

**UTILISATION OF INDUSTRIAL CAPACITY
IN INDIA, 1967-68**

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FOREWORD

As and when the economic data started being used for economic policy making, the need for their quick availability became more and more urgent. In India, the system of getting weekly price data regularly and their compilation came into existence at first. Slowly efforts went underway to make other economic data also available regularly and expeditiously. However, the effort to do so for industrial data have not so far proved successful. The latest and detailed results of Annual Survey of Industries now available are for the year 1964, and the latest summary results are for the year 1965. From such a time-lag in publication, it is obvious that this information would be useful for the researches in economic history rather than for taking current policy decisions or for formulating future plans.

Faced with this acute problem, Professor Langlutke of Munich devised a scheme of quick business surveys where a small questionnaire was sent to a selected band of entrepreneurs and the results were based on only those returns which were received within a stipulated time limit. It was realised that even a quick survey, which bypassed the statistical methods of survey, was much more useful than a scientifically designed and collected set of stale information. For derived characteristics like per cent unutilised capacity, causes leading to unutilised capacity, or percentage change in expected sales, the bias need be much less. To get an idea of dependance, independent variables need not be random.

The scheme developed was found to be so useful that an Institute was established in Munich to undertake research on these lines. It mails a brief questionnaire to the industries every month and analyses the situation obtaining monthly. The success of the survey and the utility of the results have encouraged its adoption in several countries some of which are Japan, Austria, the Netherlands, Belgium, South Africa, Sweden, Switzerland, Denmark, Finland, Australia, Italy, France, the Great Britain and the U.S.A.

This technique has been unconsciously adopted in India too. The Monthly Statistics of Production of Selected Industries of India may be said to be on similar lines, which brings out monthly data relating to production. Indeed, it is the only industrial guide regarding current production in the country whose results are known much before the ASI results appear. Even this has got a publication-lag of about 4 to 6 months. (The latest now available is, however, for the month of February 1968).

The Monthly Statistics of Production gives monthly figures of production and capacity of certain selected industries. The figures of capacity are based on the number of shifts per day and the number of working hours in a year as prescribed by the Agency collecting data, and not as envisaged by the entrepreneurs. Secondly, it does not collect information regarding

the causes for unutilised capacity. Thirdly, its coverage is limited to only certain selected industries, leaving a substantial industrial area untouched.

With a view to supplement the available information and to get an idea of the causes of the industrial recession being experienced by the country in the last few years, the Institute undertook a business survey in 1967, on the lines of Munich Business Surveys. The results have been issued as Gokhale Institute Mimeograph Series No. 2. It obviously filled an important lacuna, as we started receiving requests from various users to repeat the survey for the year 1967-68. The present study is the result of the same and is more comprehensive. The willing cooperation of 618 firms in quickly responding to our questionnaire is a matter for which we feel grateful.

We have been able to get quick information about unutilised capacity and causes for it for 517 manufactured products. Out of these, only 199 are covered by Monthly Statistics of Production, which means that hardly any information is available about the production and capacity of 318 products covered by this survey from any regular source of statistics. This is quite an unsatisfactory state of affairs and it is high time that this gap is filled expeditiously in the coverage of Monthly Statistics.

The results show three primary sets of causes for the enormous amount of unutilised capacity that our industries had to put up with. The first is related to the bad agricultural seasons affecting adversely the supply of agricultural raw materials for a group of industries. Low utilisation in these industries have affected the demand of certain industries which were providing them with secondary raw materials and auxiliary products, and so on. A second group of industries are affected by the shortage of foreign exchange to get essential intermediate goods not produced in India. They in turn have affected the capacity utilisation in quite a few industries due to their forward and backward linkages. There is a third and most important set of capital goods industries which are affected badly by the slackening of the investment tempo due to serious planning being in abeyance during the last few years. To get over this, a bold programme of investment will be necessary.

We hope, this itemised study will enable us to devise detailed specific programmes for meeting the stupendous problem of unutilised capacities in Indian industries.

Gokhale Institute of)
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December, 1968.)

P. N. Mathur
Director

PREFACE

The prevalence of unutilised capacity in Indian industries since the beginning of the First Five Year Plan is noticeable in retrospect. Attempts to minimise the extent of unutilised capacity are evident from the Industrial programmes of all the three Five Year Plans. The available studies indicate varying success in these attempts. By the end of the Third Plan period and the years that followed, the problem of widespread unutilised capacity reached serious dimensions. The present study relates to the year April 1967 to March 1968 and embodies an assessment of unutilised capacity and reasons for the unutilised capacity during 1967-68; it also portrays the outlook of production for the year 1968-69.

For this purpose, a Survey was conducted by Gokhale Institute of Politics and Economics, Poona, by mailing a suitably designed proforma. 618 factories responded to this. From the standpoint of the experience of research workers in this field, this voluntary response is quite encouraging. It is my pleasure to thank all these factories for quickly responding to our mailed inquiry. I also thank the Editor, the Economic Times, Bombay, for inserting a news item regarding this Survey in his columns on front page on April 20, 1968.

I have derived immense benefit through discussions with my colleagues to whom I am very much indebted. I am grateful to Mr. R. D. Divekar and Miss Latika Mandke for their competent statistical assistance. I insist that I alone am responsible for any mistakes or shortcomings in this study.

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INTRODUCTION

The prevalence of considerable unutilised capacity in many industries has been a matter of serious concern. Ever since the beginning of the first Five Year Plan period, the planners are concerned about this as can be seen in plan documents. According to some studies, the level of under-utilisation seems to have somewhat declined over the decade of second and third plan periods. But, by the end of the third plan period and the couple of years that followed, the widespread underutilisation of industrial capacity reached serious dimensions. The planners have rightly indicated the top priority 'to bring about conditions within which the maximum utilisation of capacity already built up is achieved (See Approach to the Fourth Five Year Plan).

2. The present study incorporates an analysis of industrial capacity utilisation in India during the year April 1967 to March 1968 based on a quick survey undertaken by Gokhale Institute of Politics and Economics and available published data. It presents detailed product-wise information regarding the extent of unutilised capacity, reasons for unutilised capacity and the outlook for the year 1968-69, in respect of 686 products. It shows that nearly half the number of products have more than 50% unutilised capacity. Inadequate demand and shortage of raw materials are the most important reasons for the unutilised capacity, the former being more dominant. The outlook of industries for 1968-69 is that of an expected increase in production by more than 5% of the production during 1967-68, in a large number of cases. An aggregate picture of the situation is that the industrial activity in 1967-68 is only around half the capacity, that it is not yet out of the grip of reduced production level and that the outlook for 1968-69 is that of recovery from this situation. The study also incorporates a further analysis of the factors working at the source of demand (when it is inadequate demand) and the situation regarding raw materials reported to be in short supply. An industry-wise analysis is also presented by suitable aggregation. It is hoped that this study may help in understanding the capacity utilisation, and also help in formulating proper remedial measures by all concerned.

3. The importance of the problem of unutilised capacity is discussed in paras 4 to 15. Details regarding the survey and the response are given in paras 16 to 24. The data from the Monthly Statistics of Production and their collation with our survey data are discussed in paras 25 to 28. The concept of capacity and its adaptation for our study are detailed in paras 29 to 38. The extent of unutilised capacity (including the methodology) during 1967-68 both product-wise and industry-wise, is discussed in paras 39 to 46. Reasons for unutilised capacity are analysed in paras 47 to 60. The outlook of production for the year 1968-69

is sketched in paras 61 to 64. In Appendix I, an analysis of the returns under the Survey which contain partial data, is made. In Appendix II, some suggestions for the improvement of data base are given. At the end occur the detailed tables A to E. The conclusions are given in paras 65 to 72.

Importance of the Problem

4. It would serve as a useful background, to know how this problem of unutilised capacity in Indian industries has been existing in the recent past. Since the purpose is to give general background, the following should be considered as illustrative rather than an exhaustive review of the literature on the subject.

5. Studies extending over all the industries, may be considered first. C. N. Vakil ^{1/} has analysed the extent of unutilised capacity in about 80 industries during the years 1946 to 1953 and observes that nearly half of these industries have about 50% unutilised capacity. Analysing the situation, he enumerates the plausible reasons for unutilised capacity as (1) the practice of some industries to keep certain reserve capacity to meet sudden demand, (2) the indivisibilities in creating the capacity and (3) the difference between expectations and results. He feels that the third reason perhaps is the dominant reason for the unutilised capacity. Elaborating on this reason, he explains that the stimulus of the immediate post-war economic situation and the Korean boom have invoked response from individual enterprises, the net result of which, in an unplanned economy, was a situation of more response than warranted. This, in turn, resulted in considerable unutilised capacity. He, therefore, poses this problem before the planners and emphasizes the need to tackle this before additional capacity is created in any industry that has underutilisation.

6. The Economic Division, Planning Commission, made a detailed study ^{2/} of this problem around the same time. It has analysed 53 industries over the period of 1946 to 1954 and notes the existence of considerable unutilised capacity. This is a detailed study distinguishing consumer, consumer durable and capital goods industries separately.

^{1/}Vakil, C.N., "Indian Industry's installed capacity and present production levels," published in Papers relating to the formulation of the Second Five Year Plan, by the Planning Commission, 1955, pp. 169-173.

^{2/}Economic Division, Planning Commission, "Installed Capacity and its utilisation in Indian industries," published in Papers relating to the formulation of the Second Five Year Plan, 1955, pp. 174-197.

The phenomenon of the creation of additional capacity in the face of the existing unutilised capacity is noticed in this study. The reasons for unutilised capacity are again the same as the ones we have noted above.

7. The studies roughly cover the first Five Year Plan period during which considerable unutilised capacity is noticed. It is a matter for concern that such a thing has occurred even after the recognition of this problem at the beginning of the first Five Year Plan period. On page 427 of the First Plan document ^{3/} the planners write, analysing the industrial situation, "By and large, the capacity of industries producing essential goods like cotton textiles, sugar, salt, matches and the soap is adequate for present requirements. The emphasis of policy in regard to them must, therefore, be on increasing the efficiency of existing plants by renovation and modernisation and by securing a better balance in the plants ... In the case of consumer goods of secondary importance such as radios, bicycles, automobiles, electric fans, etc. ... the problem again is one of utilising existing capacity fully, of developing the units which have already been set up or are under construction to at least the minimum economic size, and of promoting a progressive switch over of assembly plants to manufacturing."

8. The Second Five Year Plan places an emphasis on the development of heavy industries. The document lays down the priorities in its industrial programmes, the fourth of which is, "fuller utilisation of existing installed capacity in industries where there are wide gaps between capacity and production." (page 394, Second Five Year Plan, 1956) The first three priorities pertain to (1) programme for heavy industries, (2) development of intermediate goods like aluminium, cement, chemical pulp, dyestuff, phosphatic fertilizers, etc., drugs and (3) modernisation of old industries like jute and cotton textiles and sugar. The importance of fuller utilisation of capacity is recognised in the following words: "It is a basic principle of planned development that capital resources, which are scarce in relation to competing demands should be conserved, and that additional production should be achieved to the maximum extent possible through greater use of idle capacity." (page 395, Second Five Year Plan).

9. Morris Budin and Samuel Paul ^{4/} have studied the utilisation of industrial capacity during the period 1949-1959,

³ First Five Year Plan, published by the Planning Commission, Government of India.

⁴ Morris Budin and Samuel Paul, "The Utilisation of Indian Industrial Capacity, 1949-1959", Indian Economic Journal, Vol. IX, No. 1, July, 1961, pp.19-47.

which includes the most part of the second plan period. They have computed three different indices based on data for about 75 industries, and based on certain assumptions regarding the number of shifts in which different industries work. Observing the trend in the utilisation over the period the authors write as follows: "Indian industries, in general, have experienced substantial progress in the utilisation of their capacity during the period 1951-59. The major exception was the year 1958 when the country was hit hard by a severe foreign exchange crisis and a general retardation of industrial activity. The trend toward improved utilisation is a partial fulfilment of the organised policies of the Government of India expressed in the First Five Year Plan." The authors hasten to say that "As a matter of fact, reporting capacity on a one-shift basis which is done by many Indian industries, tends to exaggerate the actual degree of capacity utilisation achieved."

10. While the above study throws somewhat optimistic view of the level of utilisation achieved, we may consider the third plan document to see how the planners feel about the performance in the second plan period and how they set to tackle this in the third plan period. Pointing out the major departures in the third plan as compared to the approach in the second plan, they write, "As regards industrial capacity, in the second plan period, the needs of regional development were kept prominently in view and the capacity under engineering industries was planned in relation to its utilisation on single shift basis. In view of the importance for the success of third plan.... the capacity of engineering industries is proposed to be built up generally on the basis of its operation on two shifts" (page xii, Programmes of Industrial Development, 1961-66, Government of India, Planning Commission). This shows clearly that the need to reduce the level of under-utilisation was considered less prominent at the stage of implementation during the second plan period. Speaking about the industrial priorities during the third plan period they write, "In the first place, where there are wide gaps between capacity and production or where, by multishift operation or the addition of balancing equipment, it is possible to secure greater output at diminishing cost, fuller utilisation of existing installed capacity must take precedence over expansions or the setting up of new units. Secondly, expansion of existing plants will have to be given preference over establishment of new units since the creation of new capacity in this manner will not only be quicker but will also assist in bringing down the investment costs per unit output." (page 458, Third Five Year Plan). Thus, it appears that greater concern is shown regarding better utilisation of the existing capacity than in earlier periods, particularly by the recognition of second shift operation in case of engineering industries.

11. The study⁵ made by the National Council of Applied Economic Research, New Delhi, covers the earlier part of the third plan period. It has made a more serious effort to know the reasons for unutilised capacity. The study is based on a Survey it carried out for the purpose (to which only 129 factories responded) and also on the published data. It reveals a generally declining underutilisation of capacity in all the industries put together. The Index of 13.3 per cent in the year 1955 decreases until the year 1958 in which it shot up to 15.2 (probably due to foreign exchange difficulties). Thereafter it has again decreased to 9.4 in the year 1962. The index was again 11.0 and 10.5 in 1963 and 1964. It is to be borne in mind that there is slight underestimation of the unutilised capacity.^{6/} The study shows that the index of unutilised capacity would go up by about 8 for the period 1961-64 if the desirable number of shifts working is considered for estimating capacity. Among the reasons for the unutilised capacity, shortage of raw materials, shortage of foreign exchange and lack of skilled labour are found to be important.

12. The problem of unutilised capacity, however, became serious around the close of the third plan period. The set back in industry during 1965-66 did not show any improvement during the year 1966-67. The fall in agricultural production, general decline in purchasing power and reduced tempo of capital formation lead to the fall in the production of consumer and producer goods. A large unutilised capacity resulted according to the study made by Gokhale Institute. The study^{7/} is based on a Survey of intermediate and capital goods industries in India during the year 1966-67. It covers about 250 products and gives a detailed product-wise picture regarding unutilised capacity and reasons for that. It shows how each industry is affected by one or the other reason. A large number of industries have unutilised capacity either due to inadequate demand or due to shortage of raw materials. Dealing with the fundamental situation in 1966-67, the Annual Plan 1967-68 gives a similar account of unutilised capacity and reasons for the unutilised capacity.

13. It would be instructive to see how this problem is viewed in the context of micro studies. Morris J. Solomon 8/

⁵ "Under-utilisation of Industrial Capacity" by National Council of Applied Economic Research, 1966.

⁶ See Dhawan, B.D. and Satyanarayana, Y., The Indian Economic Journal, Vol. XVI, July-September, 1967, pp.95-99.

remarks in his study of certain firms that "there is reason to believe that many Indian plants can increase their output upto 500% with little or no increase of investment in fixed plant. In addition to increasing production and employment with given resources, the measures that would make such increases possible would also be highly profitable to the individual enterprises." The author, however, ascribes primary responsibility to achieve this to the skill of the Management in overcoming social obstacles. Commenting that full utilisation of the plant capacity is conditioned by Government action he says that "many industries in India have installed capacity which is considerably in excess of raw material and/or demand. This in retrospect is a failure of the licensing process." (page 42) Further he wonders "whether regional claims for certain units to be licensed, or avoidance of monopoly is being accommodated at a high cost of excess capacity, with the resulting 'high price structure into the industry." (page 43).

14. We have seen how various studies and plan documents exhibit the concern regarding unutilised capacity. The Annual Plan 1967-68 also points out that "particular attention has been given to better utilisation and diversification of existing capacity in realising increased production" (page VIII-15). The slow pace of industrial growth and actual decline in the production levels in some industries in the very recent past have left behind considerable unutilised capacity in many industries. Great efforts needed to rectify this situation are duly recognised by the Planning Commission in its latest document 9/ on Fourth Plan. Among the industrial priorities, top priority is given 'to bring about conditions within which the maximum utilisation of capacity already built up is achieved.

⁷ Raghunath K. Koti, "Capacity utilisation and factors affecting it in certain Indian industries, 1966-67," Mimeograph No. 2 Gokhale Institute of Politics and Economics, Poona, 1967.

⁸ Solomon, Morris J. "Better Plant Utilisation in India" published by the Indian Statistical Institute, Indian Statistical Series No. 17, 1963.

⁹ "Approach to the Fourth Five Year Plan", full text reproduced in Yojana, May 26, 1968.

15. So far we have seen how the problem of unutilised capacity is exhibited in various studies and how important its knowledge is for planning and development. We shall now see how important its knowledge is for the very technique of planning. Elaborating on the concept of the capital coefficients and their relevance in the technique of planning, P.R. Brahmananda ^{10/} emphasises the need to take into account the extent of unutilised capacity while computing the capital coefficients. Emphasizing the same point, P.N. Mathur ^{11/} illustrates precisely how the non-consideration of the existing level of under-utilisation of capacity in computing the output-capital ratios affects the empirical basis of planning, commenting on 'The approach of operational research to planning in India' by P.C. Mahalanobis. He shows that "if we correct Prof. Mahalanobis' income coefficient for consumers' goods industry only for under-utilisation of capacity its value becomes 1.0 instead of 0.7" (page 406). This shows another facet of the importance of the study of capacity utilisation. Having seen the importance of the problem, matters relating to the present study may now be taken up.

Necessity of a Survey

16. The primary object of the study was to quickly assess the extent of unutilised capacity in Indian industries during the year 1967-68, and reasons for the same. The following published data were considered to be relevant for this purpose, viz., (1) Monthly Statistics of Production of Selected Industries of India (MSP, in short), (2) Speeches of the Company Chairmen while presenting the Annual Accounts and Report of their respective companies, and (3) Articles appearing in Journals and Dailies like Economic Times and Financial Express. The MSP is the most important source of the data regarding unutilised capacity, which covers about 300 products. Even though it has good coverage, it is known that a considerable number of products remain outside its coverage; the time-lag in publication is about six to eight months; and it has no information regarding reasons. Considering the latter two sources of published data, it was noted that some information regarding unutilised capacity and/or reasons may become available in respect of certain industries, but that it would be very difficult to get either systematic information or to be able to collate the available information with the MSP data. In order to have systematic and comprehensive information, it was decided to undertake a survey.

¹⁰ Brahmananda, P.R., "Capital output ratio in economic planning" published in Papers relating to the formulation of the Second Five Year Plan, pages 160-168.

¹¹ Mathur, P.N., 'A Note on Planning in India', The Indian Economic Journal, Vol. IV, 1967.

Nature of Survey

17. The next step was to decide upon the method of survey, the coverage, mode of contacting the units and the contents of the proforma. Taking into account our objective and the factors relevant to the survey, it was decided to contact all the industries (including mining but excluding textile and food industries) by mailing a proforma. Textile and food industries were excluded because data regarding unutilised capacity were available in MSP and the reasons for the unutilised capacity are relatively better known. The design of the proforma would be dealt with later.

List of factories chosen

18. In order to get a suitable list of factories, the following published sources were examined:-

- (1) Economic Guide and Investors' Handbook of India, 1966-67 - published by Kothari and Sons.
- (2) Handbook of Indigenous Manufacturers of Engineering Stores - published by the D.G.T.D. (List as on 1-3-1966, V edition).
- (3) Handbook of Indigenous Manufacturers of Chemical and Miscellaneous Stores - published by the D.G.T.D. (List as on 30-6-1965, V edition).
- (4) All India Directory and Handbook of Small Industries - published by the Federation of Association of Small Industries of India (Sept. 1966, I edition).
- (5) All India Manufacturers Organisation Directory, 1966 - published by A.I.M.O. (III edition).

19. The last source mentioned above contains a recent and more exhaustive list of factories, compared to other sources. It was, therefore, decided to choose this list. The following broad groups of industries were then chosen from it.

- (1) Mineral Industries, (2) Basic Metallurgical Industries, (3) Engineering Industries, (4) Chemical Industries, (5) Processing Industries (like rubber, leather, footwear, etc.) and (6) other miscellaneous Industries. The proforma was mailed to all the addresses listed under these industries around the first week of April 1968. In the last week of April 1968 a reminder was sent to only those factories which are listed in the A.I.M.O. Directory under Detailed Section. These are the factories which furnished more details to A.I.M.O. Directory, and hence were considered (by us) to be more likely to respond.

Proforma

20. Before we consider the nature of response to our Survey, the proforma mailed to the factories may be des-

cribed. In order to facilitate quick return of the proforma, it was designed to contain minimum information necessary for our study. The factories were requested to furnish approximate figures of production and capacity, basis for capacity and reasons for unutilised capacity, during the year 1967-68, for each product separately. They were requested to mention the customer/industry from whom demand was inadequate, if that be a reason for unutilised capacity, and to state their assessment of why the customer demanded less. They were also requested to mention the name of the raw material, its requirement per unit of output, its price and whether it is produced in India, if shortage of raw material is a reason for unutilised capacity. The other related items in the proforma were regarding whether the recent import liberalisation policy has helped them, whether they can work three shifts, the marketing channel and the size of the factory.

Nature of Response

21. By the end of July 1968, 618 factories responded to our mailed proforma. Out of these, 418 furnished complete details and 57 gave less systematic information which could be analysed and incorporated in this study. The nature of response to our survey is as follows:

<u>Nature of response</u>	<u>No. of factories</u>
(a) Adequate information sent	418
(b) Less adequate information sent	57
Total analysed	475
(c) Unwilling/unable to give information	37
(d) Returns promised but not sent	26
(e) Production stopped/not started	28
(f) Not having manufacturing activity	52
Total	143
Total number that responded	618

Size of respondent factories

22. It would be of interest to know the size of the respondent factories. Such an information is available in respect of the 418 factories that have furnished adequate data. The following table gives the distribution of these factories according to the net value of fixed assets belonging to them and their size by employment.

Table 1. Size of respondent factories

Net value in lakh Rs.	Employment size					Total	%
	Very small	Small	Big	N.A.			
0.0- 0.9	17	37	12	1	67	16	
1.0- 4.9	2	31	52	1	86	21	
5.0- 7.4	-	1	14	-	15	4	
7.5- 9.9	-	2	12	-	14	3	
10.0-24.9	-	1	37	1	39	9	
25.0-49.9	-	-	25	1	26	6	
50.0-99.9	-	-	19	-	19	5	
100.0 and above	-	-	49	2	51	12	
N.A.	17	21	43	20	101	24	
Total	36	93	263	26	418	100	
%	9	22	63	6	100		

Note: Big - factory employing 100 or more without the aid of power or 50 or more with the aid of power.
 Small.- factory employing 20-99 without power or 10-49 with power.
 Very small.- the remaining type of factories.
 - means nil
 N.A.means not available.

23. This table shows that nearly two-thirds of the factories are big on employment basis and nearly half of these have fixed assets worth (net) Rs. five lakhs or more. Considering this in relation to the list of factories contacted, it would be reasonable to infer that the response from big factories is relatively better than the response from small and very small factories, since the list contains presumably a very large number of smaller factories.

Encouraging response

24. In relation to the large number of factories contacted, the response appears to be small. This phenomenon is, however, not discouraging to those who are acquainted with the field of industrial enquiry. The following bits of experience in similar field of enquiry illustrate the point. The National Council of Applied Economic Research, New Delhi, got response from 129 factories out of 4,728 factories contacted with a purpose to study the underutilisa-

tion of capacity in industries. The Gokhale Institute of Politics and Economics, Poona, mailed a proforma to about 1200 companies in the year 1967 with a purpose to study the capacity utilisation and got response from 287 companies. A response from 618 factories is, therefore, to be considered as encouraging, particularly in the context of the aforementioned. This, however, would raise a question of how far these are representative of the characteristics in the universe intended to be studied.

Nature of MSP data

25. As mentioned earlier, MSP is an important source of data. It contains monthly figures of production and capacity regarding about 300 products. The figures of capacity are obtained on a stipulated basis of capacity. The coverage of a given product in relation to its production in the economy is not clearly known. The Agencies from whom data are collected and the number of factories covered are known. These seem to suggest that the coverage is quite large in case of many products. This Index, however, is separately published under a bulletin a few months before the MSP issue containing this Index is published. The latest issue available for our purpose was the November-December 1967 issue, while the bulletin available was for April 1968.

26. It is clear that MSP data are available for the period April to December 1967. In view of our study period, being 1967-68, there is a need to estimate the figures of production and capacity for the remaining period January to March 1968. Two alternatives appear reasonable. One way is to assume that the average monthly production and capacity in the latter period is same as the corresponding average figures in the earlier period. Another way is to estimate the production for the latter period by using the Index of production and assume that the average monthly capacity in both the periods is same.

Estimated MSP figures for 1967-68

27. Examining the first alternative further it is seen that the assumption of same average monthly production during both the periods is not supported by the Index of production which shows differences. The assumption regarding capacity does not, however, appear to be unreasonable in case of many products, judging from the figures for the two corresponding periods falling in the year 1966-67 (208 out of 310 products showed no change in the average monthly figures of capacity; 80 showed an increase in the latter period; the remaining 22 showed decrease in the latter period). Examining the second alternative, it is to be noted that the use of the Index for individual products entails an assumption that the change

in the production levels of individual products constituting the group (for which Index is available) is same as for the group as a whole. Weighing the two alternatives, the second is preferred and used to obtain estimates of production and capacity for 1967-68.

Collation of Survey and MSP data

28. It is mentioned earlier that the product-wise figures of production and capacity are given by each factory. 418 factories have furnished data regarding 517 products. The MSP has yielded data regarding 324 products. In the process of identifying a Survey product with the MSP product and vice versa, it was necessary to aggregate some products in one or the other source. The result was that 199 Survey products were found to correspond to 117 MSP products. From the remaining MSP products, those for which the figures of capacity were not available, were excluded, leaving 169 products to be included in our study. Thus, 318 non-common survey products, 199 common products and 169 non-common MSP products (total 686) constitute the basis of our study.

Concept of Capacity

29. The concept of capacity is crucial in the study of under utilisation. Dealing with the meaningful approaches to this concept, Budin and Paul suggest that all these centre around two definitions 'Engineering' and 'Modified Engineering'. "The 'Engineering' approach is in terms of capacity potential of the equipment of the firm, generally built up from estimates of the speed of the major machines, and finally assessed in terms of the limitations set by the slowest equipment." "The 'Modified Engineering' approach takes into consideration the limitations of the other factors of production, e.g., the quantity and quality of available labour and management, the quality of raw materials and the regularity of delivery schedules of inputs for the plant." On one extreme is the purely technical consideration in determining the capacity. By imposing economic or institutional limitations on this extreme technical consideration, and determining the corresponding capacity one would depart from this extreme case. Where it is important to emphasize the utilisation of the existing equipments, it would be appropriate to allow only technical considerations in the determination of the capacity and then account for the unutilised capacity by all the relevant factors. For a given factory, the capacity can be estimated on technical considerations in a relatively simpler way if it is producing one product. If it is a multi-product factory, where the products compete in the use of equipments, one would get an estimate of capacity as the combination of 'highest' levels of output of different products and such an estimate is not unique.

In other words, the capacity would depend on the product mix and that there is no way of choosing one particular product-mix as the best solely on technical considerations.

30. All this shows that the desirability of estimating capacity on technical considerations has to be guided by the practicability also. In the context of our Survey by mailed proforma where the response is voluntary, very strict considerations could not get into the definition of capacity. It is defined as "the maximum production possible with the available equipment during the year, assuming normal operative conditions. All the products and their quantity mentioned against this should be capable of being produced together during the year. Against basis (of capacity) mention whether it is single, double or three shifts."

31. In case of MSP, the capacity is on the stipulated basis of certain number of shifts and certain number of days worked, depending upon the products. For a large number of products, the basis is only one shift. Many of the earlier studies, using MSP data have shown the awareness that these data do not indicate the real extent of existing capacity. These studies incorporate analysis based on their own judgement regarding the basis of capacity.

Analysis of Common Products

32. It is clear that the survey basis of capacity reflects the existing practice of work according to the respondent factories while the MSP basis of capacity is the one stipulated by the authorities concerned. Since the data regarding common products are available in both the sources, it would be appropriate to make a comparative study and choose the best way of obtaining estimates of capacity. Table B gives the list of common products, their production, capacity, percent unutilised capacity and basis of capacity according to MSP, basis of capacity according to Survey, percent unutilised capacity according to Survey and certain other figures that would be explained below. The first is to examine the bases of capacity.

Comparison of bases of capacity

33. For a given common product, the Survey basis of capacity would be the whole pattern of shift working depicted by the factories manufacturing the given product. To be able to compare this with the MPS basis, some measure indicating the pattern should be chosen. We have considered the weighted average number of shifts worked in different factories manufacturing the given product as an appropriate measure, weights being the capacity of the concerned factories. These figures are given in Table B and are denoted by the symbol \bar{n} . The highest number of shifts worked by

any factory manufacturing a given product is also given (denoted by the symbol n). The number of shifts according to MSP is denoted by n' and given in the table. The following table summarises the comparison between n and n' .

Table 2. Table showing the number of common products according to the MSP basis (n') and Survey basis of capacity (\bar{n})

MSP Basis. No. of Shifts (n')	Survey Basis (\bar{n}) Average No. of shifts						Total
	1.0	1.1-1.9	2.0	2.1-2.9	3.0	N.A.	
1	24	9	14	9	28		84
2	2			1	2		5
3		1			18		19
N.A.	7	2		2	1	3	15
Total	33	12	14	12	49	3	123

Note: Though there are 117 products in Table B, for 6 more products this information is additionally available.

N.A. means not available.

34. There are 108 products after excluding 15 for which MSP basis is not available. The number of shifts is same in Survey and MSP in case of 42 products; it is greater in Survey than in MSP in case of 63 products; it is smaller in Survey than in MSP in case of only 3 products. (We note here that we are unable to take into account the number of days worked in a year since this information is not available in the Survey). By and large, the MSP basis shows lower number of shifts so that its adoption would lead to an underestimation of the extent of unutilised capacity. This is highlighted if we notice that the MSP basis is only one shift while the survey basis is three in case of 28 products. This is the comparison if we consider the survey basis as the average number of shifts. It would be instructive to make a comparison using the highest number of shifts for Survey basis. The following table presents the comparison.

Table 3. Table showing the number of common products according to the MSP basis (n') and Survey basis of Capacity (n)

MSP basis No. of shifts (n')	Survey Basis (n) Maximum No. of shifts				Total
	1	2	3	N.A.	
1	22	18	44		84
2	2		3		5
3		1	18		19
N.A.	7		5	3	15
Total	31	19	70	3	123

Note: Though there are 117 products in Table B, for 6 more products this information is additionally available.

N.A. means not available.

35. This table shows practically the same differences between MSP and Survey as Table 2. The only notable exception is that a larger number of products show three shift working in Table 3. It is, therefore, clear that the Survey basis should be adopted. The adoption of the highest number of shifts would mean an assumption that for a given product all the factories can work the highest number of shifts reported by any of them. The adoption of the average number of shifts would mean that the existing practice of shift work is taken into account. For the purpose of this study the average number of shifts is adopted as the basis for the common products.

Survey coverage relative to MSP

36. After deciding about the basis to be adopted regarding common products, we may now compare the coverage in survey and MSP. The production reported in the Survey is expressed as the percent of the production covered in MSP, product-wise, and given in Table B. Though this is one indicator of the coverage, the appropriate indicator is the percentage capacity. Using the survey basis of capacity (\bar{n}), the MSP figure of capacity is adjusted; and then the capacity under Survey is expressed as percent of this adjusted MSP capacity. (See Table B). The following table gives a summary picture of the coverage in Survey relative to MSP.

Table 4. Distribution of common products according to coverage

Coverage %	Number of common products		
	1	2	3
0.1 - 10.0	42	32	4
10.1 - 20.0	15	24	9
20.1 - 30.0	11	8	3
30.1 - 40.0	12	4	8
40.1 - 50.0	2	4	2
50.1 - 60.0	6	2	4
60.1 - 70.0	2	2	0
70.1 - 80.0	3	2	1
80.1 - 90.0	1	0	3
90.1 - 100.0	3	3	2
100.1 & above	4	2	15
N.A.	0	15	17
*	16		
Total	117	117	

Note:

A given figure in column (2) shows the number of common products which fall in the corresponding range of coverage, where coverage is that of production. A given figure in column (3) indicates similar information, with the difference that the coverage is that of capacity.

N.A.

means that the figure in MSP is not available.

Refers to products for which units of production/capacity are not comparable so that percent coverage cannot be calculated.

This table shows that MSP has much larger coverage for the items covered by it, generally speaking. For our study, the MSP figures of production and, as mentioned earlier, the corresponding adjusted MSP figures of capacity on Survey basis of capacity would be used.

Bias in Survey?

37. In a survey like this where the response is purely voluntary, the response cannot be considered, a priori, to be of random nature. Nothing about the non-respondents can be stated since those non-respondents are not re-contacted. It is, however, very important to keep in mind

that in similar voluntary surveys of industries conducted world over, greater importance is being attached to having some information obtained in this manner rather than to have none. The popularly known Munich Business Test ^{12/} has the following to write when faced with this problem. "The selection of the firms did not comply with the condition of random sampling. The basic statistical data were insufficient..... Furthermore, it should be noted that a correct sample, in addition to the condition of random selection, also requires a sufficiently large number of firms (universe) to ensure that deviations assume a random character. If the number is not sufficiently large, random selection may lead to false results as deviations containing the element of bias do not cancel out according to the law of large numbers. Especially in the industrial sector the various universe became too small (due to substratification into branches, groups and products in the Kf) to apply the principle of random selection. The principle of deliberate selection was therefore applied....."

38. We may now proceed to examine in the light of available data whether the respondent factories are those which have relatively large unutilised capacity. We have seen that the MSP has better coverage. We may surmise that the respondent factories in case of a particular product, have relatively large unutilised capacity (and hence there is bias introduced in the Survey data) if the percent unutilised capacity is greater than that in MSP. Such a comparison is possible in case of common products. Out of 107 common products for which comparable data are available 48 products are such that the Survey shows greater percent unutilised capacity and the remaining 59 show less. Similar comparative position emerges even if we exclude the products that show a difference in percent unutilised capacity according to Survey (a) by not more than 5 and (b) by not more than 10, compared to the percent unutilised capacity according to MSP. Basing on these observations one gets a general faith that such a bias is perhaps absent in the survey.

Unutilised capacity

39. We have set sufficient background to be able to appreciate the figures of unutilised capacity. In case of non-common Survey products, the percent unutilised capacity is calculated on the basis of figures of production and capacity reported in Survey. In case of common products the percent unutilised capacity obtainable from MSP is adjusted

¹²The Konjunkturtest, A new method of economic research, by Wilhelm Marguardt and Werner Strigel, IFO-Institut für wirtschaftsforschung, 1960, translated by G. J. Hupker.

to reflect the Survey basis of capacity. In other words; the percent unutilised capacity u is given by $u' (\bar{n}/n')$ where u' is the percent unutilised capacity according to the MSP data, n' is the number of shifts as reported in MSP and \bar{n} is the average number of shifts as reported in the Survey. In case of the remaining non-common MSP products, the percent unutilised capacity is calculated from MSP data. The product-wise figures of production, capacity, percent unutilised capacity etc... are given regarding all the 686 products in Table A. The following table gives a compact picture of the unutilised capacity for which purpose, the products are classified into broad groups of industries (the classification would be explained later). The table shows that 8.1% of the products show overutilised capacity.* This has occurred either due to more number of shifts actually worked than is considered for reporting the capacity, or due to the product-mix being actually different from the one considered for reporting the capacity. 4.5% of the products have no unutilised capacity. The figures of capacity were not available in 2.5% of the products. The remaining 84.9% of the products are more or less evenly spread over the whole range of percent unutilised capacity. Nearly half the number of products show 50% or more unutilised capacity. This phenomenon is seen in practically all the broad groups of industries except perhaps in wood and furniture industries, rubber industries and transport equipment industries. The percent unutilised capacity seems to be particularly high in fertiliser industries. While this table shows the pattern of the percent unutilised capacity in different broad groups of industries, the level of percent unutilised capacity in different broad groups can be known only after assigning appropriate weights to the products constituting them, which is considered below.

*There are 12 products besides these, which are survey products and which show unutilised capacity and overutilised capacity for each product, according to respective experiences of factories manufacturing the given product. These two are shown separately. In respect of over-utilisation one can consider that the capacity is as much as the reported production so that there is neither unutilised nor overutilised capacity. Another way is to compute capacity on the basis of the number of shifts greater by one (2 or 3 as the case may be) than the reported number and then relate the reported production to this capacity so that there would be no overutilised capacity; and indeed considerable unutilised capacity may result due to this. We have not done either. In table 5 given here, only the percent unutilised capacity corresponding to these products is considered.

Table 5. Distribution of products in different industries according to percent unutilised capacity during 1967-68

S. No.	Industry	Percent unutilised capacity						
		*	0	1-9	10-19	20-29	30-39	40-49
1.	Mining industry	1						
2.	Food industry		1	1	2	4	4	
3.	Beverage industries		1		1			
4.	Tobacco manufacturers						1	
5.	Textile industries			1	2	1	1	
6.	Footwear industries	1						
7.	Wood & Furniture industries	2	1	3	2	1	2	1
8.	Paper industries	1		1	2	1	3	1
9.	Printing & Publishing industries							
10.	Tanneries & Leather industries	1		1	1			
11.	Rubber industries	1	2	6		3	3	
12.	Fertiliser industries			1				1
13.	Heavy Chemical industries	4		8	2	4	4	12
14.	Other Chemical industries	9	2	5	4	6	17	7
15.	Refractories, Glass, Cement etc.			4	4	3	5	4
16.	Basic Metal industries	5	2	4	1	6	1	
17.	Metal Products industries	5	3	1		4	7	8
18.	Non-Electrical Mach. & Equip.	9	11	2	6	11	6	7
19.	Elec. Mach. & Equip.	6	2	5	2	2	2	1
20.	Transport Equipment industries	2			4	1	4	3
21.	Miscellaneous industries	2	2	2	3	2	3	3
Total		49	27	45	36	49	63	48

Contd...

Table 5- Contd.

S. No.	Industry	Percent unutilised capacity					N. A.	Total
		50-59	60-69	70-79	80-89	90-100		
1.	Mining industry				1		8	10
2.	Food industry	1	4	1	3	5	1	27
3.	Beverage industries		1					3
4.	Tobacco manufacturers	1						2
5.	Textile industries	1	2	3	1			12
6.	Footwear industries				1			2
7.	Wood & Furniture industries				1	1		14
8.	Paper industries	2	1	2	2			16
9.	Printing & Publishing industries							
10.	Tanneries & Leather industries		3	1		1		8
11.	Rubber industries	4	3	1	1			24
12.	Fertiliser industries	4	1	1	2	1		11
13.	Heavy Chemical industries	5	3	6	4	8		60
14.	Other Chemical industries	9	7	13	11	8		98
15.	Refractories, Glass, Cement etc.	4	4	4	2	1		35
16.	Basic Metal industries	1	5	3	4	3	3	38
17.	Metal Products industries	8	9	2	6	3		56
18.	Non-Electrical Mach. & Equip.	10	8	7	15	13	3	108
19.	Elec. Mach. & Equip.	6	1	3				30
20.	Transport Equipment industries	3	1		1	1		20
21.	Miscellaneous industries	1	7	2	1	1		29
Total		60	60	49	56	46	15	603

Note: * Indicates over-production.

(1) The table contains 603 products which correspond to 686 products under study, some of which had to be aggregated for the purpose of getting unutilised capacity.

(2) N.A. means that the figure of capacity is not available.

(3) Blank space in the body of the table indicates zero.

Necessity of industry-wise estimates

40. It is to be noted that each product is an industry in the sense that it is an aggregate of that part of the manufacturing activities of the concerned factories which refers to the product. In order to know the implications of the unutilised capacity in the economy as a whole ^{13/} and to work out detailed remedial measures in an Input-Output framework, it is necessary to have estimates of percent unutilised capacity in various industries that constitute the input-output table. The latest and the most detailed Input-Output table for Indian economy ^{14/} is the one available for the year 1963 in which the manufacturing industries correspond to the industries according to the classification in Annual Survey of Industries. The estimates of percent unutilised capacity have therefore to be for these industries.

Definition of Industry

41. The ASI industry is an aggregate of factories such that the major output of a constituent factory relates to the industry concerned. Thus, for example, the factories producing sugar, or, sugar and gur, or, sugar, gur and alcohol etc., may all belong to sugar industry as long as the value of production of sugar is a major portion of the total value of all the products manufactured in each factory. A given product, therefore, can be found in two or more industries. In other words, each ASI industry is characterised by the particular product-mix. It should be noted that the product-mix of a given industry in a given year may not be the same in all the years. Thus, the product-mix of the given ASI industry in 1963 may have changed in the year 1967-68. The product-mix in 1967-68 is, however, unknown. Although the use of input-output table for 1963 may be made for the purpose of measuring the unutilised capacity (in the sense of Klien) or for working out the remedial measures, results

¹³Klien L.R. 'Some theoretical issues in the measurement of capacity' Econometrica, Vol. 28, No. 2, April 1960, pp. 272-286. He points out that 'a practical method for combining a group of capacity measures for interrelated industries into an overall-index is to force them into an input-output mold' (page 280).

¹⁴Mathur, P.N., in collaboration with Kulkarni, A.R., Venkatramiah P. and Narain Das, Input-Output table for Indian economy, 1963, 241 x 241 sectors unpublished.

need to be related to the nature of the industry (viz. product-mix) in 1967-68. A strict adherence to the product-mix of 1963 may not essentially improve the results. Three ways of estimating the percent unutilised capacity for each ASI industry may be considered. One is to classify all the 418 factories that have furnished data under the survey, according to ASI classification and then calculate industry-wise figures of percent unutilised capacity. Another is to use the product-wise figures of percent unutilised capacity and fuse them in the context of the product-mix of a given industry in 1963 and then make an estimate for the industry. The third is to classify all the products according to ASI classification and consider the resulting groups of products as representing the ASI industries for our purpose. In the first way, the information regarding MSP products cannot be used at all. In the second way, we may not achieve much improvement in the results to justify huge computations, particularly because the product-mix is known to change from year to year. Hence we are contended to choose the third alternative. All the 686 products are classified into the ASI classification, assigning a product to the industry producing most of it using 1963 data as guide for this purpose. The resulting groups of products are considered very near to the ASI industries.

Weights for obtaining the estimates

42. The next consideration is regarding the weights to be used for getting the weighted average percent unutilised capacity in each industry. The appropriate weight would be the value of capacity of a given product in the economy during the year 1967-68. Let us see how far we can approach this with the available data. The latest year for which productwise figures of value of production can be obtained is for 1963, from the volumes of the Annual Survey of Industries (census scheme)*. This refers to only the large-scale manufacturing industries in India. The product-wise data for small scale industries and cottage industries are not available. We have, therefore, obtained the value of production of a product, regardless of the industry manufacturing it, from the ASI, ((census scheme). To be able to identify the products under study with those in ASI aggregation in some cases had to be done. Wherever it was not possible to identify a product under study with that in ASI, the value of production as reported in the survey is used. A large number of products (586 out of 686) could be considered for getting industrywise estimates.

*By the time all the volumes for 1964 become available, our study had advanced considerably so that those could not be utilised.

43. The next step is to estimate the production during 1967-68. For this purpose, the monthly Index* of production is used. The ratio of the average monthly Index for 1967-68 to the corresponding figure 1963 is applied to the figure of production in 1963 in order to get an estimate of the production in 1967-68. This estimate is then adjusted to get an estimated value of capacity assuming that the percent unutilised capacity observed for a given product is a valid estimate for that product in the economy. In this manner, productwise estimates of the value of capacity in 1967-68 (at 1963 Ex-factory prices) are obtained. The percent unutilised capacity in an industry is then obtained as the weighted average of the figures of percent unutilised capacity of the products** constituting the industry, weights being the estimates of capacity obtained. For this purpose, the reported overutilisation is considered as zero unutilised capacity. The details so far given reveal many shortcomings but unavoidable in these estimates but this is the best that could be done with the available data. The aforementioned methodology may be precisely given as follows:

Let p_i be the value of production of the i th product in 1963 according to ASI, 1963.

and r_i be the Index ratio (i.e. ratio of the average monthly Index for 1967-68 to that for 1963).

then $P_i = p_i r_i$, the estimated value of production of the i th product in 1967-68 at 1963 prices (or the value of the production of the product at 1967-68 prices as reported in the Survey, only when p_i is not available).

Let U_i be the percent unutilised capacity of the i th product (considering the overutilisation as zero percent unutilised capacity).

*It is understood that this Index does not reflect the real change in the economy, because it is based on MSP data which are not adequate. In the absence of any other indicator, this can be taken as a fair indicator of change.

**It is mentioned earlier that some products had to be aggregated, to be able to identify them with ASI products. The percent unutilised capacity in such aggregate is obtained properly either with the help of survey data or some other data.

then $C_i = \frac{100 P_i}{(100 - U_i)}$, the estimated value of capacity of the i th product in 1967-68 (at 1963 or 1967-68 prices, as the case may be).

If n products belong to a given industry, the percent unutilised capacity of that industry is given by U , where

$$U = (\sum C_i U_i) / (\sum C_i), \text{ summation extending over } i = 1 \text{ to } n.$$

44. In this manner, the figures of percent unutilised capacity for various industries are computed. These are given in Table C. The following table shows the extent of unutilised capacity in these industries.

Table 6. Distribution of industries according to percent unutilised capacity

% Unutilised capacity	No. of Industries
0.0 - 9.9	23
10.0 - 19.9	14
20.0 - 29.9	16
30.0 - 39.9	20
40.0 - 49.9	19
50.0 - 59.9	14
60.0 - 69.9	15
70.0 - 79.9	16
80.0 - 89.9	12
90.0 - 100.0	4
Total	153

Note: Out of 153 industries, 4 refer to mining. These 4 mining industries are distributed equally in the first two classes.

45. We may now proceed to get an idea of the extent of unutilised capacity in the industrial economy of the country in 1967-68. According to ASI, 1963, there are 203 industries. We consider that these 203 industries and 4 mining industries constitute the industrial economy. Estimates are available for 149 ASI industries and 4 mining industries. The percent unutilised capacity regarding each of the 54 remaining ASI industries is assumed to be the figure corresponding to the industry nearabout that.

Table C shows these assumed figures marked with an asterisk(*). All these industries are aggregated into 21 broad groups of industries. For a given broad group of industry, the percent unutilised capacity is calculated on the following considerations. The appropriate weight should be the estimated capacity of the industry in 1967-68. The available data, however, are the figures of gross output of each ASI industry in large scale manufacturing sector in the year 1963. These figures are adjusted for statistical coverage (since the reporting in ASI is not 100% in all industries). The change in the level of output of an industry from 1963 to 1967-68 is considered to be same as the change reflected by the set of products under study belonging to that industry. Using this information the value of gross output of each ASI industry in 1967-68 (at 1963 ex-factory prices) is estimated. Using the figures of percent unutilised capacity of each industry, the capacity of each industry in 1967-68 is estimated. Finally the percent unutilised capacity in each broad group of industries is estimated. The following gives this methodology in terms of symbolic notations.

Let q_i^1 be the value of gross output of i th industry in 1963.

Let n_i be the percentage number of factories covered by ASI in i th industry.

Then $q_i = (100 q_i^1) / n_i$ is the value of gross output of i th industry in 1963, adjusted for statistical coverage.

Let R_i be the proportion of the estimated value of production of the product (belonging to i th industry) in 1967-68 to that in 1963.

Then $Q_i = R_i q_i$ is the estimated value of gross output of i th industry in 1967-68 (at 1963 ex-factory prices).

Let U_i be the percent unutilised capacity of i th industry.

Then $K_i = (100 Q_i) / (100 - U_i)$ is the estimated value of capacity of i th industry in 1967-68 (at 1963 ex-factory prices).

If m industries are aggregated into a given broad group of industries, the percent unutilised capacity of that broad group is obtained as -

$$\left| \sum (K_i - q_i) \right| / \left| \sum K_i \right|$$

summation extending over $i = 1$ to m .

All the relevant data are given in Table C. The estimated value of adjusted gross output in 1967-68, (q), and that of capacity in 1967-68, (K), the change in the levels of gross output, (R), are given in Table C. The assumed figures of R for the 54 ASI industries are indicated by an asterisk.

46. The table below gives the broad groups of industries and the percent unutilised capacity in each of these. It shows that the unutilised capacity is more than 40% in 12 out of 21 industries. Almost all the intermediate and capital goods industries show this extent of unutilised capacity. Metal products, non-electrical machinery and equipment, fertilizer and food industries show more than 60% unutilised capacity. Mining, beverages and footwear industries show less than 20% unutilised capacity. If we consider the value added in each ASI industry in 1963 (v_i) in place of the value of gross output (q_i) in the above computations and

calculate the percent unutilised capacity in each broad group (given in table above), the picture of the broad-group-wise unutilised capacity remains more or less same except in case of food industries (where the earlier estimate is 51% and the use of value added figures yields 64%) and non-electrical machinery (where the figures are 69% and 60%). The industrial activity (excluding mining), on the whole, seems to be around only half of the capacity.* This is, indeed, very disturbing.

Reasons for unutilised capacity

47. Having seen the extent of unutilised capacity, we may proceed to study the reasons for unutilised capacity. This part of the analysis would be solely based on the information provided by the respondent factories. Each factory has furnished productwise reason for unutilised capacity. Thus 418 factories have given reasons regarding 803 products (each product counted as many times as the number of factories manufacturing it) which have unutilised capacity. These may be called 803 product-factories to distinguish them from

*This is on the basis of the data from the census sector of the Annual Survey of Industries. If, however, the information regarding the small-scale industries covered by a sample under the ASI is also considered for weightage purpose, the unutilised capacity is seen to be even more. For details see Appendix III.

Table 7. Estimated unutilised capacity in broad groups of industries during 1967-68

S. No.	Name of the Industry	Gross output in 1963 in '000 Rs.	Index	% U1
	1	2	3	4
1.	Mining Industries	2056716	1.101	9.55
2.	Food Industries	7709267	1.070	63.87
3.	Beverage Industries	113023	1.422	18.35
4.	Tobacco Industries	1068702	1.385	34.96
5.	Textile Industries	12416611	1.004	35.44
6.	Footwear etc. Industries	123761	1.252	00.00
7.	Wood-furniture Industries	351385	1.613	28.90
8.	Paper Industries	936124	1.427	36.09
9.	Printing & Publishing Industries	729668	1.364	28.30
10.	Tanneries & Leather Industries	173565	0.928	46.27
11.	Rubber Industries	1032780	1.294	26.45
12.	Fertilizer Industries	469074	1.650	76.22
13.	Heavy Chemical Industries	407659	1.534	40.82
14.	Other Chemical Industries	4018189	1.379	55.03
15.	Refractories, Glass, Cement etc.	1682781	1.250	46.00
16.	Basic Metal Industries	5860105	0.965	42.27
17.	Metal Products Industries	1162446	1.547	62.85
18.	Non-Electrical Machinery and Equipment	1707955	1.295	59.97
19.	Electrical Machinery and Equipment	1740053	1.613	46.74
20.	Transport Equipment Industries	3724471	1.191	41.17
21.	Miscellaneous Industries	2565470	1.597	44.90
	Total (excluding Mining)	47993089	1.187	49.19

Contd...

Table 7 - Contd.

S. No.	Name of the Industry	Value added in 1963 in '000 Rs.	Index	% U ₂
	1	5	6	7
1.	Mining Industries	1527634	1.101	9.89
2.	Food Industries	1108784	1.083	50.54
3.	Beverage Industries	36748	1.343	18.06
4.	Tobacco Industries	261593	1.357	35.10
5.	Textile Industries	3592389	1.007	35.57
6.	Footwear etc. Industries	28604	1.240	0.00
7.	Wood-furniture Industries	97109	1.605	28.79
8.	Paper Industries	257071	1.429	35.09
9.	Printing & Publishing Industries	287559	1.363	28.30
10.	Tanneries & Leather Industries	24285	0.926	46.82
11.	Rubber Industries	326979	1.298	25.04
12.	Fertilizer Industries	107285	1.637	76.12
13.	Heavy Chemical Industries	129381	1.534	40.79
14.	Other Chemical Industries	1130611	1.340	53.85
15.	Refractories, Glass, Cement etc.	453172	1.459	40.76
16.	Basic Metal Industries	1468920	0.967	44.28
17.	Metal Products Industries	325654	1.498	62.49
18.	Non-Electrical Machinery and Equipment	567632	1.320	69.01
19.	Electrical Machinery and Equipment	540661	1.571	45.21
20.	Transport Equipment Industries	1206859	1.120	42.46
21.	Miscellaneous Industries	934510	1.601	44.80
Total (excluding mining)		12885806	1.205	45.90

Note:

Column (3) shows the ratio of the estimated gross output during 1967-68 (at 1963 prices) to that in 1963.

Column (4) shows percent unutilised capacity based on gross output data.

Column (6) shows the ratio of the estimated value added in 1967-68 to that in 1963.

Column (7) shows the percent unutilised capacity based on value added data.

the 517 survey products. The table given below shows the relative importance of the reasons for unutilised capacity.

Table 8. Distribution of product-factories according to the reasons for unutilised capacity during 1967-68

Reasons for unutilised capacity	No. of product-factories	%
a. Inadequate demand	262	32.6
b. Inadequate demand as one among 'other' reasons	63	7.8
c. Shortage of raw materials	139	17.3
d. Shortage of raw materials as <i>one</i> among 'other' reasons	39	4.9
e. Inadequate demand and shortage of raw materials	31	3.9
g. 'Other' reasons*	117	14.6
k. No reasons given	152	18.9
Total	803	100.0

* Important among 'other' reasons are labour trouble (23), technical difficulties (23), inadequate finance (13), power shortage (11) and development stage (11).

If we exclude those product-factories for which no reasons are given, for the purpose of knowing the relative importance of the reasons, we would note that 67% of the remaining product-factories are affected by either inadequate demand or shortage of raw materials or both. This would go up to 82% if those product-factories are included which are affected by 'other' reasons besides the inadequate demand and/or shortage of raw materials. Between the two reasons, inadequate demand and shortage of raw materials, the former seems to be affecting nearly twice the number of product-factories affected by the latter.

Reasons, industry-wise

48. The information regarding 803 product-factories is suitably aggregated to get the reasons for the unutilised capacity of 517 survey products. These are mentioned

in Table A. If all the factories manufacturing a given product have same reason for unutilised capacity, that reason is shown against the product. If, however, the factories show different reasons for the given product, all these reasons are shown against the product together with their respective percentage shares in the total unutilised capacity of that product as reported. In order to get industry-wise picture of reasons, this information regarding 517 products is aggregated to conform to the 21 broad groups of industries. The table below gives this information.

49. This table shows a picture of relative importance of the reasons on the whole similar to the one shown in Table 8. Inadequate demand seems to be affecting a large part of the (1) beverage (2) tobacco (3) tanneries and leather (4) rubber (5) refractories, glass, cement etc. (6) basic metal (7) metal products (8) non-electrical machinery (9) electrical machinery and (1) transport equipment industries. The shortage of raw materials has relatively an upper hand in causing the unutilised capacity in (1) food (2) textile (3) wood furniture and (4) miscellaneous industries. Both these reasons seem to be operative in (1) paper (2) fertiliser (3) heavy chemicals and (4) other chemical industries. The 'other' reasons are affecting prominently in (1) mining and (2) footwear industries. This seems to indicate the general fall in demand for consumer and engineering goods and shortage of raw materials (particularly the agriculture-based raw materials). Having seen this situation regarding 1967-68, we may now proceed to see the nature of inadequate demand and shortage of raw materials in some detail.

Nature of inadequate demand

50. It is seen that inadequate demand is one of the very important reasons for unutilised capacity. The term 'inadequate demand' may embrace a variety of different circumstances. For instance, (1) substitution of a product may be the situation termed as inadequate demand. (2) The practice of some industries to keep certain reserve capacity to meet sudden demand (as Vakil apprehended) may be the circumstance termed as inadequate demand. (3) The demand for a particular product may have really gone down due to the reduced level of activity of the industry demanding it. (4) Similarly, the demand by the final consumer (for consumption or investment) may have gone down. (5) The capacity of a product may be far in excess of what the present economy can absorb in normal circumstances, which situation may also be labelled as inadequate demand. Envisaging such possibilities and with a view to understand this phenomenon of inadequate demand more deeply, the proforma was designed to get information on this aspect.

Table 9. Distribution of survey products in different industries according to reasons for unutilised capacity

S. No.	Name of the Industry	Reasons for unutilised capacity						Total	
		a	b	c	d	e	g		k
1.	Mining Industries	3					7	5	15
2.	Food Industries	5		12	2		5	1	25
3.	Beverage Industries			1				1	2
4.	Tobacco Industries		2						2
5.	Textile Industries		1	3	1				5
6.	Footwear etc. Industries						1	1	2
7.	Wood-Furniture Industries	2		4	2		1	1	10
8.	Paper Industries	6		5			2	2	15
9.	Printing and Publishing Industries								-
10.	Tanneries and Leather Industries	5						1	6
11.	Rubber Industries	14	3	3			4	6	30
12.	Fertilizer Industries	2			3				5
13.	Heavy Chemical Industries	10	1	11	1	7	5		35
14.	Other Chemical Industries	31	1	23	3	9	16	8	91
15.	Refractories, glass, cement etc. Industries	18	5	3			10	2	38
16.	Basic Metal Industries	6	14	6	1		7	2	36
17.	Metal Products Industries	15	8	6	7	3	3	4	46
18.	Non-Electrical Machinery and Equipment Industries	46	10	5	5	1	2	13	82
19.	Electrical Machinery and Equipment Industries	12		6	3		2	7	30
20.	Transport Equipment Industries	13			1		5	1	20
21.	Miscellaneous Industries	4	1	7	2	1	4	3	22
Total		192	46	95	31	21	74	58	517

Note: a denotes Inadequate demand. b denotes Inadequate demand as one among 'other' reasons. c denotes Shortage of raw materials. d denotes Shortage of raw materials as one among 'other' reasons. e denotes Inadequate demand and shortage of raw materials. g denotes 'Other' reasons. k denotes No reasons given.

51. The factories have furnished the name of the industry which demands their products and the factors operative at that industry which, according to the assessment of these factories, have caused inadequate demand for their products. Such information is available in respect of 170 products out of 259 products which are affected by inadequate demand as the only reason or one of the reasons. The various factors operative at the sources of demand, according to the respondent factories, centred around three categories, viz., reduced level of activity of the customer; substitution of their products; and excess capacity in the economy. The second is further split into two, to distinguish the substitution by indigeneous products from the substitution by imported ones. This is given in Table D. It may be noted from this table that for some products the customers/industries demanding each product are two or more. Similarly, the factors operative at some of the sources of demand may be two or more. For a given product there may be x industries/customers demanding it and the reasons operative at each industry/customer may be y in number so that there would be xy items of information for that product. Thus the total number of items against all the 170 products is 216. The distribution of these 216 items according to the factors operative at source of demand and source of demand is given in the table below to get an idea of the relative importance of the factors.

52. Before the sources of inadequate demand as given in table above are dealt with, we should note that these sources are the ones obtained by classifying the names of customer/industry as mentioned by the respondent factories. This list of sources refers to broad categories. It should be noted further that the category 'Engineering' is not exclusive of the categories 'metal and metal products', 'machinery', 'transport equipment' and 'Railways'. Another similar instance is that of the category 'Government' which is not exclusive of some of the categories mentioned above. /ie: On the basis of the number of items, it appears that nearly 75% of the number of items (excluding 35 for which no source is mentioned) fall in the categories Engineering industry (36%), Government (27%) and Textile industry (12%). We have earlier seen in para 49 that Engineering industry has unutilised capacity due to inadequate demand for its products being a relatively more widespread reason; Here we see that the factories in different industries assess that Engineering industry is the source of inadequate demand. Though this is keeping with the interdependence of the industries in the economy, to visualise clearly this should be seen in the Input-Output framework. We may also note here the dependence on Government demand to some extent.

Table 10. Distribution of items* according to the source of demand and factors operative at the source.

S. Customer/industry No. (Source of demand)	Factors Operative					Total items
	(1)	(2)	(3)	(4)	(-)	
1. Agriculture	3	1	-	2	-	6
2. Food	2	-	-	-	-	2
3. Textiles	18	1	1	-	2	22
4. Paper	3	-	-	-	-	3
5. Chemicals	6	2	-	1	8	17
6. Cement etc.	1	-	-	-	1	2
7. Metal & metal products	-	5	3	-	-	8
8. Machinery	12	-	-	-	1	13
9. Transport equipment	9	1	3	4	4	21
10. Railways	2	-	-	-	1	3
11. Engineering	18	1	-	1	1	21
12. Construction	3	-	-	-	-	3
13. Government	40	2	-	6	1	49
14. Others	4	5	-	-	2	11
15. Not mentioned	10	16	7	2	-	35
Total	131	34	14	16	21	216
%	61	16	6	7	10	100

* For the explanation of 'item' see the para above.

Note: Factors operative at source

- (1) Curtailed production.
- (2) Substitution by another product.
- (3) Substitution by imported product.
- (4) Excess capacity in the economy.
- (-) No information is available.

53. This table also indicates that the curtailed production consumption by the customer is the most prominent factor responsible for inadequate demand as seen from 61% of the items. The next is the substitution taking place in case of 22% of the items. This aspect, particularly the substitution of indigeneous products by imported products seen in 6% of the items (11 products) needs to be further examined. Excess capacity in the economy is reported in case of 7% of the items (16 products). In view of the immediate importance of the latter two aspects, we may consider more details about these products.

Excess Capacity

54. The names of the products reported to have excess capacity in the economy are given below together with the percent unutilised capacity and the average number of shifts.

Table 11. Products reported to be having excess capacity in the economy

S.No.	Name	U	\bar{n}
117	Vacuum hose	78	3.0
119	Railway buffer spring	83	3.0
129	rubber belting	37	3.0
156	Alumina Sulphate	82	3.0
164	Sodium silicate	41	3.0
177	Hydrochloric acid	73	3.0
335	Sheet glass	76	3.0
419	Steel containers	41	1.0
420	Tin containers	57	1.4
537	Ball, roller bearings	61	2.5
616	Bare conductors	34	3.0
638	Radiators	54	1.5
646	Commercial vehicle wheels	12	1.0
647	Car tractor wheels	59	1.0
648	Tank wheels	95	1.0
660	Electricity meters	67	2.0

Note: This table is extracted from Table A. U denotes the percent unutilised capacity. \bar{n} denotes the average number of shifts. S.No. given here is according to Table A.

The existing pattern of shift work (\bar{n} , the average number of shifts worked) and the extent of unutilised capacity (U) regarding the products listed above, help to understand the phenomenon of excess capacity in the economy.* It may be noted that 11 out of 16 products have more than 50% unutilised capacity. Indeed all of them show more than 40% unutilised capacity except rubber belting bare conductor and commercial vehicle wheels. In order to appreciate the situation, it may be noted that the capacity is based on 1 shift in case of 4 products, between 1.1 to 2.9 shifts in case of another 4 products, and on 3 shifts in remaining cases. The reported excess capacity in the context of large unutilised capacity and particularly in the context of the low average number of shifts worked in case of 4 to 8 products, needs to be taken into account.

Products substituted by imported products

55. From table D, we note that 11 products are reported to be substituted by the imported ones. These are listed below.

Table 12. Products substituted by the imported products

S.No.	Name of the Product	U
138	Superphosphate	21
148	Mixed fertilizers	78
201	Hexamine	100
356	Welding flux	33
370	Steel ingots	4
373	Rolled products (Steel)	21
386	Forgings	38
452	Chaff cutter Knives	65
453	Machine knives	62
484	Power looms	68
680	Stamping foil	72

Note: This table is extracted from Table A. U denotes percent unutilised capacity. Rolled products steel (S.No. 373), according to some factories, has overutilised capacity of 13 percent.

*It would be useful to locate the excess capacity in economy with the help of an Input-Output table.

In the face of the policy of the Government to encourage import substitution, quite a reverse seems to have happened in some cases at least, as the above table shows. Further probe into this aspect would help in knowing why this is happening so that appropriate policy measures could be formulated.

Shortage of raw materials

56. The shortage of raw materials is the next important reason for unutilised capacity. Each factory, in such instance, was requested to mention the name of raw material in short supply, and to indicate the amount of raw material required for producing one unit of the product, whether it was produced in India and also the price of raw material. While the names of raw materials in short supply together with the indication whether they are produced in India are available, the other information available is not uniformly satisfactory in case of all the factories. The former information is listed in Table E. The latter part is not analysed. It would be useful to make a further analysis of the situation governing these raw materials that has led to shortage.

57. Table E gives the list of raw materials reported to be in short supply. There are 110 such raw materials of which 40 are produced in India, 44 are not produced in India, 11 are produced in India as well as imported and for the remaining 15 raw materials no such information is available. These particulars are according to the respondent factories. The dominance of the imported raw materials can be seen from this. In order to know the situation governing the supply of these raw materials indigenously produced, this list of raw materials (excluding those which are exclusively imported) is compared with the list of 686 products covered in this study. It is gratifying to note that 34 raw materials are covered as products under our study. The following table (extracted from Table A) describes the situation regarding these 34 products (which are reported as raw materials in short supply).

58. It is surprising to note that all these products have an unutilised capacity of more than 10%, except bicycle tyres, bicycle tubes and Sodium Sulphate which show over-utilisation, and coking coal, molasses, soda ash and copper (refined) which show less than 10% unutilised capacity. Perhaps, there is need to create additional capacity in respect of the latter two sets of products. Considering the first set of products, (which have more than 10% unutilised capacity) we may note that the reason for unutilised capacity is shortage of raw materials in a large number of these cases. In a few cases, inadequate demand is reported to be one of the reasons. These are copper (refined), coal,

Table 13. Situation in respect of certain raw materials reported to be in short supply

S.No. as in Table A	Name of the Product	U	O	u	C	Reason
1	Coal	12			NA	38a 62g
2	Coking Coal	8			NA	g
14	Gypsum	12			NA	g
18	Wheat flour	67				c
24	Sugar	20				c
25	Molasses	2				c
27	Groundnut Oil	63				74c 10d 16g
43	Rectified Spirit, Power & Ind. Alcohol	72		62	5	c
108	Bicycle tyres		19			k
109	Bicycle tubes		23			k
157	Titanium dioxide	25				d
170	Caustic Soda	25		22	17	g
174	Soda ash	5		8	12	g
186	Potassium chlorate			14	*	
194	Sodium sulphate			-10	*	
200	Formaldehyde	50				c
202	Benzene			41	*	
210	Styrene	31				c
212	Urea Formaldehyde Resin	83				c
216	Resins	91		54	9	7c 93e
236	Dyes and Pigments	61				7a 90e 3g
291	Glycerene			33	*	
300	Glue and gelatine		7	76	13	k
371	Steel	29	1			42a 58b
372	Stainless steel sheets	65				c
384	Foundry castings	64				g
386	Forgings	38				62a 38g
396	Copper refined	3		1	96	b
399	Brass sheets	91				c
410	Refined Lead	53		87	28	c
412	Gold				NA	*
417	Zinc sheets and strips				12	*
616	Bare conductors	34				a
679	Industrial Brushes	40				c

Contd...

Table 13 - Contd.

Note: U denotes percent unutilised capacity and O denotes percent overutilised capacity according to Survey data.

u denotes percent unutilised capacity according to MSP data. (If it is negative, it indicates overutilisation).

C denotes the capacity of the product according to Survey expressed as percent of the capacity of the same product according to MSP, adjusted for the differences in the number of shifts worked as reported in survey and MSP.

* denotes inability to get this figure since units are not comparable.

The letters under the column 'Reason' denote as follows.

a denotes inadequate demand.

b denotes inadequate demand as one 'among' other reasons.

c denotes shortage of raw materials.

d denotes shortage of raw materials as one among other reasons.

e denotes inadequate demand and shortage of raw materials.

g denotes 'other' reasons.

k means that no reason is given.

steel, forgings and bare conductors. In the case of the last product, inadequate demand is the only reason. This aspect needs to be probed into further to understand the contradiction in this particular case. On the whole, the shortage of raw materials may be said to be mostly due to the underutilisation of the capacity of raw material manufacturing industries; the underutilisation in these industries in turn is mostly due to shortage of raw materials required by them.

Import liberalisation policy

59. The shortage of raw materials and its repercussions have been analysed. From Table E we may note that out of 110 raw materials reported to be in short supply 44 are imported. A considerable dependence on imported raw materials is clear. Ever since 1958, when the foreign exchange difficulties became supreme, a constant screening and improvement of the import policy of the Government has been evident. After devaluation in 1960, a radical thinking on the import policy has taken place. The policy of liberalisation of imports during the year 1967-68, particularly in the latter half of this year, it was felt, might have produced a desirable atmosphere for the industries. With a view to know from the industries how they considered this policy from their viewpoint, a question was introduced in the proforma. The question was, 'Has the recent policy of import liberalisation helped?' The table below summarises their answer to this.

60. This table shows that, out of 517 survey products, the policy is useful in 36% of the products, not useful in 26%, not applicable in 23% and nothing mentioned in remaining 15% of the products. If we consider the cases where nothing is mentioned about the policy and believe that these cases may as well be those where the policy is not applicable (otherwise, it may be argued, they would have cared to answer this vital question of their concern), the area where import policy is felt comes to about half. This apart, it is clear from the table that the recent policy of import liberalisation seems to have helped the industries, by and large. Considering the reported effect of the policy industry-wise, it appears that it has helped relatively in textile, rubber, heavy chemicals, other chemicals, basic metal, non-electrical and electrical machinery industries. It seems to have not helped to that extent in food, paper and fertilizer industries. While we note here that the policy has helped more, one wonders whether it is too liberal in certain cases if we recall the list of products reported to have been substituted by the imported ones (See Table 12). In reading this, it is to be borne in mind that the policy of import liberalisation is quite complex and the general reaction is depicted on the skeleton information available in the survey.

Table 14. Distribution of survey products according to their industries and their assessment of whether the recent policy of import liberalisation helped

S. No.	Industry	1	2	3	4	5
1	Mining Industries	8	-	-	7	15
2	Food Industries	11	2	6	6	25
3	Beverage Industries	1	-	-	1	2
4	Tobacco Manufacturers	-	-	-	2	2
5	Textile Industries	-	3	1	1	5
6	Footwear Industries	1	-	-	1	2
7	Wood and Furniture	1	1	1	7	10
8	Paper Industry	1	1	5	8	15
9	Printing and Publishing	-	-	-	-	-
10	Tanneries and Leather	4	-	1	1	6
11	Rubber Industries	2	14	5	9	30
12	Fertilizer Industries	-	1	4	-	5
13	Heavy Chemical Industries	3	23	5	4	35
14	Other Chemical Industries	12	34	27	18	91
15	Refractory, Glass, Cement etc.	7	8	7	16	38
16	Basic Metal Industries	6	14	5	11	36
17	Metal products Industries	5	18	20	3	46
18	Non-Electrical Machinery and Equipment Industries	8	31	22	21	82
19	Electrical Machinery and Equipment Industries	3	18	8	1	30
20	Transport Equipment Industry	3	8	7	2	20
21	Miscellaneous	2	9	11	-	22
Total		78	185	135	119	517
%		15	36	26	23	

Note:

- 1 = Not mentioned
- 2 = Helpful
- 3 = Not helpful
- 4 = Not applicable
- 5 = Total

Outlook of production for 1968-69

61. We have so far considered the reasons for unutilised capacity and have tried to understand more deeply the two important reasons, namely, inadequate demand and shortage of raw materials. In order to have some idea about the outlook* of the industries in respect of production for the year 1968-69, the factories were requested to indicate this as a percent of the production during the year 1967-68. Most of them have indicated this by giving the percentages, productwise, while a few have mentioned it as good, bad or no change. Considering an expectation of increased production in 1968-69 by more than 5% of the production in 1967-68 as reflecting good outlook, of decreased production by more than 5% as bad outlook, and that of intermediate position as reflecting same outlook (no change), the given information is classified in respect of the 803 product-factories, and presented in the table below.

Table 15. Outlook for 1968-69

Outlook	No.	%
Good	361	45.0
Same (no change)	200	24.9
Bad	61	7.6
Not mentioned	181	22.5
Total	803	100.0

Note: The number of product-factories is given in Column 2.

This shows that good outlook prevails by and large. If we exclude the product-factories for which no outlook is given and consider the position regarding remaining product-factories, we note that good outlook is reported in 58%, same outlook in 32% and bad outlook in 10% of these cases. By and large, this is not indicative of a wide-spread and vigorous industrial activity in view of large unutilised capacity in 1967-68 and an expectation of less than 5% increase or even decrease in 42% cases.

*The popularly known Munich Business Test has done pioneering work in this direction. It gets monthly data on matters like this and gives forecasts, which are hailed by the industries as giving very useful business intelligence and which are useful for economic analysis as well, particularly the business cycles.

Reasons and Outlook

62. Before we proceed to get a picture of product-wise (and then industry-wise) outlook, it would be useful to examine how the outlook is related to the reasons for unutilised capacity in 1967-68. The following table gives the relevant data. This table shows that relatively good outlook prevails in all cases, whatever the reasons for unutilised capacity are, except in those for which no reasons for unutilised capacity are given. Broadly speaking, the outlook is relatively good in cases of product-factories for which 'other' reasons exist as the only reason, or, as one of the reasons for the unutilised capacity. This may be taken to indicate that the industries anticipate to overcome the 'other' reasons with greater ease. We may now consider the outlook industry-wise.

Industry-wise Outlook

63. The information regarding outlook in case of 803 product-factories is suitably aggregated to get productwise outlook for 517 products. (This information is given in Table A). These products are classified into the broad groups of industries, according to their outlook, to get an industrywise picture of outlook, which is given below.

64. Of the 517 Survey products, 47% show good outlook, 25% show no change, 8% indicate bad outlook and 20% have nothing to report. Comparing this with similar figures regarding the product-factories (in table 15) the relative positions are practically same. The pattern of outlook in different industries is more or less similar to what we have seen in respect of all industries put together. Perhaps, the exceptions are food, paper, tanneries and leather industries, heavy chemical, refractories etc. basic metal, metal products and miscellaneous industries where the outlook is not as good as it is in other industries. To sum up, one may note a general good outlook for 1968-69. If we recall that the industrial activity in 1967-68 is only around half the capacity, and that the outlook is either same or bad in quite a considerable number of products, one would feel that a very vigorous and widespread industrial activity is rather not anticipated according to the industries.

Conclusion

65. We have been able to get a broad picture of the extent of unutilised capacity and reasons for the unutilised capacity during 1967-68, and the outlook of production of 1968-69. This broad picture has emerged out of the detailed productwise data available under a Survey carried out by the Gokhale Institute of Politics and Economics, Poona, and also

Table 16. Reasons for unutilised capacity, and outlook for 1968-69, regarding 803 product-factories

S. No.	Reason for unutilised capacity in 1967-68	Outlook for 1968-69					%
		bad	same	good	N.A.	Total	
1.	Inadequate demand	20 (10)	69 (33)	117 (57)	56	262	32.6
2.	Inadequate demand as one among 'other' reasons	5 (10)	12 (23)	36 (67)	10	63	7.8
3.	Shortage of raw materials	14 (13)	35 (32)	60 (55)	30	139	17.3
4.	Shortage of raw materials as one among 'other' reasons	1 (4)	6 (22)	20 (74)	12	39	4.9
5.	Inadequate demand and shortage of raw materials	2 (9)	6 (29)	13 (62)	10	31	3.9
6.	'Other' reasons	8 (8)	21 (22)	67 (70)	21	117	14.6
7.	No reasons given	11 (10)	51 (46)	48 (44)	42	152	18.9
Total		61 (10)	200 (32)	361 (58)	181	803	100.0

Note: Figures in brackets are percentages to the total number of product-factories corresponding to the given reason, for which the outlook is available.

Table 17. Number of Survey products according to outlook for 1968-69 in various industries

S. No.	Name of the industry	Outlook				Grand Total	
		go- od	sa- me	bad	N. A.		
1.	Mining Industries	7	4	1	3	15	45
2.	Food Industries	9	11	-	5	25	27
3.	Beverage Industries	1	-	-	1	2	3
4.	Tobacco Manufacturers	2	-	-	-	2	2
5.	Textile Industries	4	1	-	-	5	12
6.	Footwear Industries	1	1	-	-	2	2
7.	Wood and Furniture Industries	7	3	-	-	10	15
8.	Paper Industries	8	5	1	1	15	17
9.	Printing and Publishing Industries	-	-	-	-	-	-
10.	Tanneries and Leather Industries	1	4	-	1	6	9
11.	Rubber Industries	18	2	2	8	30	35
12.	Fertilizer Industries	3	1	-	1	5	11
13.	Heavy Chemical Industries	16	11	2	6	35	60
14.	Other Chemical Industries	39	18	10	24	91	111
15.	Refractories, Glass, Cement etc. Industries	20	15	2	1	38	45
16.	Basic Metal Industries	17	13	2	4	36	54
17.	Metal Products Industries	9	15	6	16	46	56
18.	Non-Electrical Machinery and Equipment Industries	37	14	12	19	82	118
19.	Electrical Machinery & Equipment Industries	22	5	1	2	30	39
20.	Transport Equipment Industries	16	3	-	1	20	26
21.	Miscellaneous Industries	8	4	3	7	22	29
Total		245	130	42	100	517	686
Percent		47	25	8	20	100	

Note: The number of products under study is given in the last column (grand total). The column preceding it gives the number of survey products.

N.A. - denotes that outlook is not mentioned.

certain other published data, important of which is the Monthly Statistics of Production of Selected Industries of India (MSP, in short).

66. The product-wise details of unutilised capacity are available in respect of 686 products, of which 318 are exclusively Survey products, 199 are Survey products identified with MSP products and 169 are exclusively MSP products. The capacity of all Survey products is on the basis of the highest output with the existing fixed assets and with the existing pattern of shift work. The capacity of exclusively MSP products is based on similar considerations with a difference that, in this case, the number of shifts considered for calculating the capacity is not actual but stipulated by data Agencies. By and large, the basis is the existing practice of shift work. About half of these 686 products show an unutilised capacity of more than 50%.

67. If we aggregate these figures of percent unutilised capacity by using the estimated values of capacity of each product in 1967-68 (at 1963 producers' prices) as the weights, the resulting industry-wise broad picture shows that many intermediate and capital goods industries have an unutilised capacity of more than 50%. Metal products, non-electrical machinery and equipment, fertiliser and food industries show more than 60% unutilised capacity. Mining, beverages and footwear industries show less than 20% unutilised capacity. On the whole, the industrial activity during 1967-68 seems to be around only half the capacity.

68. The reasons for the unutilised capacity of 517 survey products are provided by the factories responding to our survey. It appears that inadequate demand is the reason in case of nearly 42% of these products; shortage of raw materials is the reason in case of another 21% of these products; and both affect 4% more of these products. Inadequate demand or shortage of raw materials or both have therefore affected nearly two-thirds of the products; further, these are associated with some other reason like power shortage, labour trouble, inadequate finance etc. in another 17% of the products. The industry-wise analysis of reasons shows that the inadequate demand has generally affected certain consumer and engineering industries and the shortage of raw materials has generally affected agriculture-based industries. It is to be borne in mind that such a hard division of industries according to reasons is rather difficult and what is stated here is only indicative. The relevant tables should be consulted to know details.

69. A further analysis of the situation governing the inadequate demand - the situation as assessed by the factories experiencing inadequate demand for their products concerned - shows that the inadequate demand is the result

of the reduced level of consumption by the final consumers or the curtailed level of production of the customer-industries in a large number of cases. It also shows that substitution by imported products is at the back of inadequate demand in case of 11 products. It further reveals that the capacity regarding 16 products is in excess of what the economy can normally absorb at this stage

70. In the survey, 110 raw materials are reported to be in short supply. It is further reported that 44 of these are imported indicating the dependence on imports. An analysis of the situation governing the indigeneous raw materials, as reflected by the details available in our study in respect of 34 raw materials, indicates that the raw material producing industries have unutilised capacity. The reason for the unutilised capacity in a large number of such industries is the shortage of raw materials required by them. It also shows that the supply of certain raw materials can be increased only by creating more capacity (if imports are ruled out). During the year 1967-68 and particularly during the latter half of this year, the Government of India adopted a liberal policy of import in order to help the industrial activity. To a question whether the liberalisation has helped the industries many industries have testified that it has helped, except perhaps in food, paper and fertiliser industries.

71. The outlook of production for 1968-69 compared to the production in 1967-68 is generally good. Considering that an expectation of increased production in 1968-69 over that in 1967-68 by more than 5% as reflecting good outlook, of decreased production by more than 5% as bad outlook and the remaining intermediate position as reflecting no change, it is seen that the outlook is good in 59%, same in 31% and bad in 10% of the products (for which outlook is mentioned). Though the expectation for 1968-69 is generally good this is not to be taken as indicative of a widespread and vigorous industrial activity in 1968-69, in the context of large unutilised capacity in 1967-68. Examining the relation between the reasons for unutilised capacity in 1967-68 and outlook for 1968-69, it appears that the outlook is particularly good in case of those products for which 'other' reasons are the only reasons, or, are one of the reasons for unutilised capacity.

72. In conclusion it may be said that the task of reducing the level of unutilised capacity is, indeed, very great. The inadequate demand, particularly for capital goods, is indicative of slackened investment. It is, therefore, important to keep up the investment programmes. The position regarding shortage of raw materials may be improved by

proper import policy, better performance of agriculture and greater industrial activity. All this calls for an integrated action aimed at building up a consistent system of industrial capacities so that the wastage of resources arising out of unutilised capacity is minimised. The detailed analysis of the industrial situation given here coupled with the visualisation of the same in the frame of industrial interdependence (viz. Input-Output analysis) would constitute the requisite basis for such an action.

LM:
171268.

Explanatory Note to Table A

Column

- 1 Serial number of the product.
- 2 Name of the product.
- 3 Unit in which production is expressed.
- 4 Reported production during the year April 1967 to March 1968 in case of Survey product; Estimated production for the same year 1967-68 in case of non-common MSP product (which is indicated by (*) in Column 9).
- 5 Reported capacity during the year 1967-68 in case of survey product; Estimated capacity during 1967-68 in case of non-common MSP product (which is indicated by (*) in column 9).
- 6 Unutilised capacity as a percent of total capacity reported in the Survey.
- 7 Over-utilised capacity as a percent of total capacity reported in the survey. (Note that these two columns are blank in case of non-survey products).
- 8 Unutilised capacity as a percent of the total capacity estimated from MSP data. The basis of capacity used in case of common products (products common to Survey and MSP) is the average number of shifts reported in the Survey. The basis in respect of the remaining MSP products is the one used in MSP data. See below for exception regarding textile products (Serial numbers 48 to 51).
- 9 (i) The coverage by the survey is indicated here as a percent of the capacity reported in the Survey to that estimated from MSP for the year 1967-68. In estimating the capacity from MSP data, the basis of the capacity is the average number of shifts according to Survey.
 (ii) Whenever the figure of capacity is not available from MSP, the coverage is indicated as a percent of the production reported under Survey to that estimated from MSP.
 (iii) This figure is available in respect of common products only.

Column

- 9 (iv) If there is a mark (*) in this column, the product corresponding to this mark is a non-common MSP product; if there is a figure, the product is a common product. if it is blank, the corresponding product is a non-common survey product.
- 10 Ex-factory value of production in thousand Rupees is given in case of Survey products.
- 11 Reasons for unutilised capacity are listed here. If there is only one reason it is indicated by certain letter. The following is the meaning :
- a - inadequate demand.
 - b - inadequate demand as one, besides 'other' reasons.
 - c - shortage of raw materials.
 - d - shortage of raw materials as one, besides 'other' reasons.
 - e - inadequate demand and shortage of raw materials.
 - g - 'other' reasons (like power shortage, labour trouble, inadequate finance, lack of skilled labour, delay in supply of raw materials, etc.)
 - h - No reason given for the unutilised capacity
 - k - The product has either no unutilised capacity or has over-utilised capacity.
- If there are two or more reasons for the unutilised capacity of a given product, they are indicated by the corresponding letters. Each letter is preceded by a figure which shows the percent of the unutilised capacity associated with the particular reason. For example, 38a 62g against the product Coal (S.No.1) shows that 38% of the unutilised capacity in this product is due to inadequate demand and 62% is due to 'other' reasons.
- 12 Average number of shifts worked by the factories producing the given product is given here, based on Survey information. It is a weighted average number; weights being proportional to the capacity of individual factories.
- 13 Highest number of shifts reported by any factory producing the given product is given here, based on Survey information.

Column.

- 14 Outlook of production for the year 1968-69 as compared to the actual production in 1967-68 is indicated by a letter. G - good; S - same (no change); B - bad; and N - Outlook is not mentioned.
- G indicates an expectation of increase by more than 5 %.
- S indicates an expectation of increase or decrease by 5% or less.
- B indicates an expectation of decrease by more than 5%.

Note regarding textile products at S.Nos.48 to 51 :

- (i) The estimated figures of capacity given in column 5 are on the basis of MSP data in units given below :

S.Nos.	Unit
48, 50	Number of spindles
49, 51	Number of looms

- (ii) The unutilised capacity given in Column 8 is computed from monthly data regarding machine activity given in 'Indian Textile Bulletin'. The figure refers to the monthly average, for the calendar year 1967.

General Notes : N.A. = Not available
 N.P. = Not possible
 = Negligible
 - = Nil.

Note regarding electricity at S.No.684

The production is expressed in units KWH while the capacity is in KW which is a rate. The quantity of capacity, therefore, depends on the length of time. The latter depends on utilisation since electricity cannot be stored. Thus it is really difficult to get an estimate of capacity. The respondent units, however, have indicated this on the basis of their assessment.

Table A : Product-wise details of production, capacity, unutilised capacity during 1967-68, and reasons; outlook for 1968-69

S.No 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
<u>Mining Industries</u>				
1	Coal	Tonnes	4542446	5164474
2	Coking coal	Tonnes	220000	240000
3	Carbonised briquettes	Tonnes	99024	363000
4	Washed coal	Tonnes	951470	977600
5	Iron ore	Tonnes	2619713	1048908
6	Iron ore (Fine)	Tonnes	20271	34946
7	Magnesite iron ore	Tonnes	7000	25000
8	Magnetite ore	Tonnes	5579	5579
9	Crude oil	'000 Bar.	18	17
10	Fire clay	Tonnes	3917	4500
11	Vermiculite	Tonnes	24	144
12	Quartz	Tonnes	41169	46500
13	Dolomite	Tonnes	6016	3300
14	Gypsum	Tonnes	3500	4000
15	Mica	Tonnes	47	47
<u>Food Industries</u>				
16	Butter	Tonnes	72	84
17	Tamarind Powder	Tonnes	100	100
18	Wheat flour	Tonnes	2489	7467
19	Other Wheat Products	Tonnes	3078	52006
20	Flour milling & grinding	'000 Tonnes	1280	3269
21	Rice	Tonnes	387	2500
22	Dal mill products	Tonnes	639	7260
23	Biscuits	Tonnes	12000	18000
24	Sugar	Tonnes	78236	97356
25	Molasses	Tonnes	15918	16190
26	Confectionary	Tonnes	1085	5500
27	Groundnut oil	Tonnes	2680	7290
28	Groundnut oilcakes	Tonnes	33	324
29	Gingelly oil	Tonnes	763	875
30	Gingelly oilcake	Tonnes	142	189
31	Mustard oil	Tonnes	150	220
32	Vanaspati	Quintals	4227731	5882493
33	Tea	Kilograms	69102	100000
34	Salt	Tonnes	115448	197500
35	Starch (Tapioca)	Tonnes	4706	15000

S.No	U	0	u	c	Value	Reasons	\bar{n}	n	L
1	6	7	8	9	10	11	12	13	14
1	12				127180	38a 62g	2.9	3	S
2	8				7920	g	3.0	3	G
3	73		N.A.	6	N.A.	a	3.0	3	G
4	3				45927	g	2.0	2	N
5		150			N.A.	k	2.1	3	G
6	42		N.A.	13	N.A.	a	3.0	3	B
7	72				196	a	1.0	1	G
8			N.A.	2	211	k	1.0	1	S
9		6			N.A.	k	3.0	3	G
10	13		N.A.	1	230	38a 62g	1.9	3	G
11	83				3	g	1.0	1	G
12	11		N.A.	17	571	g	1.0	1	N
13		82	N.A.	1	139	k	1.0	1	N
14	12		N.A.	..	91	g	1.0	1	S
15			N.A.	..	376	k	1.0	1	S
16	14				432	c	1.0	1	G
17					28	k	2.0	2	S
18	67				16193	c	3.0	3	N
19	94				2123	c	3.0	3	N
20			61						
21	84				253	c	1.0	1	N
22	91				1090	g	1.0	1	G
23	33				65000	c	3.0	3	S
24	20				150020	c	3.0	3	G
25	2				N.A.	c	3.0	3	S
26	80				5000	c	3.0	3	S
27	63				7880	74c 10d 16g	2.8	3	G
28	90				18	c	3.0	3	N
29	13				3346	35a 65g	2.6	3	G
30	25				131	a	1.0	1	S
31	32				75	c	1.0	1	N
32			28	*					
33	31				346	c	1.0	1	G
34	42		N.A.	3	2055	g	1.0	1	G
35	69				6212	g	3.0	3	S

S.No 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
36	Dextrines	Tonnes	1437	3000
37	Glucose (Liquid)	Tonnes	100	2250
38	Starch	Tonnes	200	1130
39	Papain	Kilograms	15000	50000
40	Pectin	Kilograms	1000	10000
41	Starch (Tamarind K.P.)	Tonnes	1350	1950
42	Sago	Tonnes	750	1026
<u>Beverage Industries</u>				
43	Rectified Spirit (Ind.)	'000 Litres	3783	13500
44	Liquor	Litres	300954	300954
45	Beer and Ale	'000 Litres	18467	21012
<u>Tobacco Manufacturers</u>				
46	Smoking Tobacco	Kilograms	5226	12040
47	Cigarettes	Millions	4554	10535
<u>Textile Industries</u>				
48	Cotton Spinning	'000 Kgs.	926259	16853225
49	Weaving of cotton textile	'000 Metres	4268388	208269
50	Woollen Worsted Yarn	'000 Kgs.	16810	223902
51	Woollen Worsted Fabric			
	(i) Wearable	'000 Metres	9227)	
	(ii) Non-wearable	'000 Kgs.	3318)	2495
	(iii) Hosiery	'000 Kgs.	186)	
52	Embroidery (Textile)	'000 Metres	1056	1200
53	Ginned cotton	Tonnes	585	3744
54	Pressing of Cotton	Tonnes	1620	5400
55	Leather cloth	'000 Metres	11379	12556
56	Linoleum	'000 Metres	915	1064
57	Textile Packing Material	Tonnes	275	900
58	Laminated Hessian bags	'000 Nos.	2035	6824
59	Cotton and hair belting	Tonnes	397	1380
<u>Footwear etc. Industries</u>				
60	Leather Footwear	'000 Pairs	15000	15016
61	Industrial Hand Gloves	Pairs	12000	66000

S.No.	U	0	u	c	Value	Reasons	\bar{n}	n	L
1	6	7	8	9	10	11	12	13	14
36	52				2299	g	3.0	3	S
37	95				180	g	3.0	3	S
38	82				240	3a 97d	1.0	1	S
39	70				1200	a	1.0	1	S
40	90				60	a	2.0	2	G
41	31				720	a	2.0	2	G
42	27				953	d	1.0	1	S
43	72		62	5	881	c	3.0	3	G
44					N.A.	k	3.0	3	N
45			12	*					
46	56				388	b	3.0	3	G
47	57		34	19	151465	b	3.0	3	G
48			20	*					
49			32	*					
50			51	*					
51			67	*					
52	12				6356	d	3.0	3	S
53	84				60	c	2.0	2	G
54	70				155	c	1.0	1	G
55			9	*					
56			14	*					
57	69				2250	c	3.0	3	G
58	70				3640	b	3.0	3	G
59			71	*					
60	...		-26	176	134716	k	1.0	1	S
61	82				21	g	1.0	1	G

S.No 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
<u>Wood and Furniture Industries</u>				
62	Sawn Timber	Cft	119827	219392
63	Railway sleepers	Cft	2139	36000
64	Tea chest plywood	Sq.metres	311797	769298
65	Plywood	Sq.metres	458839	577897
66	Wooden boxes	Numbers	18338	18538
67	Cardboard boxes	Numbers	301563	442924
68	Wooden planks	Numbers	252764	263514
69	Flush doors	Numbers	6088	6700
70	Electric fittings	'000 Rupees	291	291
71	Cork discs	'000 Number	1224893	648000
72	Cork sheets	Sq.metres	843209	1004400
73	Cork stoppers	'000 Number	235547	198160
74	Particle board	Sq.metres	647925	3891533
75	Card staves	Numbers	135407	168000
76	Wooden furniture	'000 Rupees	8	12
<u>Paper Industries</u>				
77	Liquid Paper Pulp	Tonnes	100	200
78	Duplicating Stencil	Quires	5540	21540
79	Newsprint	Tonnes	31270	30000
80	Writing & Printing Paper	Tonnes	63965	79863
81	Paper boards	Tonnes	5599	5588
82	Wrapping & Packing Paper	Tonnes	4426	6870
83	Straw boards	Tonnes	10085	21696
84	Kraft Paper	Tonnes	19418	21400
85	Waterproof paper	Tonnes	305	508
86	Waterproof paper	'000 Rupees	2435	6670
87	Mill boards	Tonnes	4100	21125
88	Hardboard	'000 sq.met.	2600	8579
89	Insulation board	Tonnes	1178	6000
90	Office files	Gross	5930	7375
91	Paper cones	Tonnes	487	720
92	Paper tubes	Tonnes	230	360
93	Paper ring tubes	Tonnes	89	120

S.No	U	O	u	c	Value	Reasons	\bar{n}	n	L
1	6	7	8	9	10	11	12	13	14
62	45				944	16a 84c	1.0	2	G
63	94				7	c	1.0	1	S
64	59		I		1339	97d 3e	3.0	3	G
65	21		I	20	2204	91d 9e	1.5	3	G
66	1			4	497	c	1.0	1	G
67	32				799	84a 8b 8g	1.1	2	G
68	4				190	g	1.0	1	G
69	9				406	c	1.0	1	S
70	0				291	k	1.0	1	S
71			-89	*					
72			16	*					
73			-19	*					
74			83	*					
75			19	*					
76	33				8	a	1.0	1	G
77	50				19	a	1.0	1	G
78	74				58	c	1.0	1	G
79		4	-41	100	32844	k	3.0	3	S
80	20		I		107766	18a 62c 20g	3.0	3	S
81		...	I	15	8492	k	3.0	3	S
82	36		I		8852	g	3.0	3	G
83	54				8857	c	3.0	3	S
84	9				24777	g	3.0	3	B
85	40				1039	c	1.0	1	N
86	63				2435	14a 86b	2.4	3	G
87	80				3000	99a 1e	2.9	3	S
88			70	*					
89			80	*					
90	19				378	c	1.0	1	G
91	32				2302	a	3.0	3	G
92	36				1254	a	3.0	3	G
93	26				1213	a	3.0	3	G

S.No 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
<u>Tanneries and Leather Industries</u>				
94	Vegetable Tanned Sole	Kilograms	357100	441544
95	Vegetable Tanned Kattai	Kilograms	248123	305973
96	Chrome Tanned band	Kilograms	45718	59662
97	Leather	'000 Number	1051	1051
98	Travel goods leather	Number	45190	610545
99	Chrome leather washer	Number	373765	400000
100	Pickers (Leather)	'000 Number	1420	4284
101	Picking bands	Kilograms	172954	609360
102	Leather belting	Kilograms	88435	282000
<u>Rubber Industries</u>				
103	Car tyres retreaded	Numbers	20000	30000
104	Scooter tyres	Numbers	3600	5400
105	Giant tyres	Numbers	625	2600
106	Auto tyres	Numbers	596658	674365
107	Auto tubes	Numbers	721960	852760
108	Bicycle tyres	Numbers	4751100	4000000
109	Bicycle tubes	Numbers	4934800	4000000
110	Repair material	Tonnes	150	300
111	Camel Back	Tonnes	3603	4950
112	Rubber Adhesive	Kilograms	4000	12000
113	Brake hoses	Numbers	124606	180000
114	High pressure hoses	Numbers	14250	12000
115	Fuel & Oil hoses	Numbers	318738	600000
116	Special purpose hoses	Numbers	40	160
117	Vacuum hose	Numbers	120310	540000
118	Surgical gloves	Pairs	120000	72000
119	Railway buffer spring	Numbers	142980	840000
120	Rubber balloon	Gross	262013	262013
121	Rubber components	'000 Rupees	286	1327
122	Rubber compound	Tonnes	17	23
123	Tread Rubber	Tonnes	11500	11565
124	Dock fenders	Kilograms	35019	35019
125	Rubber channels	Kilograms	20000	40000
126	Rubber rollers	Numbers	60	120
127	Latex Foam Sponge	Kilograms	29000	40000
128	Automobile cover	Numbers	177983	240000
129	Rubber belting	Metres	1213343	1920000
130	Fan, Industrial belt	Numbers	889900	960000
131	Vulcanising solution	Litres	6605	10000

S.No 1	U 6	0 7	u 8	c 9	Value 10	Reason 11	\bar{n} 12	n 13	L 14
94	19		67	N.P.	2142	a	2.0	2	S
95	19				3133	a	2.0	2	S
96	23		12	N.P.	317	a	2.0	2	S
97					40207	k	N.A.	-	S
98	92				249	99a 1g	1.0	1	G
99	6				224	a	1.0	1	N
100			67	*					
101			72	*					
102			69	*					
103	33				1100	b	2.0	2	G
104	33				75	b	2.0	2	G
105	76				100	b	2.0	2	G
106	11		3	20	208640	g	3.0	3	G
107	15				22653	g	3.0	3	G
108		19			25310	k	3.0	3	N
109		23			11943	k	3.0	3	N
110	50				2700	g	3.0	3	G
111	27		66	15	26092	g	3.0	3	G
112	67				30	a	1.0	1	N
113	31				867	a	1.0	1	N
114		19			952	k	1.0	1	N
115	47		53	39	1862	a	1.0	1	N
116	75				4	a	1.0	1	B
117	78				801	a	3.0	3	G
118		67			90	k	1.0	1	S
119	83				599	a	3.0	3	G
120	0				303	k	1.0	1	B
121	78				286	a	1.0	1	N
122	26				95	c	1.1	2	G
123	...				8512	c	3.0	3	G
124	0				220	k	3.0	3	N
125	50				60	a	1.0	1	G
126	50				24	a	1.0	1	G
127	27		9	3	319	a	1.0	1	G
128	26				41909	a	3.0	3	G
129	37				19092	a	3.0	3	G
130	7		60	75	3485	a	3.0	3	G
131	34				17	c	2.0	2	G

S.No. 1	Name of the Product 2	Unit 3	Prod. 4	Cap. 5
132	Transm.& conveyor belting	Tonnes	5378	7296
133	Rubber components of Rly.	'000 Numbers	611	930
134	Ebonite sheets, Tubes	'000 Kg.	112	170
135	Waterproof fabrics	'000 Metres	4417	4786
136	Dipped Rubber Goods	Lakhs	2609	2666
137	Rubber Footwear	'000 Pairs	32342	32558

Fertilizer Industries

138	Superphosphate	Tonnes	388488	422248
139	Urea	Tonnes	88908	172000
140	Double Salt	Tonnes	61384	71500
141	Ammonium Sulphate	Tonnes	241300	320000
142	Ammonium chloride	Tonnes	7732	16380
143	Ammonium phosphate (N)	Tonnes	13906	29352
144	Nitro phosphate (..)	Tonnes	16410	43200
145	Calcium Ammonium Nitrate	Tonnes	113306	204252
146	Ammonium phosphate (P ₂ O ₅)	Tonnes	16858	36696
147	Nitro phosphate (P ₂ O ₅)	Tonnes	15809	35100
148	Mixed Fertilizers	Tonnes	2158	10000

Heavy Chemical Industries

149	Chlorosulphonic acid	Tonnes	2976	10200
150	Alumina Sulphate Fer	Tonnes	36441	50294
151	Magnesium sulphate	Tonnes	565	1887
152	Mercury salts	Kilograms	10064	25000
153	Copper salts	Tonnes	124	160
154	Organo mercurials	Tonnes	288	1047
155	Ferric Alum, Amm sulphate	Tonnes	4500	4800
156	Alumina Sulphate	Tonnes	54	300
157	Titanium dioxide	Tonnes	3760	5000
158	Caustic liquid	Tonnes	6677	8400
159	Alfloc	Tonnes	359	650
160	Liquid Ammonia	Litres	1522	16200
161	Occuline	Litres	4192	64800
162	Trisodium phosphate	Tonnes	4885	4900
163	R. E. Chloride	Tonnes	4100	4200
164	Sodium silicate	Tonnes	1278	2178
165	Potassium Citrate	Kilograms	15177	120000
166	Sodium Citrate	Kilograms	14321	6000
167	Di-calcium phosphate	Kilograms	195	6000
168	Cream of tartrate	Kilograms	553	6000

S.No	U	0	u	c	Value	Reason	\bar{n}	n	L
1	6	7	8	9	10	11	12	13	14
132			26	*					
133			34	*					
134			34	*					
135			8	*					
136			2	*					
137	1		4	57	134826	a	1.0	1	S
138	21		1	N.P	110902	90a 7c 2g	3.0	3	S
139	48		80	N.P	49173	5d 95g	3.0	3	G
140	14		84	N.P	27322	d	3.0	3	G
141	24		91	N.P	82887	d	3.0	3	G
142			53	*					
143			53	*					
144			62	*					
145			44	*					
146			54	*					
147			55	*					
148	78				1079	a	3.0	3	N
149	71				N.A.	58e 42g	3.0	3	G
150	30	3			N.A.	e	3.0	3	S
151	70				124	a	3.0	3	B
152	60				1268	c	3.0	3	G
153	22				1436	a	3.0	3	G
154	72				2049	c	3.0	3	G
155	6				1485	g	3.0	3	G
156	82				27	a	3.0	3	S
157	25				1647	d	3.0	3	S
158	20				N.A.	c	3.0	3	S
159	45				N.A.	a	3.0	3	S
160	91				3	c	1.0	1	G
161	93				5	c	1.0	1	G
162	...				3517	c	3.0	3	G
163	2				7769	c	3.0	3	G
164	41				391	a	3.0	3	G
165	87				106	e	1.0	1	N
166		139			97	k	1.0	1	N
167	97				1	e	1.0	1	N
168	91				5	e	1.0	1	N

S.No 1	Name of the Product 2	Unit 3	Prod. 4	Cap. 5
169	Sodium potassium tartrate	Kilograms	255	6000
170	Caustic Soda	Tonnes	44725	60000
171	Sulphuric acid	Tonnes	185165	273085
172	Nitric acid	Tonnes	123	183
173	Phosphoric acid & comp.	Tonnes	1355	2480
174	Soda ash	Tonnes	44436	46800
175	Ammonia alum	Tonnes	328	600
176	Alumina ferric	Tonnes	2459	3600
177	Hydrochloric acid	Tonnes	5263	9000
178	Liquid chlorine	Tonnes	4857	7500
179	B.H.C. (Tech.)	Tonnes	3379	4800
180	Hydrogen peroxide (liquid)	Litres	1413	81000
181	Calcium carbide	Tonnes	6676	10000
182	Bleaching powder	Tonnes	9071	17784
183	Bichromates	Tonnes	7537	8040
184	Copper sulphate	Tonnes	2096	5340
185	Sodium sulphide	Tonnes	3738	7212
186	Potassium chlorate	Tonnes	4147	4824
187	Calcium carbonate (Prec.)	Tonnes	11642	10620
188	Sodium bicarbonate	Tonnes	20359	30636
189	Bromide	Tonnes	71	456
190	Bromine	Tonnes	153	264
191	Chromic acid	Tonnes	435	648
192	Sodium Hexameta Phosphate	Tonnes	316	720
193	Argon Gas	'000 Cu. Met.	152	354
194	Sodium sulphate	Tonnes	50875	46200
195	Nitrous oxide	Mil. litres	172	300
196	Sodium Aluminate	Tonnes	924	1620
197	Potassium permanganate	Tonnes	691	1270
198	Nickel sulphate	Tonnes	582	1222
199	Sodium Hydrosulphide	Tonnes	4474	7812
200	Formaldehyde	Tonnes	7009	14000
201	Hexamine	Tonnes	0	600
202	Benzene	Litres	20908808	35313000
203	Acetylene	'000 cu. met.	4782	10669
204	Acetic acid	Tonnes	10479	12120
205	Acetic anhydride	Tonnes	3642	3648
206	Acetone	Tonnes	495	696
207	Ethyl acetate	Tonnes	1957	3036
208	Yeast	Tonnes	308	888

S.No.	U	0	u	c	Value	Reason	\bar{n}	n	L
1	6	7	8	9	10	11	12	13	14
169	96				2	e	1.0	1	N
170	25		22	17	43473	g	3.0	3	S
171	32		43	18	73709	6a18c72e4g	3.0	3	S
172	33		4	1	185	g	1.0	1	B
173	45		84	23	4717	a	3.0	3	G
174	5		8	12	20440	g	3.0	3	S
175	45		95	3	148	a	3.0	3	S
176	32		74	1	738	c	3.0	3	G
177	41		73	7	1298	a	3.0	3	S
178	35		46	5	N.A.	a	3.0	3	S
179	30		97	1	N.A.	c	3.0	3	G
180	98		1	N.P	3	c	1.0	1	G
181	33		74	5	7010	b	3.0	3	G
182			49	*					
183			6	*					
184			61	*					
185			48	*					
186			14	*					
187			-10	*					
188			33	*					
189			84	*					
190			42	*					
191			33	*					
192			56	*					
193			57	*					
194			-10	*					
195			43	*					
196			43	*					
197			46	*					
198			52	*					
199			43	*					
200	50				8726	c	3.0	3	G
201	100				0	a	3.0	3	N
202			41	*					
203			55	*					
204			13	*					
205			...	*					
206			30	*					
207			35	*					
208			65	*					

S.No. 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
<u>Other Chemical Industries</u>				
209	Synthetic rubber	Tonnes	19940	30000
210	Styrene	Tonnes	6200	9000
211	Polyster Glass Sheet	Numbers	2250	4000
212	Urea formaledehyde Resin	Tonnes	305	1829
213	Polythene	Tonnes	4368	10000
214	M.F.moulding powder	Tonnes	0	254
215	Synthetic Resin bind.mat.	Kilograms	2097830	3000000
216	Resins	Tonnes	302	3475
217	Plasticizers	Tonnes	2569	3600
218	Phenol moulding powder	Kilograms	491800	980000
219	U.F.Moulding Powder	Tonnes	1090	1524
220	Polysterene mould powder	Tonnes	6311	10000
221	P.V.C.Sheetings	Tonnes	3150	4716
222	Polythene films & tubings	Tonnes	2487	4469
223	Phenolic laminates	Tonnes	2884	2706
224	Polythene moulding powder	Tonnes	8852	17496
225	Carbon di Sulphide	Kilograms	1586661	2737000
226	Viscose rayon yard	Tonnes	3342	3342
227	Viscose staple fibre	Kilograms	3636637	3636637
228	Rayon Acetate Yarn	Tonnes	1808	2004
229	Cellophane	Tonnes	5616	6000
230	Nylon mono-filament	Tonnes	76	88
231	Nylon filament yard	Tonnes	2625	2527
232	Polyster fibre	Tonnes	3279	2004
233	Gunpowder	Tonnes	31	310
234	Safety fuse	'000 coils	34	360
235	Blank cartridges	'000 Number	300	1000
236	Dyes and pigments	Tonnes	900	2341
237	Pigment emulsion	Kilograms	768630	600000
238	Organic pigment powder	Kilograms	237021	400000
239	Optical(Bleaching agents)	Kilograms	365090	279165
240	Oxygen	Cu.metre	243585	302400
241	Carbon di oxide	Tonnes	395	952
242	Eucalyptus oil	'000 Litre	36	36
243	Sandalwood oil etc.	Kilograms	5768	12000
244	Castor oil	Tonnes	573	1000
245	Cotton Seed Oil	Tonnes	1212	3492
246	Cotton seed oil cake	Tonnes	1719	10000

S.No 1	U 6	O 7	u 8	c 9	Value 10	Reason 11	\bar{n} 12	n 13	L 14
209	33				79119	c	3.0	3	G
210	31				23246	c	3.0	3	N
211	44				191	c	2.0	2	N
212	83				1140	c	3.0	3	G
213	56				N.A.	c	3.0	3	N
214	100				0	a	3.0	3	N
215	30		71	18	13519	a	3.0	3	S
216	91		54	9	1377	7c 93e	2.9	3	G
217	29		73	32	19910	c	3.0	3	G
218	50		54	11	2420	c	2.0	2	G
219	28		66	36	5365	a	3.0	3	G
220			37	*					
221			33	*					
222			44	*					
223			-7	*					
224			49	*					
225	42				1336	g	3.0	3	N
226	0		67	3	41980	k	3.0	3	N
227	0		29	5	15017	k	3.0	3	N
228			10	*					
229			6	*					
230			13	*					
231			-4	*					
232			-64	*					
233	90				114	98a 2g	1.0	1	S
234	90				17	g	1.0	1	N
235	70				300	g	1.0	1	N
236	61				55312	7a 90e 3g	2.6	3	G
237		28	71	19	20726	k	2.0	2	S
238	41				7914	a	1.0	1	G
239			30	*					
240	19		40	1	122	c	3.0	3	S
241	58		81	2	595	41a 59c	3.0	3	S
242	0				397	k	1.0	1	S
243	52				1500	e	3.0	3	S
244	43				N.A.	e	1.0	1	N
245	65		N.P.	3	364	84a 16d	2.7	3	S
246	83				860	a	3.0	3	B

S.No. 1	Name of the product 2	Unit 3	Prod 4	Cap. 5
247	Vegetable oils	Tonnes	601	900
248	Phenyle	Litres	10000	50000
249	Paint Oil	Litres	5000	20000
250	French Polish	Litres	13000	52000
251	Enamels	Litres	3180	25000
252	Black Japan etc.	Litres	5800	60000
253	Cement colours	Tonnes	20	50
254	Nitro cellulose laquer	'000 Litre	18	60
255	Thin ancilaries	'000 Rupee	15	53
256	N.C.Thinners	Litres	82474	120000
257	Varnish	Litres	485798	592098
258	Paints	Litres	412500	570000
259	Paints colour pastes	Tonnes	46	150
260	Solution & Paints	'000 Litre	3951	7395
261	Stiff Paints	Tonnes	1844	3075
262	Paints enamels varnish	Tonnes	5779	8000
263	Lead oxide	Tonnes	56	6895
264	Zinc Oxide	Tonnes	6809	18000
265	Sodium metabisulphite	Kilograms	73452	77400
266	Sodium bisulphite	Kilograms	106628	272988
267	Potassium metabisulphite	Kilograms	14944	13176
268	Sodium thiosulphate anhyd	Kilograms	40713	60012
269	Sodium carbonate	Kilograms	73191	136512
270	Sodium Sulphite anhyd.	Kilograms	32056	136512
271	Sodium formaldehyde	Kilograms	2907	13176
272	Fine Chemicals	Kilograms	36000	36000
273	Sodium thiosulphate	Kilograms	351156	443988
274	Gezaniol	Kilograms	25808	19080
275	Ionone	Kilograms	30614	21264
276	Citronellol	Kilograms	25839	15264
277	Hydroquinine	Kilograms	52965	83520
278	DDT (Technical form)	Tonnes	1606	1344
279	Textile auxiliaries	Kilograms	3043970	3299598
280	Heat treatment salts	Kilograms	599219	659141
281	Degreasing agents	Kilograms	188650	207515
282	Water treatment product	Kilograms	81600	89760
283	Drugs & medicines	'000 Rs.	86535	131992
284	Oleic Fatty acids	Tonnes	109	720
285	Metallic Stearates	Tonnes	88	180
286	Auxiliaries Tro. etc	Tonnes	44	420

S.No 1	U 6	0 7	u 8	c 9	Value 10	Reason 11	\bar{n} 12	n 13	L 14
247	33				1955	g	3.0	3	S
248	80				25	c	1.0	1	S
249	75				15	a	1.0	1	S
250	75				40	c	1.0	1	S
251	87				21	17a 83c	1.0	1	G
252	90				12	c	1.0	1	S
253	60				40	c	1.0	1	S
254	70		54	2	184	a	1.0	1	G
255	72				15	a	1.0	1	G
256	31				225	a	1.0	1	G
257	18				1705	14a 86c	2.4	3	G
258	28				1650	76a 24c	2.6	3	G
259	69				138	c	1.0	1	S
260	47		27	20	25590	98e 2g	3.0	3	G
261	40				6542	a	3.0	3	N
262	28				27307	e	1.0	1	G
263	99		71	64	99	d	1.0	1	N
264			62	*					
265	5				163	a	3.0	3	B
266	61				136	c	3.0	3	B
267		13			119	k	3.0	3	B
268	32				107	a	3.0	3	B
269	46				89	a	3.0	3	B
270	76				59	g	3.0	3	B
271	78				30	e	3.0	3	B
272	0				50	k	2.0	2	S
273	21		81	6	583	c	3.0	3	B
274			-35	*					
275			-44	*					
276			-69	*					
277			37	*					
278		19			7870	k	3.0	3	S
279	9	1			22053	g	3.0	3	G
280	9				N.A.	g	1.0	1	G
281	9				N.A.	g	1.0	1	G
282	9				N.A.	g	1.0	1	G
283	35	1	N.P.	N.P.	86535	6a28b35c26e5g	1.8	3	G
284	85				655	a	2.0	2	B
285	51				708	a	2.0	2	G
286	89				265	a	2.0	2	G

S.No 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
287	Glycol glycerene amines	Tonnes	52	120
288	Paint driers	Kilograms	2195	120000
289	Washing soap	Tonnes	3044	5290
290	Toilet soap	Tonnes	38	88
291	Glycerene (Refined)	Tonnes	9000	13440
292	Synthetic detergents	Tonnes	14530	18804
293	Hair oils, cosmetics	'000 Rs.	695	869
294	Agarbattis	Tonnes	50	100
295	Safety matches	Gross	1981842	3050000
296	Bengal matches	Gross	88285	100000
297	Shellac compound	'000 Rs.	16	63
298	Shellac	Tonnes	6192	7400
299	Shellac wax	Tonnes	115	160
300	Glue and Gelatine	Tonnes	1290	1200
301	Kaolin	Kilograms	66000	150000
302	Acacia	Kilograms	410	20000
303	Tragacanth	Kilograms	373	10000
304	Calcium	Kilograms	1400	14000
305	Talc	Kilograms	1177	10000
306	Valve Grinding Paste	Kilograms	249	1130
307	Fountain pen ink	Litres	79680	202464
308	Dry mix for flooring	Tonnes	1500	2400
309	Synthetic emery powder	Tonnes	625	900
310	Printing inks	Tonnes	2066	3099
311	Chemicals	Tonnes	2131	3409
312	Activated earth	Tonnes	1764	2200
313	Activated carbon	Tonnes	1004	1128
314	Myrobalan Extracts	Tonnes	1511	10140
315	Kerosine oil	'000 Tonnes	385	582
316	Light distillates	'000 Tonnes	409	617
317	Diesels	'000 Tonnes	652	985
318	Fuel oil	'000 Tonnes	766	1157
319	Bitumen	'000 Tonnes	142	215
<u>Refractories, Glass, Cement etc. Industries</u>				
320	Fire bricks	Tonnes	33105	40000
321	Bricks	'000 Number	52993	68512
322	Firecrete Refractories	Tonnes	1776	1800
323	Cement compound	Tonnes	548	600

S.No 1	U 6	0 7	u 8	c 9	Value 10	Reason 11	\bar{n} 12	n 13	L 14
287	57				413	a	2.0	2	G
288	98				15365	a	2.0	2	G
289	42	I		I	5046	24a6b55c13g	1.0	2	G
290	57	I	23	2	104	b	1.0	1	G
291			33	*					
292			23	*					
293	20				695	c	1.0	1	G
294	50				135	g	1.0	1	N
295	35	I	35	N.P	15060	e	1.0	1	S
296	12	I		I	380	e	1.0	1	N
297	75				16	c	1.0	1	N
298	16				21484	d	3.0	3	G
299	28				615	d	3.0	3	G
300		7	76	13	4193	k	3.0	3	N
301	56				N.A.	a	1.0	1	N
302	98				5	c	1.0	1	N
303	96				N.A.	a	1.0	1	N
304	90				N.A.	a	1.0	1	N
305	88				N.A.	a	1.0	1	N
306	78				2	a	1.0	1	N
307	61				916	g	1.0	1	G
308	37				762	a	1.0	1	N
309	30				437	a	3.0	3	N
310	33				21014	a	2.0	2	G
311	37				N.A.	a	3.0	3	G
312	20		83	14	1067	a	3.0	3	G
313			11	*					
314			85	*					
315	34	I		I	N.A.	g	3.0	3	G
316	34	I		I	N.A.	g	3.0	3	G
317	34	I	N.P.	N.P.	N.A.	g	3.0	3	G
318	34	I		I	N.A.	g	3.0	3	G
319	34	I		I	N.A.	g	3.0	3	G
320	17				5755	b	2.0	2	S
321	23	I		I	5055	a	2.4	3	S
322	1	I	@	I	1133	a	3.0	3	G
323	9	I		I	1151	a	3.0	3	G

@ this bracket extends upto s.no.326.

S.No 1	Name of the Product 2	Unit 3	Prod. 4	Cap. 5
324	Refractory products	Tonnes	31479	51427
325	Basic bricks	Tonnes	31320	45000
326	Silica bricks	Tonnes	8290	12000
327	Mica bricks	'000 Number	470	4500
328	Terazzo tiles	'000 Number	700	2500
329	Flooring tiles	Sq.ft.	13514	18501
330	Tiles	'000 Number	5638	7088
331	Tiles Ridges & Valleys	'000 Number	208	212
332	Roofing tiles	'000 Number	12947	14000
333	Glazed tiles etc.	'000 Number	10800	14400
334	Glass shells	Lakh pieces	807	1011
335	Sheet glass	Sq.metres	5720983	8850383
336	Optical lenses	Pairs	12000	1200000
337	Laboratory glass	Tonnes	7685	13824
338	Glass tubes & rods	Tonnes	3479	6720
339	Glass bangles	'000 Number	94935	135000
340	Glass products	'000 Rupees	19619	26119
341	Ceramics	'000 Rupees	2454	3561
342	Stoneware pipes etc	Tonnes	14151	21512
343	Stoneware pipes	'000 Rupees	750	750
344	Stoneware	Tonnes	2996	3366
345	White wares	Tonnes	17208	39756
346	Sanitarywares	Tonnes	12227	15192
347	Electrical porcelain	Tonnes	313	660
348	Industrial porcelain	Tonnes	15	40
349	Porcelain Insulators	Tonnes	4133	5000
350	Cement	'000 Tonnes	7061	7682
351	Asbestos Cement products	'000 Tonnes	251	451
352	R.C.C.Pipes	Metres	103721	277012
353	Mild Steel Pipes	R.ft.	100000	250000
354	R.C.C.products	Numbers	21417	32274
355	Hume Steel Pipes	Tonnes	1912	5000
356	Welding flux	Tonnes	48	72
357	Crushed stone	Brass	2600	6300
358	Asphalt	Tonnes	12500	24000
359	Coated abrasives	'000 Reams	166	372
360	Grinding wheels	Tonnes	4061	4666
361	Mica powder	Tonnes	75	300
362	Chalk lumps	Tonnes	6500	10000
363	Whiting powders	Tonnes	8200	12500
364	Graphite powder	Tonnes	760	750

S.No 1	U 6	O 7	u 8	c 9	Value 10	Reason 11	\bar{n} 12	n 13	L 14
324	39	I	65	9 I	8745	67a 33b	1.8	2	S
325	30	I		I	22275	b	2.0	2	S
326	31	I		I	2487	b	2.0	2	S
327	89				470	a	3.0	3	G
328	72				550	g	3.0	3	B
329	27				1339	98a 2g	1.0	1	S
330	20				886	g	1.0	1	G
331	2				76	g	1.0	1	S
332	7				2115	81a 19g	1.0	1	S
333	25		51	N.P.	3996	a	3.0	3	S
334			20	*					
335	35		76	16	23502	63a 37e	3.0	3	G
336	99				100	c	2.0	2	G
337			44	*					
338	48	I		I	4419	b	3.0	3	S
339	30	I	81	3 I	700	g	1.0	1	B
340	25	I		I	19619	38e 62g	3.0	3	G
341	31				2454	24b 76c	1.7	3	G
342	34	I		I	5660	a	2.2	3	S
343	-	I	11	30 I	750	k	1.0	1	S
344	11		40	17	2485	68b 32h	1.5	3	S
345			57	*					
346			19	*					
347	52	I		I	389	a	1.9	2	G
348	62	I	71	12 I	28	a	2.0	2	G
349	17	I		I	13571	a	2.0	2	G
350	10	2	...	68	680812	30a 4b 66g	3.0	3	G
351			44	*					
352	63				2308	96a 4g	1.0	1	G
353	60				40	c	1.0	1	G
354	34				490	97a 3g	1.0	1	G
355	62				3027	a	1.0	1	G
356	33				172	a	1.0	1	G
357	59				169	g	1.0	1	N
358	48				625	g	1.0	1	G
359			55	*					
360			13	*					
361	75				1	a	1.0	1	S
362	35				325	g	2.0	2	G
363	34				533	g	3.0	3	G
364		1			471	k	1.0	1	S

S.No. 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
<u>Basic Metal Industries</u>				
365	Pig Iron	Tonnes	3733526	3157300
366	Semi finished steel	Tonnes	562000	315000
367	Mild steel bars	Tonnes	5289	20000
368	M.S.Rounds	Tonnes	16015	34600
369	Steel Ingots etc	Tonnes	20554	25000
370	Steel Ingots	Tonnes	1948060	2030217
371	Steel	Tonnes	4642000	6504300
372	Stainless steel sheets	Tonnes	3500	10000
373	Rolled products	Tonnes	185567	201500
374	Sleepers	Tonnes	55857	61000
375	Fish Plates	Tonnes	3068	11000
376	Wheelset assembled	Tonnes	20022	57000
377	Heavy Sections	Tonnes	289555	447000
378	Ferro alloys	'000Tonnes	160	N.A.
379	Electrical steel sheets	Tonnes	27638	18000
380	Malleable castings	Tonnes	1655	4200
381	Cast Iron Castings	Tonnes	10092	21287
382	Industrial allum casting	Tonnes	82	500
383	Castings	Tonnes	250	300
384	Foundry castings	Tonnes	4082	11360
385	Grey Iron Castings	Tonnes	3589	4891
386	Forgings	Tonnes	4011	6474
387	Non-ferrous castings	Tonnes	386	1124
388	Steel casting	Tonnes	4535	11291
389	Structural steel	Tonnes	21095	43022
390	Transmission Line Towers	Tonnes	32090	33090
391	Steel Pipes	Tonnes	10981	34138
392	Pipes and Tubes	R.ft.	189636	936000
393	Tubes	'000Metres	1836	1836
394	Spun Pipes	Tonnes	85705	158496
395	Seamless tubes	Tonnes	22822	30000
396	Copper refined	Tonnes	9287	9600
397	Copper sheets, circles	Tonnes	44	65
398	Brass patta	Tonnes	86	1350
399	Brass sheets etc.	Tonnes	114	1200
400	Electric Copper Bars	Tonnes	5460	8400
401	Rolled products	Tonnes	3025	9600
402	Pipes and tubes (copper)	Tonnes	748	5987

S.No 1	U 6	O 7	u 8	c 9	Value 10	Reason 11	\bar{n} 12	n 13	L 14
365	4	22			1125769	g	3.0	3	G
366		78			236040	k	N.A.	-	B
367	73		-88	47	4193	a	2.0	2	S
368	54				11921	77a 11b 12d	1.6	2	S
369	18				17000	b	2.0	2	G
370	4		-36	45	2343622	18a 82g	3.0	3	S
371	29	1	-9	179	2692694	42a 58b	3.0	3	G
372	65				3000	c	1.0	1	N
373	21	13			112059	65a 35b	2.7	3	S
374	8				43010	g	2.0	2	S
375	72				3375	a	3.0	3	S
376	65				28031	g	3.0	3	S
377	35				217166	b	3.0	3	S
378			N.A.	*					
379			-53	*					
380	60				6123	75a 25g	1.8	3	S
381	52				13772	45a 55b	1.8	3	G
382	84				856	b	2.0	2	G
383	17				250	b	2.0	2	G
384	64		82	23	6965	g	2.0	2	G
385	27	1			5663	5b 95g	2.0	2	G
386	38				18359	62a 38g	2.6	3	G
387	66				5997	81b 19g	1.2	2	G
388	60				13394	34a 53b 13g	2.3	3	G
389	51		93	16	30087	15a 44b 41d	2.0	3	G
390	3			67 25	26699	b	2.0	2	G
391	68				8700	b	1.0	1	G
392	80		...	20	229	b	1.0	1	N
393	-				4638	k	1.0	1	N
394	46		78	24	53600	b	2.0	2	G
395			24	*					
396	3		1	96	63152	b	3.0	3	G
397	32				792	d	1.0	1	N
398	94		80	5	N.A.	c	2.0	2	B
399	91				1167	c	1.8	2	S
400	35		79	10	40404	g	3.0	3	G
401	68				27419	c	3.0	3	S
402			73	*					

S.No 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
403	Aluminium(virgin)	Tonnes	104463	93637
404	Sheets and circles	Tonnes	32236	43896
405	Foils	Tonnes	4846	6492
406	Wire rods for A.C.S.R.	Tonnes	36496	36996
407	Rods and Sections	Tonnes	7446	6769
408	Pipes & tubes(Brass)	Tonnes	857	N.A.
409	Antimony	Tonnes	765	1002
410	Refined lead	Tonnes	2336	5000
411	Refined silver	Kilograms	3250	6500
412	Gold	Kilograms	3137	N.A.
413	Brass & copper alloys	Tonnes	5153	6690
414	Arsenical copper rods	Tonnes	60	612
415	Lead Pipes and Tubes	Tonnes	165	4800
416	Lead sheets	Tonnes	1113	3000
417	Zink sheets & strips	Tonnes	4208	4800
418	Liquid gold	Kilograms	2213	12924
<u>Metal Products Industries</u>				
419	Steel containers	Number	130000	220000
420	Tin containers	Number	2057385	4743254
421	Aluminium containers	Number	200000	500000
422	Aluminium seals	'000Nos.	10219	30000
423	Buckets	'000 Rs.	666	1440
424	Buckets	'000Nos.	170	360
425	Aluminium measures	Number	4800	8500
426	Drums	'000Nos.	242	335
427	Kegs	'000Nos.	135	300
428	Cutlery items	Tonnes	10	60
429	Locks metal fittings	'000 Rs.	349	685
430	Staple pins	'000 Nos.	800000	800000
431	Wire nails	Tonnes	210	1120
432	Rivets	Tonnes	25	120
433	Seat frames	Numbers	200	200
434	Gutter (Air India)	Numbers	1150	1150
435	Wires	Tonnes	10	50
436	Bolts	Gross	299813	600000
437	Bolts,Nuts etc.	'000 Rs.	400	600
438	Iron nipples	'000 Nos.	12167	18000

S.No 1	U 6	O 7	u 8	c 9	Value 10	Reason 11	\bar{n} 12	n 13	L 14
403				*					
404			27	*					
405			25	*					
406			1	*					
407				*					
408			N.A.	*					
409			24	*					
410	53		87	28	7008	c	3.0	3	S
411	50				1593	c	3.0	3	S
412			N.A.	*					
413			23	*					
414			90	*					
415			97	*					
416			63	*					
417			12	*					
418			83	*					
419	41				620	56a 44c	1.0	1	B
420	57				5660	17a 83c	1.4	2	S
421	60				50	a	1.0	1	S
422	66				248	c	2.0	2	N
423	54				666	d	1.0	1	N
424	53				N.A.	d	1.0	1	N
425	44				35	e	1.0	1	S
426	28				N.A.	d	1.0	1	N
427	55				N.A.	d	1.0	1	N
428	83				150	c	1.0	1	N
429	49				349	a	1.0	1	N
430	0				300	k	2.0	2	G
431	81				233	a	1.0	1	S
432	79				325	a	1.0	1	N
433	0				6	k	1.0	1	N
434	0				7	k	1.0	1	N
435	80				160	b	1.0	1	S
436	50				1104	b	1.0	1	N
437	33				400	b	2.0	2	G
438	32				147	e	1.0	1	N

S.No 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
439	Zip fastners	Metres	148360	350000
440	Wood screws	Tonnes	209540	720000
441	Machine screws	Gross	1382823	1675000
442	Wire ropes	Tonnes	10643	30773
443	Metal Sheet Stampings	Tonnes	65	200
444	Enamel wares	'000Nos.	28798	52786
445	Iron safe	Number	141	241
446	Razor blades	Lakhs	7323	12240
447	Harricane Lanterns	'000 Nos.	1380	2753
448	Small tools	Number	25547	40012
449	Small tools Acc.	'000 Rs.	2819	3000
450	Vices	Number	18433	30000
451	Hand Pumps	Number	1346	1200
452	Chaff cutter knives	Pairs	155682	450000
453	Machine knives	Number	37966	100000
454	Hacksaw blades	Hundreds	249190	435996
455	Umbrella fittings	Gross	10715	102000
456	Sanitary fittings	'000 Rs.	300	600
457	Beam scales	Number	1200	1800
458	Steel utensils	Tonnes	150	838
459	Brass utensils	Tonnes	136	350
460	Brass utensils etc	Tonnes	5	450
461	German silver utensils	Tonnes	80	550
462	Aluminium etc utensils	Tonnes	1139	2650
463	L.P.G.Cylinder valves	in thousand	171	279
464	Pressure regulator	in thousand	108	144
465	Hot stampings	in thousand	402	600
466	Bicycle brake sets	Sets	3154	120000
467	Non-ferrous products	in thousand	120	400
468	Engg.steel file	in thousand	2197	2880
469	Oil pressure lamps	in thousand	90	188
470	Thermos flasks	in thousand	3018	3780
471	Stoves:Pressure type	Number	110874	315000
472	Stoves:Non-Pressure type	Number	352721	162000
473	Expanded metal	Tonnes	550	6480
474	Bright Bars	Tonnes	28980	50784

S.No	U	0	u	c	Value	Reason	\bar{n}	n	L
1	6	7	8	9	10	11	12	13	14
439	58		-7	9	148	d	1.0	1	S
440	62		-14	N.P	978	41a 59b	1.0	1	S
441	18	1	-10	39	1571	2a 98c	1.0	1	G
442			65	*					
443	68				346	d	1.0	1	S
444			45	*					
445	41				30	g	1.0	1	B
446			40	*					
447	50		28	42	5660	38c 62g	1.0	1	S
448	36				7756	a	2.0	2	S
449	6				2819	a	2.0	2	S
450	39				938	g	N.A	-	G
451		12			60	k	N.A	-	G
452	65				622	b	1.0	1	N
453	62				1198	b	1.0	1	N
454			43						
455	89				122	b	1.0	1	G
456	50				300	a	1.0	1	S
457	33				22	a	1.0	1	S
458	82				4568	c	1.0	1	B
459	61				1735	a	1.0	1	B
460	99				62	c	1.0	1	B
461	85				800	e	1.0	1	B
462	57				12304	a	1.0	1	G
463	39				2135	a	3.0	3	G
464	25				815	a	3.0	3	S
465	33				N.A.	b	3.0	3	N
466	97				85	a	3.0	3	N
467	70				800	d	1.0	1	G
468	24		65	9	5267	a	3.0	3	S
469			52	*					
470			20	*					
471			65	*					
472			118	*					
473			92	*					
474			43	*					

S.No 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
<u>Non-Electrical Machinery and Equipment Industries</u>				
475	Boilers	in thousand	13824	20945
476	Turbines	in thousand	5000	18500
477	Diesel engines	Number	25832	52191
478	I.C. Engines	Number	1833	1500
479	Oil Engines	Number	120	150
480	Components	Number	30146	37683
481	Industrial engines	Number	243	1500
482	Auto looms	Number	80	600
483	Plain looms	Number	12	1200
484	Power looms	'000 Rs.	802	2500
485	Spinning ring frame	Number	15	48
486	Carding engines	Number	462	1080
487	Cotton shuttles	Number	45020	100000
488	Textile ring spindles	Number	60000	96000
489	Humidifiers	Number	758	4000
490	Steam coils	Number	183	2000
491	Industrial controls	Number	41	250
492	Industrial mach.	Number	137	6520
493	Crayon textile mills	Gross	1870	3600
494	Bobbins	Number	487026	700000
495	Spinning frames	Number	64	504
496	Carpet Backing Looms	Number	102	384
497	Roll/cone winder scroll type	Number	2	72
498	Traverse Bar Type	Number	0	96
499	Cop winder	Number	1	72
500	Softner	Number	2	36
501	Bailing Press	Number	7	48
502	Second drawing	Number	28	72
503	Finisher drawing (weft)	Number	4	72
504	Finisher drawing (light yarn)	Number	25	144
505	Pre-beaming	Number	3	108
506	Sizing machine	Number	nil	24
507	Jute shuttles	Number	72343	90700
508	Staves	Number	100634	125500
509	Card and gill pins	in thousand	444205	600000

S.No 1	U 6	O 7	u 8	c 9	Value 10	Reason 11	\bar{n} 12	n 13	l 14
475	34		N.A.	N.A.	13824	b	N.A	-	G
476	73				5000	g	2.0	2	G
477	51		51	29	43972	98a 2c	2.3	3	G
478		22			3489	k	2.0	2	G
479	20				N.A.	a	2.0	2	G
480	20				600	a	3.0	3	G
481	84				3296	a	2.0	2	G
482	87				1280	c	2.0	2	B
483	99		89	11	30	a	2.0	2	B
484	68				802	a	N.A	-	B
485	68		62	2	555	a	3.3	3	S
486			57	*					
487	55		43	76	2195	b	1.0	1	S
488	38				450	a	1.0	1	S
489	81				1421	a	1.0	1	N
490	91				437	a	1.0	1	N
491	84				67	a	1.0	1	N
492	98				557	a	1.0	1	N
493	48				3	e	1.0	1	G
494	34				1191	a	1.0	1	B
495			87	*					
496			73	*					
497			97	*					
498			100	*					
499			99	*					
500			94	*					
501			85	*					
502			61	*					
503			94	*					
504			83	*					
505			97	*					
506			100	*					
507	20				1928	a	1.0	1	S
508	20				741	a	1.0	1	S
509	26				1595	a	2.0	2	S

S.No 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
510	Sugar machinery	Thousand Rs	4717	23585
511	Tea processing machinery	Thousand Rs	4052	2885
512	Tank (Tea industry)	Thousand Rs	1269	3000
513	Mining machinery	Thousand Rs	16492	16492
514	Cement machinery	Thousand Rs	3065	3332
515	Chemical machinery	Thousand Rs	404	1200
516	Water treat. acc.	Thousand Rs.	720	800
517	Grinding mills	Number	24	54
518	Decorticator	Number	78	98
519	Rotary oil mills	Number	61	61
520	Filter presses	Number	47	47
521	Copra cutting machine	Number	8	8
522	Plunager pumps	Number	9	9
523	Spare parts	Thousand Rs	154	154
524	Rice mill (complete)	Number	17	34
525	Dal mill (complete)	Number	3	6
526	Rice-cum-Dal mills	Number	5	10
527	Rice Dal mill	Number	3	6
528	Baling press	Number	10	48
529	Winches	Number	2	6
530	Material handling Equip.	Thousand Rs.	3552	3552
531	Cranes	Number	5	15
532	Lifts	Number	639	672
533	Hoist Block	Number	1108	10008
534	Centrifugal Pumps	Number	22569	27100
535	Pumps	Number	1367	5640
536	Air compressors	Number	3610	7464
537	Ball, Roller Bearings	in thousand	2328	3250
538	Lathe	Number	1878	4213
539	Auto chucking lathes	Number	8	24
540	Capston and turrets	Number	107	435
541	Lathe chucks	Number	800	1500
542	Drilling machine	Number	3	6
543	Planing Machine	Number	4	6
544	Shaping machine	Number	3	12
545	Precision machine	Number	10	12
546	Machine tools	Number	182	360
547	Accessories	Thousand Rs	7045	12996
548	Opertable tools	Thousand Rs	15901	20700
549	Other metal framing mach.	Thousand Rs	6071	6996

S.No 1	U 6	O 7	u 8	c 9	Value 10	Reason 11	\bar{n} 12	n 13	L 14
510	80			N.A.	4717	b	N.A.	-	G
511		40			4052	k	1.0	1	N
512	58				1269	a	2.0	2	N
513	0				16492	k	2.0	2	N
514	8			N.A.	3065	b	N.A.	-	G
515	66				404	a	1.0	1	S
516	10				720	a	1.0	1	G
517	56				10	b	1.0	1	B
518	20				94	b	1.0	1	B
519	0				79	k	1.0	1	S
520	0				193	k	1.0	1	S
521	0				9	k	1.0	1	S
522	0				6	k	1.0	1	S
523	0				154	k	1.0	1	S
524	50				455	c	1.0	1	B
525	50				79	c	1.0	1	B
526	50				150	c	1.0	1	B
527	50				14	c	1.0	1	B
528	79				213	a	2.0	2	N
529	67				144	a	3.0	3	G
530	0				3552	k	1.0	1	N
531	67		89	N.A.	332	a	3.0	3	G
532			5	*					
533			89	*					
534	17				4982	a	2.1	3	S
535	76		-58	18	332	78a 22g	1.0	1	G
536			52	*					
537	28		61	11	20794	a	2.5	3	G
538	55				17635	92a 8e	1.9	3	G
539	67				783	a	2.0	2	G
540	75				5505	a	2.0	2	G
541	47				N.A.	a	1.0	1	S
542	50		63	N.P	N.A.	d	N.A.	-	G
543	33				N.A.	d	N.A.	-	G
544	75				10	a	2.0	2	B
545	17				60	a	2.0	2	G
546	49				1077	a	1.8	2	G
547			46	*					
548			23	*					
549			13	*					

S.No 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
550	Wood working machines	Thousand Rs	1741	2508
551	Furnaces	Thousand Rs	38873	52296
552	Re-rolling plants etc	Thousand Rs	5824	2796
553	Plastic working mach.	Thousand Rs	12460	9204
554	Welding Equipments	Number	425	723
555	Welding machines	Thousand Rs	2200	10000
556	Sewing machine needles	Thousand Rs	6103	8400
557	Milling Cutters	Number	352724	326004
558	Reamers	Number	228811	189000
559	Lathe tools	Thousand Nos.	903	1356
560	Diamond Drill Bits	Number	39418	48000
561	Threading tools	Number	2272683	2445996
562	Tungsten carbide	Kilograms	42978	74004
563	Band Saw Blade (wood work)	R.metres	681293	2268996
564	Metal cutting	R.metres	1364389	1080000
565	Twist Drills	in thousand	8830	10160
566	Tractors	in thousand	200	600
567	Track rollers	in thousand	1210	6000
568	Track pins	Number	12810	86400
569	Track bushes	Number	13851	86400
570	Track link Assys	Number	151	720
571	Grouser shoes	Number	3808	36000
572	Agril. Implements	Tonnes	2043	3583
573	Hand sprayer	Number	900	10000
574	Sprayer-cum-duster	Number	18	600
575	Thresher	Number	94	700
576	Fibre Extract Mach.	Number	4	60
577	Plough	Number	1853	3000
578	Ghamellas	Tonnes	62	300
579	Road rollers	Number	16	150
580	Typewriters	Number	43257	66000
581	Duplicators	Number	4677	9900
582	Air-conditioners	Number	1727	3600
583	Air-conditioner Frig.	Thousand Rs	45831	45831
584	Sewing machines	Number	348132	469992
585	Sewing machine parts	Thousand Rs	58	99
586	Dairy Equip Acc	Thousand Rs	325	400
587	Cinema equip.comp.	Thousand Rs	400	400
588	Tile presses	Number	3	3
589	Brick cutting table	Number	2	2

S.No	U	0	u	c	Value	Reason	\bar{n}	n	L
1	6	7	8	9	10	11	12	13	14
550			31	*					
551			26	*					
552			-108	*					
553			-35	*					
554	41		25	4	228	d	1.0	1	G
555	78		46	100	2200	b	2.0	2	G
556			27	*					
557			-8	*					
558			-21	*					
559			33	*					
560			18	*					
561			7	*					
562			42	*					
563			70	*					
564			-26	*					
565			13	*					
566	67		86	1	4000	g	3.0	3	G
567	80				946	a	1.0	1	G
568	85				179	a	1.0	1	G
569	84				499	a	1.0	1	G
570	79				1210	a	1.0	1	G
571	89				274	a	1.0	1	G
572	43				2805	52b 48c	1.5	2	G
573	91				180	a	1.0	1	N
574	97				18	a	1.0	1	N
575	87				237	47a 53b	1.6	2	G
576	93				10	a	1.0	1	N
577	38				151	a	N.A.	-	G
578	79				N.A.	d	1.0	1	N
579	89		91	3	N.A.	a	3.0	3	N
580	5		35	*					
581			53	*					
582	52		11	18	4094	a	1.0	1	G
583	0		-54	N.P	45831	k	1.0	1	N
584			26	*					
585	41				58	a	1.0	1	N
586	19				325	b	1.0	1	G
587	0				400	k	1.0	1	B
588	0				3	k	N.A.	-	N
589	0				4	k	N.A.	-	N

S.No 1	Name of the Product 2	Unit 3	Prod. 4	Cap. 5
590	Heat Exchangers	Number	2695	10780
591	Diamond dies	Number	1272	3500
592	Mechanical equipment	Tonnes	6533	20001
<u>Electrical Machinery and Equipment Industries</u>				
593	Generators	Number	1	4
594	Capacitors	KVAr	116629	121625
595	Charging Equipment	Number	1582	1532
596	Transformers	MVA	1300	1800
597	Transformers	Number	163	6000
598	Switchgear controlgear	Number	1816	2717
599	Electric motors	Number	23206	32927
600	Electric fans	Number	214148	260655
601	Exhaust fans	Number	3971	8000
602	Wall fans	Number	4283	7000
603	Mine lighting lamps	Number	41000	36000
604	Mini.elec. bulbs	in thousand	1562	1800
605	Incandescent fil. lamps	in thousand	75402	60840
606	Fluorescent lamps	in thousand	5529	6000
607	Electric horns	in thousand	17435	72000
608	Lighting fittings	in thousand	111543	118800
609	Ballasts for fitting	in thousand	162261	120000
610	Plastic accessories	in thousand	15949	22228
611	Brass Lamp Holders	in thousand	2647	5459
612	Arc welding electrodes	Lakh R.met.	1912	3980
613	Conduit pipes	R.ft.	200000	500000
614	Super enam.conductors	Tonnes	1449	2604
615	Conductors	Tonnes	898	2580
616	Bare conductors	Tonnes	3970	6000
617	Winding wires	Tonnes	11720	20040
618	Rubber & Plastic cables	Lakh meters	3720	8606
619	Paper Insul.power cable	Kilometers	2566	8364
620	Automobile batteries	in thousand	247	232
621	Train lighting cells	in thousand	24	15
622	Batteries Mining	Number	113000	108000
623	Battery motor cycle	Number	8000	12000
624	Batteries car	Number	1800	15000
625	Batteries	Number	66678	78000
626	Battery plates	Number	239443	300000

S.No 1	U 6	0 7	u 8	c 9	Value 10	Reason 11	\bar{n} 12	n 13	L 14
590	75				864	a	1.0	1	N
591	64				318	a	1.0	1	G
592	67				32029	37c 63d	2.0	2	G
593	75				5550	g	2.0	2	G
594	4				8225	g	2.2	3	G
595		3			2351	k	1.0	1	G
596	28		I -5	N.A. I	N.A.	c	2.0	2	G
597	97		I	I	24	a	1.0	1	S
598	33				41200	a	1.0	1	G
599	30				43281	89a 3c 8g	1.9	3	S
600	18				31777	89a 11b	1.9	2	G
601	50		I 55	9 I	445	a	2.0	2	G
602	39		I	I	642	a	2.0	2	G
603		14			3895	k	1.0	1	G
604	13		3	6	617	c	1.0	1	G
605			-24	*					
606			8	*					
607	76				523	d	1.0	1	N
608	6				4522	a	1.0	1	S
609		35			1698	k	1.0	1	S
610			28	*					
611			52	*					
612			52	*					
613	60		9	12	80	c	1.0	1	G
614	44		I	I	28249	a	3.0	3	G
615	65		I 74	4 I	16360	a	2.2	3	G
616	34		I	I	22600	a	3.0	3	B
617			42	*					
618			57	*					
619			69	*					
620		8	I	I	38032	c	2.5	3	G
621		60	I	I	N.A.	k	2.0	2	G
622		5	I 54	26 I	4068	k	1.0	1	G
623	33		I	I	336	c	1.0	1	G
624	88		I	I	216	c	1.0	1	G
625	15		I	I	11450	d	2.2	3	G
626	20				N.A.	a	1.0	1	S

S.No 1	Name of the product 2	Unit 3	Prod. 4	Cap. 5
627	Battery cables	Number	50393	120000
628	Dry cells	Lakhs	3130	3466
629	Radio receivers	Number	238076	260000
630	Loudspeakers	Number	230000	230000
631	Gang condensors	Number	388000	388000

Transport Equipment Industries

632	Railway wagons	Number	11850	29940
633	Jeep truck	Number	885	2000
634	Jeep	Number	4359	8000
635	Cars	Number	10862	10862
636	Commercial vehicles	Number	2883	3838
637	Radiators and cooler	Number	20412	24000
638	Radiators	Number	51118	103200
639	Door laces	Number	61000	101600
640	Weather cord	Number	80000	130000
641	Glass channels gen	R.ft.	810000	1350000
642	Pistons	in thousand	9272	12494
643	Cylinder liners	in thousand	250	1250
644	Piston rings	in thousand	5269	6000
645	Gaskets	in thousand	13675	21000
646	Comm. Vehicle wheels	Number	175743	200000
647	Car tractor wheels	Number	61000	150000
648	Tank wheels	Number	238	5000
649	Valve guides	Number	125000	150000
650	Motor starters	in thousand	376	294
651	Motor cycles	Number	23829	(
652	Scooters & Scooterets	Number	32071	(68004
653	Mopeds	Number	9011	(
654	Three-wheelers	Number	4712	(
655	Trailers	Number	78	564
656	Bicycles	Number	8000	30000
657	Bicycle parts	Thousand Rs	3110	5036

Miscellaneous Industries

658	Transfusion Apparatus	Number	2000	6000
659	Clinical Thermometers	Number	849631	2108000
660	Electric meters	Number	7000	200000
661	Water meters	Number	127061	313333
662	Measuring Instruments	Number	124951	133548

S.No 1	U 6	0 7	u 8	c 9	Value 10	Reason 11	\bar{n} 12	n 13	L 14
627	58				108	d	1.0	1	N
628			10	*					
629	8		-69	47	53910	83a 17c	1.0	1	G
630	0				0	k	2.0	2	G
631	0				0	k	2.0	2	G
632			60	*					
633	56	I			19590	a	2.0	2	G
634	46	I	36	17	73105	a	2.0	2	G
635	0	I			137736	k	2.0	2	S
636	25	I			82318	a	2.0	2	S
637	15				7417	a	1.0	1	G
638	54				20458	a	1.5	2	G
639	40				370	a	3.0	3	G
640	38				340	a	3.0	3	G
641	40				490	a	3.0	3	G
642	26				28168	g	2.0	2	G
643	80				4490	g	2.0	2	G
644	12				4637	g	2.0	2	G
645	35				5447	g	2.0	2	S
646	12				25655	a	1.0	1	G
647	59				3378	a	1.0	1	G
648	95				53	a	1.0	1	G
649	17				62	g	1.0	1	G
650			-28	*					
651)					
652)					
653			- 2	*					
654)					
655	86		58	8	299	a	1.0	1	N
656	73		49	1	1240	d	2.0	2	G
657	38		NP	NP	3110	66a 34e	1.2	3	G
658	67				10	g	1.0	1	G
659			60	*					
660	65		67	8	1700	b	2.0	2	S
661			60	*					
662			6	*					

S.No 1	Name of the Product 2	Unit 3	Prod. 4	Cap. 5
663	Scientific instruments	thousand Rs	8319	9619
664	Surveying equipment	Number	250	300
665	Offset camera	Number	6	24
666	Spectacle frames	Number	26700	36000
667	Manufacture of clocks	Number	69632	107004
668	Precious stones(cut)	Carats	25000	50000
669	Coins	in thousand	1145436	1084865
670	Mouth Organs	in thousand	107	288
671	Musical instruments	in thousand	674	674
672	Pencils	Lakhs	1605	3032
673	Lead slip products	in thousand	51533	43200
674	Pens	Number	2870	9000
675	14 carat pen nibs	Number	500	3000
676	Buttons	Kilograms	18633	27000
677	Bangles	'000 pairs	1500	2400
678	Synthetic stones	Kilograms	12433	14400
679	Brushes industrial	Thousand Rs	134	224
680	Stamping foils	Thousand Rs	9	32
681	Fancy articles	Number	6000	8000
682	Bone Meal etc	Tonnes	475	1200
683	Enamel tin sheets	Thousand Rs	0	350
684	Electricity	'000 KWH	46911	84727
685	Documentaries	Number	86	90
686	News reel	Number	52	52

S.No 1	U 6	0 7	u 8	c 9	Value 10	Reason 11	\bar{n} 12	n 13	L 14
663	14				8319	a	1.0	1	S
664	17				250	a	1.0	1	N
665	75				120	g	2.0	2	G
666	26				89	c	1.0	1	G
667			35	*					
668	50				15000	d	1.0	1	B
669		6			28026	k	1.0	1	G
670	63				N.A.	c	1.0	1	B
671	0				70	k	1.0	1	S
672			47	*					
673			-19	*					
674	68				19	c	1.0	1	N
675	83				4	c	1.0	1	N
676	31				144	c	1.0	1	S
677	38				75	d	1.0	1	N
678			14	*					
679	40				132	c	1.0	1	G
680	72				9	a	1.0	1	G
681	25				60	e	1.0	1	G
682	60				218	c	1.0	1	B
683	100				0	g	N.A.	-	N
684	45				6663	a	3.0	3	G
685	4				500	g	3.0	3	N
685	0				1500	k	N.A.	-	N

Explanatory Note to Table B

Column

- 1 Serial Number
- 2 Name of the Product as in MSP
- 3 Unit in which production is expressed
- 4 Estimated production for the year 1967-68 from MSP data.
- 5 Estimated capacity for the year 1967-68 from MSP data.
- 6 Unutilised capacity as a percent of the capacity based on figures from columns 4 and 5 (u'). Negative figure indicates over-utilisation.
- 7 Number of shifts according to MSP basis of capacity(n').
- 8 Average number of shifts according to Survey(\bar{n}).
- 9 Highest number of shifts according to survey(n).
- 10 Percent unutilised capacity based on MSP coverage and survey basis of capacity(u). This is obtained as follows. Suppose that the production in column 4 is P and capacity in column 5 is C, then the Capacity on Survey basis is C' given by -

$$C' = \frac{\bar{n}}{n'} \cdot C. \text{ Then } u = \frac{C - P}{C} \cdot 100$$
 Negative figure indicates overutilisation.
- 11 Percent unutilised capacity according to Survey.
- 12 Percent overutilised capacity according to Survey.
- 13 Production according to Survey as a percent of the production according to MSP.
- 14 Capacity according to Survey as a percent of the capacity according to MSP on Survey basis (viz C)
- 15 Serial number of products listed in Table A corresponding to the product named in column 2.

General Notes :

- * Computation of the figure is not possible due to units of measurement being different.
- Not available; n.a. Not available.

Notes regarding some products marked as -

- 1 - (See S.No.18) Cab tyres is excluded since its unit is different.
- 2 - (See S.No.49) Capacity is in terms of seed and production is in terms of oil.
- 3 - (See S.No.53) Three products, Liver extract injection, Penicillin and Vitamin A are not included in this, since these have different units.

Table B : Estimated production and capacity (1967-68), basis of capacity, unutilised capacity and coverage in respect of common products.

S. No.	Name of the product as in MSP	Unit	Estimated for 1967-68 (MSP)	
			Prod.	Cap.
1	2	3	4	5
1	Coal, including Lignite	Tonnes	70922000	N.A.
2	Iron Ore	Tonnes	19933000	N.A.
3	Dolomite	Tonnes	1202580	N.A.
4	Fire clay	Tonnes	277730	N.A.
5	Gypsum	Tonnes	839699	N.A.
6	Magnesite	Tonnes	301307	N.A.
7	Mica (crude)	Tonnes	17271	N.A.
8	Quartz and Silica	Tonnes	241853	N.A.
9	Salt refining	'000 Qunit	43390	N.A.
10	Cigarette mnfging	'000 Nos.	54912300	55896000
11	Footwear (leather)	'000 Pairs	10777	8524
12	a. Tea Chest Plywood	Sq. Metres	25146000	13080000
	b. Commer. Plywood	Sq. Metres		
13	Newsprint paper	Tonnes	31349	30100
14	a. Writ. & Ptg. Paper	Tonnes	581682	682088
	b. Wrapping Paper	Tonnes		
	c. Paper Board	Tonnes		
15	Chrome Tanned Hides	Thousands	881	1580
16	Veget. Tanned Hides	Thousands	3151	4829
17	Rubber Footwear	'000 Pairs	54460	56880
18	Tyres and Tubes	'000 Nos.	46149	47703
19	Rubber Belting	'000 Nos.	4603	3850
20	Hoses	'000 Nos.	1592	1897
21	Latex Foam Sponge	Tonnes	1059	1162
22	Camel back	Tonnes	10953	10630
23	Power & Ind. Alcohol	'000 Litres	111399	293832
24	Sulphuric Acid	Tonnes	835737	1477215
25	Caustic Soda	Tonnes	267143	341907
26	Soda Ash	Tonnes	365771	395784
27	Chlorine Liquid	Tonnes	80274	149509
28	Oxygen Gas	Cu. Metres	32200700	53793600
29	Calcium carbide	Tonnes	51017	66000
30	Hydrogen peroxide	Tonnes	2975	3000
31	Carbon-di-oxide gas	Tonnes	10828	19368

S. No	u'	n'	\bar{n}	n	u	U	O	Coverage %		Survey products
								Prod.	Cap.	
1	6	7	8	9	10	11	12	13	14	15
1	N.A.	-	2.8	3	N.A.	72.7	0.0	6.4	N.A.	1-4
2	N.A.	-	2.1	3	N.A.	2.9	141.7	13.2	N.A.	5-7
3	N.A.	-	1.0	1	N.A.	0.0	82.3	0.5	N.A.	13
4	N.A.	-	1.9	3	N.A.	12.9	0.0	1.4	N.A.	10
5	N.A.	-	1.0	1	N.A.	12.5	0.0	0.4	N.A.	14
6	N.A.	-	1.0	1	N.A.	72.0	0.0	2.3	N.A.	8
7	N.A.	-	1.0	1	N.A.	0.0	0.0	0.3	N.A.	15
8	N.A.	-	1.0	1	N.A.	11.4	0.0	17.0	N.A.	12
9	N.A.	-	1.0	1	N.A.	41.6	0.0	2.7	N.A.	34
10	1.8	2	3.0	3	34.5	56.7	0.0	8.0	19.0	47
11	-26.4	1	1.0	1	-26.4	0.1	0.0	139.0	176.0	60
12a		1	3.0	3		59.5	0.0			64
	-92.2				19.9			3.0	4.0	
b		1	1.5	3		20.6	0.0			65
13	-41.5	3	3.0	3	-41.5	0.0	4.2	99.0	100.0	79
14a		3	3.0	3		20.2	0.3			80
b	14.7	3	3.0	3	14.7	35.6	0.0	13.0	13.0	82
c		3	3.0	3		0.0	0.1			81
15	44.3	1	2.0	2	72.1	23.3	0.0	*	*	96
16	34.8	1	2.0	2	67.4	19.0	0.0	*	*	94-95
17	4.3	1	1.0	1	4.3	0.7	0.0	59.0	57.0	137
18	3.3	3	3.0	3	3.3	2.3	17.6	24.0	20.0	103-109
19	-19.6	1	3.0	3	60.1	33.5	0.0	125.4	75.0	129
20	16.1	1	1.8	3	53.3	57.2	1.0	36.0	39.0	113-117
21	8.8	1	1.0	1	8.8	27.5	0.0	3.0	3.0	127
22	-3.3	1	3.0	3	65.6	27.2	0.0	33.0	15.0	111
23	62.1	3	3.0	3	62.1	71.9	0.0	3.0	5.0	43
24	43.4	3	3.0	3	43.4	32.1	0.0	22.0	18.0	171
25	21.9	3	3.0	3	21.9	25.4	0.0	17.0	17.0	170
26	7.6	3	3.0	3	7.6	5.0	0.0	12.0	12.0	174
27	46.3	3	3.0	3	46.3	35.2	0.0	6.0	5.0	178
28	40.1	3	3.0	3	40.1	19.4	0.0	0.8	0.6	240
29	22.7	1	3.0	3	74.3	33.2	0.0	13.0	5.0	181
30	0.8	1	1.0	1	0.8	98.2	0.0	*	*	180
31	44.1	1	3.0	3	81.4	64.7	0.0	3.6	1.6	241

S. No.	Name of the product as in MSP	Unit	Estimated for 1967-68(MSP)	
			Prod.	Cap.
1	2	3	4	5
32	Hydrochloric Acid	Tonnes	33924	41248
33	Phosphoric Acid	Tonnes	1745	3537
34	Nitric Acid	Tonnes	13934	14508
35	Alumina Ferric	Tonnes	98422	125389
36	Sodium Thiosulphate	Tonnes	1541	2664
37	Phenol Form.Mould.Powd.	Tonnes	4141	4512
38	Urea Form.Mould.Powder	Tonnes	1453	1422
39	Plywood Synth.Resins	Tonnes	4822	5460
40	P.V.C.Resins/Comp.	Tonnes	16954	12800
41	Rayon:Viscose Yarn Fibres	Tonnes	35553	35836
42	Staple fibre	Tonnes	55717	26040
43	Dye-stuff-dyes	Tonnes	5030	7632
44	Activated Bleaching Earth	Tonnes	2719	5392
45	Ammonium Sulphate(N)	Tonnes	81565	928981
46	Double Salt(N)	Tonnes	16222	34872
47	Urea (N)	Tonnes	90748	152544
48	Super. Phosphate(P ₂ O ₅)	Tonnes	161264	162020
49	Cotton Seed Oil	Tonnes	36878	734852
50	Paints and Varnishes	Tonnes	81209	105960
51	Read Lead	Tonnes	3119	10800
52	Nitro Cellulose Lacq.	'000Litres	1822	3360
53	Drugs & Pharmaceuticals	Kilograms	711124	1874876
54	Soap	Tonnes	178610	232800
55	Matches	Mil.Sticks	250638	388672
56	B.H.C. (Tech.)	Tonnes	9585	123552
57	Glue & Gelatine	Tonnes	2240	3168
58	Alum	Tonnes	960	6516
59	Petroleum Refinery Prod.	'000Tonnes	13779	N.A.
60	Glazed Tiles	Tonnes	12874	8748
61	Refractories	Tonnes	737600	1239600
62	Sheet Glass	Sq.Metres	13799000	18900000
63	Other Glass Ware	Tonnes	204151	375994
64	Stone ware	Tonnes	11900	13200
65	Stone ware pipes	'000Tonnes	69	78
66	Ceramic insulators	Tonnes	14032	24060
67	Cement	'000Tonnes	11380	11330
68	Pig Iron	Tonnes	6808100	5642400
69	Semi-finished Steel	Tonnes	1481300	1387200
70	Steel Ingots	Tonnes	6219300	4569600

S. No.	u'	n'	\bar{n}	n	u	U	0	Coverage %		Survey Products
								Prod.	Cap.	
1	6	7	8	9	10	11	12	13	14	15
32	17.8	1	3.0	3	72.6	41.5	0.0	15.0	7.0	177
33	50.7	1	3.0	3	83.6	45.3	0.0	78.0	23.0	173
34	4.0	1	1.0	1	4.0	32.7	0.0	9.0	1.0	172
35	21.5	1	3.0	3	73.9	31.6	0.0	25.0	1.0	176
36	42.2	1	3.0	3	80.7	20.9	0.0	23.0	6.0	273
37	8.2	1	2.0	2	54.1	49.8	0.0	12.0	11.0	218
38	-2.2	1	3.0	3	66.0	28.4	0.0	75.0	36.0	219
39	11.7	1	3.0	3	70.6	30.0	0.0	43.0	18.0	215
40	-32.5	1	2.9	3	54.3	91.3	0.0	2.0	9.0	216
41	0.8	1	3.0	3	67.0	0.0	0.0	9.0	3.0	226
42	-114.0	1	3.0	3	28.7	0.0	0.0	6.0	5.0	227
43	34.1	1	2.3	3	71.3	21.4	5.1	38.0	19.0	236-238
44	49.6	1	3.0	3	83.2	19.8	0.0	65.0	14.0	312
45	91.2	3	3.0	3	91.2	24.5	0.0	*	*	141
46	53.5	1	3.0	3	84.5	14.1	0.0	*	*	140
47	40.5	1	3.0	3	80.2	48.3	0.0	*	*	139
48	0.5	3	3.0	3	0.5	20.7	0.9	*	*	138
49	*	1	2.7	3	*	65.3	0.0	3.0	*	245
50	23.2	2	2.1	3	26.9	37.3	0.0	17.0	20.0	257-262
51	71.1	1	1.0	1	71.1	99.1	0.0	2.0	64.0	263
52	45.8	1	1.0	1	54.2	70.1	0.0	1.0	1.8	254
53	62.1	1	1.8	3	78.9	35.2	0.8	*	*	283
54	23.2	1	1.0	2	23.2	42.7	0.0	2.0	2.0	289-290
55	35.5	1	1.0	1	35.5	34.3	0.0	*	*	295-296
56	92.2	1	3.0	3	97.4	29.6	0.0	35.0	1.0	179
57	29.3	1	3.0	3	76.5	0.0	7.5	58.0	13.0	300
58	85.3	1	3.0	3	95.1	45.3	0.0	34.0	3.0	175
59	N.A.		3.0	3	N.A.	33.8	0.0	17.1	N.A.	315-319
60	-47.2	1	3.0	3	51.0	25.0	0.0	*	*	333
61	40.5	1	1.7	3	65.0	28.1	0.0	18.0	9.0	321-326
62	-27.0	1	3.0	3	75.7	35.3	0.0	41.0	16.0	335
63	45.7	1	2.8	3	80.6	30.6	0.0	10.0	3.0	338-340
64	9.8	1	1.5	3	39.8	11.0	0.0	25.0	17.0	344
65	11.4	1	1.0	1	11.4	32.5	0.0	23.2	30.0	342-343
66	41.7	1	2.0	2	70.8	21.7	0.0	32.0	12.0	347-349
67	-0.4	3	3.0	3	-0.4	9.6	1.6	62.0	68.0	350
68	-20.7	3	3.0	3	-20.7	3.9	22.1	55.0	56.0	365
69	-6.8	3	1.7	2	-88.5	9.0	66.8	39.0	47.0	366-368
70	-36.1	3	3.0	3	-36.1	4.2	0.0	32.0	45.0	369-370

S. No.	Name of the product as in MSP	Unit	Estimated for 1967-68(MSP)	
			Prod.	Cap.
1	2	3	4	5
71	Finished Steel	Tonnes	3965800	3638400
72	Transmission towers	Tonnes	44001	66108
73	Heavy Structural	Tonnes	19216	138264
74	Steel Pipes & Tubes	Tonnes	205287	409284
75	Cast Iron Spun Pipes	Tonnes	142926	330360
76	Castings & Forgings	Tonnes	51368	122376
77	Copper smelting	Tonnes	9894	9960
78	a. Sheets & Circles(Cop.)	Tonnes	869	48000
	b. Sheets & Cir.(Brass)	Tonnes	8577	
79	Virgin Lead	Tonnes	2448	6043
80	Elec.Copper Wire Rods	Tonnes	18426	29100
81	Wood Screws	Mil.Nos.	1881	1644
82	Machine Screws	Mil.Nos.	675	613
83	Steel files	'000 Nos.	10906	10416
84	Hurricane Lanterns	'000 Nos.	4707	6564
85	Tractors	Nos.	10374	24504
86	Road Rollers	Nos.	464	1620
87	Diesel Engines	Nos.	88052	78084
88	Boilers	'000 Rs.	40031	N.A.
89	Looms	Nos.	2009	8736
90	Complete Ring Spg.Frame	Nos.	950	1680
91	Shuttle(Cotton)	Nos.	77119	132000
92	Sugar Machinery	'000 Rs.	88780	N.A.
93	Tea Machinery	'000 Rs.	13019	N.A.
94	Cement Mill Machinery	'000 Rs.	59808	N.A.
95	Cranes	Tonnes	8478	25680
96	Power Driven Pumps	Nos.	288200	182400
97	Ball & Roller Bearings	'000 Nos.	11762	12137
98	Machine tools	'000 Rs.	236696	380700
99	Elec.Welding Machine	'000 Rs.	5451	5004
100	Welding Equipment	'000 Rs.	8155	10800
101	Port.Air-conditioners	Nos.	17684	20040
102	Domestic Refrigerators	Nos.	41153	26796
103	Power Transformers	'000K.V.A.	5308	5066
104	Electric Motors	'000 H.P.	2024	1416
105	Conductors	Tonnes	74828	103620
106	Storage Batteries	Nos.	808200	795600
107	Miniature Lamps	'000 Nos.	27094	27960

S. No.	u'	n'	\bar{n}	n	u	U	O	Coverage %		Survey Products
								Prod.	Cap.	
1	6	7	8	9	10	11	12	13	14	15
71	-9.0	3	3.0	3	-9.0	29.2	0.5	117.0	179.0	371-372
72	33.4	1	2.0	2	66.7	3.0	0.0	73.0	25.0	390
73	86.1	1	2.0	3	93.0	51.0	0.0	110.0	16.0	389
74	49.8	2	1.0	1	-0.4	58.7	0.0	8.0	20.0	391-393
75	56.7	1	2.0	2	78.3	45.9	0.0	60.0	24.0	394
76	58.0	1	2.3	3	81.7	53.3	0.0	56.0	23.0	380-388
77	0.7	3	3.0	3	0.7	3.2	0.0	94.0	96.0	396
78 a	80.3	1	1.0	1	80.3	32.3	0.0	5.0	5.4	397-399
b		1	1.9	2		92.2	0.0	2.0		
79	59.5	1	3.0	3	86.5	53.2	0.0	95.0	28.0	410
80	36.7	1	3.0	3	78.9	35.0	0.0	30.0	10.0	400
81	-14.4	1	1.0	1	-14.4	61.8	0.0	*	*	440
82	-10.1	1	1.0	1	-10.1	18.2	0.7	29.0	39.0	441
83	-4.7	1	3.0	3	65.1	23.7	0.0	20.0	9.0	468
84	28.3	1	1.0	1	28.3	50.0	0.0	29.0	42.0	447
85	57.7	1	3.0	3	85.9	66.6	0.0	2.0	1.0	566
86	71.4	1	3.0	3	90.5	89.3	0.0	3.0	3.0	579
87	-12.8	1	2.3	3	50.9	50.5	0.0	29.0	29.0	477
88	N.A.		-	-	N.A.	33.9	0.0	34.5	N.A.	475
89	77.0	1	2.0	2	88.5	92.5	0.0	7.0	11.0	482-484
90	43.5	2	3.0	3	62.3	68.7	0.0	2.0	2.0	485
91	43.1	1	1.0	1	43.1	54.9	0.0	60.0	76.0	487
92	N.A.		-	-	N.A.	80.0	0.0	5.3	N.A.	510
93	N.A.		1.0	1	N.A.	0.0	40.4	31.1	N.A.	511
94	N.A.		-	-	N.A.	8.0	0.0	5.1	N.A.	514
95	67.0	1	3.0	3	89.0	66.6	0.0	*	*	531
96	-58.0	1	1.0	1	-58.0	26.9	0.0	8.0	18.0	534-535
97	3.1	1	2.5	3	61.2	28.3	0.0	20.0	11.0	537
98	37.8	1	1.7	2	63.4	54.4	0.0	*	*	538-546
99	-8.9	1	2.0	2	45.6	78.0	0.0	40.0	100.0	555
100	24.5	1	1.0	1	24.5	41.2	0.0	3.0	4.0	554
101	11.8	1	1.0	1	11.8	52.0	0.0	10.0	18.0	582
102	-53.6	1	1.0	1	-53.6	0.0	0.0	*	*	583
103	-4.8	1	1.0	2	-4.8	97.2	0.0	*	*	596-597
104	-43.0	1	1.9	3	24.7	29.5	0.0	*	*	599
105	27.8	1	2.8	3	74.2	43.5	0.0	8.0	4.0	614-616
106	-1.6	1	2.2	3	53.9	7.0	7.2	57.0	26.0	620-625
107	3.1	1	1.0	1	3.1	13.2	0.0	6.0	6.0	604

S. No.	Name of the product as in MSP	Unit	Estimated for 1967-68 (MSP)	
			Prod.	Cap.
1	2	3	4	5
108	Electric Fans	'000Nos.	1350	1580
109	Radio Receivers	Nos.	926583	548512
110	Conduit Pipes	'000 R.ft.	3876	8536
111	House Service Meters	Nos.	830379	1264992
112	(a) Cars	Nos. I		
	(b) Trucks & Buses	Nos. I	94449	74304
	(c) Jeeps & Land Rovers	Nos. I		
113	Trailers	Nos.	2874	6912
114	Bicycle (complete)	Nos.	1683437	1655325
115	Bicycle spare parts & acc.	'000 Rs.	129205	N.A.
116	Zip fasteners	Metres	4255300	3969600
117	Plasticizers	Tonnes	3074	3799

Sr. No.	u'	n'	\bar{n}	n	u	U	O	Coverage %		Survey Products
								Prod. 13	Cap. 14	
	6	7	8	9	10	11	12			15
108	14.6	1	1.9	2	55.1	19.3	0.0	16.0	9.0	600-602
109	-68.9	1	1.0	1	-68.9	8.4	0.0	26.0	47.0	629
110	54.6	2	1.0	1	9.2	60.0	0.0	5.0	12.0	613
111	34.4	1	2.0	2	67.2	65.0	0.0	8.0	8.0	660
112a		1	2.0	2		0.0	0.0			
t	-27.1	1	2.0	2	36.4	24.8	0.0	20.0	17.0	633-636
c		1	2.0	2		47.6	0.0			
113	58.4	1	1.0	1	58.4	86.1	0.0	3.0	8.0	655
114	-1.7	1	2.0	2	49.1	73.3	0.0	0.5	0.9	656
115	N.A.		1.2	3	N.A.	38.2	0.0	2.4	N.A.	658
116	-7.2	1	1.0	1	-7.2	57.6	0.0	3.0	9.0	439
117	19.1	1	3.0	3	73.1	28.6	0.0	84.0	32.0	217

Table C Percent unutilised capacity in various ASI industries

S.No.	Name of the ASI Industry	Estimated value for 1967-68 in. '000 Rupees		u %	Index Ratio
		Prod.	Cap.		
1	2	3	4	5	6
<u>Mining Industries</u>					
1	Coal and lignite	1762829	1997981	11.8	1.101 *
2	Metal mining	127290	127794	0.4	1.101 *
3	Gypsum	8009	9101	12.0	1.101
4	Other mining				
<u>Food Industries</u>					
1	Slaughtering etc. of meat ; and other misc. food	76290	559004	86.4	1.040
2	Milk and malted foods	27950	32500	14.0	1.056
3	Canning and preserving of fruits and vegetables			33.0*	0.988 *
4	Canning and preserving of fish and other sea foods			33.0*	0.988 *
5	Flour mill products	503084	5212763	90.4	0.903
6	Rice mill products	8721	54503	84.0	0.903
7	Dal mill products	8997	99964	91.0	0.903
8	Bakery products	179919	268536	33.0	1.745
9	Sugar	1600204	1998871	20.0	0.960
10	Gur			20.0*	0.960 *
11	Cocoa, chocolate & sugar confectionery	40646	203229	80.0	0.988
12	Edible oils (other than hydrogenated oils)	746223	2991413	75.1	1.103
13	Hydrogenated oil (Vanaspati)	90978	126359	28.0	1.102
14	Tea manufacturing	1434523	2079019	31.0	1.118
15	Coffee curing			31.0*	1.244 *
16	Cashewnut processing			31.0*	1.244 *
17	Starch			14.0*	1.056 *
18	Cold storage			33.0*	0.988 *
19	Salt	41198	71031	42.0	0.955
<u>Beverage Industries</u>					
20	Spirits (alcohol)	31849	46270	31.2	1.144
21	Wine industries			12.0*	1.374 *
22	Beweries and malt	41847	47553	12.0	1.488
23	Soft drinks and carbonated water			12.0*	1.374 *

S.No.	Name of the ASI Industry	Estimated value for 1967-68 in '000 Rupees		u %	Index Ratio
		Prod.	Cap.		
1	2	3	4	5	6
<u>Tobacco Industries</u>					
24	Biri			55.9*	1.372 *
25	Cigar	8682	19731	55.9	1.374
26	Cigarette	801163	1213884	34.0	1.371
27	Snuff			34.0*	1.372 *
28	Jerda			34.0*	1.372 *
29	Other tobacco manufacturers			34.0*	1.372 *
<u>Textile Industries</u>					
30	Cotton textiles	7954414	10605885	25.0	1.032
31	Jute textiles			25.0*	0.875 *
32	Woollen textiles	277131	692828	60.0	0.632
33	Silk			60.0*	0.632 *
34	Art silk			25.0*	0.875 *
35	Webbing, narrow fabrics etc.	32657	37111	12.0	1.500
36	Textiles dyeing, bleaching			25.0*	0.875 *
37	Thread and thread ball making			25.0*	0.875 *
38	Carpet weaving			25.0*	0.875 *
39	Knitting mill products			25.0*	0.875 *
40	Cordage, rope, twine			25.0*	0.875 *
41	Cotton ginning, cleaning and pressing	101750	542629	81.3	1.055
42	Jute pressing			60.0*	0.632 *
43	Wool baling & pressing			60.0*	0.740 *
44	Coir manufacturers			60.0*	0.875 *
45	Artificial leather & oil cloth; linoleum etc.	54957	61013	9.9	1.615
46	Gas mantles; textiles n.e.c.	15500	51631	70.0	0.878
47	Tarpaulines, tents, sails etc.			70.0*	1.500 *
<u>Footwear etc. Industries</u>					
48	Footwear	46234	46234	0.0	1.028
49	Clothing and tailoring; others	938	938	0.0	1.313
50	Umbrella			0.0*	1.313 *

S.No.	Name of the ASI INdustry	Estimated value for 1967-68 in '000 Rupees		u %	Index Ratio
		Prod.	Cap.		
1	2	3	4	5	6
<u>Wood, furniture Industries</u>					
51	Saw milling	46836	768109	93.9	1.842
52	Plywood	89867	112334	20.0	1.244
53	Wooden, cane containers and wares	26671	27212	2.0	1.841
54	Joinery and general wood working	2708	2759	1.9	1.842
55	Cork and wood products n.e.c.	5833	6175	5.5	1.194
56	Wooden furniture and fixtures	19834	29602	33.0	1.842
57	Metal furniture and fixtures; others			33.0*	1.423
<u>Paper Industries</u>					
58	Pulp; paper; newsprint	264069	368281	28.3	1.323
59	Paperboard and strawboard	31306	68056	54.0	1.376
60	Paper for packing	46815	53118	11.9	1.326
61	Hardboard (incl. fibre and chipboard)	188470	769527	75.5	1.376
62	Other paper and paper products	5587	7957	29.8	1.333
<u>Printing & Publishing Industries</u>					
63	Letter press and lithographic printing and book-binding			28.3*	1.333
64	Other printing (incl. photography)			28.3*	1.333
<u>Tanneries and Leather Industries</u>					
65	Tanneries and leather finishing	127166	232223	45.2	0.904
66	Leather products (except footwear and other wearing apparel)	4807	17625	72.7	0.757
<u>Rubber Industries</u>					
67	Tyres and Tubes	303652	406197	25.3	1.332
68	Surgical, medical products; other rubber products	95075	172800	45.0	1.129
69	Rubber footwear	1152577	160684	4.0	1.170

S.No.	Name of the ASI Industry	Estimated Value for 1967-68 in '000 Rupees		u %	Index Ratio
		Prod.	Cap.		
1	2	3	4	5	6
<u>Fertilizer Industries</u>					
70	Inorganic fertilizers	593479	2473013	76.0	1.621
71	Mixed fertilizers	95640	434729	78.0	1.624
<u>Heavy Chemical Industries</u>					
72	Inorganic heavy chemicals	493393	840270	41.3	1.509
73	Organic heavy chemicals	19531	28495	31.5	1.446
<u>Other Chemical Industries</u>					
74	Synthetic resins, plastics and rubber	198520	427685	53.6	1.693
75	Manmade fibres	279259	526822	47.0	1.499
76	Explosives	8732	85323	89.8	0.970
77	Dye-stuffs	158454	546393	71.0	2.017
78	Turpentine and resin; products of fermentation (except alcohol) others	2964	14207	79.1	1.328
79	Vegetable oils	9343	17770	47.4	1.716
80	Paints, varnishes & lacquers	209988	773762	72.9	1.021
81	Fine chemicals (incl. photographic)	63625	166304	61.7	1.346
82	Insecticides, fungicides and weedicides	3158	3158	0.0	0.961
83	Textile auxiliaries; sizing materials	24389	26802	9.0	0.961
84	Drugs and pharmaceuticals	83766	128871	35.0	0.968
85	Soap and glycerine	381388	1323771	71.2	1.105
86	Cosmetics etc	89837	114876	21.8	1.589
87	Matches	104580	160893	35.0	1.009
88	Lac including shellac	14740	17548	16.0	0.967
89	Glue and gelatine; waxes etc	6670	27793	76.0	1.161
90	Misc. other products	31393	52912	40.7	0.991
91	Petroleum refineries; misc. products of petroleum and coal	845715	1281387	34.0	1.801

S.No.	Name of the ASI Industry	Estimated Value for 1967-68 in '000 Rupees		u %	Index Ratio
		Prod.	Cap.		
1	2	3	4	5	6
<u>Refractories, Glass, Cement etc.</u>					
92	Firebricks	67875	81777	17.0	1.681
93	Refractories; furnaces lining bricks	98435	280466	64.9	1.268
94	Tiles	18698	29183	35.9	1.681
95	Glass-hallow ware			20.0	1.180
96	Sheet and plate glass	61562	256508	76.0	1.402
97	Glasswool; misc.glassware	21271	111951	81.0	1.074
98	Laboratory glassware	17881	31930	44.0	1.703
99	Chinaware and pottery	14777	20615	28.3	1.498
100	Sanitary and white wares	8347	10536	20.8	1.522
101	Insulators	12491	43071	71.0	1.631
102	Cement(hydraulic)	945639	1050709	10.0	1.216
103	Asbestos cement	75941	135610	44.0	0.816
104	Hume pipes & concrete prod.	6707	17328	61.3	0.894
105	Stone dressing and crushing	7761	16127	51.9	0.894
106	Grinding wheels and abrasives	36916	51490	28.3	1.284
107	Mica	7	16	56.3	0.894
108	Non-metallic mineral products etc.	7369	11133	33.8	0.894
<u>Basic Metal Industries</u>					
109	Iron and steel(metal)	1679060	1902716	11.8	0.947
110	Ferro-alloys			0.0	0.970
111	Iron and steel castings and forgings	360716	2003975	82.0	1.035
112	Iron and steel structurals	501014	505550	0.9	0.970
113	Iron and steel pipes	279966	539158	48.0	0.895
114	Non-ferrous basic metal	363578	887135	59.0	0.978
<u>Metal Product Industries</u>					
115	Metal containers and steel trunks	460726	1014736	54.6	1.787
116	Cutlery, locks etc	15194	888066	82.7	0.945
117	Bolts, nuts, nails, etc	163766	526386	68.9	1.006
118	Enamelling, japaning, etc	106577	308405	65.5	1.571
119	Type founding			65.5*	1.903 *
120	Welding			65.5*	1.903 *

S.No	Name of the ASI Industry	Estimated Value for		u	Index
		1967-68 in '000 Rs.			
1	2	3	4	5	6
		Prod.	Cap.	%	Ratio
121	Safes and vaults	1360	2306	41.0	1.903
122	Razor blades	17218	28797	40.2	0.871
123	Hurricane lanterns	14771	20516	28.0	0.897
124	Hand and small tools	20740	33345	37.8	1.395
125	Metal fittings for shoes etc.	505	4592	89.0	0.945
126	Sanitary, plumbing fixtures	1399	2798	50.0	0.945
127	Weights; other products	183025	574848	68.2	1.790
<u>Non-electrical machinery and equip.</u>					
128	Boilers and steam generating plants	154	234	34.2	1.416
129	Internal combustion engines	7714	25511	69.8	0.894
130	Textile machinery	124471	401132	69.0	0.797
131	Jute machinery	3349	4986	32.8	0.181
132	Sugar machinery	8236	41180	80.0	0.894
133	Tea machinery	10563	11216	5.8	0.894
134	Mining machinery	4400	4645	5.3	0.894
135	Metallurgical and cement machinery			5.3*	0.894 *
136	Chemical machinery	15724	40668	61.3	0.894
137	Pharmaceutical machinery			5.3*	0.894 *
138	Paper machinery			5.3*	0.894 *
139	Construction machinery			5.3*	0.894 *
140	Oil mill machinery	193	200	3.5	0.894
141	Rice, dal and flour mill mach.	1673	3346	50.0	0.894
142	Size reduction equipment	58	276	78.9	0.894
143	Conveying equipment	35758	198464	81.9	1.073
144	Mixers and reactors; centrifugal machinery			80.0*	0.894 *
145	Power driven pumps	46024	46024	0	1.204
146	Air and gas compressors, vacuum pumps			52.0	1.640
147	Refrigeration plants			5.0*	1.204 *
148	Fire fighting equipments			61.9*	1.204 *
149	Ball, roller and tapered bearings; speed reduction units	21148	54225	61.0	0.894
150	Machine tools	233910	506680	53.8	2.988
151	Tractors, harvestors etc	2163	15448	85.9	6.357
152	Agricultural implements	71975	135458	46.8	1.640

S.No	Name of the ASI Industry	Estimated Value for 1967-68 in '000 Rs.		u %	Index Ratio
		Prod.	Cap.		
1	2	3	4	5	6
153	Earth moving mach. etc.	20385	226498	91.0	0.574
154	Typewriters and duplicators	3869	5953	35.0	1.020
155	Calculators; other equipment			35.0*	1.204
156	Air-conditioners and refrigerators	94665	99614	5.0	1.826
157	Sewing and knitting machines	11572	19614	41.0	1.204
158	Weighing machines			35.0*	1.204
159	Others	42443	111477	61.9	1.640
<u>Electrical machinery and equip.</u>					
160	Equipment forelectricity generation, transm. and distribution	300204	412717	27.2	2.029
161	Electrical motors	180893	258419	30.0	1.704
162	Electrical fans	170744	210795	18.9	1.170
163	Electrical lamps	73945	75057	1.5	1.358
164	Electrical furnaces; x-ray equip.; others	24588	30761	20.1	1.012
165	Electrical cables and wires	672469	2274780	70.4	1.537
166	Household appliances			0.0*	1.205 *
167	Storage batteries	104660	226631	53.8	1.169
168	Dry cells	56864	63182	10.1	2.216
169	Telephones			0.0*	1.205 *
170	Telegraph equipment; teleprinter			0.0*	1.205 *
171	Wireless apparatus; Radio etc	25146	25146	0.0	2.215
<u>Transport equipment industries</u>					
172	Ships and other vessels			0.0*	0.876 *
173	Boat building			0.0*	0.876 *
174	Railway locomotives			59.9*	0.640 *
175	Railway rolling stock	248433	621082	59.9	0.618
176	Tramway works			59.9*	0.640
177	Motor vehicles	1765412	2725109	35.2	1.320
178	Repair of motor vehicles			35.2*	1.320 *
179	Motor cycles, bicycles; others	338854	576820	41.3	1.540
180	Aircraft			0.0*	0.876 *

S.No	Name of the ASI Industry	Estimated Value for 1967-68 in '000 Rs.		u %	Index Ratio
		Prod.	Cap.		
1	2	3	4	5	6
<u>Miscellaneous Industries</u>					
181	Surgical instruments	418	1051	60.2	1.418
182	Water, steam, electricity meters	13511	36245	62.7	1.003
183	Indicating, recording etc. devices			6.0	1.305
184	Scientific instruments	10328	12009	13.9	1.305
185	Math. survey and drawing instruments	10873	13100	17.0	1.305
186	Photographic papers; photographic and optical goods	6574	9914	33.7	1.351
187	Watches and clocks			35.0	1.084
188	Jewellery	15000	30000	50.0	1.055
189	Mints	65971	65971	0.0	1.351
190	Musical instruments	1336	1480	9.7	1.351
191	Pen and pencil	11059	20865	47.0	1.128
192	Fountain pen	23306	83194	71.9	1.351
193	Buttons	8237	11938	46.9	1.351
194	Ice			14.0*	1.351 *
195	Plastic moulded goods			46.9*	1.351 *
196	Celluloid articles; others	75	121	38.0	1.351
197	Brooms and brushes	922	1553	40.6	1.351
198	Games and sports goods			25.0	1.351 *
199	Toys	3918	5224	25.0	1.351
200	Wrapping, packing etc. of articles			25.0	1.351 *
201	Bones, ivory, horns etc. productn.	6495	16237	60.0	1.351
202	Slates and slate products			65.5*	1.351 *
203	Electric light and power; gas	3163928	5752596	45.0	1.592

Table D : Products affected by inadequate demand as one of the reasons for unutilised capacity, their source of demand and the factor operative at the source

S.No. as in Table A	Name of the product covered by Survey	Source of demand and Factor operative at source(indicated by a Code Number in bracket)
1	2	3
1	Coal	Railways(-); Consumer(1);
41	Starch(Tamarind K.P.)	Textiles(1); Wood & Cork(2);
58	Laminated hessian bags	Chemicals(-)
64	Tea Chest Plywood	Food(1)
67	Cardboard boxes	Chemicals(2)
77	Liquid paper pulp	Rubber (1);
80	Writing,printing paper	Government(1);
85	Water proof paper	Textile(1); Engineering(1);
87	Mill boards	-(2); Paper(1)
91	Paper cones	Textile(1);
92	Paper tubes	Textile(1);
93	Paper ring tubes	Textile(1);
98	Travel goods leather	Consumer(2);
112	Rubber adhesive	Transport equipment(-);
113	Brake hoses	Transport equipment(1); machinery(1);
115	Fuel and oil hoses	Transport equipment(1); machinery(1);
117	Vacuum hose	Government(1,4);
119	Railway buffer spring	Government(1,4);
129	Rubber belting	-(2,4);
138	Superphosphate	-(3); chemicals(1);
148	Mixed fertilizers	-(3);
149	Chlorosulphuric acid	Chemical(1)
159	Alumina Sulphate Ferric	Paper (1)
156	Alumina Sulphate	Government(4)
164	Sodium Silicate	Chemicals(4);
171	Sulphuric acid	Textiles(1); Paper (1)
175	Ammonia alum	Government(2)
177	Hydrochloric acid	Government (4);
181	Calcium carbide	Chemicals(1); Engineering(1)
201	Hexamine	-(3);
214	M.F.Moulding Powder	-(1);
215	Synthetic resin binder material	Textile(1);

S.No. as in Table A 1	Name of the product covered by Survey 2	Source of demand and Factor operative at source (indicated by a Code Number in bracket) 3
216	Resins	-(1)
219	U.F.moulding powder	-(1)
233	Gunpowder	Non-metallic mineral products(-);
236	Dyes and pigments	Chemicals(1); Textiles(-)
238	Organic pigment powder	Chemicals(1);
241	Carbon di oxide	-(2)
243	Sandalwood oil etc	Chemicals(2)
246	Cottonseed oilcake	Export market (-)
249	Paint oil	-(2)
257	Varnish	-(2)
258	Paints	-(1)
260	Solution and paints	Engineering (1)
261	Stiff paints	Engineering Industries(1);
262	Paints, enamels, varnishes	Railways(1)
283	Drugs and medicines	Government(1); Consumer(2);
289	Washing soap	-(1); -(2); Consumer(2)
295	Safety matches	-(2)
301	Kaolin	Chemicals(-)
303	Tragacanth	Chemicals(-)
304	Calcium	Chemicals(-)
305	Talc	Chemicals(-)
308	Dry mix for floorings	Government(2)
309	Synthetic emery powder	Metal products(2);
312	Activated Earth	-(1)
320	Fire bricks	Metal (2)
321	Bricks	Textile(-); Engineering Industries(-)
324	Refractory products	Government(1); Metal(2)
325	Basic bricks	Metal(2)
326	Silica bricks	Metal(2)
327	Mica bricks	Government(1)
333	Glazed tiles	Government(1)
335	Sheet Glass	Construction(1); -(4);
342	Stoneware pipes etc	Government(1); Chemicals(-)
347	Electrical porcelain	Government(1);
348	Industrial porcelain	Government(1);
349	Porcelain insulators	Government(1); Engineering(1);
350	Cement	Government(1);
352	RCC pipes	Government(1); - (2);

S.No. as in Table A 1	Name of the product covered by Survey 2	Source of demand and Factor operative at source(indicated by a Code Number in bracket) 3
355	Hume Steel Pipes	Government(1);
356	Welding flux	- (2,3)
361	Mica Powder	- (2)
367	Mild steel bars	Construction (1)
368	M.S. Rounds	Engineering Industries (1)
370	Steel Ingots	Basic Metal(3); Transport Equip(3)
371	Steel	Engineering Industries (1);
373	Rolled products	Basic metal(3); Transport Equip(3) Construction(1).
375	Fish plates	Government(1);
377	Heavy Sections	Government(1)
381	C.I.Castings	Engineering Industries(1)
382	Industrial Castings	Electrical Machinery(1)
386	Forgings	Basic Metal(3); Transport Equip(3)
388	Steel castings	Engineering Industries (1); Railways(1);
389	Structural Steel	Engineering (1); Construction(1).
390	Transmission Line Towers	Government (1)
391	Steel Pipes	Government (1)
394	Spun Pipes	Government (1)
419	Steel containers	Agriculture (4)
420	Tin containers	Agriculture (4)
421	Aluminium containers	Agriculture (2)
431	Wire nails	-(2)
432	Rivets	Transport Equipment (1)
436	Bolts	-(2)
437	Bolts, nuts etc.	Machinery (1)
438	Iron nipple	Transport Equipment (1;2)
440	Wood screws	-(1); -(2).
448	Small tools	Government (1)
449	Small tools accessories	Government (1)
452	Chaff cutter knives	-(3)
453	Machine knives	-(3)
455	Umbrella fittings	-(1)
459	Brass utensils	-(2)
462	Aluminium etc.utensils	-(1)
463	L.P.G.Cylinder valve	Petroleum & coal(-)
464	Pressure regulator	Petroleum & coal(-)

S.No. as in Table A 1	Name of the Product covered by survey 2	Source of demand and Factor operative at source (indicated by a Code Number in bracket). 3
465	Hot Stampings	Elec. Machinery (-); Transport Equipment (-)
466	Bicycle brake sets	Transport Equipment (-)
468	Engineering steel file	Engineering Industries (1)
475	Boilers	Engineering Industries (1)
477	Diesel Engines	Agriculture (1)
480	Components	Engineering Industries (1)
483	Plain Looms	Engineering Industries (2)
484	Power Looms	Textile (3)
487	Cotton shuttles	Textile (1)
488	Textile ring spindle	-(1)
489	Humidifiers	Textile (1)
490	Steam coils	Textile (1)
491	Industrial controls	Textile (1)
493	Crayon textile mill	Textile (2)
494	Bobbins	Textile (1)
507	Jute shuttles	Textile (1)
508	Staves	Textile (1)
509	Card and Gill pins	Textile (1)
510	Sugar machinery	Sugar (1)
514	Cement machinery	Cement (1)
515	Chemical machinery	Chemicals (1)
517	Grinding Mills	Engineering (1)
518	Decoraticator	Engineering (1)
528	Bailing Press	Textile (1)
534	Centrifugal Pumps	Agriculture (1); -(2).
535	Pumps	Government (1)
537	Ball, Roller bearings	Engineering Industries (1, 4)
538	Lathe	Engineering Industries (1)
541	Lathe chucks	Engineering Industries (1)
544	Shaping Machine	Machinery (1)
545	Precision machine	Machinery (1)
546	Machine tools	Engineering Industries (1)
555	Welding machines	Engineering (1)
567	Track rollers	Government (1)
568	Track pins	Government (1)
569	Track bushes	Government (1)
570	Track link assys	Government (1)
571	Grouser shoes	Government (1)

S.No. as in Table A 1	Name of the product covered by survey 2	Source of demand and factor operative at source (indicated by a Code Number in bracket) 3
572	Agricultural implements	Government (1)
573	Hand sprayer	Government (1)
574	Sprayer-cum-duster	Government(1)
575	Thresher	Government (1)
576	Fibre extracting machine	Government (1)
579	Road Rollers	Government (1)
590	Heat Exchangers	Transport Equipment(1); Machinery(1)
591	Diamond dies	Electrical machinery(1)
596	Transformer	Textile(1); Government(1)
599	Electric motors	Agriculture(1); -(2);
600	Electric fans	Government(-); Consumers(1,2)
608	Lighting fittings	Textile(1); Government(1);
614	Super Enamel Conductor	Government(1); Elec.machinery(1);
615	Conductors	Government(1); Elec.machinery(1);
616	Bare conductors	Government(1,4);
626	Battery plates	Electrical machinery(1);
633	Jeep Truck	Government(1);
634	Jeep	Government(1)
637	Radiators and Coller	Transport Equipment(-)
638	Radiators	Machinery(1); Transport Equip.(1,4)
646	Commercial vehicle wheels	Transport Equipment(1,4)
647	Car tractor wheels	Transport Equipment(1,4)
648	Tank wheels	Transport Equipment(1,4)
660	Electricity Meters	Government(4)
663	Scientific instruments	Educational Institutions(-)
680	Stamping foil	-(3)

Note: Those products are omitted for which neither the source of demand nor the factor operative at the source is available.

Factor Operative at Source

- (1) Curtailed production. (2) Substitution by another product.
 (3) Substitution by imported product.
 (4) Excess capacity in the economy. (-) No information is available.

Table E: List of 110 raw materials reported to be in short supply

Produced in India

(1) Groundnut	(21) Soda ash
(2) Cotton	(22) Benzene
(3) Cotton seed	(23) Chlorate of Potash
(4) Timber	(24) Sodium sulphate
(5) Coal	(25) Chloroform
(6) Coking coal	(26) Formaldehyde
(7) Steam Coal	(27) Methanol
(8) Lead concentrate	(28) Film Scraps
(9) China clay	(29) Urea Formaldehyde Resin
(10) Sand	(30) Synthetic Redoxide
(11) Wheat flour	(31) Bentone
(12) Sugar	(32) Glycerine
(13) Bagasse	(33) Match wax
(14) Molasses	(34) Toluene (Nitration G)
(15) Groundnut oil	(35) Phenol
(16) Denatured spirit	(36) Cylinder
(17) Alcohol	(37) Copper Conductors
(18) Rectified spirit	(38) Battery Separators
(19) Bicycle Tyres	(39) Cycle Rims
(20) Bicycle Tubes	(40) Raw bones

Not Produced in India

(1) Gold	(23) Gum Arabic
(2) Graphite	(24) Carbon black
(3) Gilsomite	(25) Citric acid
(4) Palm oil	(26) Tartaric acid
(5) Mutton Tallow	(27) Tar acid High boil
(6) Asbestos Fibre	(28) Optical glass
(7) Tissue paper	(29) Emery Powder
(8) Fibre Board	(30) Re-Rolling Material
(9) Sulphur	(31) Hard steel wire
(10) Arsenic	(32) Aluminium Alloy Strips
(11) Titanium dioxide	(33) Nickel
(12) Penta	(34) Refined Lead
(13) Crystex Inso. Sulphur	(35) Auto Loom Components
(14) Maleic anhydride	(36) Tungsten filaments
(15) Pentaerythritol	(37) Glass tubings
(16) Plastic Moulding Powder	(38) Rectifier bulbs
(17) Silicon Resin	(39) Resistance wires
(18) Dyes and Pigments	(40) C.N. Sheets
(19) Dyes Intermediaries	(41) Precious Stones (Raw)
(20) Mineral Turpentine	(42) C.N. Tubes and Rods
(21) Solvents	(43) Brushes Industrial
(22) Ceramic Onglaze	(44) Mexican Fibre

Continued/

Produced in India as well as imported

- | | |
|----------------------------|------------------------|
| (1) Red phosphorous | (7) C.R.C.A. sheets |
| (2) Plithalic Anhydride | (8) Tin plate |
| (3) Parafin wax | (9) Copper |
| (4) Stainless steel sheets | (10) Zinc |
| (5) Steel | (11) Battery container |
| (6) Mild steel sheets | |

Nothing mentioned

- | | |
|--------------------|-----------------------|
| (1) Bauxite | (9) Salicylic acid |
| (2) Gypsum | (10) Alloy steel |
| (3) Special Rubber | (11) Foundry castings |
| (4) Silicate Soda | (12) Forgings |
| (5) Caustic soda | (13) Brass sheets |
| (6) Cinnamon | (14) German silver |
| (7) Styrene | (15) Radio Parts |
| (8) Resins | |

Note:- 110 raw materials are reported to be in short supply of which 40 are produced in India, 44 are not produced in India, 11 are produced in India as well as imported and for the remaining 15 raw materials nothing is mentioned.

APPENDIX I

An analysis of the returns containing only partial data would be made in this Appendix. It may be seen from para 21 that 57 factories have given less adequate data so that these could not be incorporated in the main body of this study. The results given in the main body should, however, be read in conjunction with the following, to the extent possible. Out of these 57 factories, 13 have merely stated that their capacity is fully utilised, 20 factories in printing industry have genuine difficulty in estimating the capacity, 6 factories in timber sawing industry have similar difficulty, and the remaining 18 have furnished incomplete data.

Considering the 13 factories which have merely stated that their capacity is fully utilised, efforts are made to find out the products they produce, let alone the figures of capacity. These products are -

(1) Sugar, (2) Millstone (textile), (3) Manganese ore, (4) Printing, (5) Musical instruments, (6) Antifriction bearings, (7) Scientific clocks, (8) Insulating enamels, varnishes and resins, and (9) Engineering works, in respect of 9 factories. The remaining 4 are engineering workshops.

We may consider the 20 returns from printing industry. 3 of these have no figures of production and capacity, 3 more have furnished only the figures of production. The remaining 14 have given figures of production and capacity. The figures of production are given against ex-factory value of production in unit of thousand rupees. The figures of capacity and unutilised capacity are also given in the same unit except in a few cases, where physical units, like number of books or number of impressions, are used. In the latter cases, the value of capacity is obtained by proper arithmetic. The figures of production and capacity for these 14 factories are 8123 and 10629 thousand rupees respectively, giving an unutilised capacity of 23.6 percent. 6 out of these 14 factories have reported full utilisation. 7 factories are working on one shift, 6 more on two shifts, 1 on three shifts and the remaining 6 have not mentioned the number of shifts worked. Out of the total value of unutilised capacity of 2506 thousand rupees, no reasons are given for the unutilised capacity of 1765 thousand rupees' worth, by the 3 concerned factories. The reasons for the remaining unutilised capacity are mainly inadequate demand, power shortage and inefficient labour. 6 factories have reported that the policy of import liberalisation has not been useful. There is a pointed reference to the necessity of importing printing machinery and spare parts for which license is not available.

There are 6 factories in timber sawing industry that have responded. Three of them are engaged in sawing work, the reported total charges being 41 thousand rupees. One more does the same work, reporting that 1634 cubic metre of timber is sawn. The remaining two have an activity of sawing the timber as well as manufacturing electrical wooden goods in one and packing cases in another factory. The sawing charges are 170 thousand rupees and the ex-factory value of the products is 142 thousand rupees for both these factories together. Practically no figures of capacity are given. A few of these factories have reported shortage of timber. Two factories are working on one shift, two factories are working on two shifts and the remaining two factories have not mentioned the number of shifts worked.

The partial information supplied by 18 factories may be considered now. This information is extracted from the returns and given below, productwise.

(1) Iron ore: 630,000 tonnes produced on one shift. The reasons for unutilised capacity are inadequate demand and labour troubles.

(2) Manganese ore: 14,500 tonnes produced on one shift. The reasons for unutilised capacity are inadequate demand and labour troubles.

(3) Bauxite: Nothing is produced. Difficulty is experienced in the sale of its stock of 10,000 tonnes.

(4) Multiwalled paper: Capacity unutilised due to shortage of kraft paper to be imported.

(5) Waxed paper: About 70% of the capacity is unutilised due to shortage of wax.

(6) Waterproof paper: Production is 15,00,000 rupees' worth. 75% of the capacity unutilised due to inadequate demand.

(7) Polythene container: About 75% of the capacity is unutilised due to inadequate demand.

(8) Footwear: Produced 15 pairs. Factory at development stage.

(9) Medicines: Capacity is not fully utilised due to inadequate demand and shortage of raw materials.

(10) Ayurvedic medicines: Unutilised capacity existed due to shortage of sugar at reasonable price, and gold. The control of the price of medicines is another reason.

(11) Soaps, detergents and toilet preparations: Produced about 478 million rupees' worth.

(12) Edible fats, foods etc.: Produced about 386 million rupees' worth.

(13) Animal feed, oils, glycerine etc.: Produced 69 million rupees' worth.

(14) Vaccine lymph: 205 kilograms capacity is unutilised because stock exists.

(15) Cast iron and steel casting:

(16) Precious metals refining: Unutilised capacity exists due to shortage of platinum, cadmium, copper, tin, lead and zinc.

(17) Boilets: Out of 10,000 tonnes of capacity, production is 6564 tonnes. (This is based on figures for January 1968).

(18) Cement machinery: Out of 4500 tonnes of capacity, 4812 tonnes produced. (This is based on figures for January 1968).

(19) Dal milling, paddy milling and agricultural equipments: Considerable unutilised capacity existed due to shortage of dal and paddy for milling and due to inadequate demand for agricultural equipments.

(20) Fabrication of plant and equipment, some chemicals and bulbs: Production is 150,000 rupees' worth, on 3 shifts. About 85% of the capacity is unutilised due to inadequate demand, shortage of raw materials and labour trouble.

(21) Engineering job work: Unutilised capacity exists due to inadequate demand and shortage of imported raw materials.

(22) Engineering products: 25 million rupees' worth produced. Capacity is not fully utilised due to inadequate demand.

(23) Telecommunication equipments:

(24) Railway wagons, cranes, heavy structurals: 13 million rupees' worth is produced. The capacity is not fully utilised due to inadequate demand and lack of sufficient finance.

Appendix II^aSome suggestions for the improvement of data base

1. Study of capacity utilisation reveals the performance of the economy and its potentialities. It helps the formulation of proper remedial measures. For these reasons, the study on continuous basis is advisable. Perhaps, this is in the back of the mind when the Annual Survey of Industries collects product-wise details regarding production, capacity and reasons for unutilised capacity * from each factory. This survey is on census basis covering all the large-scale industries and on sample basis covering the small-scale industries. The unfortunate aspect of this is that these very useful data which are collected year after year are not compiled and published. Though the publication-lag may not be less than about two years, the information would not lose any importance for certain other economic analysis. The analysis and the publication of these data should be done.
 2. While the ASI data thus available would be comprehensive, the disadvantage in its publication-lag can be overcome to some extent by the data published in the Monthly Statistics of production of Selected Industries of India (MSP). This source covers some factories, (most of which are registered with Government Agencies, DGTI being the prominent. It gives monthly figures of production and capacity (but not reasons for unutilised capacity), product-wise, with a publication lag of about six months usually. (Upto the end of October 1968, the latest issue available that of November-December 1967). The major deficiencies in this are regarding the definition of capacity and the coverage of industries.
 3. The basis of capacity is defined as certain number of shifts worked and certain number of days in a year worked according to different industries. Indeed such a definition has led to the presentation of overutilisation of a considerable number of products. Generally speaking, MSP data would yield an underestimation of the real extent of unutilised capacity. Our study has shown that the number of shifts according to MSP is less than the average number of shifts according to Survey (which reflects the existing pattern of shift-work). Obviously, this is undesirable. The best that could be immediately done is to collect statistics on the basis of the existing practice of shift-work and report the latter as well in a suitable manner.
 4. Our study has further revealed that a considerable number of products are outside the purview of MSP coverage. Indeed, the MSP has not increased the coverage since 1960. In order to get a reasonably good picture of the developing industries in India, it is imperative that the coverage is
- * See block 6 of the Return in which the data are collected by the Annual Survey of Industries.

substantially increased to include most of the new products. Further, it is desirable to keep revising the coverage periodically (say once in two years) so as to incorporate new industries additionally.

APPENDIX III

In the main body of the analysis, the extent of unutilized capacity in 21 broad groups of industries is estimated through two stages of computations. Firstly, the product-wise figures of percent unutilised capacity are weighted by the corresponding product-wise figures of the estimated value of capacity, to get percent unutilised capacity in industries. The figures of estimated value of capacity related to the large-scale manufacturing factories covered by the Annual Survey of Industries (Census scheme). The second stage was to aggregate all industries constituting the industrial economy of our country, into 21 broad groups of industries and attempt an estimate for these broad groups.

The estimate of percent unutilised capacity in a broad group of industries is obtained as the weighted average of the figures of percent unutilised capacity in industries constituting the group, weights being the figures of estimated value of the capacity of the concerned industries. These figures of estimated value of the capacity are based on (1) the gross output according to the Annual Survey of Industries, 1963, Census Scheme, (2) correction done for 100% statistical coverage, (3) estimate of increase or decrease in the level of output in 1967-68 compared to that in 1963, and (4) the percent unutilised capacity. Another set of figures of percent unutilised capacity in these 21 broad groups of industries were obtained by using the figures of value added in place of gross output. (For details please see paras 40 to 46).

The purpose of this Appendix is to compute the percent unutilised capacity by incorporating the ASI data regarding Sample sector into the weights used earlier in the second stage of work. This sector covers, by sample, all the factories which employ 20 to 99 persons (manufacturing without the aid of power) or employ 10 to 49 persons (manufacturing with the aid of power). The figures of gross output and value added are available for 55 major industries (at 3 digit level). In order, therefore, to incorporate the data from Sample sector, the data regarding 203 industries (excluding mining) in Census sector are first aggregated into the 55 major industries. After this is done, for each major industry in Census sector, (1) increase or decrease in the level of output in 1967-68 compared to that in 1963 and (2) the percent unutilised capacity are computed. These two are applied to the figure of value of gross output in each major industry in 1963 in Sample sector to arrive at the estimated value of

* With a view to complete the study at an early date, much time consuming sophistication and refinement that are not likely to materially affect the results were not introduced. It was, however, thought that the refinement appearing in this Appendix would be worthy. The requisite analysis was done during the time the manuscript was being typed, so that this appears here

capacity in each major industry in Sample sector during 1967-68. Symbolically, it is as follows:-

Let Q_i be the value of gross output of i -th major industry in 1963 in Sample sector.

Let R_i be the proportion of the estimated value of production in 1967-68 to that in 1963, in all the industries that constitute the i -th major industry.

Let U_i be the percent unutilized capacity in all the industries that constitute the i -th major industry.

Then $K_i = (100 Q_i R_i)/(100-U_i)$ is the estimated value of capacity of the i -th major industry in Sample sector in 1967-68 (at the 1963 ex-factory prices).

The figures of capacity (K_i) for all major industries in Sample sector are obtained in this manner, together with the figures of gross output ($Q_i R_i$), for the year 1967-68. The figures of capacity and gross output for major industries in Census sector for the year 1967-68, are available from the earlier work. The total capacity and output, for Census and Sample sectors together are then obtained easily for each major group. These major groups are further aggregated into 21 broad groups of industries. The table (i) below gives the value of gross output in 1963, the estimated change in the level of output in 1967-68 as compared to that in 1963 and the percent unutilised capacity in each broad group of industries. It also gives the percent unutilised capacity when only Census sector was considered (figures (U_1) from Table 7, page 27).

Comparing the percent unutilised capacity based on Census and Sample sector data (U_1) with the corresponding figures based on Census data (U_1), they are seen to be practically the same except in case of food industries (in which case the figures are 71.5% and 63.9% respectively) and in case of textile industries (38.7% and 35.4%). For the industrial economy as a whole (excluding mining), the unutilised capacity is 54.2%, based on the use of Census and Sample sector data while the figure based on Census data alone is 49.2%.

By using the figures of value added in major industries in 1963 in Census and Sample sectors in place of the corresponding figures of gross output, and by employing similar method, the percent unutilised capacity is obtained for the 21 broad groups of industries. The results are given in table (ii) with particulars similar to table (i).

It shows that the figures of percent unutilised capacity in both the methods are practically the same except in food industries where the use of Census and Sample sector data shows 61.1% and the use of Census data shows 50.5% unutilised capacity. Textile and refractory etc. industries show a somewhat lesser unutilised capacity when Census and Sample data

are both used. On the whole, 48.2% is unutilised according to the method where Census and Sample data are both used, as compared to 45.9% obtainable when Census data are used.

We may conclude that the inclusion of the Sample sector data, though appropriate, has not changed materially, many results obtained earlier, except in case of a very few industries. It shows that the unutilised capacity in the industrial economy as a whole is somewhat greater.

Table (i) : Estimated unutilized capacity in broad groups of industries during 1967-68 with the use of Census and Sample sector output data.

S. No.	Name of the industry.	Based on Census and Sample sector data			% U ₁
		Value of gross output in 1963, in '000-Rs.	Index Ratio	% U ₁	
(1)	(2)	(3)	(4)	(5)	
1.	Mining industries	2056716	1.101	9.55	9.55
2.	Food Industries	11703298	1.049	71.51	63.87
3.	Beverage industries	157075	1.374	19.34	18.35
4.	Tobacco industries	1473312	1.381	34.96	34.96
5.	Textile industries	13786734	1.003	38.70	35.44
6.	Footwear etc. industries	196220	1.247	0.0	0.0
7.	Wood-furniture industries	594783	1.574	27.70	28.90
8.	Paper industries	1008280	1.420	36.09	36.09
9.	Printing & publishing industries	1027290	1.355	28.30	28.30
10.	Tanneries & leather industries	343693	0.913	46.78	46.27
11.	Rubber industries	1111679	1.291	26.45	26.45
12.	Fertilizer industries				
13.	Heavy Chemical industries	5462168	1.333	58.58	58.28
14.	Other chemical industries				
15.	Refractories, glass, cement etc. industries	1931228	1.224	46.90	46.00
16.	Basic Metal industries	6358541	0.965	42.65	42.27
17.	Metal products industries	1860854	1.529	62.85	62.85
18.	Non-electrical machinery and equipment	2232150	1.288	59.97	59.97
19.	Electrical machinery and equipment	1897239	1.612	46.74	46.74
20.	Transport equipment industries	3951999	1.130	42.20	41.17
21.	Miscellaneous industries	825918	1.308	45.69	44.90
Total (excluding mining)		55922461	1.148	54.24	49.19

Note : Column (3) shows the ratio of the estimated gross output during 1967-68 to that in 1963.
 Column (4) shows the percent unutilized capacity when the data regarding gross output of Census and Sample sectors are used.
 Column (5) shows the percent unutilised capacity when the data regarding gross output of Census sector alone are used.

Table (ii) : Estimated unutilized capacity in broad groups of industries during 1967-68 with the use of Census and Sample sector value-added data.

S. No.	Name of the industry	Based on Census and Sample Sector data			% U ₂
		Value added in 1963 in '000 Rs.	Index ratio	% U ₂	
(1)	(2)	(3)	(4)	(5)	
1.	Mining industries	1527634	1.101	9.89	9.89
2.	Food industries	1479845	1.068	61.09	50.54
3.	Beverage industries	52214	1.317	19.28	18.06
4.	Tobacco industries	314021	1.378	35.08	35.10
5.	Textile industries	3804676	1.005	31.98	35.57
6.	Footwear etc. industries	42754	1.233	0.0	0.0
7.	Wood-furniture industries	163268	1.569	28.08	28.79
8.	Paper industries	274332	1.423	35.15	35.09
9.	Printing & Publishing industries	405119	1.355	28.30	28.30
10.	Tanneries & leather industries	43034	0.910	48.00	46.82
11.	Rubber industries	348439	1.296	25.03	25.04
12.	Fertilizer industries	1511561	1.358	56.48	56.61
13.	Heavy Chemical industries				
14.	Other chemical industries	601157	1.243	42.88	46.76
15.	Refractories, glass, cement etc. industries				
16.	Basic Metal industries	1570092	0.967	44.56	44.28
17.	Metal products industries	500647	1.498	62.49	62.49
18.	Non-electrical machinery and equipment	739692	1.306	69.02	69.01
19.	Electrical machinery and equipment	575376	1.573	45.20	45.21
20.	Transport equipment industries	1278533	1.072	43.38	42.46
21.	Miscellaneous industries	239664	1.303	44.52	44.80
Total (excluding mining)		13944424	1.166	48.21	45.90

Note : Column (3) shows the ratio of the estimated value added during 1967-68 to that in 1963.
 Column (4) shows the percent unutilised capacity when the data regarding value added of Census and Sample Sectors are used.
 Column (5) shows the percent unutilised capacity when the data regarding value added of Census Sector alone are used.

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