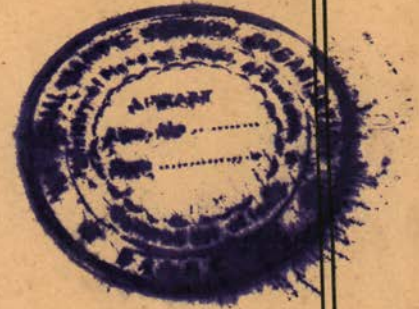


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# THE NATIONAL SAMPLE SURVEY

NUMBER 57

REPORT ON  
SAMPLE SURVEY OF  
MANUFACTURING INDUSTRIES : 1955(2)



Issued by

The Cabinet Secretariat : Government of India

Printed by the Eka Press, Calcutta in 1962 and published  
by the Manager of Publications, Civil Lines, Delhi-8

*For use of the Indian Statistical Institute*

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The report was prepared by P. K. Ghosh.

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# THE NATIONAL SAMPLE SURVEY

NUMBER 57

## REPORT ON SAMPLE SURVEY OF MANUFACTURING INDUSTRIES : 1955 (2)

*This report entitled 'Sample Survey of Manufacturing Industries : 1955 (2)' was prepared by the Indian Statistical Institute, Calcutta and is being published in the form in which it was submitted to the Government of India and Government are not responsible for the views expressed in the report.\**

### CHAPTER ONE INTRODUCTION

1.1. The Sample Survey of Manufacturing Industries for the 5th round was conducted in the year 1956 to collect data regarding the establishments registered under sections 2m(i) and 2m(ii) of the Factories Act, 1948 for the calendar year 1955, except for sugar industry where the reference period was July 1955—June 1956.

1.2. *Coverage* : The survey for this round covered all the establishments in India excluding Andaman and Nicobar Islands registered under sections 2m(i) and 2m(ii) of the Factories Act, 1948. It may be mentioned here that the establishments of Jammu and Kashmir State are outside the purview of the Indian Factories Act, 1948. The State of Jammu and Kashmir follows its rule of registration similar to that of 1948 Act, for all the non-household manufacturing units irrespective of using power and not using power, employing any number of workers. The section 2m(i) of the Factories Act, 1948 refers to those factories using power and engaging 10 or more workers on any day during the reference year, and the section 2m(ii) of the Factories Act, 1948 refers to those factories not using power and engaging 20 or more workers on any day. All these registered manufacturing establishments are classified into 63 broad industry groups under the Census of Manufacturing Industry Rules, 1945. The registered manufacturing establishments working under the Ministries of Defence and Railways, Government of India were excluded from the scope of this survey.

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\* The draft report (No. D. 74) was submitted to the Government of India in September 1960.

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1.3. *Sampling design*: The sampling frame of this survey was prepared on the basis of lists of factories obtained from the offices of the Chief Inspector of Factories of various states. It was observed that there were altogether 34117 factories in the year 1955, out of which 27658 were registered under section 2m(i) of the Factories Act, 1948 and 6459 under section 2m(ii) of the aforesaid Act. The frame for sampling establishments finally prepared, referred to the list of factories classified under 63 broad industry groups along with the corresponding annual average (or maximum in the absence of average) number of workers during the reference year.

1.4. In determining the sample size a very broad consideration was given to two important factors—cost and precision. Appropriate sample size was fixed on a priori grounds with the object of obtaining all-India estimates of the value added by the manufacturing sector as a whole. It was decided to select 4415 factories for the 5th round of the survey where the total number of samples not surveyed was 465, out of which 374 belonged to factories using power and 91 belonged to those not using power. These 4415 samples were allocated to two categories of factories—using power and not using power—on the basis of the total number of workers engaged under each of them and the total number of samples allocated to the first category was 3751 and the second category consisted of 664 samples. Thus, after allocation of samples for two categories of factories, the sample factories using power were re-allocated to 63 different industry groups on the basis of the joint consideration of the number of workers and the standard deviation of output per worker (obtained from the results of survey of 1949 and 1950). After allocation of samples for each industry, all the factories, employing 250 or more were selected for complete enumeration. Thus excluding the factories selected for complete enumeration, samples were drawn within each industry after proper stratification, taking into consideration that the stratum size with respect to number of workers should be more or less the same in each case. Two samples for each stratum were drawn at random without replacement so as to provide two sub-sample estimates. In the case of factories not using power the 63 broad industry groups were regrouped into some 15 broad industry groups and then samples were drawn in each classified group after proper stratification. It was decided to include in the 5th round of the survey all the undertakings registered under the Industries (Development and Regulation) Act, 1951. Thus some additional factories were covered under complete enumeration in this round in order to include all the scheduled undertakings excluding coal existing in the year 1955, and therefore the sample size of the 5th round of survey suddenly rose to 4415 from 3636 of the preceding round. About 2300 factories were surveyed in order to cover about 2900 scheduled undertakings.

1.5. There were many items of information in the questionnaire intended for collection with special attention to the following items:

(i) value of fixed capital, such as land and building, plant and machinery and other fixed assets;

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(ii) value of working capital consisting of stocks of fuels, raw materials, products, by-products, cash in hand and at bank at the end of the accounting year;

(iii) rent on fixed assets secured on lease;

(iv) duration of working period;

(v) employment figures with necessary breakdowns showing wages and salaries paid;

(vi) value and quantity of consumption of fuels, raw materials, chemicals, etc. including services received from other sources;

(vii) value and quantity of products and by-products of the factory and services rendered to customers.

CONCEPTS AND DEFINITIONS

1.6. Some of the important concepts and definitions are being mentioned below for better appreciation of the results of the survey discussed in the subsequent chapter. A facsimile of the schedule of enquiry has been appended for ready reference.

(1) *Factories*: Factories registered under sections 2m(i) and 2m(ii) of the Indian Factories Act, 1948, i.e. those using power and those not using power, employing 10 or more and 20 or more workers respectively.

(2) *Fixed and working capital*: Book values were taken as found on the closing date which was generally expected to be 31st December, 1955. In the case of any variation of the accounting year followed by the factory concerned, the one that was followed had been accepted for this purpose, subject to the condition that the date in question should range between 1st July, 1955 and 30th June, 1956.

(3) *Number of working days*: It refers to those days only on which manufacturing operations were carried on. Days on which repair and maintenance work only was done, are excluded in this computation.

(4) *Number of persons employed per working day*: The average number of persons employed, calculated on the basis of actual attendance and not on the basis of names in the regular rolls, was taken into consideration. This average number comprised workers and other than workers.

(5) *Workers and other than workers*: All persons directly working on or at or for the plant and machinery were included in the category of workers. Generally speaking, all persons of the rank of an assistant foreman or chargehand (category II) and similar other ranks and below are included in the category of workers. Persons of the rank of foreman, assistant engineer, supervisor or chargehand and similar other non-technical supervisory function were considered in the category of supervisory staff. Employees other than the above two categories were included in the category of other employees.



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(6) *Man hours* : The estimate was made only in respect of workers directly employed by the factory. Total man hours worked during the reference year was obtained by taking the total number of man hours worked on each working day. The number of man hours on any working day was the product of the total attendance for each shift in the day and the length of the shift.

(7) *Salary and wages* : It referred to the total remuneration including allowances, overtime payment, D.A., etc. besides the basic pay. Bonus and all payments made in cash or kind either individually or in groups were included.

(8) *Fuels and materials consumed* : Fuels and materials manufactured in the factory and consumed by it were excluded.

(9) *Value of fuels and materials, etc. consumed* : It was inclusive of all taxes and freight charges as already included in the seller's price but excluded those as were payable by the factories on or after purchase. When the price of the raw materials included the freight charges, not separately paid by the factory, no attempt was made to separate them out. Similar was the case with the excise duties and other taxes included already in the price of material and not paid separately by the factory.

(10) *Work done for the factory by other concerns* : The services received by the factory from other sources were considered.

(11) *Work done for other concerns* : Services rendered by the factory to other concerns were included.

(12) *Input* : It comprised three broad components—(i) material input, (ii) industrial service input, and (iii) non-industrial service input. The material input covered the consumption of raw materials and fuels, etc. for the manufacturing processing and normal repair and maintenance of fixed assets. The industrial services input referred to purchased services from other concerns for the manufacturing processing as well as for normal repair and maintenance. The non-industrial services input comprised certain other services normally utilised by manufacturing concerns which might or might not have been rendered by a factory, but which would have helped the sample factory in its manufacturing activity. Such services refer to institutional services like printing, auditing and advertisement, warehouse services, insurance service, etc. Lastly, the input also included all impositions on account of local rates and trade licences as well as duties on raw materials, cess and taxes, which were not included in the cost of materials.

(13) *Output* : The value of output was obtained at ex-factory value of goods and services rendered to customers exclusive of excise duties and other taxes. This value of output, of course, did not include the value of internal repairs and maintenance done with their own resources. Such non-inclusion might have affected the value added to some extent which would be very insignificant. The ex-factory value was obtained by adopting any of the two procedures. One of the procedures

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was to obtain the ex-factory value from the selling price after certain deductions—value of returnable cases, if any, discounts, rebates to distributing agents, commissions or brokerages to selling agents and other similar charges. The second procedure was to obtain ex-factory value by constituent components of the manufacturing processing: Thus it consisted of total input (value of raw materials, etc.), other “factor payments”, and depreciation charges.

(14) *Value added by manufacture*: This value was the difference between the values of output and corresponding input and it was, however, gross of depreciation.

FIELD SURVEY

1.7. The survey of this round commenced from the first week of July, 1956 and was expected to be completed by the end of January 1957. The sample size was 4415 in total in this round. The 5th round of the survey also covered, excluding coal, all the undertakings registered under the Industries (Development and Regulation) Act, 1951. All the 55 classifications of the scheduled industries were taken into consideration in the 5th round of the survey. Thus the total number of schedules completed was about 5600.

1.8. The “half sampling arrangements” introduced in the 4th round of the survey was also continued in this round so as to provide two estimates for two sets of investigators. As the survey of the scheduled undertakings was given priority in the 5th round of the survey a separate list of undertakings was drawn up for the field investigators.

1.9. The work-load of the 5th round survey was thus increased to a great extent relatively to that of the preceding round. The strength of field investigators was the same for the 4th and 5th rounds of the survey. Two new surveys relating to weights and measures and occupation pattern were taken up for the year 1955. Some 20 investigators were temporarily recruited for the survey of the weights and measures but no additional investigator was appointed for the survey regarding occupation pattern. The survey of weights and measures was completed by the end of August 1957 and the survey about occupation pattern was completed by the middle of February 1958. But the survey of factories and scheduled undertakings for the year 1955 could only be completed by the end of June, 1958, which was expected to be completed by the end of January 1957.

STATISTICAL PROCESSING

1.10. It may be useful to give here a brief account of the processing of the data collected for the year 1955. A note relating to the data of weights and measures collected for the year 1955 was submitted to the Metric Committee under

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the Ministry of Commerce and Industry, Government of India by the first week of October 1957. The data as such collected regarding occupation pattern for the year 1955 was sent to the Perspective Planning Division of the Planning Commission, Government of India by the middle of March 1958. The provisional estimates of a few selected items for the year 1955 regarding the factories, using power and not using power, were submitted to the Government of India by 31st October 1958. The estimates of a few selected items for the year 1955 regarding the factories, using power and not using power, for the state of Jammu and Kashmir were submitted by the end of September 1959. An NSS report (No. 56) regarding the scheduled undertakings for the year 1955 was submitted to the Government of India by 31st March 1960.

## CHAPTER TWO

### THE FRAME

2.1. A Complete list of factories was collected for the year 1954 from different states. A supplementary list of factories for the new additions in the year 1955 was also collected in order to arrive at a complete sample frame for the year 1955. Actually, the list of additions and deletions of factories was collected from different states for the year 1955 and then a list of net new additions for the year 1955 was obtained. This list of factories referred only to the factories registered under sections 2m(i) and 2m(ii) of the Factories Act, 1948.

2.2. It has already been stated in the previous chapter that there were 34117 factories in all for the year 1955, excluding those under the control of the Ministries of Railways and Defence, out of which 27658 belonged to power-using sector and 6459 belonged to not-power-using sector. It was observed that there were many factories in the sample frame where information on average number of workers was not available. Non-availability of this information seems to be very surprising when it is known that the registration of factories is based on the number of workers engaged by them. The sample selection was rather handicapped due to lack of this information in certain cases. It was further observed that the industry classifications of certain factories in the sample frame were not up to date.

2.3. *Sample coverage*: The samples selected covered 12.9 per cent of the total number of factories. The coverage of samples in the case of factories using power was 13.6 per cent and it was 10.3 per cent in the case of factories not using power.

TABLE (2.1): SAMPLE COVERAGE

type of factory	number of factories		
	universe	sample	percentage covered
(1)	(2)	(3)	(4)
1. using power	27658	3751	13.6
2. not using power	6459	664	10.3
3. all factories	34117	4415	12.9

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2.4. It is observed from the table given below that percentage of increase of total factories in the year 1955 over 1954 was 4.12, where 3.66 per cent accounted for factories using power and 6.08 per cent was for those not using power.

TABLE (2.2): TOTAL COVERAGE FOR 1954 AND 1955

type of factories	number of factories			number of workers (in lakhs)	
	universe 1954	universe 1955	p.c. diff. over 1954	universe 1954	universe 1955
(1)	(2)	(3)	(4)	(5)	(6)
1. using power	26680	27658	3.66	25.17	27.17
2. not using power	6086	6459	6.08	2.68	2.93
3. all factories	32766	34117	4.12	27.85	30.10

2.5. Thus the relative increase of factories was more in the case of not-power-using sector than in power-using sector. It has been further observed that 81.4 per cent of the total factories happened to be under section 2m(i) of the Factories Act 1948 in the year 1954 and it was 81.1 per cent in the year 1955. Thus it appears that there was no significant change during the years 1954 and 1955 in the ratio of factories\*for using power and not using power. The number of workers per factory happened to be the same more or less in both the years 1954 and 1955.

## CHAPTER THREE

### RESULTS OF THE SURVEY

3.1. The broad results of the survey for the year 1955 have been discussed in this chapter for the whole of India, taking all the industries pooled together and for ten selected industries.

3.2. Table 3.1 describes the details of output, input and value added (gross of depreciation).

TABLE (3.1): ESTIMATED VALUES OF OUTPUT, INPUT AND VALUE  
ADDED FOR ALL INDUSTRIES: 1955

items	number of sample factories 4415
(1)	estimates (rupees crores) (2)
1. value of products	2249.50
2. services sold to others	79.34
3. total output (1+2)	2328.84
4. value of raw materials and fuels, etc.	1505.90
5. services purchased from others	107.44
6. total input (4+5)	1613.34
7. value added by manufacture (3-6)	715.50

3.3. The value of output of all industries together was Rs. 2328.84 crores in the year 1955, and the corresponding total input was Rs. 1613.34 crores. Thus the value added (gross of depreciation) was Rs. 715.50 crores for the year 1955. It may be observed that the value of products formed the major share of the total output and it was about 96 per cent of the total output and similarly the value of raw materials and fuels, etc. was about 93 per cent of the total input. Thus the value of services sold out or purchased had a little effect on the entire manufacturing activity of India in the light of value added. The proportion of gross value added to the value of total output was about 30 per cent. The total input was about 69 per cent of the total output.

#### FACTORIES USING AND NOT USING POWER

3.4. It has been observed that about 81 per cent of the total registered factories were using power and about 19 per cent were not using power. Comparisons

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have been made in respect of certain selected items in order to show the relative importance of the two groups. The details have been shown in Table (3.2).

TABLE (3.2): ESTIMATES OF SELECTED ITEMS FOR FACTORIES USING POWER AND NOT USING POWER: 1955

items	unit	total			percentage		
		factories using power	factories not using power	all factories	factories using power	factories not using power	all factories
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. fixed capital	Rs. (crores)	818.97	8.29	827.26	98.91	1.09	100.00
2. total number of employees	no. (000)	2773.05	339.04	3112.10	89.01	10.99	100.00
3. man hours	no. (crores)	512.12	57.54	569.66	89.01	10.99	100.00
4. payments to employees	Rs. (crores)	329.09	15.47	344.57	95.58	4.42	100.00
5. total output	Rs. (crores)	2191.66	137.18	2328.84	94.11	5.89	100.00
6. total input	„	1500.68	112.66	1613.34	92.98	7.02	100.00
7. value added	„	690.98	24.52	715.50	96.57	3.43	100.00
8. number of samples		3751	664	4415	84.96	15.04	100.00
9. total number of factories		27658	6459	34117	81.01	19.09	100.00

3.5. Though the proportion of factories not using power to the total factories was about 19 per cent, the contributions of this sector in respect of all the important items of information were much less. The contribution of value added was only about 3 per cent in this sector. Thus it may be concluded that the contributions of factories using power could not be taken for the entire manufacturing activity of India. It is interesting to note that the contribution of output was about 6 per cent corresponding to about 7 per cent of input in the case of factories not using power. The proportion of number of employees was 11 per cent in this sector.

EMPLOYMENT AND EARNINGS

3.6. Table (3.3) provides the estimates of the details of employment and the corresponding labour earnings.

3.7. The total estimated number of employees in the year 1955 was 31.13 lakhs. The number of workers was 26.75 lakhs and the number of persons other than workers was only about 4.38 lakhs. The proportion of workers to the total employees was about 85.93 per cent and thus the percentage of persons other than workers was 14.07. The proportion of payment to workers to the total payment

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to the total employees was 72.89 per cent. Thus the ratio of labour payment was different from that for employment with respect to workers and persons other than workers. The payment per worker estimated for the year 1955 was Rs. 935 and, on the other hand, the payment per person other than workers was Rs. 2158. Thus the average payment for workers was about 43 p. c. of the average payment for persons other than workers.

TABLE (3.3): ESTIMATED NUMBER OF PERSONS EMPLOYED PER WORKING DAY AND THEIR EMOLUMENTS: 1955

items	unit	estimates
(1)	(2)	(3)
1. workers	number (000)	2675.1
2. persons other than workers	"	437.6
3. total employees	"	3112.9
4. man hours	number (crores)	569.66
5. payment to workers	rupees (crores)	250.14
6. payment to persons other than workers	"	94.43
7. payment to total employees	"	344.57

3.8. Table (3.4) provides a study of estimates of certain selected items for the years 1954 and 1955. It may be observed that the relative increase of output for the year 1955 over 1954 was about 5 per cent and it was 3.4 per cent in case of input.

TABLE (3.4): ESTIMATES OF SELECTED ITEMS FOR 1954 AND 1955

items	unit	estimates		percentage difference over 1954
		1954	1955	
(1)	(2)	(3)	(4)	(5)
1. value of products	rupees (crores)	2150.81	2249.50	4.6
2. services sold to others	"	63.98	79.34	23.4
3. total output (1+2)	"	2214.79	2328.84	5.1
4. value of raw materials, fuel, etc.	"	1470.26	1505.90	2.5
5. services purchased	"	89.52	107.44	20.2
6. total input (4+5)	"	1559.78	1613.34	3.4
7. value added (3-6)	"	655.01	715.50	9.2
8. payment to employees	"	325.87	344.57	5.9



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The increase of value added over 1954 was 9.2 per cent. Thus it is interesting to note that the increase of input was relatively less to that of corresponding output which resulted in the addition of more value added (gross of depreciation). It may be observed that there was a certain major jump in 1955 over 1954 in respect of services sold to others and this had influenced the rise in value added for the year 1955.

RESULTS OF TEN INDUSTRIES

3.9. It may be useful to present here estimates of a few selected items regarding ten major manufacturing industries in order to give a broad idea of the contributions made by industries. Table (3.5) provides the estimates of fixed capital for ten selected industries, using power.

TABLE (3.5): ESTIMATES OF FIXED CAPITAL FOR TEN SELECTED INDUSTRIES USING POWER : 1955

industry	sample size	estimates of fixed capital (Rs. in crores)
(1)	(2)	(3)
1. petroleum refining	4	12.32
2. cotton textiles	433	108.44
3. ship building and repairing	23	5.06
4. iron and steel	138	57.72
5. asbestos and asbestos cement products	8	0.44
6. paper and paper board	34	14.88
7. rubber and rubber manufacture	37	6.69
8. textile machineries	33	4.03
9. sugar	182	28.16
10. tobacco	40	4.41

3.10. It has been found that the value of fixed capital for all industries taken together was Rs. 818.97 crores for the factories using power. The cotton textiles alone accounted for Rs. 108.44 crores with respect to fixed capital for the year 1955. The value of fixed capital was Rs. 57.72 crores in the case of iron and steel industry for the year 1955. Thus the fixed capital of cotton textiles was relatively the highest and it was about double that of iron and steel industry.

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INPUT, OUTPUT AND VALUE ADDED

3.11. Table (3.6) provides the estimates of input, output and value added and their relative contributions with respect to ten selected industries using power for the year 1955.

TABLE (3.6): ESTIMATES OF INPUT, OUTPUT AND VALUE ADDED FOR TEN SELECTED INDUSTRIES USING POWER: 1955

industry	sample size	estimates (Rs. crores)			col. (3)	col. (5)
		input	output	value added	as per-centage of col. (4)	as per-centage of col. (4)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. petroleum refineries	4	17.95	29.65	11.97	60.5	39.5
2. cotton textile	433	294.68	468.46	173.78	62.7	37.3
3. ship building and repairing	23	6.22	14.33	8.11	43.4	56.6
4. iron and steel	138	80.99	143.26	62.27	56.6	43.4
5. asbestos and asbestos cement products	8	1.95	3.03	1.08	64.3	35.7
6. paper and paper board	34	16.19	26.83	10.64	60.4	39.5
7. rubber and rubber manufacture	37	25.16	37.54	12.38	67.1	32.9
8. textile machineries	33	5.70	9.50	3.80	60.0	40.0
9. sugar	182	98.24	136.04	37.80	72.1	27.9
10. tobacco	40	34.02	40.91	6.89	83.2	16.8

3.12. It may be observed that the percentage of value added to total output was the highest (56 per cent) in the case of ship-building and repairing industry, though the total output was only Rs. 14.33 crores. Iron and steel, textile machineries, petroleum and paper industries came next to ship-building and repairing in order in this respect. It may be interesting to note that the proportions of input to total output was highest in case of tobacco industry. It may be observed that the proportion of value added to total output in the case of sugar industry was slightly lower than the over-all percentage of 30. It may be very interesting to note here that the proportion of value added to total output was the highest in the case of ship-building and repairing with relatively very low amount of fixed capital.

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3.13. Table (3.7) presents a comparative study of the labour earnings and corresponding total input for a few specific industries using power for the year 1955.

TABLE (3.7): ESTIMATES OF LABOUR EARNINGS AND INPUT FOR TEN SELECTED INDUSTRIES USING POWER: 1955

industry	sample size	estimates of salaries and wages paid (Rs. lakhs)			total input (Rs. lakhs)	col. (4) as percentage of col. (6)
		direct and contract workers	total employees	col (3) as percentage of col. (4)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. asbestos and asbestos cement products	8	31.6	40.7	78	194.7	20
2. cotton textiles	433	8902.6	11144.0	79	29468.9	38
3. petroleum refineries	4	49.9	84.0	59	1795.2	5
4. iron and steel	138	1920.6	2628.7	73	8099.2	32
5. ship building and repairing	23	343.1	547.8	62	1432.6	31
6. paper and paper board	34	261.0	400.1	65	1619.4	25
7. rubber and rubber manufacturing	37	277.4	467.9	59	2516.5	19
8. textile machineries and accessories	33	141.8	198.3	71	570.4	35
9. sugar	182	734.2	1075.8	69	9824.6	11
10. tobacco	40	235.3	327.7	72	3401.7	9

3.14. It may be observed that the percentage of payment to workers to total payment to total employees was the highest in the case of cotton textiles and this was the lowest in the case of petroleum and rubber manufacturing industries. The percentage of labour payment to total input was very poor in the case of petroleum industry and similar was the case in respect of tobacco, sugar and rubber manufacturing industries in order. This percentage of labour payment to total input was relatively significant in the case of textile machineries and cotton textiles. Some interesting observations might be derived from the details given in Table (3.7).

RELIABILITY OF RESULTS

3.15. There is hardly any published material which can be compared with the SSMI estimates for comprehensive external check. The only source of figures available for a broad external check is the Census of Manufacturing Industries (CMI) compiled by the Directorate of Industrial Statistics, Ministry of Commerce and Industry (the Industrial Wing of CSO at present), Government of India. There was much difference between the CMI and SSMI data with respect to the geographical and industrial coverage. Within each industry, the CMI covered only those factories, using power and employing 20 or more workers on any day. The SSMI, on the other hand, covered all the factories, using power and employing 10 or more workers and those not using power and employing 20 or more workers. The

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CMI covered only first 29 groups of industries, whereas, the SSMI covered all the 63 industry groups. Thus the SSMI results are expected to be more than that of the corresponding CMI data. An attempt has been made here to present some external as well as internal consistency of the results for the year 1955 in respect of the first 29 industry groups only.

TABLE (3.8): ESTIMATES OF INPUT, OUTPUT AND VALUE ADDED FOR SSMI AND CMI FOR THE YEARS 1951 TO 1955

year	CMI (Rs. crores)			SSMI (Rs. crores)			percentage difference of SSMI over CMI		
	output	input	value added	output	input	value added	output	input	value added
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. 1951	1306.86	940.47	366.19	1555.06	1116.52	438.54	18.99	18.72	19.76
2. 1952	1183.97	848.18	335.79	1398.62	1012.17	386.45	18.13	19.33	15.09
3. 1953	1122.78	766.01	356.77	1316.47	899.15	417.32	17.25	17.38	16.97
4. 1954	1287.55	899.72	397.83	1406.50	971.02	435.48	9.24	9.14	9.46
5. 1955	1406.10	958.42	447.68	1491.22	1037.12	454.10	5.33	8.04	1.56

3.16. It may be observed that the values of output, input and value added for the year 1951 to 1955 have followed the same trend more or less in respect of SSMI and CMI. It may be further noticed that the estimates of SSMI are found to be larger than those of CMI in all cases.

3.17. An approximate idea of the precision of the estimates of SSMI may be indicated by presenting the sub-sample estimates of a few selected items and their percentage difference. The sub-sample difference may somewhat broadly give an idea of the reliability of the results so obtained for the year 1955.

TABLE (3.9): ESTIMATES OF SELECTED ITEMS BY SUB-SAMPLES : 1955

items	unit	estimates			percentage difference col. (3)-(4) col. (5) × 100
		s.s.1	s.s.2	comb.	
		(3)	(4)	(5)	
1. value of output	Rs. (crores)	2332.70	2324.97	2328.84	0.3
2. value of input	"	1595.03	1631.64	1613.34	2.2
3. value added	"	737.67	693.33	715.50	6.2
4. total employees	no. (000)	3109.1	3112.5	3112.9	0.1
5. payment to total employees	Rs. (crores)	343.74	345.39	344.57	0.1

3.18. It may be observed that the estimates of all the selected items in respect of all industries taken together for the year 1955 happened to be within 6 per cent sub-sample difference more or less. Thus the comparison of SSMI estimates with the corresponding figures of CMI and the comparison of SSMI estimates of a few selected items by sub-samples for the year 1955 may now be able to throw some light on the reliability of the results obtained for the year 1955.

APPENDIX I

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TABLE (1.1) : DISTRIBUTION BY INDUSTRIES OF FACTORIES USING POWER AND CORRESPONDING SAMPLES AND SAMPLING FRACTION : 1955

description (1)	CMI classification number (2)	number of factories		percent- age covered (5)
		universe (3)	samples (4)	
1. wheat and flour	01	176	40	22.73
2. rice milling	02	2788	209	7.50
3. biscuit making	03	172	22	12.79
4. fruits and vegetables processing	04	38	16	42.11
5. sugar : vacuum pan factory	05a	146	138	94.52
6. sugar : refractories	05b	3	2	66.67
7. sugar : gur factories	05c	961	42	4.37
8. distilleries and breweries	06	67	23	34.33
9. starch	07	142	19	13.38
10. vegetable oil : unclassified	08	427	52	12.18
11. vegetable oil : oil mills	08a	1384	206	14.88
12. vegetable oil : hydrogenated	08b	43	22	51.16
13. paints and varnish	09	113	18	15.93
14. soap	10	69	21	30.43
15. tanning	11	225	48	21.33
16. cement	12	27	27	100.00
17. glass and glassware	13	166	55	33.13
18. ceramics	14	97	37	38.14
19. plywood and tea chests	15	90	17	18.89
20. paper and paper board	16	88	34	38.64
21. matches	17	128	34	26.56
22. cotton textiles : unclassified	18	53	36	67.92
23. cotton textiles : spinning mills	18a	153	94	61.44
24. cotton textiles : composite mills	18b	312	261	83.65
25. cotton textiles : power loom mills	18c	330	37	11.21
26. cotton textiles : hand loom mills	18d	40	8	20.00
27. woollen textiles	19	76	30	39.40
28. jute textiles	20	112	112	100.00
29. chemical : (including drugs)	21	449	68	15.14
30. aluminium : copper and brass primary products	22a	38	18	47.37
31. aluminium : copper and brass secondary products	22b	573	50	10.30
32. iron and steel : primary products	23a	25	14	56.00
33. iron and steel : secondary products	23b	1145	124	10.83
34. bi-cycles	24	99	19	19.19
35. sewing machines	25	31	9	29.03
36. electric lamps	27	16	13	81.25
37. electric fans	28	45	13	28.89

*Sample Survey of Manufacturing Industries 1955(2)*

TABLE (1.1) : DISTRIBUTION BY INDUSTRIES OF FACTORIES USING POWER AND  
CORRESPONDING SAMPLES AND SAMPLING FRACTION : 1955

description (1)	CMI classification number (2)	number of factories		percent- age covered (5)
		universe (3)	samples (4)	
1. wheat and flour	01	176	40	22.73
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8. distilleries and breweries	06	67	23	34.33
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11. vegetable oil : oil mills	08a	1384	206	14.88
12. vegetable oil : hydrogenated	08b	43	22	51.16
13. paints and varnish	09	113	18	15.93
14. soap	10	69	21	30.43
15. tanning	11	225	48	21.33
16. cement	12	27	27	100.00
17. glass and glassware	13	166	55	33.13
18. ceramics	14	97	37	38.14
19. plywood and tea chests	15	90	17	18.89
20. paper and paper board	16	88	34	38.64
21. matches	17	128	34	26.56
22. cotton textiles : unclassified	18	53	36	67.92
23. cotton textiles : spinning mills	18a	153	94	61.44
24. cotton textiles : composite mills	18b	312	261	83.65
25. cotton textiles : power loom mills	18c	330	37	11.21
26. cotton textiles : hand loom mills	18d	40	8	20.00
27. woollen textiles	19	76	30	39.40
28. jute textiles	20	112	112	100.00
29. chemical : (including drugs)	21	449	68	15.14
30. aluminium : copper and brass primary products	22a	38	18	47.37
31. aluminium : copper and brass secondary products	22b	573	50	10.30
32. iron and steel : primary products	23a	25	14	56.00
33. iron and steel : secondary products	23b	1145	124	10.83
34. bi-cycles	24	99	19	19.19
35. sewing machines	25	31	9	29.03
36. electric lamps	27	16	13	81.25
37. electric fans	28	45	13	28.89

*National Sample Survey*

TABLE (1.1) (Contd.): DISTRIBUTION BY INDUSTRIES OF FACTORIES USING POWER  
AND CORRESPONDING SAMPLES AND SAMPLING FRACTION : 1955

description	CMI classification		number of factories		percent- age covered
	number	universe	samples		
(1)	(2)	(3)	(4)	(5)	
38. gen. engg. and electrical eng. unspecified	29	889	53	6.07	
39. gen. engg. and electrical eng. repairing works	29a	299	42	14.05	
40. gen. engg. and electrical eng. manufacturing	29b	1071	94	8.78	
41. footwear and leather manufacturing	30	53	16	30.19	
42. rubber and rubber manufacturing	31	199	38	19.10	
43. enamelware	32	33	8	24.24	
44. hume pipes and other cement and concrete products	33	122	15	12.30	
45. asbestos and asbestos cement products	34	10	8	80.00	
46. bricks, tiles, lime and surki manufacturing	35	285	42	14.74	
47. lac	36	64	12	18.75	
48. turpentine and resin	37	7	5	71.43	
49. plastics (including gramophone records)	38	194	24	12.37	
50. petroleum refining	39	13	4	30.77	
51. saw milling	40	702	35	4.99	
52. woodware (including furniture, etc.)	41	239	25	10.46	
53. tea manufacturing	42	1212	151	12.46	
54. tobacco products	43	92	42	45.65	
55. groundnut decorticating, etc.	44	470	42	8.94	
56. printing and book binding	45	1852	122	6.59	
57. webbing narrow fabrics	46	120	14	11.67	
58. hosiery and other knitted goods	47	368	31	8.42	
59. thread and thread-ball making	48	45	8	17.78	
60. textile dyeing, bleaching, etc.	49	317	34	10.73	
61. clothing and tailoring	50	46	11	23.91	
62. cotton ginning and pressing	51	2725	199	7.30	
63. rope making	52	42	12	28.57	
64. silk and artificial silk	53	1007	99	9.83	
65. jute pressing	54	30	8	26.67	
66. electricity generation and transformation	55	459	55	11.98	
67. automobiles and coach buildings	56	888	87	9.80	
68. ship building and ship repairing	57	52	24	46.15	
69. air craft assembling and repair service	60	28	11	39.29	
70. railway wagon manufacturing	61	26	14	53.85	
71. textiles machinery accessories	62	254	34	13.39	
72. unspecified industries	63	2601	334	12.84	
73. all industries		27658	3751	13.56	



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TABLE (1.2): DISTRIBUTION BY INDUSTRIES OF FACTORIES NOT USING POWER AND CORRESPONDING SAMPLES AND SAMPLING FRACTION: 1955

CMI classification industry	number	number of factories		per cent covered
		universe	samples allotted	
(1)	(2)	(3)	(4)	(5)
1. soap	10	37	7	18.92
2. tanning	11	199	20	10.05
3. glass and glassware	13	83	16	19.28
4. matches	17	90	32	35.56
5. cotton textiles (unclassified and spinning mills)	18, 18a	38	10	26.32
6. cotton textiles (composite mills, power loom mills)	18b, 18c	23	4	17.39
7. cotton textiles : hand loom mills	18d	483	43	8.90
8. woollen textiles	19	43	7	16.28
9. chemicals (including drugs, etc.)	21	53	8	15.09
10. aluminium, copper and brass (primary and secondary products)	22a, 22b	50	5	9.80
11. iron and steel (primary and secondary products)	23a, 23b	61	3	4.92
12. general engg. and electrical eng. : repairing works	29a	5	2	40.00
13. gen. engg. and electrical eng. : manufacturing	29b	16	7	43.75
14. footwear and leather manufacturing	30	31	7	22.58
15. rubber and rubber manufacturing	31	21	2	9.52
16. enamelware	32	1	—	0.00
17. bricks, tiles, lime and surki manufacturing	35	571	32	5.60
18. lac	36	137	12	8.76
19. petroleum refining	39	4	2	50.00
20. tobacco products	43	2634	139	5.28
21. groundnut decorticating, etc.	44	210	95	45.24
22. printing and book binding	45	89	11	12.36
23. webbing narrow fabrics	46	14	2	14.29
24. hosiery and other knitted goods	47	24	5	20.83
25. thread and thread-ball making	48	8	—	0.00
26. rope making	52	63	5	7.94
27. automobiles and coach building	56	60	13	21.67
28. other industries	01, 02, 03, 04, 05a, 05b, 05c, 06, 07, 08, 08a, 08b, 14, 16, 24, 29, 37, 38, 33, 40, 41, 42, 49, 57, 50, 51, 53, 54, 62, 63	1411	175	12.40
29. all industries	—	6459	664	10.28

National Sample Survey

TABLE (2.1) : DISTRIBUTION OF SUB-SAMPLES BY INDUSTRIES FOR FACTORIES USING POWER : 1955

CMI classification	number	factories using power			
		C.E.	s.s. 1	s.s. 2	combined
industry					
(1)	(2)	(3)	(4)	(5)	(6)
1. wheat and flour	01	26	33	33	40
2. rice milling	02	29	119	119	209
3. biscuit making	03	12	17	17	22
4. fruits and vegetables processing	04	10	13	13	16
5. sugar : vaccum pan factory	05a	134	136	136	138
6. sugar : sugar refractories	05b	2	2	2	2
7. sugar : gur factories	05c	18	30	30	42
8. distilleries and breweries	06	15	19	19	23
9. starch	07	7	13	13	19
10. vegetable oil : unclassified	08	26	39	39	52
11. vegetable oil : oil mills	08a	89	148	148	207
12. vegetable oil : hydrogenated	08b	16	19	19	22
13. paints and varnish	09	12	15	15	18
14. soap	10	15	18	18	21
15. tanning	11	24	36	36	48
16. cement	12	27	27	27	27
17. glass and glassware	13	37	46	46	55
18. ceramics	14	23	30	30	37
19. plywood and tea chests	15	7	12	12	17
20. paper and paper board	16	22	28	28	34
21. matches	17	20	27	27	34
22. cotton textiles : unclassified	18	30	33	33	36
23. cotton textiles : spinning mills	18a	85	89	89	93
24. cotton textiles : composite mills	18b	251	256	256	261
25. cotton textiles : power loom mills	18c	13	25	25	37
26. cotton textiles : hand loom mills	18d	8	8	8	8
27. woollen textiles	19	18	24	24	30
28. jute textiles	20	112	112	112	112
29. chemical (including drugs, etc.)	21	46	57	57	68
30. aluminium, copper and brass primary products	22a	10	14	14	18
31. aluminium, copper and brass secondary products	22b	31	45	45	59
32. iron and steel : primary products	23a	12	13	13	14
33. iron and steel : secondary products	23b	50	87	87	124
34. bi-cycles	24	11	15	15	19
35. sewing machines	25	9	9	9	9
36. electric lamps	27	13	13	13	13
37. electric fans	28	7	10	10	13

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TABLE (2.1) (Contd.): DISTRIBUTION OF SUB-SAMPLES BY INDUSTRIES FOR FACTORIES USING POWER : 1955

CMI classification		factories using power			
industry	number	C.E.	s.s. 1	s.s. 2	combined
(1)	(2)	(3)	(4)	(5)	(6)
38. gen. engg. and electrical eng. : unspecified	29	28	41	41	54
39. gen. engg. and electrical eng. : repairing works	29a	28	35	35	42
40. gen. engg. and electrical eng. : manufacturing	29b	46	70	70	94
41. footwear and leather manufacturing	30	12	14	14	16
42. rubber and rubber manufacturing	31	22	30	30	38
43. enamelware	32	6	7	7	8
44. hume pipes and other cement and concrete products	33	7	11	11	15
45. asbestos and asbestos cement products manufacturing	34	6	7	7	8
46. bricks, tiles, lime and surki	35	24	33	33	42
47. lac.	36	6	9	9	12
48. turpentine and resin	37	5	5	5	5
49. plastic (including gramophone)	38	8	16	16	24
50. petroleum refining	39	2	3	3	4
51. saw milling	40	13	24	24	35
52. woodware (including furniture)	41	7	16	16	25
53. tea manufacturing	42	23	87	87	151
54. tobacco products	43	30	36	36	42
55. groundnut decorticating, etc.	44	14	28	28	42
56. printing and book binding	45	54	88	88	122
57. webbing narrow fabrics	46	2	8	8	14
58. hosiery and other knitted goods	47	5	18	18	31
59. thread and thread-ball making	48	2	5	5	8
60. textile dyeing, bleaching, etc.	49	22	28	28	34
61. clothing and tailoring	50	5	8	8	11
62. cotton ginning and pressing	51	33	116	116	199
63. rope making	52	6	9	9	12
64. silk and artificial silk	53	53	76	76	99
65. jute pressing	54	2	5	5	8
66. electricity generation and transformation	55	27	41	41	55
67. automobiles and coach buildings	56	31	59	59	87
68. ship building and ship repairing	57	16	20	20	24
69. aircraft assembling and repairing service	60	9	10	10	11
70. railway wagon manufacturing	61	10	12	12	14
71. textiles machinery	62	14	24	24	34
72. unspecified industries	63	148	241	241	334
73. all industries	—	2003	2877	2877	3751

*National Sample Survey*

TABLE (2.2): DISTRIBUTION OF SUB-SAMPLES BY INDUSTRIES FOR FACTORIES  
NOT USING POWER : 1955

CMI classification		factories not using power			
industry	number	C.E.	s.s.1	s.s.2	combined
(1)	(2)	(3)	(4)	(5)	(6)
1. soap	10	1	4	4	7
2. tanning	11	4	12	12	20
3. glass and glassware	13	4	10	10	16
4. matches	17	24	28	28	32
5. cotton textiles : (unclassified as spinning mills)	18, 18a	2	6	6	10
6. cotton textiles : (composite mills, power loom mills)	18b, 18c	—	2	2	4
7. cotton textiles : (hand loom mills)	18d	19	31	31	43
8. woollen textiles	19	3	5	5	7
9. chemical (including drugs, etc.)	21	2	5	5	8
10. aluminium : copper and brass (primary and secondary products)	22a, 22b	5	5	5	5
11. iron and steel (primary and secondary products)	23a, 23b	1	2	2	3
12. gen. engg. and electrical eng. : (repairing works)	29a	2	2	2	2
13. gen. engg. and electrical eng. : (manufacturing)	29b	3	5	5	7
14. footwear and leather manufacturing	30	5	6	6	7
15. rubber and rubber manufacturing	31	—	1	1	2
16. enamelware	32	—	—	—	—
17. bricks, tiles, lime and surki manufacturing	35	4	18	18	32
18. lac	36	6	9	9	12
19. petroleum refining	39	—	1	1	2
20. tobacco products	43	65	102	102	139
21. groundnut decorticating, etc.	44	81	88	88	95
22. printing and book binding	45	1	6	6	11
23. webbing narrow fabrics	46	—	1	1	2
24. hosiery and other knitted goods	47	1	3	3	5
25. thread and thread-ball making	48	—	—	—	—
26. rope making	52	1	3	3	5
27. automobiles and coach buildings	56	5	9	9	13
28. other industries	01, 02, 03, 04, 05a, 05b, 05c, 06, 07, 08, 08a, 08b, 14, 16, 24, 29, 37, 38, 33, 40, 41, 42, 49, 57, 50, 51, 53, 54, 62, 63	77	126	126	175
29. all industries		316	490	490	664

*Sample Survey of Manufacturing Industries 1955(2)*

TABLE (3): ESTIMATES OF SELECTED ITEMS FOR ALL INDUSTRIES BY TYPES OF FACTORIES AND SUB-SAMPLES : 1955

items	unit	using power			p.c. diff.
		s.s. 1	s.s. 2	comb.	
(1)	(2)	(3)	(4)	(5)	(6)
<i>capital</i>					
1. fixed capital	in (lakhs)	91356.4	72437.6	81897.0	23.10
<i>input</i>					
2. value of total raw materials, etc. and fuel, lubricants, etc.	in (lakhs)	140328.5	140226.8	140277.7	0.07
3. work done for the factory by other concerns	"	9524.3	10055.8	9790.0	5.43
4. value of total input	in (lakhs)	149852.8	150282.6	150067.7	0.29
<i>output</i>					
5. value of total products	in (lakhs)	213645.8	209603.7	211624.6	1.01
6. work done by the factory for other concerns	"	6653.6	8427.2	7540.6	23.52
7. value of total output	in (lakhs)	220299.4	218030.9	219165.2	1.03
8. value added	"	70446.6	67748.3	69007.5	3.91
<i>employment</i>					
9. direct workers and contract workers	in (000)	2356.4	2366.0	2361.2	0.41
10. number of employees other than workers	"	428.4	391.9	412.3	8.85
11. total number of persons employed	in (000)	2784.8	2757.9	2773.5	0.97
12. total man hours	in (lakhs)	51273.1	51151.1	51212.1	0.24
<i>payment</i>					
13. payment to direct workers and contract workers	in (lakhs)	24021.6	23361.2	23691.4	2.79
14. payment to employees other than workers	"	8698.2	9738.4	9218.3	11.28
15. payment to total employees	in (lakhs)	32719.8	33099.6	32909.7	1.15
16. number of sample factories		2877	2877	3751	—

*National Sample Survey*

TABLE (3) (Contd.): ESTIMATES OF SELECTED ITEMS FOR ALL INDUSTRIES BY TYPES OF FACTORIES AND SUB-SAMPLES : 1955

items	unit	not using power			
		s.s. 1	s.s. 2	comb.	p.c. diff.
(1)	(2)	(7)	(8)	(9)	(10)
<i>capital</i>					
1. fixed capital	in (lakhs)	721.7	936.2	828.9	25.88
<i>input</i>					
2. value of total raw materials, etc. and fuel, lubricants, etc.	in (lakhs)	8694.3	11931.0	10312.6	31.39
3. work done for the factory by other concerns	„	956.4	951.0	953.7	0.57
4. value of total input	in (lakhs)	9650.7	12882.0	11266.3	28.68
<i>output</i>					
5. value of total products	in (lakhs)	12613.1	14037.6	13325.4	10.69
6. work done by the factory for other concerns	„	358.2	428.4	393.2	17.85
7. value of total output	in (lakhs)	12971.3	14466.0	13718.6	10.90
8. value added	in (lakhs)	3320.6	1584.0	2452.3	70.82
<i>employment</i>					
9. direct workers and contract workers	in (000)	298.6	329.6	313.9	9.88
10. number of employees other than workers	„	25.7	25.0	25.3	2.77
11. total number of persons employed	in (000)	324.3	354.6	339.2	8.93
12. total	in (lakhs)	5563.8	5943.4	5753.6	6.60
<i>payment</i>					
13. payment to direct workers and contract workers	in (lakhs)	1430.3	1215.2	1322.8	16.26
14. payment to employees other than workers	„	224.6	224.5	224.5	0.04
15. payment to total employees	in (lakhs)	1654.9	1439.7	1547.3	13.91
16. number of sample factories		490	490	664	—

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TABLE (3) (Contd.): ESTIMATES OF SELECTED ITEMS FOR ALL INDUSTRIES BY TYPES OF FACTORIES AND SUB-SAMPLES: 1955

items	unit	using and not using power combined				
		s.s. 1	s.s. 2	comb.	p.e. diff.	
(1)	(2)	(11)	(12)	(13)	(14)	
<i>capital</i>						
1. fixed capital	in (lakhs)	92078.1	73373.8	82725.9	22.61	
<i>input</i>						
2. value of total raw materials, etc. and fuel, lubricants, etc.	in (lakhs)	149022.8	152157.8	150590.3	2.08	
3. work done for the factory by other concerns	"	10480.7	11006.8	10743.7	4.90	
4. value of total input	in (lakhs)	159503.5	163164.6	161334.0	2.27	
<i>output</i>						
5. value of total products	in (lakhs)	226258.9	223641.3	224950.0	1.16	
6. work done by the factory for other concerns	"	7011.8	8855.6	7933.8	23.24	
7. value of total output	in (lakhs)	233270.7	232496.9	232883.8	0.33	
8. value added	in (lakhs)	73767.2	69332.3	71549.8	6.20	
<i>employment</i>						
9. direct workers and contract workers	in (000)	2655.0	2695.0	2675.1	1.52	
10. number of employees other than workers	"	454.1	416.9	437.6	8.50	
11. total number of persons employed	in (000)	3109.1	3112.5	3112.7	0.11	
12. total man hours	in (lakhs)	56836.9	57094.5	56965.7	0.45	
<i>payment</i>						
13. payment to direct workers and contract workers	in (lakhs)	25451.9	24576.4	25014.2	3.50	
14. payment to employees other than workers	"	8922.8	9962.9	9442.8	11.01	
15. payment to total employees	in (lakhs)	34374.7	34539.3	34457.0	0.48	
16. number of sample factories			3367	3367	4415	—

*National Sample Survey*

TABLE (4.1): ESTIMATES OF FIXED CAPITAL FOR SELECTED INDUSTRIES USING  
POWER BY SUB-SAMPLES : 1955

selected industries		sample size number of factories			fixed capital (Rs. in lakhs)			p.c. diff.
description	code	s.s. 1	s.s. 2	comb.	s.s. 1	s.s. 2	comb.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. petroleum refineries	39	3	3	4	1234.4	1230.6	1232.5	0.3
2. cotton textiles	18	409	409	433	10856.9	10831.6	10844.1	0.2
3. ship building and repairing	57	19	19	23	607.6	603.9	605.8	0.6
4. iron and steel	23	100	100	138	5944.8	5601.0	5772.8	0.6
5. asbestos and asbestos cement products	34	7	7	8	42.0	46.3	44.1	9.7
6. paper and paper board	16	28	28	34	1478.2	1497.4	1487.8	1.3
7. rubber and rubber manufacturing	31	29	29	37	646.9	692.7	669.8	6.8
8. textile machineries	62	23	23	33	405.6	400.9	403.2	1.7
9. sugar	5	168	168	182	2878.9	2753.3	2816.1	0.4
10. tobacco	43	34	34	40	417.5	464.0	440.8	1.1



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TABLE (4.2): ESTIMATES OF PAYMENT TO DIRECT AND CONTRACT WORKERS, EMPLOYEES OTHER THAN WORKERS AND TOTAL EMPLOYEES FOR SELECTED INDUSTRIES USING POWER BY SUB-SAMPLES: 1955

selected industries	code	sample size			salary and wages paid to direct and contract workers (rupees in lakhs)			p.c. diff.
		s.s. 1	s.s. 2	comb.	s.s. 1	s.s. 2	comb.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. petroleum refineries	39	3	3	4	50.5	49.3	49.9	2.4
2. cotton textiles	18	409	409	433	9112.7	8692.6	8902.5	4.7
3. ship building and repairing	57	19	19	23	356.0	330.3	343.1	7.5
4. iron and steel	23	100	100	138	1936.1	1905.1	1920.6	1.6
5. asbestos and asbestos cement products	34	7	7	8	31.8	31.4	31.6	1.3
6. paper and paper boards	16	28	28	34	260.0	261.9	261.0	0.7
7. rubber and rubber manufacturing	31	29	29	37	286.3	268.4	277.4	6.5
8. textile machineries	62	23	23	33	138.9	144.7	141.8	4.1
9. sugar	5	168	168	182	732.5	735.8	734.2	0.4
10. tobacco	43	34	34	40	240.2	230.3	235.3	4.0

selected industries	salary and wages, etc. paid to employees other than workers (rupees in lakhs)				salary and wages, etc. paid to total employees (rupees in lakhs)			
	s.s. 1	s.s. 2	comb.	p.c. diff.	s.s. 1	s.s. 2	comb.	p.c. diff.
(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1. petroleum refineries	35.1	34.5	34.1	2.3	84.4	83.6	84.0	0.9
2. cotton textiles	2279.3	2212.6	2241.4	2.6	11383.0	10905.2	11144.0	4.3
3. ship building and repairing	209.6	208.6	204.7	3.9	556.6	538.9	547.8	3.2
4. iron and steel	719.2	697.0	708.1	3.1	2655.4	2602.1	2628.7	2.0
5. asbestos and asbestos cement products	9.1	9.0	9.1	1.0	40.9	40.4	40.7	1.2
6. paper and paper boards	138.3	140.0	139.1	1.2	398.3	401.9	400.1	0.9
7. rubber and rubber manufacturing	189.6	191.5	190.5	1.0	475.9	459.9	467.9	3.4
8. textile machineries	52.2	60.8	56.5	15.2	191.1	205.5	198.3	7.2
9. sugar	351.5	331.9	341.6	5.7	1084.0	1067.7	1075.8	1.51
10. tobacco	35.1	89.6	92.4	6.0	335.3	319.9	327.7	4.7

TABLE (4.3): ESTIMATES OF VALUE OF RAW MATERIALS, FUELS AND LUBRICANTS AND TOTAL INPUT FOR SELECTED INDUSTRIES USING POWER BY SUB-SAMPLES: 1955

selected industries		sample size			value of total raw materials fuels and lubricants etc. (rupees in lakhs)				total input (rupees in lakhs)			
description	code	s.s. 1	s.s. 2	combined	s.s. 1	s.s. 2	combined	p.c. diff.	s.s. 1	s.s. 2	combined	p.c. diff.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1. petroleum refineries	39	3	3	4	1451.9	1451.6	1451.7	0.0	1795.6	1794.8	1795.2	0.0
2. cotton textiles	18	409	409	433	28825.4	27495.3	28160.2	4.7	29417.7	29520.2	29468.9	0.3
3. ship building and repairing	57	19	19	23	460.8	467.7	464.3	1.5	616.4	627.5	622.0	1.8
4. iron and steel	23	100	100	138	7325.5	7554.2	7439.9	3.0	7983.3	8215.0	8099.2	2.9
5. asbestos and asbestos cement products	34	7	7	8	187.0	185.1	186.0	1.0	195.7	193.7	194.7	1.0
6. paper and paper board	16	28	28	34	1430.6	1536.4	1483.5	7.1	1556.7	1682.1	1619.4	7.7
7. rubber and rubber manufacture	31	29	29	37	2362.2	2432.6	2397.4	2.9	2484.7	2548.2	2516.5	2.5
8. textile machineries	62	23	23	33	518.9	547.8	533.4	5.4	553.0	587.9	570.4	6.1
9. sugar	5	168	168	182	9190.4	8691.3	8940.8	5.6	10083.2	9565.8	9824.6	5.3
10. tobacco	43	34	34	40	2410.2	2336.5	2373.4	3.1	3456.1	3347.2	3401.7	3.2

TABLE (4.4): ESTIMATES OF VALUE OF TOTAL PRODUCTS AND TOTAL OUTPUT FOR SELECTED INDUSTRIES USING POWER  
BY SUB-SAMPLES : 1955

selected industries		sample size			value of total products, etc. and by-products (rupees in lakhs)				value of total output (rupees in lakhs)			
description	code	s.s. 1	s.s. 2	combined	s.s. 1	s.s. 2	combined	p.c. diff.	s.s. 1	s.s. 2	combined	p.c. diff.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1. petroleum refineries	39	3	3	4	2962.2	2962.2	2962.2	0.0	2965.7	2964.1	2964.9	0.1
2. cotton textiles	30	409	409	433	47622.3	45762.1	46992.2	0.4	47758.3	45934.5	46946.4	0.4
3. ship building and repairing	67	19	19	23	964.8	927.8	916.3	2.5	1435.6	1439.7	1432.6	0.9
4. iron and steel	23	100	100	139	13946.7	13972.8	13959.8	0.0	14346.6	14305.7	14326.1	0.0
5. asbestos and asbestos cement products	34	7	7	8	304.3	301.8	303.1	0.8	304.4	301.8	303.1	0.8
6. paper and paper boards	16	28	28	34	2625.3	2736.2	2680.7	0.0	2625.4	2741.0	2683.2	0.4
7. rubber and rubber manufacturing	31	29	29	37	3716.3	3739.8	3728.0	0.6	3725.1	3783.9	3754.5	1.6
8. textile machinery and accessories	62	23	23	33	921.3	915.6	918.4	0.6	939.5	960.3	949.9	2.2
9. sugar	5	168	168	182	13439.4	12745.9	13092.6	0.5	13444.1	13764.3	13604.2	0.2
10. tobacco	43	34	34	40	4150.8	4065.7	4078.3	2.1	4157.0	4025.2	4091.2	3.2

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TABLE (4.5): ESTIMATES OF VALUE OF TOTAL INPUT AND TOTAL OUTPUT AND VALUE ADDED FOR SELECTED INDUSTRIES USING POWER BY SUB-SAMPLES : 1955

selected industries		sample size			value of total input (rupees in lakhs)			
description	code	s.s. 1	s.s. 2	comb.	s.s. 1	s.s. 2	comb.	p.c. diff.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. petroleum refineries	39	3	3	4	1794.6	1795.8	1795.2	0.0
2. cotton textiles	18	409	409	433	29417.7	29529.2	29468.9	0.3
3. ship buildings and repairing	57	19	19	23	1616.4	627.5	622.0	1.7
4. iron and steel	23	100	100	138	7983.3	8215.0	8099.2	2.9
5. asbestos and asbestos cement products	34	7	7	8	195.7	193.7	194.7	1.0
6. paper and paper boards	16	28	28	34	1556.7	1682.1	1619.4	0.0
7. rubber and rubber manufactures	31	29	29	37	2484.7	2548.2	2516.5	2.5
8. textile machineries	62	23	23	33	1553.0	587.9	570.4	6.1
9. sugar	5	168	168	182	10083.2	9565.8	9824.6	5.3
10. tobacco	43	34	34	40	3456.1	3347.2	3401.7	3.2

selected industries		value of total output (rupees in lakhs)				value added (rupees in lakhs)			
description		s.s. 1	s.s. 2	comb.	p.c. diff.	s.s. 1	s.s. 2	comb.	p.c. diff.
(1)		(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1. petroleum refineries		2965.7	2964.1	2964.9	0.1	1170.1	1169.3	1196.7	0.1
2. cotton textiles		47758.3	45934.5	46846.4	0.4	18340.6	16414.3	17377.5	11.1
3. ship buildings and repairing		1425.6	1439.7	1432.6	0.9	809.2	812.2	810.6	0.3
4. iron and steel		14346.6	14305.7	14326.1	0.3	6363.3	6090.7	6226.9	4.4
5. asbestos and asbestos cement products		304.4	301.8	303.1	0.8	108.7	108.1	108.4	0.5
6. paper and papers board		2625.4	2741.0	2683.2	4.3	1068.7	1058.9	1063.8	0.9
7. rubber and rubber manufactures		3725.1	3783.9	3754.5	1.6	1240.4	1235.7	1238.0	0.4
8. textile machineries		939.5	960.3	949.9	2.1	386.6	372.4	379.5	3.7
9. sugar		13444.1	13764.3	13604.2	2.4	3360.9	4198.5	3779.6	22.2
10. tobacco		4157.0	4025.2	4091.2	3.2	700.9	678.0	680.5	3.3

APPENDIX II  
 FACSIMILE OF THE SCHEDULES OF INVESTIGATION  
 GOVERNMENT OF INDIA NATIONAL SAMPLE SURVEY  
 Establishment Schedule : Manufacturing Industries, 1956  
 (Reference period 1955)

[1] identification code		[2] geographical location		[3] operation details	
1. state		1. district		1. perennial/seasonal 1/2	
2. industry (C.M.I.)		2. taluk/district		2. if seasonal, normal season	
3. industry (S.I.)		3. town			
4. zone		4. post office		3. months of operation in 1955	
5. stratum		5. name of factory			
6. scheme		6. type of ownership		4. year of start of manufacture	
7. sub-sample		7. type of management		5. date of closing yearly accounts	
8. sample unit no.					

[4] capital structure					
sr. no.	item	value (Rs.) as on		depreciation charges for the year (Rs.)	rent paid during the year (Rs.)
		1-1-55	31-12-55		
(0)	(1)	(2)	(3)	(4)	(5)
1.	land			x	
2.	building				
3.	sub-total-1 = (1+2)				
4.	plant and machinery				
5.	furniture				
6.	transport equipments				
7.	other fixed assets				
8.	sub-total-2 = (5+6+7)				
9.	total fixed capital: sub-total 2 = (3+6+8)				
10.	raw materials, fuels, etc.				
11.	finished products				
12.	semi-finished and partly finished products				
13.	cash in hand and at bank				
14.	sundry debtors				
15.	sundry creditors				
16.	balance (14 minus 15)				
17.	total working capital: sub-total 4 = (10 to 15)				
18.	total invested capital = (9+17)				

[5] labour employed and their emolument during Jan.—Dec. 1955					
sr. no.	item	total man-hours	average no. per working day	salaries, wages and other emolument (Rs.)	
				(0)	(1)
(0)	(2)	(3)	(4)	(5)	(6)
1.	men				
2.	women				
3.	children (above 14, below 18)				
4.	sub-total-1 = (1+2+3)				
5.	workers employed through contractors	x	x		
6.	sub-total-2 = (4+5)	x			
7.	supervisory and managerial staff	x			
8.	other employees	x			
9.	employees for providing individual and group benefits [8.1.1 + 8.1.2] for col. 3 & [8.3.7 + 8.3.9] for col. 4	x			
10.	total = (6+7+8+9)	x			
11.	contribution to funds (provident funds, social insurance, etc.)	x	x		
12.	contribution to pensions, gratuity, compensation, etc.	x	x		

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[7] employment: change in volume over four quarters in 1955									
sr. no.	item	strength (no.) as per rolls on				average no. employed per working day during			
		1-1-55	1-4-55	1-7-55	1-10-55	Jan. March	April-June	July-Sept.	Oct. Dec.
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	workers employed directly								
2.	workers employed through-contractors								
3.	sub-total—1 = (1)+(2)								
4.	supervisory and managerial staff								
5.	rest of the employees								
6.	sub-total—2 = (4)+(5)								
7.	total = (3)+(6)								

[8] individual benefit during Jan.—Dec. 1955										
sr. no.	type of benefit	no. of employees benefited			no. of workers engaged	salaries & wages (Rs.)	other (Rs.) expenses			total (6)+(7)+(9)
		workers	others	total			workers	others	total	
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.	housing									
2.	transport									
3.	creche									
4.										
5.										
6.										
7.	total									

[9] group benefits during Jan.—Dec. 1955						[10] intermediate products (fuels, etc.) produced during Jan.—Dec. 1955						
sr. no.	type of benefit	no. of workers engaged	salary & wages (Rs.)	other (net) expenses (Rs.)	total (3)+(4) (Rs.)	sr. no.	item	unit	produced in 1955		consumed in 1955	
									quantity	value (Rs.)	quantity	value (Rs.)
(0)	(1)	(2)	(3)	(4)	(5)	(0)	(1)	(2)	(3)	(4)	(5)	(6)
1.	canteen					1.	electricity	kwh.				
2.	school					2.	water (gals.)	1000				
3.	club					3.	coal gas (cft.)	1000				
4.	reading room & library					4.						
5.	co-operative stores					5.						
6.	medical					6.						
7.						7.						
8.						8.						
9.	total					9.	total					

[10-2] intermediate products (other than fuels, etc.) produced during Jan.—Dec. 1955										
sr. no.	item	unit	stock on 1-1-55		produced in 1955		consumed in 1955		stock on 31-12-55	
			quantity	value (Rs.)	quantity	value (Rs.)	quantity	value (Rs.)	quantity	value (Rs.)
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.	total									

[11] particulars of investigator, etc.

1. investigator's name .....

2. date: (i) first visit..... 3. (ii) final visit..... 4. no. of visits.....

5. signature..... 6. date.....

7. date of scrutiny..... 8. signature of scrutiniser..... 9. date.....

10. countersignature of A.D..... date..... date of despatch.....

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[12] raw materials, chemicals, packing materials, etc., consumed during Jan.-Dec. 1955 (excluding products made by the factory)					[13] products, by-products and subsidiary products during Jan.-Dec. 1955 (excluding intermediate products)				
sr. no.	item	unit	quantity	value (Rs.)	sr. no.	item	unit	quantity	value (Rs.)
(0)	(1)	(2)	(3)	(4)	(0)	(1)	(2)	(3)	(4)
1.					1.				
2.					2.				
3.					3.				
4.					4.				
5.					5.				
6.					6.				
7.					7.				
8.					8.				
9.					9.				
10.					10.				
11.					11.				
12.					12.				
13.					13.				
14.					14.				
15.	others	x	x		15.				
16.	sub-total-1=(1 to 15)	x	x		16.				
17.					17.				
18.					18.	others	x	x	
19.					19.	sub-total-1=(1 to 18)	x	x	
20.					20.				
21.					21.				
22.					22.				
23.					23.				
24.	others	x	x		24.				
25.	sub-total-2=(17 to 24)	x	x		25.				
26.					26.				
27.					27.				
28.					28.				
29.					29.	others	x	x	
30.					30.	sub-total-3=(20 to 29)	x	x	
31.					31.				
32.					32.				
33.					33.				
34.	others	x	x		34.				
35.	sub-total-3=(26 to 34)	x	x		35.				
36.					36.				
37.					37.				
38.					38.				
39.					39.				
40.	others	x	x		40.				
41.	sub-total-4=(36 to 40)	x	x		41.				
42.	transport charges not included in cost of input materials	x	x		42.	others	x	x	
43.	total=(25+35+41+42)	x	x		43.	sub-total-3=(21 to 42)	x	x	
					44.	total=(19+30+43)	x	x	

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[14] fuels, lubricant and electricity consumed during Jan.—Dec. 1955 (excluding products made by the establishment)					[15] total input during Jan.—Dec. 1955			
sr. no.	item	unit	quantity	value (Rs.)	sr. no.	item	value (Rs.)	
(0)	(1)	(2)	(3)	(4)	(0)	(1)	(2)	
1.	coal	ton			1.	materials consumed in manufacture (12.4.43 & 14.4.14)		
2.	coke	ton			2.	materials consumed and other expenses for repair & maintenance		
3.	coal gas	1000 cft.			3.	expenses for group and individual benefits (8.9.7 & 9.4.9)		
4.	firewood	ton			4.	sub-total-1=(1 to 3)		
5.	charcoal	ton				work done by other concerns on :—		
6.	petroleum & motor spirit	gallon			5.	repair and maintenance		
7.	synthetic petrol	gallon				manufacturing processes (describe)		
8.	other fuel oil	gallon			6.	(a)		
9.	lubricating oil	gallon			7.	(b)		
10.	industrial & power alcohol	gallon			8.	(c)		
11.	electricity	k.w.h.			9.	(d) others		
12.	water (purchased)	1000 gals			10.	sub-total-2=(6 to 9)		
13.	others	x	x		11.	sub-total-3=(4+5+10)		
14.	total =	x	x		12.	postage & stationery		
[16] total output during Jan.—Dec. 1955					13.	printing service		
sr. no.	item			value (Rs.)	14.	advertisement service		
(0)	(1)			(2)	15.	warehousing service		
1.	value of production of goods (13.4.44)				16.	insurance service		
	work done for other concerns on :—				17.	purchase agency service		
2.	repair and maintenance				18.	sub-total-4=(12 to 17)		
	manufacturing processes (describe)				19.	audit, accounts & bank service		
3.	(a)				20.	managing agency service		
4.	(b)				21.	other services		
5.	(c)				22.	sub-total-5=(19 to 21)		
6.	(d) others				23.	local rates & trade licence		
7.	sub-total=(3 to 6)				24.	duties, cesses & taxes on purchases		
8.	total=(1+2+7)				25.	total=(11+18+22 to 24)		
[17] trend of production and possibilities under existing fixed capital equipment								
sr. no.	item	unit	actuals			maximum possible under ideal conditions (per year)	p.c. of col. (5) to col. (6)	reasons (describe)
			last year (1955)	year before last (1954)	average over last five years (1951-55)			
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	shifts per day	no.						
2.	no. of working days	no.						
3.	no. of workers per working day	no.						
major products :								
4.	quantity							
5.	value	Rs.						
6.	quantity							
7.	value	Rs.						
8.	quantity							
9.	value	Rs.						
10.	quantity							
11.	value	Rs.						
12.	quantity							
13.	value	Rs.						
14.	quantity							
15.	value	Rs.						