1571.39 and Rs. 1642.18 crore. Corresponding to that in all industries for the years 1949 and 1950, the number of workers in the ten major industries formed respectively 60 and 58 per cent and the value of output 53 and 54 per cent. Per capita labour earnings in all industries were Rs. 975 in 1949 and Rs. 964 in 1950, the corresponding figures in the ten major industries being Rs. 1053 in 1949 and Rs. 1027 in 1950. Thus in the ten major industries the rate of earnings was low and the average annual earning high compared to all industries because the number of working days in the former case was 226 and 200 in the latter case.

EMPLOYMENT *VIS-A-VIS* CAPITAL INVESTMENT

5.53. The total invested capital in all industries was Rs. 1068.05 crore in 1949 and Rs. 1100.96 crore in 1950. The corresponding figures of fixed capital are Rs. 538 and Rs. 583 crore respectively. As against this the total number of persons employed in all industries stood at 2714 thousand in 1949 and 2627 thousand in 1950. The figures of output per employed person was Rs. 5790 and Rs. 6251 in 1949 and 1950 respectively. These figures for all industries are shown in Table (5.21).

TABLE (5.21): NUMBER OF PERSONS EMPLOYED, PER CAPITA COST OF EMPLOYMENT AND GROSS OUTPUT PER EMPLOYED PERSON IN ALL INDUSTRIES IN 1949 AND 1950

item	unit	1949	1950
(1)	(2)	(3)	(4)
1. number of employed persons	(thousand)	2714	2627
2. total invested capital	(Rs. crore)	1068.05	1100.96
3. per capita cost of employment in terms of invested capital	(Rs.)	3935	4191
4. fixed capital	(Rs. crore)	538.00	582.76
5. per capita cost of employment in terms of fixed capital outlay	(Rs.)	1982	2218
6. gross output per employed person	(Rs.)	5790	6251

5.54. The invested capital per employed person in all industries works out to Rs. 3935 in 1949 and Rs. 4191 in 1950. The fixed capital per employed person recorded an increase of 11.9 per cent in 1950 over 1949. The output per employed person stood at Rs. 5790 and Rs. 6251 during 1949 and 1950, which meant an increase of 8 per cent in the latter year.

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5.55. An investment in the ten major industries of the order of 55.14 and 54.68 per cent during 1949 and 1950 respectively of the total invested capital in all the industries went towards providing employment broadly to 60 per cent of the total employed persons in all industries. The fixed capital per employed person formed 87 per cent in 1949 and 90 per cent in 1950 of that in all industries. The cost of providing employment to one person in these ten industries varied on an average from Rs. 3700 to Rs. 4000. The corresponding output per employed person lay in the range of Rs. 5400 to Rs. 5900. In the order of capital-intensity per employed person, the ten major industries can be arranged as follows : iron and steel, cement, paper and paper board, tobacco, paints and varnishes, tea, sugar, cotton textile and jute. The highest fixed capital investment among the ten industries was in iron and steel, followed by cement, paper and paper board, chemicals, tea, tobacco, sugar, paints and varnishes, cotton and jute. This is shown in Table (5.22).

TABLE (5.22) : CAPITAL AND OUTPUT PER EMPLOYED PERSON IN 1949 AND 1950

industry	invested capital per employed person Rs.		fixed capital per employed person Rs.		output per employed person Rs.	
	1949	1950	1949	1950	1949	1950
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. cement	8057	8990	5197	5927	5986	9394
2. chemicals	8000	7824	4786	4659	6047	7068
3. cotton textiles	2796	3112	965	1168	4628	4844
4. iron and steel	8521	9042	5483	6073	7286	7304
5. jute textile	2059	2213	838	958	4536	4947
6. paints and varnishes	6920	6754	1845	1720	11532	10913
7. paper and paper board	7701	7343	5409	5447	4910	4919
8. sugar	4579	4519	1625	2106	7481	7982
9. tea	6554	7034	4511	4637	8186	9378
10. tobacco	7976	6508	2337	2313	12899	13352
11. total (1 to 10)	3727	4023	1725	1993	5444	5902
12. total of all industries	3935	4191	1982	2218	5790	6251

5.56. Thus the invested capital in the ten major industries per employed person, recorded an increase of 8 per cent in 1950 over 1949, while the fixed capital was marked by an increment of the order of 16 per cent in the latter year. The output per employed person on the other hand witnessed a rise by about 8.4 per cent in 1950 over the previous year.

CAPITAL FORMATION

5.57. The fixed capital in all industries was Rs. 538 crore in 1949 and Rs. 583 crore in 1950. This meant an increase in the fixed capital outlay in all

industries taken together of the order of Rs. 45 crore or 8.36 per cent in course of one year. For the ten major industries on the whole the fixed capital increased in 1950 over 1949 by Rs. 26 crore or by 9.5 per cent. Individually for each of these ten industries there was a general increase in the figures of fixed capital in 1950 over 1949.

PRICE FACTOR

5.58. All that has been said above regarding increase in the value of production would mean little real gain as the recorded higher attainments in 1950 may be due to the higher prices in the latter year. The price factor has to be taken into account for final appraisal. It would be well to remember that the index number of wholesale prices was 308 for 1947. After the partial decontrol experiment in that year, the index number of wholesale prices came to be stabilised around 380 in 1948. During the year 1949 this index stood at 385. Thereafter, towards the beginning of 1950, a downward trend in prices was noticeable as a result of a general readjustment of prices all over the world. But this falling tendency received a setback owing to the outbreak of war in Korea in June 1950. Prices went up rapidly and wholesale price index for the year 1950 stood at 409. Prices in 1950 were thus higher to the tune of 6 per cent over those in 1949.

5.59. Assuming that the wholesale index number is applicable to the field under review, we find that for all industries taken together as also for ten major industries there was very little increase in the real value added per worker. Certain individual industries, however, such as cement and jute recorded a real increase of the order of 75 per cent and 35 per cent respectively. Other industries where real increase in the value added per worker was broadly in the neighbourhood of 12 per cent in the year 1950 were chemicals, tea and sugar. On the other hand, the real value added per worker in 1950 as compared to 1949 declined sharply in paints and varnishes followed by cotton textiles, iron and steel, tobacco, and paper and paper boards.

5.60. The rise in prices of the order of 6 per cent in 1950 as compared to the price level in the year 1949 can hardly be taken to usher in anything like a boom in the real sense for industries. It is true that owing to the particular tempo of the Korean war, the products of jute, cement, chemicals and cotton textile industries received a larger assured export market, but the industries found it difficult to expand their production adequately so as to make full use of the favourable market conditions.

APPENDIX I

INDUSTRY-WISE TABLE SHOWING THE NUMBER OF SAMPLE FACTORIES AND THE TOTAL NUMBER OF FACTORIES COVERED IN SSMI : 1949 AND 1950

industry	total number of sample factories	total number of factories
(1)	(2)	(3)
1. wheat flour	8	115
2. rice milling	38	1574
3. biscuit making	10	70
4. fruit and vegetable processing	6	26
5. sugar : vacuum pan factories	72	171
6. sugar : gur and jaggery refineries	7	7
7. sugar : gur factories	10	253
8. distilleries and breweries	8	66
9. starch	6	22
10. vegetable oils : oil mills	58	1282
11. vegetable oils : hydrogenated	9	34
12. paints and varnishes	8	48
13. soap	11	82
14. tanning	17	115
15. cement	11	17
16. glass and glassware	31	177
17. ceramics	12	76
18. plywood and tea chests	11	47
19. paper and paper board	15	52
20. matches	14	79
21. cotton textiles : spinning mills	38	84
22. cotton textiles : composite mills	232	312
23. cotton textiles : power-loom mills	32	359
24. woollen textiles	16	67
25. jute textiles	100	104
26. chemicals (including drugs etc.)	27	210
27. aluminium, copper and brass : primary products	3	3
28. aluminium and brass etc. : secondary products	26	254
29. iron and steel : primary products	5	5
30. iron and steel : other than primary products	17	198
31. bicycles	6	17
32. sewing machines	6	6
33. producer gas plants	3	3
34. electric lamps	10	10
35. electric fans	9	43

Manufacturing Industries, 1949 and 1950

INDUSTRY-WISE TABLE SHOWING THE NUMBER OF SAMPLE FACTORIES AND THE TOTAL NUMBER OF FACTORIES COVERED IN SSMI: 1949 AND 1950 (Contd.)

industry	total number of sample factories	total number of factories
(1)	(2)	(3)
36. general and electrical engineering repair workshop	7	210
37. " " " " manufacturing	114	1730
38. footwear and leather manufacturing	8	31
39. rubber and rubber manufacturing	10	99
40. enamelware	6	26
41. hume pipes and other cement and concrete products	7	57
42. asbestos and asbestos cement products	3	5
43. bricks, tiles, lime and surki manufacturing	23	219
44. lac	15	78
45. turpentine and rosin	2	2
46. plastic (including gramophone records)	8	33
47. saw milling	9	305
48. woodware (including furniture)	19	149
49. tea manufacturing	78	1080
50. tobacco products	19	150
51. groundnut decorticating etc.	26	382
52. printing and bookbinding	57	915
53. webbing narrow fabrics	8	86
54. hosiery and other knitted goods	27	240
55. thread and thread ball making	12	36
56. textiles, dyeing, bleaching etc.	19	173
57. clothing and tailoring	11	27
58. cotton ginning and pressing	119	2767
59. rope making	4	8
60. silk and artificial silk	33	313
61. jute pressing	15	39
62. electricity generation and transformer	16	225
63. automobiles and coach building	38	421
64. ship building and ship repairing	14	60
65. aircraft assembling and repair service	7	18
66. railway wagon manufacturing	3	4
67. textile machinery and accessories	17	103
68. unspecified industries	96	1398
69. total of all industries	1742	17377

SAMPLE SURVEY OF MANUFACTURING INDUSTRIES, 1950

Industry.....

State.....

Region.....

Area.....

Stratum No.....

Serial No. of factory in the Stratum.....

1. Name and address of the factory.....

2. Value of Capital employed, as at the close of the year.

(1) *Fixed Capital*—

(11) Land and buildings

(12) Plant and machinery

(13) Other fixed assets

Total .

(2) *Working Capital*—

(21) Stocks of fuels and raw materials

(22) Stocks of products, by-products, and partly finished products

(23) Cash in hand and at banks

Total .

(3) *Rent of fixed assets secured on lease*

3. Duration of Working—

(1) No. of days on which any manufacturing operations were carried on

(2) No. of shifts worked per day

(3) Length of Shift

1949
Rs.

1950
Rs.

APPENDIX II
 FACSIMILE OF THE SCHEDULE OF INVESTIGATION

4. Labour employed —	1949				No. of manhours worked (workers only).	Amount received by labour.			1950				No. of manhours worked (workers only)	Amount received by labour		
	Average No. of persons employed per working day.					Salaries and wages	Value of other benefits	Total	Average No. of persons employed per working day					Salaries and wages	Value of other benefits	Total
	Men	Women	Child- ren	Total					Men	Women	Child- ren	Total				
(1) Workers																
(2) Others																
Total																
5. Input —	Quantity Tons.				Value at factory Rs.			Quantity Tons.				Value at factory Rs.				
(1) Fuels, and Electricity—																
(11) Coal and Coke																
(12) Other fuels (value only)																
(13) Electricity (Electricity generated within the factory should be excluded).																
(2) Raw materials, chemicals, packing materials, etc.—																
(21)																
(22)																
(23)																
(24) Others, (value only) including lubricants, consumable stores etc.																
(3) Work done for the factory by other concerns (value only)																
Total																
6. Output—																
(1) Products and by-products—																
(11)																
(12)																
(13)																
(14) Others (value only)																
Total																
(2) Work done by the factory for customers																
Total																

Investigator.....

Regional Officer.....

Date.....

Date.....

APPENDIX III

PRINCIPAL PARTICIPANTS

This Survey was initiated in the Directorate of Industrial Statistics under instructions from the Honorary Statistical Adviser to the Cabinet and the Chairman of the National Income Committee and the collection of the data was also made by the staff of that Directorate. Processing and analysis of the data were done and the report (on the basis of a draft prepared by Shri Hari Charan Ghose, then Chief Director of National Sample Survey) prepared by the Indian Statistical Institute.