

## FOREWORD

It is now generally known that the industrial expansion during the three plan periods has led to the creation of considerable unutilized capacity in a number of industries in India. The reasons for this, however, have not yet been properly investigated into and hence not well understood. Conditions of recession which have appeared in certain industries have complicated the situation further. Therefore, in order to assess the extent of unutilized capacity and the reasons therefor, in certain selected industries, the Institute conducted a quick investigation. The present mimeographed publication is a preliminary report of this investigation.

The investigation was confined to important industries manufacturing capital goods and intermediate goods and therefore covered coal and other mining, paper, chemicals, fertilisers, cement, metal and metal products, machinery, transport equipment and other engineering industries. Kothari's Economic Guide and Investors' Handbook of India 1965 lists approximately 1200 companies having factories in these lines. As the idea was to conduct a quick enquiry, the method of mailed enquiry was adopted and a brief questionnaire was mailed to all these companies, actually 1175 in number. After waiting for a while, a reminder was sent. In all 387 companies sent in replies but about half of them were indifferent or incomplete. Only 151 replies were complete and they form the basis of the present report.

Considering the general reluctance to reply to mailed questionnaire, we are not discouraged by the response to our enquiry. However, it must be admitted that the small response deprives the results of much of their validity. Nevertheless, we are venturing to forward the results of the enquiry for two reasons. Firstly, the present report will indicate the kind of results that can be secured from such an enquiry and the nature of the problems that they can throw light on provided that they were based on a fuller response from the industries. It is hoped that these results will create greater interest in such enquiries and that we shall obtain better response from the industry to similar enquiries in future. Secondly, in spite of the admittedly inadequate base, it may be noted that the results are not entirely useless. It will be seen that the enquiry covered 234 industrial products and obtained estimates of unutilised capacity in these cases and the reasons therefor. Moreover, it should be noted that only 87 of these 234 products appear in 'Monthly Statistics of Production' so that very little information is available from other sources on a large number of products covered by the present enquiry.

The enquiry was conducted under the guidance of Professor P.N. Mathur and forms part of a series of studies in inter-industry relations he is organizing in the Institute. It is needless to say that the validity and utility of these studies will depend upon the extent of willing co-operation that the industry extends.

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CAPACITY UTILISATION AND FACTORS AFFECTING IT, IN  
CERTAIN INDIAN INDUSTRIES, 1966-67

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Introduction

1. It is a common knowledge that certain Indian industries have considerable unutilised capacity. The reasons for the unutilised capacity, however, are not known in detail. Knowledge of both these would be very helpful for a detailed planning. With a view to quickly assess the situation in this regard, a survey of certain selected industries was undertaken recently. In this paper the results of this survey are analysed. The necessary background for the discussion of the results is given in paras 2 to 15. The extent of unutilised capacity, reasons for the same are discussed in detail, product-wise, in paras 16 to 32. Analysis of important industries is made in paras 33 to 43. Main conclusions are given in paras 44 to 49.

Scope of the Survey

2. The intention of the survey was to cover only important industries that manufacture capital goods and intermediate goods. The industries selected, therefore, were coal and other mining, paper, chemicals, fertilisers, cement, metal and metal products, machinery, transport equipment and other engineering. It was also decided to contact these industries by mailing a proforma. The first problem, therefore, was that of a suitable sampling frame. The best frame would be the list of all factories in these industries giving their postal addresses and their size by capacity. Such a frame was not available. The 'Indian Industries, 1963' was not useful because it meant contacting about 10,000 factories (which was unwieldy) since sampling was not possible in the absence of information regarding the size of the factory. Compared to this, Kothari's 'Economic Guide and Investors' Handbook of India, 1965' was found to be useful because it was more recent, it meant contacting about 1400 companies (on a rough count). Moreover, the coverage was expected to be greater in this case because a company may have more than one factory\* and the size of the factory also is likely to be bigger. Hence it was decided to contact all these companies. Proforma was posted to all of them (which were actually 1175 in number) and was followed by only one reminder. (See Appendix A for proforma).

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\* The returns analysed show that the average number of factories per company is 1.6.

The response was 25%. (See Appendix B for details). However, 151 companies (13%) could be incorporated in this study since the response from the rest of the companies was not helpful.

### Nature of inquiry

3. As mentioned earlier, the object was to quickly assess the latest position regarding the capacity utilisation and reasons affecting it. Each company was, therefore, requested to give approximate figures of production, capacity and reasons for unutilised capacity, productwise. The reasons were to be given in order of importance. Since our interest was more in the reasons 'lack of demand' and 'shortage of raw materials', among other things, more particulars are sought regarding these two reasons (See the proforma). As a background for the discussion of the results given in detail in Table 1, some points are elaborated below.

### Best and latest years

4. The companies were requested to furnish the particulars for the 'best' and 'latest' years. For the purpose of this survey, the best year was defined as 'the year since January 1960 in which the total production was the highest' and the latest year was defined as 'the latest year possible for which particulars are readily available'. The particulars required for best year were the figures of production and the pattern of sales of various products, productwise. The particulars required for the latest year were the figures of production, pattern of sales, figure of capacity, and the reasons for unutilised capacity, if any, product-wise. (See proforma). It was expected that the latest year for a majority of responding companies would be about the year 1966. The distribution of 140 responding companies according to latest and best years, given in Appendix D, shows that the latest year in respect of 102 companies (73%) was within the period January 1966 to April 1967, as expected. Though the analysis of the latest situation was the immediate object, particulars regarding best year were also asked, with a view to have comparison between the situations in the latest and best years, to some extent. Considering the periods to which the latest and best years refer, it is significant to note that these are same in case of 75 companies (54%), these differ by one year in case of 30 companies (21%), and by two years in case of 20 companies (14%). Considering the definition of best year, that it could be any year 'since January 1960', it may be noted that practically all companies (123) have best year falling after January 1963.

### Concept of capacity

5. A given company may have only one factory. If the factory is producing only one product, the maximum output of that product technically possible, should be the capacity,

This pre-supposes absence of restraints on account of raw materials, labour, market etc. In other words, the maximum output possible with the existing set of equipments and machinery, given all other things, is the capacity, which may be termed the technical capacity. If the factory is producing two or more products (and they are not joint products) and if those products are competitive in respect of the use of at least one equipment, then the capacity of the factory as a whole would be a function of the product-mix. In such cases the estimation of capacity is a difficult task and may involve use of different techniques.\* If the company has more than one factory the capacity in respect of the company as a whole would just be the addition of capacities of individual factories the company has. Such a concept of capacity is relevant here since our interest is to know what is technically possible and what the reasons are for under-utilisation, if any.

6. In view of the possible difficulty in estimating the technical capacity and the time it may take, a practical definition of capacity is given considering what best can be quickly obtained. The definition given was : 'Capacity means the optimum production possible with the equipment during the latest year assuming normal operating conditions. All the products and their quantity mentioned under this should be capable of being produced together during that year.' The words 'normal operating conditions' were intended to mean the number of shifts normally worked, normal period of time for repairs etc. Obviously, the capacity based on this definition would be less than the technical capacity to the extent the institutional factors, like less number of shifts worked etc., affect. Under these circumstances, one should not expect production to exceed capacity. The returns, however, show that in case of some products the production exceeds capacity.\*\* Secondly, a given product is manufactured by different companies working different number of shifts. This clearly indicates that the reported figures of capacity are less than the technical capacity in those cases. It would be interesting to estimate the difference between technical and actual capacities. This would need closer examination of the basis of capacity. This is not attempted here. Whatever the companies have reported as capacity is considered in this study.

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\* See "optimum capacity and imbalance of capital equipment in machine manufacturing industries" by P. N. Mathur, S. P. Valavade and M. V. Kirloskar (to be published in Artha Vijnana, Sept-Dec. 1967).

\*\* Only the company reports that the production of paper is greater than capacity because higher grammage paper is produced than the grammage used for estimating the capacity.

### Unutilised capacity

7. The figures of production and capacity during latest year, in physical units, are given in Tables 2 and 3 of the proforma. The excess of capacity over output as a per cent of the capacity is the unutilised capacity (U). The excess of output over the capacity as a per cent of capacity is the overutilised capacity (O). Whenever a given product is manufactured by two or more factories, or whenever two or more products/aggregated, it is necessary to segregate the unutilised and overutilised capacities so that, for the aggregate product, the real unutilised capacity regarding some of its 'members' is not offset by the overutilised capacity of other 'members' constituting that aggregate product. For example, if a product is manufactured by two companies and the capacity is 100 units in each case, while the production is 60 and 120 units respectively, then  $U = 20$  and  $O = 10$ , the percentages of unutilised capacity and overutilised capacity, respectively, for that product

8. The companies were requested to report the value of production also during the latest year. The value of capacity, therefore, can be obtained. Percentages similar to U and O can be calculated on the value basis. These would be same as U and O if the product is single but may be different if the product is an aggregate product. In the latter case it indicates differences in the prices of products aggregated. In this study covering 234 products, a small number of them are aggregate products. In the latter case the percentages calculated on the basis of either physical or value units are not much different practically. Hence the analysis here runs in terms of the percentages based on physical units, U and O, which are given in Table 1. However, the value of unutilised and overutilised capacities in respect of only those products that have both unutilisation and overutilisation is given in Appendix F.

### Data in MSP publication

9. Since only 25% of the companies responded to the survey it is desirable to see the extent of coverage by this survey in context of the published data available. The 'Monthly Statistics of Production of Selected Industries of India', January and February, 1967, (referred as MSP hereafter) is a publication that gives the latest position regarding capacity utilisation of a large number of products. Before the comparison is made the nature of data in MSP may be considered in relation to that in the survey.

10. Firstly, the number of products covered by MSP, as far as the industries under study are concerned is 354, while the survey covers 234 products. 87 products are common in both. The comparison is possible only in respect of these 87 products. Secondly, the unutilised capacity of a common product during the calendar year 1966 according to MSP is compared with the unutilised capacity of the same product for the

latest year according to the survey. Although the periods should be the same, it could not be considered in view of the time it would take to collate the data given in MSP so that it referred to the latest year of the common product (which period may vary from product to product). Perhaps this would not seriously affect the comparison. Thirdly, the figure of capacity given against the calendar year 1966 in MSP is the monthly capacity at the end of the year 1966 whereas the figure of production given is the monthly average. These two figures are not comparable because the figure of monthly capacity is found to change during the year 1966. For our purpose, the annual capacity for the year 1966 is obtained by adding the relevant monthly figures which is comparable with the annual production for getting the unutilised capacity. Fourthly, the figure of production given in MSP, against a product, seems to be the aggregate of individual figures corresponding to the different factories manufacturing that product. The real unutilised capacity, therefore, is not necessarily borne out by the difference between the figures of capacity and production because, for a given product some factories may have unutilised capacity while others may have overutilised capacity so that the latter may partly offset the former, in the aggregate. Finally, the basis of capacity used in MSP is not necessarily the same as the one used by the responding companies. This, it is felt, may be a serious limitation affecting the comparison. For instance, the annual installed capacity of superphosphate is computed in MSP assuming 330 days of working and 3 shifts per day. According to survey, it is seen that three out of six companies manufacturing superphosphate report capacity on the basis of 2 shifts while the other three report on the basis of 3 shifts. Similarly the capacity of wire ropes and railway wagons is on the basis of 2 shifts according to MSP while the basis is 3 shifts according to survey. And so on.

11. Using the figures of production and capacity given in MSP, the excess of capacity over production as per cent of capacity is obtained in respect of these 87 products only, and given in Table 1 under the column (u). A few salient features may be given here. Firstly, the figures of installed capacity are not available in case of 13 products. These are mining products, machinery like boilers, sugarcane crushers, electric motors etc. and transport equipments like trucks, three-wheelers etc. Secondly, overutilisation (u is negative) is reported in case of 17 products, important among them are products like steel ingots, Rolling mill and foundry products, Diesel engines, pumps, power transformers etc. for all of which the survey shows unutilised capacity. Considering the products having more than 50% unutilised capacity, some fertilisers, steel castings, tractor, conveying equipments, cables and wires etc. are the important ones among a total of 11 products.

### Coverage by the Survey

12. The extent of coverage by the survey in the context of MSP may be considered. The number of products covered by MSP and survey according to broad groups of industries is given in Appendix D. The coverage by the survey appears to be adequate in most of the industries except 'metal mining' and 'non-metallic mineral products' industries. In fact it covers greater number of products than MSP in case of Electrical machinery and transport equipment industries. The last column of Appendix D lists 147 products which are in the survey but not MSP. In respect of 87 products common to both MSP and survey, it is possible to know the coverage product-wise. For this purpose, the production of a given product according to the survey is expressed as a per cent of the production of the same product according to MSP (which is given in Table 1 under column c). The figures of capacity are not used for this purpose for fear of non-comparability. In Appendix E the distribution of products according to coverage (c) is given. This indicates that the coverage by survey is more than 30% in about half the number of common products. It may be pointed out here that the survey covers a large number of products which are not covered by MSP, indicating less extensive coverage by the latter source. But, it should be noted that the number of factories covered by MSP for a given product is quite large.

### Representative Character of the Survey

13. It may be recalled here that no sampling was possible in selecting the companies so that the responding companies cannot be taken to constitute a random sample. In such a survey as this one may anticipate that the companies experiencing relatively more unutilised capacity chose to respond. It would, therefore, be pertinent to examine whether these 151 companies analysed are "biassed". The statistical procedure should be to sample the non-responding companies and make a judgement. This might mean personal interview. Neither the time nor the resources permitted this. The only thing that can be examined is to see whether there is any 'bias' with respect to MSP.

14. Consider those 87 common products. If the unutilised capacity reported in the survey ( $U - O$ ) is greater than the one reported in MSP ( $u$ ), in case of relatively large number of products, we may infer that the companies are experiencing relatively greater unutilised capacity, or there is bias. A scatter diagram of 74 products (because  $u$  is not available for the other 13 products) according to  $U - O$  and  $u$  shows that 13 products fall within 5% or either side of the line of equal unutilised capacity ( $U - O = u$ ), while 22 products show less unutilised capacity in the survey and 39 show more unutilised capacity. The inference is that there is probably bias in the responding companies. This inference is subject

comparability of the basis of capacity as given in MSP and in survey, which is elaborated in para 10.

15. MSP covers one group of products while the survey covers another. We may examine whether the percentage number of products having unutilised capacity to the total number of products covered by the survey is different from the similar percentage corresponding to MSP. The following table gives the number of products according to capacity utilisation.

	Unutilised capacity (1)	No unutilised capacity (2)	Total (3)	$\frac{(1)}{(3)} \times 100$ (4)
MSP	238	52	290	82.1
Survey	198	36	234	84.6

(Note: In case of 64 products covered by MSP figures of capacity are not available. Hence these are excluded).

Considering the figures in column 4, it appears that these percentages are not much different.

#### Detailed results of the study

16. The figures of production, capacity, per cent unutilised and overutilised capacities, all based on physical units, are given in Table 1 along with the reasons for unutilised capacity. These data are product-wise and products are listed in a sequence similar to that of MSP. The values of production and capacity are also given. The Note preceding the Table 1 explains the various columns of that table. The survey covers 234 products of which 20 have fully utilised capacity and 14 have overutilised capacity. The distribution of the remaining 200 products, according to the unutilised capacity, is given in Table 2. By looking into the list of products falling in different ranges of unutilised capacity, it is difficult to name the industries that are to be found exclusively in one or the other range. Considering the set of products that have more than 60% unutilised capacity,\* it appears that some Chemicals, Fertilisers and Drugs, Steel tubes, Steel forgings and Non-ferrous alloys, some metal products, Textile and other machinery, Conductors and cables and some transport equipments are the important ones. It is clear that the extent of unutilised capacity is quite considerable. Although it is important to consider specially those products which have large unutilised capacity, the relative importance of the products cannot be judged solely on the basis of unutilised capacity. For instance, Steel ingots has only 12% unutilised capacity according to the survey, but it is difficult to treat this product as unimportant. Perhaps, the value added by manufacturing a given product is a reasonable basis to judge the importance of that product. In the absence of such data, we are considering the value of unutilised capacity reported in the survey as indicative of the importance of the product. A word



of caution is very necessary here. A product important according to this survey need not be important in the context of the economy. This is so, because, firstly, the survey covers only a part of the economy. In particular, it does not cover a large number of products covered by the MSP. Secondly, the coverage of a given product by the survey is only a part of the capacity of that product in the economy. For a large number of products (about 140) covered by this survey but not by MSP, there is no way of knowing their capacity in the economy. We, therefore, repeat the word of caution, that, the analysis based on the value of unutilised capacity reported in the survey should be considered strictly within the frame of the survey.

17. The value of the capacity of all the 234 products is 18376 million rupees of which the 200 products having unutilised capacity account for 16350 million rupees. The value of unutilised capacity is 3432 million rupees and that of overutilised capacity is 209 million rupees, constituting 18.7 and 1.4 per cent of the total capacity of all the 234 products. The unutilised capacity of those 200 products having unutilised capacity is 21%. Of these 200 products, only six products have an unutilised capacity each worth more than 100 million rupees, which together account for nearly half the total unutilised capacity as shown in the following Table.

S. No.	Name of the product	Value of unutilised capacity in '000 Rs.	U %
85	Semi-finished steel	604703	15
86	Steel ingots	274305	12
87	Rolling mill & foundry products	197805	17
89	Heavy structurals	321408	21
90	Mild steel tubes	158431	71
185	Aluminium conductors	102143	61
Total		1658795	
Total in the survey		3432005	

It may also be seen that the first four products mentioned above have unutilised capacity between 12 to 21 per cent, but their value is substantial. The reasons for the unutilised capacity may be considered now.

\* The median unutilised capacity (considering only these 200 products) is 36.0%; the first and third quartiles are 19.6% and 57.1% respectively.

### Reasons for unutilised capacity

18. The companies were requested to state the reasons for unutilised capacity in order of their importance. In some returns, more than two reasons are listed. It may be recalled that our interest is primarily in the reasons 'lack of demand' and 'shortage of raw materials'. Hence,

both the reasons were found in the list, no others were taken into account. If only one or none of these reasons was there the other important reason(s) was picked out, so that only two were considered. Thus the reasons may be 'lack of demand', 'shortage of raw materials' or 'others' or any combination of only two of these. According to these reasons, the number of products, the value of unutilised capacity etc. are given in Table 3. 'Lack of demand', 'shortage of raw materials' and 'other' reasons are important in that order, solely affecting 56, 53 and 45 products respectively. 19 products are affected both by 'lack of demand' and 'shortages'. This category would be dealt with later. No reasons are given in case of 14 products. If the number of products affected, whether wholly or partly, is considered, 'shortages' and 'lack of demand' become important factors affecting 81 and 77 products respectively, while 'other' reasons affect 56 products. (See last 3 rows of Table 3). In terms of the unutilised capacity, reason-wise, 'shortages' and 'lack of demand' again seem to occupy important positions causing 47% and 36% unutilised capacity. Considering the total value of unutilised capacity in the survey, these two reasons together account for about 60%. Thus, from all considerations these two reasons are more important than 'other' reasons, though the latter is not insignificant. All these three may be dealt with in greater detail.

#### Lack of demand

19. This is the only reason for the unutilised capacity in case of 56 products which show 36% unutilised capacity on an average, the value of which is 401 million rupees. This value is 12.8% of the total value of unutilised capacity. Though 56 products are affected, it is possible that the lack of demand for certain products may lead to reduced demand for certain other products and so on. In order to see if such a thing exists, a list of 27 important products is considered for a closer examination. All the products common to MSP and survey, and all those which have considerable value of unutilised capacity according to survey, are included in this list (See Table 4). This list accounts for 335 million rupees worth unutilised capacity, or 82% of the unutilised capacity of all 56 products.

20. It can be seen that the textile machinery, Machine tools, House service meters and plastic moulding machinery lack demand on one hand; Railway wagons, truck and trailer lack demand on the other. Further, refractories, stoneware,

sanitaryware, cement products and road rollers also lack demand. These in turn seem to have affected steel castings, cast iron spun pipes, electrodes and automobile wheels. Coal and iron ore seem to follow next. Wire ropes, used largely in coal mining, is also lacking demand. The lack of demand in chemicals; however, seem to be connected with certain other industries. A word of caution may be added here. In interpreting 'lack of demand' the related questions like (i) at what price? (ii) whether there is excess capacity in relation to requirement? are relevant. This will need further probe into the other data. It will suffice to add here that there is a possibility of excess capacity built in the economy in respect of certain products. In fact, the companies manufacturing wire ropes and House service meters have remarked that the capacity for them is far in excess of the requirement in the country.

21. We may now consider all the 77 products affected by lack of demand. One of the intentions of the survey was to locate the source of demand lacking, so that the interdependence could be traced to some extent. The companies were requested to mention the source of demand lacking. In case of only 21 products, the concerned companies have mentioned the source. In case of the remaining 56 products it may be possible to enumerate the industries using a given product, with the help of detailed input-output table, but it would be difficult to locate the source of demand lacking. Obviously one cannot be precise. We have, therefore, considered broad sources and classified all the remaining products. This together with the sources mentioned for those 21 products is given in Table 5. Considering the number of products each source affects, Engineering industry, Industry (general) and Textile industry are the important sources accounting for half the number of products. In terms of unutilised capacity, the first two sources retain their order of importance, while Electricity Supply takes the third position. These three account for 72% of the value of unutilised capacity of these 77 products.

#### Shortage of raw materials

22. Whenever the reason for unutilised capacity was 'shortages', the companies were requested to mention the name of the raw materials in short supply, the quantity of each of them for full capacity production and whether the materials are produced in India or not. The quantity data provided by the companies, however, are not analysed here. It may be noted from table 3 that this is the only reason for the unutilised capacity of 53 products which together show 47% unutilised capacity on an average and account for 632 million rupees. This value is 19.7% of the total value of unutilised capacity under the survey. For a detailed study a set of important products is picked out on considerations similar to those listed in table 4. These are 23 products having 534 million rupees worth of unutilised capacity, or 83% of the value of unutilised

capacity of all 53 products. These are given in Table 6. The names of raw materials in short supply and whether they are not produced in India are also given. Some comments on Table 6 would be useful.

23. It is important to note that MSP shows overutilisation of capacity regarding Crown corks, bright steel bars and shaftings, storage batteries etc. while the survey shows unutilised capacity (and has reasonably good coverage of MSP). Many products, viz., Sulphuric acid, certain fertilisers, certain chemicals are directly affected due to shortage of sulphur, which is to be imported. Through shortage of sulphur, the products Nitric acid, Alum etc. have unutilised capacity. The shortage of Nitrogenous fertilisers has affected NPK Mixtures. Thus sulphur is the dominant material in short supply. Non-ferrous alloys are affected due to shortage of non-ferrous metals. Crown corks and containers report shortage of tin plates. Bright steel bars & shaftings are affected by shortage of Alloy steel, which is to be imported. Oil engines have shortage of castings to be imported. These castings must be of special type. (We have seen earlier that castings lack demand). Motorcycles, Autocycles, cycles face shortage of tyres and tubes besides other parts and components, some of which are to be imported. According to MSP, there is over-utilisation of capacity of tyres and tubes. Such a detailed table as this, therefore, helps in locating areas of action. Of course, the decisions (like creation of additional capacity or importing or such) will depend on certain other considerations also.

24. We may now consider all the 83 products affected by shortages. The list of these products and the raw materials in short supply is given in Table 7. The table shows that 63 raw materials are in short supply. If these are available, 18.7% of the total unutilised capacity can be wiped out while there will be some improvement in the utilisation of capacity of other products where 'shortages' is one of the reasons. It is interesting to see the structure of interdependence provided by this table. As an aid to this, the fact whether the raw materials listed have unutilised capacity or over-utilised capacity is indicated by symbols - or + respectively in the last column of this table. For instance, Aluminium is a raw material in short supply which has unutilised capacity, because bauxite is in short supply. There are, however, some instances which cannot be explained. For instance Coke is a raw material reported to be in short supply. It has unutilised capacity due to lack of demand, according to survey! This table is useful to trace the interdependence. It is possible to pick out different complexes such that within each there is greater interdependence. Two such are picked out and dealt with below. These two account for an unutilised capacity worth 1148 million rupees or 65% of the unutilised capacity affected by shortages.

Chemical complex

25. The first is regarding chemical complex. If sufficient\* amount of six products namely Sulphur, Hydrochloric acid, Sodium Nitrate, Bauxite, Rock and Murate of Potash are available, eleven products, chiefly fertilisers and sulphuric acid, would have full capacity utilisation since these suffer only due to shortage of raw materials (See Table 8) for details). This would mean importing sulphur and Murate of potash. Such an availability will wipe out the unutilised capacity worth 186 million rupees. The implicit assumption in this statement is that there is no structural imbalance in the economy. For example, unless sufficient amount of Nitrogenous fertilisers is available, the capacity of NPK mixtures cannot be fully utilised and in the above statement it is assumed that sufficient Nitrogenous fertilizers would be available to feed the NPK mixtures if the capacity of the former is fully utilised.

Metals Complex

26. The second is regarding Metals. If sufficient\* amount of steel ingot, certain non-ferrous metals and PVC and Insulating paper are available, the shortages affecting 18 products, mainly structurals, metal products, aluminium conductors, cables and wires, and transformers, can be wiped out (See Table 9). The value of unutilised capacity of these 18 products is 962 million rupees. The following table shows the extent of unutilised capacity according to reasons.

Reason	No. of products	Value of unutilised capacity in '000 Rs.	%
1. Shortage of raw materials only	8	66211	6.9
2. Lack of demand and shortage of raw materials	7	852394	88.6
3. Short. of raw materials and other reasons	3	43122	4.5
Total	18	961727	100.0
'Shortages ...' as one of the reasons	81	1753944	

\* It is possible to give an estimate of requirements, but is not done here for want of time.

It is clear from this that not much of utilisation is possible by overcoming shortages only, unless the associated reasons are also overcome. The implication of the joint reasons 'lack of demand' and 'shortages' would be considered below.

#### Lack of demand and shortage of raw materials

27. From table 3, it can be seen that only 19 products are affected by this. But the value of unutilised capacity is 1001 million rupees, or 29% of the total unutilised capacity. If only 11 important products are considered, their share would be 974 million rupees or 97.3% of the unutilised capacity of all 19 products (See Table 10). The number of companies manufacturing each of these products is two or more except in case of two products. Looking into the returns of the individual companies, the extent due to 'lack of demand' and due to 'shortages' is separated and given in the same table.

28. It is clear that some companies report lack of demand for a given product and some others report shortages for the same product. While the latter companies imply that there is demand for the product manufactured by them, the former set of companies face lack of demand. This indicates product differentiation. On the other hand, the set of companies reporting lack of demand probably do not have shortage of raw materials (or at least they seem to have a command of raw materials market) while the other set of companies report shortage of raw materials. This indicates differential abilities to procure raw materials. For instance, aluminium conductors are manufactured by three companies of which two report shortage of raw materials and one reports lack of demand. Similarly, in case of diesel engines manufactured by five companies, one has full capacity utilisation, two have unutilised capacity due to lack of demand and the remaining two have shortage of components to be imported. It would require separate study to probe into such situation more deeply. Considering the situation where a given product manufactured by only one company has unutilised capacity due to lack of demand and shortages, the following may be the explanation. It is possible that one of them is a reason for unutilised capacity upto certain stage of capacity utilisation, beyond which another reason also becomes operative. Barrels and paper insulated power cables are examples of these (See Table 10).

29. Turning to the consideration of Metal group described in para 26, the extent of utilisation by removing the bottleneck of raw materials can be easily worked out from Tables 9 and 10 as 404 million rupees worth. There may be slight improvement in respect of products affected by shortages and 'other' reasons. It may be recalled that the chemicals group would have a recovery of about 186 million rupees worth of unutilised capacity. By removing the bottleneck of raw materials in case

of chemicals and Metals, capacity utilisation will improve by 590 million rupees worth. This amount is one-third of the total unutilised capacity affected by shortages; or it is 17% of the total unutilised capacity in the survey. At the same time it should be noted that the Metal group suffers from the lack of demand and the value of the unutilised capacity due to this is 338 million rupees. Considering that the Metal group includes 7 products each of which is affected by both the reasons, 'shortages' and 'lack of demand' sharing 514 and 338 million rupees worth of unutilised capacity respectively, (See tables 9 and 10) one wonders whether there is excess capacity also besides the market imperfection mentioned in para 25. There is scope to study this further.

#### Other reasons:

30. It is seen from table 3 that the 'other' reasons affect 45 products solely, accounting for 1134 million rupees worth of unutilised capacity, or 33% in the survey. It is an associated reason in case of another 11 products accounting for only 3.4% of the total unutilised capacity in the survey. The details of various reasons under 'other' are given in Table 11. Though 56 products are affected, only few products falling in 'Iron and Steel' industry account for nearly three-fourths of the total.

31. Considering the importance of various reasons, it appears that labour troubles and power shortage are very important barring the reason 'Fire, damage etc. ...'. These two account for 40 and 12 per cent while the latter accounts for 34 per cent of the total value of unutilised capacity due to 'other' reasons. This observation is subject to the arbitrary manner in which the value of unutilised capacity of the product affected by two or more reasons (within 'other') is distributed

#### Overall position

32. From the above analysis the following overall position emerges in respect of important reasons affecting the unutilised capacity.\* (See next page for the Table).

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\* The value of unutilised capacity due to joint reasons 'lack of demand' and 'shortages' is split on the basis of data in Table 10.

Reasons for unutilised capacity	Value of unutilised capacity in '000 Rs.	% to the total in the survey
1. Lack of demand	1008250	29.4
2. Shortage of raw materials	1045579	30.5
3. Other reasons		
(i) Labour troubles	496698	14.5
(ii) Power shortage	153362	4.5
(iii) Fire, damage etc.	428523	12.5
4. No reasons given	95610	2.8
<b>Total</b>	<b>3228022</b>	<b>94.2</b>
<b>Total in the survey</b>	<b>3432005</b>	<b>100.0</b>

Note: The extent of unutilised capacity mentioned under 3 is subject to limitations described in para 31.

It is clear from the above table that shortage of raw materials and lack of demand are the most important reasons. Labour troubles is also a disturbing factor.

#### Industry-wise analysis

33. So far, the analysis has been product-wise. To focus attention on broad sectors industry-wise analysis would be made in this and subsequent paras. The industrial classification chosen is the one that roughly corresponds with the one given in MSP. All the products covered by survey are classified according to this classification, and it is seen these products correspond to 49 industries. Considering the extent of unutilised capacity in each industry and the share of unutilised capacity of each industry in the total, it appears that there are ten important industries. These are dealt with here. These ten industries cover 77 products and account for 82% of the total unutilised capacity (See Table 12). Further they account for 73% of the total capacity covered. Textile machinery, other machinery, cables and wires, NPK mixtures are the industries which have more than 60% unutilised capacity in each of them. Iron and steel, Automobile etc. have relatively a large share in the total unutilised capacity. These may be discussed industry-wise.



### Fertilisers

34. NPK mixtures has unutilised capacity due to shortage of Nitrogenous fertilisers and Murate of Potash. The latter is not produced in India. All the fertilisers, namely, Ammonium sulphate, Ammonium chloride, superphosphate and Ammonium phosphate have unutilised capacity due to shortage of sulphur, Sulphuric acid, Hydrochloric acid and Rock. It is clear that this industry is affected only by shortages. The shortage of sulphur is very crucial.\*

### Iron and Steel

35. (i) Basic metal: Pig iron, semi-finished steel and steel ingots are included here. While pig iron suffers from shortage of electrode paste, mechanical trouble and damages, the other two are affected largely by labour troubles, power shortage and damages.\*\*

(ii) Heavy structurals etc.: Transmission towers, Rolling mill and foundry products, Heavy structurals including bars, mild steel tubes and cast iron spun pipes are the products included in this. The first product is the only product facing shortage of zinc (to be imported) and also power shortage. The next three products suffer due to lack of demand as well as shortage of raw materials, but the former reason accounts for two-third of the total unutilised capacity of these three products. The materials in short supply are zinc, steel ingot and tin ingot. (Zinc is to be imported; Steel ingot itself has unutilised capacity due to the reasons stated earlier; position regarding tin ingot is not known). The last product, namely, cast iron spun pipes has lack of demand. The position regarding this group may be summed up by saying that lack of demand is the main reason.

(iii) Castings etc.: Cast iron pipes, steel castings and malleable castings lack demand. Die casting and Foundry casting face shortage of copper and aluminium. Cast iron castings and Ferro alloys have lack of demand as well as shortage of raw materials; the former needs pig iron and coke

\* The only exception is that of Urea which has also unutilised capacity to the tune of 60% but the reason is that it is an item being 'developed'.

\*\* It may be noted that Pig iron and steel ingots have considerable overutilised capacity, while semi-finished steel has negligible unutilised capacity, according to MSP. But the survey, having reasonably good coverage of MSP as far as these products are concerned, shows unutilised capacity.

of good quality while the latter needs manganese ore. Steel forgings are affected by power shortage. Regarding Laminations and stampings a small part of its unutilised capacity is explained by delay in supply of raw materials while for the rest no reason is given. Iron casting is the only product in this group that has overutilised capacity. It, therefore, follows that some products face lack of demand while others face shortage of copper, aluminium, pig iron etc. To sum up the position regarding these three subgroups of Iron and steel industry, it may be stated that the basic metal has considerable unutilised capacity due to important reasons like labour troubles, power shortage and damages. The reduced availability of this may affect many industries like the second and third subgroups. Some products under Heavy structurals and castings lack demand.

### Metal Products

36. Wire ropes, barrels and industrial components are the only three products facing lack of demand. The remaining eight products\* face shortage of raw materials, principal among these raw materials are special steel and certain non-ferrous metals. Certain varieties of special steel are not manufactured in India. Here again the effect of inadequate supply of basic metals can be seen.

### Agricultural machinery and implements

37. The tractor making industry has unutilised capacity. Lack of demand and shortage of parts and components (to be imported) equally share the reason for this unutilised capacity. The tractor-drawn implements and other agricultural equipments also lack demand. The plough and other agricultural tools, however, have no unutilised capacity. It is, therefore, clear that tractor and tractor-drawn implements (the use of which is indicative of mechanised farming) lack demand and face shortages, while the other tools and implements (indicative of traditional but improved farming) do not have unutilised capacity.

### Diesel and oil engines

38. The unutilised capacity of diesel engines is largely due to lack of demand and to a lesser extent is due to non-availability of certain components to be imported. Regarding oilengine, non-availability of the castings is the reason.

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\* These are Crown corks, Bright steel bars and shaftings, Aluminium ware vessels, Cycle chains, Jute baling hoops, Box strapping, containers & components (tin) and Fourdrinier wire cloth.

The boiler and pressure vessels have unutilised capacity due to shortage of various parts and components to be largely imported. The thin-walled products, Nozzles and Nozzle-holders (which are required for diesel and oil engines) face shortage of bi-metal strip and alloy steel. In case of valves, the mechanical trouble is the reason, while lubricators have no unutilised capacity. In respect of this industry, shortages are dominant, though Diesel engines face lack of demand also.

#### Textile machinery

39. Power looms and other items of textile machinery lack demand.

#### Other machinery

40. Five items of machinery are included here. Rice mill machinery is affected due to labour troubles, while industrial engines are affected by labour troubles and power shortage. Cement machinery faces shortage of parts and components to be largely imported. Plastic moulding machinery is lacking demand. Decorticators has no unutilised capacity. The picture, therefore, is of a mixed type, with shortages as the dominant reason.

#### Cables and wire

41. Aluminium conductors, electric cables and wires, paper insulated power cables have unutilised capacity due both to lack of demand and shortage of raw materials. The latter reason is more dominant. The solidal underground power cables, conductor accessories and High tension galvanised steel wires suffer from shortage of raw materials. Important raw materials reported to be in short supply are Aluminium, PVC, special steel sheets, and alloy steel, lead, and Electrolytic zinc and insulated paper, affecting all the products mentioned above. Though lack of demand is a reason, the shortages are affecting these products much more.

#### Automobile

42. Heavy duty chassis (trucks) faces lack of demand. The other trucks also have unutilised capacity but no reasons are given for that. Comet passenger and good chassis is affected by labour troubles. It, therefore, follows that the commercial trucks lack demand. The unutilised capacity in this seems to have affected the products Automobile wheels and Automobile shock absorbers which report lack of demand.

### Other transport equipments

43. Trailer is the only product lacking demand. This is in line with the lack of demand for heavy trucks, 3-wheelers, scooters, autocycles and cycles have shortage of raw materials, important of which are alloy steel, steel sheets, tyres and tubes, besides many components and parts to be largely imported. The products pistons, brake parts, oil seals which are required in this and automobile industry have no unutilised capacity. Leaf springs (another product required in this industry) has slight unutilised capacity, but no reason is given. Recalling that the tyres and tubes are overutilised (according to MSP) the picture that emerges is that the capacity of these equipments cannot be fully utilised until the supply of these parts produced in India and of the parts and components to be imported is substantially increased. Thus, the items like scooters etc. face shortages and some of the parts required by these are having no unutilised capacity. It is significant that trailers lack demand.

### Conclusions

44. A brief account of this survey may be given as an introduction to the conclusions. This survey was taken up with a view to know the reasons for unutilised capacity in important capital and intermediate goods manufacturing industries in India during the recent past. Out of 1175 companies to whom a proforma was mailed for getting particulars, though we got replies from 287 companies, only 151 companies furnished adequate details. This study is based on these 151 companies, which cover the industries we intended to cover, to a reasonable extent. Compared to the publication 'Monthly Statistics of production', there appears to be no 'bias' in the responding companies, in the sense, that the companies which have responded to this survey are not those which had relatively more unutilised capacity. The survey covers 234 products of which there is no unutilised capacity in case of 34 products. Product-wise figures of capacity utilisation and reasons for unutilised capacity are thrown by the survey. Indeed, this survey gives extent of capacity utilisation in case of a large number of products (about 147 products) which are not covered by the 'Monthly Statistics of production'. The survey covers a capacity of 18376 million rupees worth of which the value of capacity of the 34 products that have no unutilised capacity is 2026 million rupees. The capacity of the remaining 200 products is unutilised to the extent of 21%.

45. Shortage of raw materials and lack of demand come out to be equally important reasons affecting 30.5 and 29.4 per cent, respectively, of the total value of unutilised capacity in the survey. Labour troubles are next in importance affecting another 15 per cent. The other reasons are, natural

calamities like fire, damage etc. and power shortage. The number of products affected by each of the above mentioned three important reasons also indicates the same order of their importance.

46. Lack of demand is the reason for unutilised capacity of products, important of which are, Textile machinery, plastic moulding machinery, Machine tools and House service meters on one hand; Railway wagons, trucks and trailers on the other hand. Further, Refractories, stoneware, cement products, and to some extent Tractors, diesel engines, Electric cables and wires are also facing lack of demand. This situation, perhaps, explains the lack of demand for Heavy structurals, cast iron spun pipes, steel castings and to some extent Rolling and foundry products. The lack of demand for coal, iron ore, electrodes, automobile parts, wire ropes and certain industrial chemicals seem to follow.

47. Shortage of raw materials is faced by many products, important among which are, sulphuric acid, Fertilisers and certain other chemicals. Sulphur (to be imported) is the principal product in short supply affecting many chemical products. Heavy structurals and certain castings are partly affected and Non-ferrous alloys, Bright bars and shaftings, certain metal products are facing shortages of raw materials, important among which are Alloy steel, special steel and non-ferrous metals most of which are to be imported. Aluminium conductors, power cables, steel wires face shortages, important of which are aluminium, PVC and special steel. Tractor, cement machinery, Boilers and pressure vessels oil-engines, electrical goods like storage batteries, dry cells and batteries, radio and transistors are suffering due to shortage of raw materials, chiefly the shortage of crucial parts and components to be imported largely. The Scooters, 3-wheelers, motorcycles, cycles also suffer due to shortage of parts and components many of which are to be imported and for some of which (like tyres and tubes, etc.) that are produced in India, the domestic capacity seems to be inadequate.

48. Coming to the other reasons (including labour troubles) affecting the various products, the vital sector of our economy is involved in this. Pig iron, semi-finished steel and steel ingots suffer due to labour troubles, power shortage and damages, fire etc. The labour troubles and power shortage have affected Hoists, cranes, industrial engines, comet passenger and goods chassis, etc.

49. It is obvious that the unutilised capacity in such a vital sector as iron and steel basic metal has resulted in the lack of demand for coal, iron ore etc. on one hand and in shortages of this metal being felt by castings, metal products etc. The lack of demand for items of machinery, transport equipment (mainly commercial type) and construction listed in para 46 seems to result in the lack of demand for products demanded by these items and so on. The shortages, particularly of basic iron and steel metal and aluminium (produced in India) and that of non-ferrous metals and vital parts and components (which are largely to be imported) are at the base of the unutilised capacity of metal products, machinery items listed in para 47.

\*\*\*

LM:  
28.9.67.

Explanatory note to Table 1

This table gives particulars about 234 products covered by the Survey. In the first two columns the serial number & the name of the product are given. The other columns are as follows :

Column Heading	Description
Unit	Unit in which figures of production and capacity are expressed.
Prod.	Production in physical units according to Survey.
Cap.	Capacity in physical units according to Survey.
U.	Unutilised capacity as percent of the capacity of the product, based on Survey.
O.	Overutilised capacity as percent of the capacity of the product, based on Survey.

(For example, paper and paper board - S.No.7 - is manufactured by 6 companies. The total capacity is 149420 tonnes. Some companies have unutilised capacity and the remaining have overutilised capacity to the extent of 10% and 7% of the capacity respectively. Hence U = 10, O=7).

u.	Unutilised capacity as percent of capacity according to MSP, during the year 1966.
c.	Production according to survey as percent of production according to MSP.
9.	Value of production in thousand rupees according to Survey.
10.	Value of capacity in thousand rupees according to Survey.
11.	Reason for unutilised capacity a-lack of demand; b-shortage of raw materials; c-'other' reasons; d-no reasons given; e- lack of parts causing idleness of machinery; f-full capacity utilisation; o-overutilised capacity; ab etc... are respective combination of reasons. Indicates 'nil'
NA	Not available.
*	Indicates inability to compute c, due to non-comparable units in terms of which the production is given. This symbol occurs only in column c.
MSP	'Monthly Statistics of Production of selected industries of India'.

Note that blank space exists under columns u and c to denote that the corresponding products are not covered in MSP which are covered by the Survey.

Table 1: Capacity utilisation and reasons for unutilised capacity according to survey; Capacity utilisation according to MSP and coverage by the survey.

	Name of the product	Unit	Prod.	Cap.	U	O	u	c	9	10	11
1	Coal	'000 Tonnes	5972	6817	12	-	NA	9	168939	190229	a
2	Iron ore	'000 Tonnes	3290	3560	8	-	NA	17	18118	44996	a
3	Gypsum	'000 Tonnes	2.5	3.0	17	-	NA	-	8	9	c
4	Rockphosphate powder	'000 Tonnes	0.9	6.0	85	-			207	1441	a
5	Acid and hypo washed goat hair	Tonnes	479	600	20	-			609	763	a
6	Steel furniture	'000 Rupees	8575	15605	45	-			8575	15605	a
7	Paper and paper board	Tonnes	144780	149420	10	7			221141	230869	ab
8	Paper products	Tonnes	638	1200	47	-			4017	7194	a
9	Leather, leather footwear and rubber footwear	'000 Rupees	273	273	-	-			273	273	f
10	Tacks	Tonnes	368	747	51	-			1313	3822	d
11	Dissolved acetylene	'000 cu.m.	2970	4358	32	-	57	68	23200	34040	a
12	Acetic acid	Tonnes	2930	3000	2	-	30	33	4395	4500	d
13	Esters (like ethyl and butyl acetate)	Tonnes	650	800	19	-			2500	3078	ab
14	Polyvinyl acetate dispersions	Tonnes	835	2400	65	-			6700	19258	b
15	Monochloro acetic Acid	Tonnes	144	300	52	-			501	1043	c
16	Carboxy methyl cellulose	Tonnes	731	1200	39	-			3188	5233	a
17	Sulphuric acid	Tonnes	876	227696	42	-	45	20	19968	34074	b
18	Caustic Soda	Tonnes	13351	16212	18	-	16	6	9299	11292	c
19	Chlorine liquid	Tonnes	3650	4728	23	-	43	6	515	666	a
20	Sodium sulphide	Tonnes	456	620	26	-	48	12	436	593	b



	Name of the product	Unit	Prod.	Cap.	U	0	u	c	9	10	11
21	Industrial oxygen	'000 cu.m.	25970	31400	17	-	31	82	27140	32814	a
22	Calcium carbide	Tonnes	9200	10000	8	-	18	18	8065	8766	d
23	Precipitated Calcium Carbonate	Tonnes	300	525	43	-	- 7	3	225	383	c
24	Nitric acid	Tonnes	236	640	63	-	-16	1	297	805	b
25	Nitrous oxide	'000 litres	170000	196000	13	-	15	102	2550	2940	a
26	Sodium hydrosulphite	Tonnes	3179	7394	57	-	41	93	14769	33758	a
27	Magnesium Carbonate	Tonnes	55	250	78	-	-	-	110	500	c
28	Ferrous Sulphate	Tonnes	522	600	13	-	-	-	65	75	b
29	Alumina Sulphate	Tonnes	31491	51615	39	-	-	-	6012	9858	b
30	Chlorosulphonic acid	Tonnes	1818	6600	72	-	-	-	1364	4950	b
31	Laminates	Tonnes	101	180	44	-	17	5	2100	3743	c
32	Resin finishes	Tonnes	191	300	36	-	-	-	685	1076	a
33	Polyster fibre	Tonnes	2361	2043	-	16	-27	93	47264	40897	o
34	Vat dyes	Tonnes	371	371	-	-	-100	38	32149	32149	f
35	Solubilized Vatdyes	Tonnes	33	119	72	-	31	31	3579	12906	a
36	Poly bottles	Number in Lakhs	3	20	85	-	-	-	100	667	c
37	Synthetic rubbers	Tonnes	15600	30000	48	-	-	-	66931	128700	c
38	Organix pigment powders	Tonnes	328	385	15	-	-	-	10298	12087	a
39	Pigment emulsions	Tonnes	735	900	18	-	-	-	24719	30268	a
40	Synthetic resin binder materials	Tonnes	2436	2300	-	6	-	-	19903	18791	o
41	Ammonium Sulphate	Tonnes	103943	181500	43	-	33	*	43255	77117	b
42	Urea 46% 'N' content	Tonnes	60607	152000	60	-	35	*	NA	NA	c
43	Ammonium chloride	Tonnes	3210	16500	81	-	57	*	3040	15626	b
44	Superphosphate	Tonnes	289496	329466	14	2	24	*	64372	73268	b
45	Ammonium Phosphate	Tonnes	49600	82500	40	-	53	*	35216	58575	b

	Name of the product	Unit	Prod.	Cap.	U	C	u	e	9	10	11
46	NPK Mixtures	Tonnes	83036	269000	69	-			37265	120318	b
47	Paints & Varnishes	Tonnes	67680	106030	36	-	36	100	NA	NA	ab
48	Penicillin	m.m.u.	65.73	77.00	15	-	- 7	53	35070	41083	a
49	Bismuth Salts	Kgs.	6729	60000	89	-			200	1783	b
50	Niacin and Niacinamide	Kgs.	23113	60000	61	-			1200	3115	c
51	Isomazid	Kgs.	Nil	30000	100	-			NA	NA	c
52	Thiacetazone	Kgs.	Nil	50000	100	-			NA	NA	c
53	Ayurvedic, allopathic and biological products	'000 Rupees	9986	11749	15	-			9986	11749	ab
54	Epsom Salt	Tonnes	673	850	21	-			245	309	c
55	Streptomycin Sulphate	Kgs.	64721	80000	19	-			15711	19420	bc
56	Chorotetracycline hydrochloride (bulk)	Kgs.	31	720	96	-			482	11195	c
57	Vitamin C	Tonnes	138	180	23	-			9737	12700	a
58	Sorbitol	Tonnes	751	800	6	-			4820	5134	a
59	Vitamin B 6	Tonnes	343	1000	66	-			260	758	a
60	Fine Chemicals	Tonnes	360	450	20	-			4650	5813	b
61	Soaps and detergents	'000 Tonnes	106	113	6	-			353900	377185	d
62	Toilet preparations	Tonnes	2158	2890	25	-			16700	22365	c
63	Tech. D.D.T.	Tonnes	1724	2688	36	-			1447	2256	d
64	50% Form D.D.T.	Tonnes	3782	5376	30	-			12100	17203	d
65	Textile auxiliaries	Tonnes	997	2500	60	-			1921	4817	a
66	Alum	Tonnes	397	916	57	-	74	24	112	258	b
67	Hydrated Chemical lime	Tonnes	500	5000	90	-			125	1250	a
68	Refined Petroleum Products	Million Tonnes	4.0	4.2	5	-			NA	NA	a
69	Coal tar	'000 Tonnes	62	68	9	-			11208	12293	d
70	Hard Coke	'000 Tonnes	1422	1550	8	-			91938	100214	a

Name of the product	Unit	Prod.	Cap.	U	0	u	c	9	10	11	
71	Glazed tiles	Tonnes	2483	2641	6	-	6	33	3354	3567	d
72	Refractories	Tonnes	91612	162815	44	-	49	13	33533	63703	a
73	Crockeryware	Tonnes	1209	1536	22	-	-	-	1561	1983	c
74	Porcelain & electric goods	Tonnes	33	60	45	-	-	-	119	216	e
75	Ceramic cores etc.	Million pieces	58	129	55	-	-	-	5500	10321	a
76	Stoneware	Tonnes	16869	20635	18	-	15	22	5030	5941	a
77	Sanitaryware	Tonnes	1391	2640	47	-	16	11	2492	4730	a
78	Ceramic insulators	Tonnes	960	2400	60	-	34	1	2790	6975	c
79	Lightning arresters	'000 Numbers	18	132	86	-	-	-	1424	10420	c
80	Cement	'000 Tonnes	6296	4510	5	1	8	57	586534	608708	e
81	Cement Products	'000 Rupees	2490	7965	69	-	29	*	2490	7965	a
82	Wired & figured Glass	'000 Sq.meters	427	560	24	-	-	-	4319	5257	a
83	Bottles and tumblers	Tonnes	1739	2400	28	-	-	-	NA	NA	c
84	Pig iron	'000 Tonnes	5177	5426	5	-	-25	73	1237951	1297493	bc
85	Semi finished steel	'000 Tonnes	5676	6493	15	3	2	419	3411821	3902917	c
86	Steel ingots	Tonnes	3558981	4032600	12	-	-45	54	2061237	2335542	c
87	Rolling mill & foundry products	'000 Tonnes	1278	1488	17	3	-23	29	900349	1054499	ab
88	Transmission towers	Tonnes	27868	42000	34	-	29	53	35391	53516	bc
89	Heavy structurals including bars	'000 Tonnes	1631	2058	21	-	35	*	1213593	1535001	ab
90	Mild steel tubes	'000 Tonnes	38	130	71	-	17	14	69474	227905	ab
91	Cast iron spun pipes	'000 Tonnes	20	25	20	-	17	9	NA	NA	a
92	Steel castings	Tonnes	10887	36960	39	-	51	21	36960	63237	a
93	Die casting	Tonnes	198	500	60	-	-	-	2400	6061	b
94	Foundry casting	Tonnes	271	500	46	-	-	-	3800	7011	b
95	Iron casting	Tonnes	8308	6000	-	38	-	-	NA	NA	o

Name of the product	Unit	Prod.	Cap.	U	0	u	c	9	10	11
96 Malleable casting	Tonnes	752	1200	37	-			203	1920	a
97 Cast iron castings	Tonnes	12585	21100	51	11			15395	27865	ab
98 Steel forgings	Tonnes	259	1800	86	-			758	5268	c
99 Ferro alloys	Tonnes	22542	23300	3	-	NA	15	NA	NA	ab
100 Laminations and stampings	Tonnes	21066	33103	37	-			120087	188704	c
101 Primary Aluminium	Tonnes	40566	40000	-	1	9	55	1683000	1659518	o
102 Rolled products	Tonnes	7963	7000	-	14	29	25	45000	39558	o
103 Rods	Tonnes	7602	6000	-	27	27	29	35300	27862	o
104 Extrusions	Tonnes	2331	2000	-	17	6	37	14300	12269	o
105 Non-ferrous alloys	Tonnes	1200	4400	73	-	35	30	8800	32267	b
106 Wire ropes	Tonnes	2062	6000	66	-	39	15	7511	23400	a
107 Crown Corks	Millions	413	1382	70	-	-24	36	7052	23598	b
108 Bright steel bars & shaftings	Tonnes	7000	62000	89	-	-8	23	7100	69186	b
109 200 litre capacity barrels	'000 Nos.	202	480	58	-			7229	17177	ab
110 Aluminium ware vessels	Tonnes	213	2160	90	-			2025	20557	b
111 Cycle chains	'000 Nos.	148	240	38	-			592	960	b
112 Jute baling hoops	Tonnes	10005	15000	33	-			12000	17985	b
113 Bax strapping	Tonnes	2934	4800	39	-			5633	9216	b
114 Industrial components	Tonnes	2700	4260	37	-			10400	16409	a
115 Containers & Components (tin)	Tonnes	35713	51130	30	-			160100	229214	b
116 Fourdrinier wire cloth	Sq.meters	23300	36800	37	-			2470	3901	b
117 Tractor	Numbers	3566	8600	59	-	69	47	58207	141722	ab
118 Tractor-drawn implements	Numbers	3308	4500	26	-			3403	4629	a
119 Agricultural implements	Numbers	1092	3535	69	-			1848	7279	a
120 Plough	Numbers	7154	7154	-	-			753	753	f

Name of the product	Unit	Prod.	Cap.	U	O	u	c	9	10	11
121 Ag. tools	'000 Nos.	4494	3500	-	28			1911	1488	o
122 Core drills	Numbers	175	230	24	-			NA	NA	c
123 Road rollers	Numbers	130	360	57	-	27	12	2340	6480	a
124 Excavators	Numbers	67	70	4	-			42145	44032	d
125 Concrete mixers	Numbers	57	57	-	-			228	228	f
126 Steam turbines	'000 Rupees	300	300	-	-			300	300	f
127 Water turbines	MW / Nos.	33/1	81/3	51	-			2206	4502	c
128 Diesel engines	Numbers	7388	11900	36	-	-40	6	18017	27976	ab
129 Lubricators (for D)	'000 Nos.	24	24	-	-			1707	1707	f
130 Valves	'000 Nos.	2425	2732	11	-			11444	12480	c
131 Oil engines	Litres	35486	48731	27	-			102779	142434	b
132 Thin walled bearings	'000 Nos.	3542	4450	20	-			10077	12660	b
133 Nozzles	'000 Nos.	56	98	43	-			1240	2158	b
134 Nozzle holders	'000 Nos.	17	28	39	-			560	917	b
135 Boilers & pressure vessels	Tonnes	2886	10000	71	-	NA	37	14430	50000	b
136 Power loom	Numbers	2111	4800	56	-	69	77	8360	19009	a
137 Other textile machinery	Numbers	352	1040	69	-			19841	55176	a
138 Rice mill machinery	Numbers	55	90	39	-			2197	3595	c
139 Sugarcane crushers	Numbers	2914	2914	-	-	NA	8	3181	3181	f
140 Centrifugal pumps	Numbers	52447	52447	-	-			12285	12285	f
141 BBL Cylinder	Numbers	62	62	-	-			39	39	f
142 Decorticators	Numbers	965	965	-	-			557	557	f
143 Cement machinery	Tonnes	2664	9000	71	-	NA	5	13020	44657	b
144 Plastic (moulding) machinery	Numbers	50	168	70	-			4517	15177	a
145 Chain Pully blocks	Numbers	589	3000	80	-			825	4203	ac

Name of the product	Unit	Prod.	Cap.	U	O	u	e	9	10	11
146 Hoist block (elec.)	Numbers	203	500	59	-			1827	4500	ac
147 Hoists	Numbers	250	329	24	-	85	40	NA	NA	c
148 Cranes	Numbers	52	68	24	-	53	*	NA	NA	c
149 Material handing equipment	'000 Rupees	400	1000	60	-			400	1000	a
150 Pumps	Numbers	17526	31355	44	-	-59	6	970	2686	bc
151 Elements & delivery valves	Numbers	49400	100000	51	-			688	1266	b
152 Vices	'000 Nos.	12	13	8	-			730	793	c
153 Piston rings	Millions	5.39	3.00	-	80			7681	4275	o
154 Cylinder liners	'000 Nos.	641	585	-	10			641	585	o
155 Machine tools	Numbers	557	922	40	-	18	3	7734	10333	a
156 Diamond drill bits	Numbers	10800	16615	35	-	29	34	NA	NA	bc
157 Tungsten carbide drill bits	Numbers	7200	11077	35	-	41	16	NA	NA	bc
158 Items of regrigeration	Numbers	1112	1308	15	-			3823	4497	d
159 Air conditioner crystal	Numbers	10000	14286	30	-			NA	NA	c
160 Packaged air-conditioners	Numbers	296	400	26	-			3793	5126	c
161 Condensers	Numbers	670	957	30	-			NA	NA	c
162 Fritz filter cartridges	'000 pieces	483	1200	60	-			4195	10430	a
163 Fritz filter assemblies	'000 pieces	59	120	51	-			841	1696	a
164 Calculators	Numbers	3118	6300	51	-			3390	6850	b
165 Adding machines	Numbers	2476	4800	48	-			1350	2617	b
166 Gas welding & Cutting equipment	Numbers	33000	68000	51	-			8100	16691	ab
167 Compressors	Numbers	18000	30000	40	-			10800	18000	a
168 Refrigerator motors	Numbers	8000	12000	33	-			800	1200	a
169 Industrial engines	Numbers	260	650	60	-			2938	7345	c
170 Power transformers	'000 KVA	2100	2526	22	5	-120	44	75705	89895	bc

	Name of the product	Unit	Prod.	Cap.	U	O	u	c	9	10	11
171	Other transformers	Numbers	753	1035	31	4			4659	4055	a
172	Electric motors	Numbers	423	535	21	-	NA	NA	20370	25062	bc
173	Electric motors	'000 H.P.	917	918	4	4	-46	46	104367	105241	c
174	Switchgear	Numbers	1631	1781	22	14			36946	38555	c
175	Control panels	Numbers	730	1000	27	-			7195	10256	bc
176	Control gears	Numbers	298	313	5	-			6763	8420	c
177	Capacitors	KVAR	85000	100000	15	-			5172	6085	b
178	Welding generators	Numbers	384	300	-	28			2563	2002	o
179	Alternators	Numbers	2005	1800	-	11			8685	7798	o
180	Breakers	Numbers	130	330	61	-			6200	15738	b
181	Combination fuse switch boards	Numbers	1200	1200	-	-			3400	3400	f
182	Combination fuse switches	Numbers	20000	25000	20	-			4600	5750	a
183	HRC fuses	'000 Nos.	600	600	-	-			3000	3000	f
184	Relays	Numbers	17500	20000	13	-			6000	6857	b
185	Conductors aluminium	Tonnes	12170	31125	61	-	36	25	65270	167413	ab
186	Electric cables & Wires	Kilometers	26880	78400	66	-	52	7	24530	77288	ab
187	Solidal underground power cables	Kilometers	360	850	58	-			5440	12844	b
188	Paper insulated power cables	Kilometers	264	500	47	-	29	6	11075	20976	ab
189	Conductor accessories	NA	NA	NA	76	-			1820	7500	b
190	High tension galvanised steel wires	Tonnes	3000	6000	50	-			6369	12738	b
191	Storage batteries	'000 Nos.	178	199	11	-	7	25	23460	26634	b
192	Dry cells & batteries	'000 Nos.	43063	65000	34	-	-14	13	18495	27917	b
193	Electric horns	Numbers	21208	72000	71	-			450	1998	ab
194	Auto bulbs	Thousand	434	1540	72	-			714	2534	b
195	Flourescent	Thousand	71	118	40	-			2830	4703	b

	Name of the product	Unit	Prod.	Cap.	U	O	u	c	9	10	11
196	Ballasts for fluorescent etc.	Thousand	103	180	43	-			989	1728	b
197	Fans	Numbers	211000	211000	-	-	15	16	54381	54381	f
198	Fan & blower equipment	Numbers	1621	1675	3	-			1340	1385	d
199	Water coolers	Numbers	2410	3430	30	-	NA	59	10845	15435	c
200	Ventilation plant & equipment	Numbers	2258	2296	2	-			1866	1897	c
201	Dust separator plant & equipment	Numbers	58	77	25	-			48	64	c
202	Heating & cooling plant & equipment	Numbers	58	77	25	-			48	64	c
203	Humidification plant & equipment	Numbers	174	197	12	-			143	162	c
204	Radio and transistor	Thousand	143	125	6	20	-55	20	43333	37879	b
205	Gang condensers	Thousand	300	300	-	-			NA	NA	f
206	Loudspeakers	Thousand	120	120	-	-			NA	NA	f
207	Electrodes	'000 meters	94000	154000	39	-	35	46	28850	47265	a
208	House service meters	Numbers	438576	681414	36	-	18	42	12956	27763	a
209	X-ray equipment	Numbers	170	170	-	-			2606	2606	f
210	Railway wagons	Numbers	280	450	38	-	44	2	14006	22509	a
211	Integral railcoaches	Numbers	270	270	-	-			52040	52040	f
212	Steam locomotives	Numbers	68	68	-	-			25348	25348	f
213	Railway Couplers	Numbers	375	1200	69	-			1138	3642	b
214	Railway shock absorbers	Numbers	7369	7320	-	1			1738	1726	o
215	Heating elements	Meters	47711	120000	60	-			900	2264	b



Name of the product	Unit	Prod.	Cap.	U	O	u	c	9	10	11
216 Comet pass. and good chassis	Numbers	3650	5000	27	-			153300	210000	c
217 (Truck) heavy duty chassis	Numbers	209	600	65	-			17556	50400	a
218 Trucks	Numbers	17500	18650	6	-	NA	63	569200	627927	d
219 Industrial shunter	Numbers	19	20	5	-			4702	4949	d
220 Motor cycles	Numbers	9507	15000	37	-	56	39	19033	30030	b
221 Scooters & 3 wheeler	Numbers	12496	27000	54	-	NA	61	NA	NA	b
222 Auto cycles	Numbers	1144	40000	97	-	NA	28	1500	52448	b
223 Three wheeler	Numbers	1499	2000	25	-	NA	126	NA	NA	c
224 Trailers	Numbers	463	630	27	-	30	10	1819	2483	a
225 Cycles	Thousand	425	361	15	-	1	22	NA	NA	b
226 Automobile wheels	1000 Nos.	296	450	34	-			13909	29499	a
227 Automobile shock absorbers	Numbers	24786	60000	59	-			2229	5396	a
228 Pistons	Thousand	405	300	-	35			19183	14210	o
229 Oil seals	Thousand	1292	1292	-	-			2908	2908	f
230 Brake parts	Thousand	378	378	-	-			371	371	f
231 Leaf springs	Tonnes	1180	1200	2	-			3000	3220	d
232 Scientific testing instruments	Numbers	15886	23368	44	12			2740	2740	ab
233 Plastic household articles	NA	NA	NA	24	-			3800	5000	ab
234 Rough synthetic stones in various colours	Kilogram	12482	13100	5	-	13	100	1516	1591	c

Table 2 Distribution of products according to the extent of unutilised capacity.

<u>Percent unutilised capacity</u>	<u>No. of products</u>
1 - 10	24
11 - 20	29
21 - 30	30
31 - 40	32
41 - 50	18
51 - 60	27
61 - 70	16
71 - 80	11
81 - 90	9
91 - 100	4
	<hr/>
Total	200
	<hr/>
No unutilised capacity	20
Over-utilised capacity	<u>14</u>
Total	<u>234</u>
	<hr/>

Table 3 - Number of products, nature and extent of capacity utilisation according to factors affecting

Factors affecting	Sym- bol	No. of produ- cts	Value in thousand rupees of		Unutilised capacity	Overutili- sed capacity	Percent unutili- sed capacity	(Per cent) share in to- tal un- utilised capacity
1	2	3	4	5	6	7	8	9
1.Lack of demand only	a	56	730080	1140384	411035	731	36	12.0
2.Shortage of raw materials and/or components only	b	53	725851	1357427	641730	10154	47	18.7
3.Other reasons	c	45	6036729	7050400	1133815	120144	16	33.0
4.No reasons given	d	14	1019992	1115602	95610	-	9	2.8
5.Lack of parts causing idleness of machinery	e	2	586653	608924	31550	9279	5	0.9
6.a and b together	ab	19	2631856	3569947	1001064	62973	28	29.2
7.a and c together	ac	2	2652	8703	6051	-	70	0.2
8.b and c together	bc	9	1393293	1498328	111150	6115	7	3.2
9.Total(1 to 8) unutilised capacity		200	13127106	16349715	3432005	209396	21	100.00
10.Fully utilised capacity	f	20	195526	195526	-	-	-	
11.Over-utilised capacity	o	14	1887169	1830979	-	56190		
12.Grand total(9 to 11) for Survey		234	15209801	18376220	3432005	265586	19	
13.a+ab+ac		77	3364588	4719034	1418150	63704	30	41.3
14.b+ab+bc		81	4751000	6425702	1753944	79242	27	51.1
15.c+ac+bc		56	7432674	8557431	1251016	126259	15	36.5

Note : No adjustment could be made regarding 21 products for which the value of production was not reported

Table 4 - Important products affected by lack of demand only

Sr. No.	Name of the product	U	O	u	c	Value of unutilised capacity in '000 Rs.
1	Coal	12	-	NA	5	21290
2	Iron ore	8	-	NA	17	26878
11	Dissolved acetylene	32	-	57	68	10840
19	Chlorine liquid	23	-	43	6	151
21	Industrial oxygen	17	-	31	82	5674
25	Nitrous oxide	13	-	15	102	390
26	Sodium hydrosulphite	57	-	41	93	18989
35	Solubilized vatdyes	72	-	31	31	9718
48	Penicillin	15	-	7	53	6013
72	Refractories	44	-	49	13	30170
76	Stoneware	18	-	15	22	911
77	Sanitaryware	47	-	16	11	2238
81	Cement products	69	-	29	*	5475
91	Cast iron spun pipes	20	-	17	9	N.A.
92	Steel-castings	39	-	51	21	26277
106	Wire ropes	66	-	39	15	15889
123	Road rollers	57	-	27	12	4140
136	Power loom	56	-	69	77	10649
137	Other textile machinery	69	-			35390
144	Plastic moulding m/c	70	-			10660
155	Machine tools	40	-	18	3	2599
207	Electrodds	39	-	35	46	18415
208	House service meters	36	-	18	42	14807
210	Railway wagons	38	-	44	2	8503
217	Truck(chassis)	65	-			32844
224	Trailers	27	-	30	10	664
226	Automobile wheels	34	-			15590
T o t a l						335161

Note : U - % unutilised capacity based on Survey

O - % overutilised capacity based on Survey

u - % unutilised capacity based on MSP

c - % coverage of MSP by Survey

\* - Computation of c not possible due to difference in units in which production is expressed.

Table 5 - Products affected by 'lack of demand' according to the source of demand lacking.

Source of demand lacking	Serial No. of products for which source reported by the companies	Value of unutilised capacity in '000 Rs.	Serial No. of products supposed to have the respective source of demand.	Value of unutilised capacity in '000 Rs.	Total value	No. of products affected
1	2	3	4	5	6	7
1. Coal	106 *	7945			7945	1
2. Agriculture			117,118,119	90172	90172	3
3. Textiles	8,16,26,32,39,65	33047	35,136,137	55366	88413	9
4. Oil	109	9948			9948	1
5. Chemicals			4,13,19,25,38,67,144	15927	15927	7
6. Petroleum refinery	70	8276			8276	1
7. Steel	2	26878			26878	1
8. Refrigeration	168	400)	11,99,162,163,166,			
9. Engineering	21,89,106*	335026)	167,171,207,226,227	70965	407108	15
10. Automobile	96	717)				30
11. Railways	1,210	29793			29793	2
12. Transport			217,224	33508	33508	2
13. Electricity supply			75,185,186,208	174529	174529	4
14. Industries (General)			7,47,87,90,92,97,114,128,145,146,155,182,193,232	451345	451345	14
15. Construction			72,76,77,81,82,91,123	43872	43872	7
16. Export market	5	154			154	1
17. Government	6,68,149,188	17531			17531	4
18. Final consumption			48,53,57,58,59,233	12751	12751	6
Total	No. of products classified: 21	469715	No. of products classified: 56	948435	1418150	78

\*Sources 1 and 9 are lacking for this product. The value of unutilised capacity is apportioned equally between these two sources.

Note: 1) No adjustment is made reg. the products for which the value of production was not available.  
 2) The sources mentioned above are not strictly non-overlapping. This, however, may not distort the picture appreciably.

**Table 6 - Important products affected by shortage of raw materials only.**

Sr. No.	Name of the product	U	O	u	c	Raw material in short supply	Whether to be imported
17	Sulphuric acid	42	-	45	20	Sulphur	Yes
20	Sodium sulphide	26	-	48	12	Glanber salt	
24	Nitric acid	63	-	-16	1	Sulphuric acid Sodium Nitrate	
41	Ammonium Sulphate	43	-	33	*	Sulphur	Yes
43	Ammonium Chloride	81	-	57	*	Hydrochloric acid	
44	Superphosphate	14	2	24	*	Sulphur, Sulphuric acid and Rock	
45	Ammonium Phosphate	40	-	53	*	Sulphur	Yes
46	NPK Mixtures	69	-			Nitrogeneous fertili- zer Murate of Potash	Yes
66	Alum	57	-	74	24	Sulphuric acid	
105	Non-ferrous alloys	73	-	35	30	Non-ferrous metals	
107	Crown corks	70	-	-24	36	Tin plates	
108	Bright steel bars and Shaftings	89	-	8	23	Alloy steel	Yes
115	Containers and Components (tin)	30	-			Tin plates	
131	Oil engines	27	-			Castings	Yes
135	Boilers and Pressure vessels	71	-	NA	37	Many parts/compo- nents	
143	Cement machinery	71	-	NA	5	do	
191	Storage batteries	11	-	7	25	Containers	
192	Dry Cells and batteries	34	-	-14	13	Five products	
204	Radio & Transister	6	20	-55	20	Four products	
220	Motor cycles	37	-	56	39	Tyres & tubes etc.	
221	Scoters & 3 wheeler	54	-	NA	61	Steel etc.	
222	Autocycles	97	-	NA	28	Tyres & tubes etc.	
225	Cycles	15	-	1	22	- do -	

Note : U - % unutilised capacity according to Survey.

O - % Overutilised capacity according to Survey

u - % unutilised capacity according to MSP

c - % coverage of MSP by Survey

\* - Computation of c not possible due to difference in units in which production is expressed.

NA - Figure of capacity not available.

Table 7 - Products affected by 'shortage of raw material' according to the raw materials

Sr. No. Name of the raw material in shortage	Name of the products affected	
1	2	3
1. Urea Formaldehyde resin	Paper and paper board(7)	+
2. Butanol (I)	Esters(like ethyl and butyl acetate)(13)	
3. Vinyl acetate(I)	Polyvinyl acetate dispersions(14)	
4. Sulphur(I)	Sulphuric acid(17), Ferrous sulphate(28), Chlorosulphonic acid(30), Ammonium sulphate(41), Superphosphate(44), Ammonium Phosphate(45).	
5. Glanber salt	Sodium sulphide(20):	
6. Sulphuric acid	Nitric acid(24), Alumina Sulphate(29), Superphosphate(44), Alum(66).	
7. Hydrochloric acid	Ammonium chloride(43)	
8. Sodium Nitrate	Nitric acid(24).	
9. Bauxite	Alumina sulphate(29)	
10. Rock	Superphosphate(44)	
11. Nitrogeous fertilisers	NPK mixtures(46)	
12. Murate of potash(I)	- do -	
13. Bismuth metal(I)	Bismuth salts(49).	
14. Methanol	Streptomycin sulphate(55)	
15. Mercury(I)	Fine chemicals(60).	
16. Iodine(I)	- do -	
17. Electrode paste	Pig iron(84)	
18. Zinc(I)	Rolling mill and foundry products (87), Transmission towers(88), Mild steel tubes(90), Non-ferrous alloys(105)	
19. Steel ingot	Rolling mill and foundry products (87), Aluminium conductors(185)	
20. Tin ingot	Heavy structurals including bars (89), Non-ferrous alloys(105).	
21. Copper	Die casting(93), Foundry casting (94), Non-ferrous alloys(105), Power transformers(170), Electric motors(172)	
22. Aluminium	Die casting(93), Foundry casting(94), Non-ferrous alloys(105), Aluminium ware vessels(110), Aluminium conductors(185), Electric cables and wires (186), Solidal underground power cables(187), Paper insulated power cables(188).	

1	2	3
23. Pig iron	Cast iron castings(97)	+
24. Coke	- do -	(-)
25. Manganese ore	Ferro alloys(99)	NA
26. Lead	Non-ferrous alloys(105), paper insulated power cables(188)	
27. Nickel	Non-ferrous alloys(105)	
28. Alloy steel (I)	Bright steel bars and shaftings (108), Nozzles(133), Elements and Delivery valves(151), High tension galvanised steel wires(190), Scooters and 3-wheelers(221).	
29. Steel sheets etc.	Barrels(109), Cycle chains(111), Jute baling hoops(112), Box strapping(113), Paper insulated power cables(188), Scooters and 3-wheelers(221)	+
30. Tin plates	Crown corks(107), Containers(115)	
31. Phosphur-broure	Fourdrinier wire cloth(116)	
32. Brass	- do -	NA
33. Castings	Oilengines(131)	-
34. Bi-metal strip(I)	Thin walled bearings(132)	
35. Nozzles	Nozzle holders (134)	(-)
36. Elements and delivery	Pumps (150)	(-)
37. Diamond	Diamond drill bits(156), Tungsten Carbide drill bits(157)	
38. Non-ferrous stampings	Gas welding and cutting equipment(166)	
39. Copper-tubes	- do -	
40. Steel springs	- do -	
41. CRCA sheets (I)	Control panels(175)	
42. Elect.meters(I)	- do -	
43. Aluminium foils	Capacitors(177)	
44. PVC(I)	Electric cables and wires(186), Solidal underground power cables(187)	
45. Insulating paper(I)	Paper insulated power cables(188)	
46. Aluminium alloy	Conductor accessories(189)	
47. Electrolytic Zinc(I)	High tension galvanised steel wires(190), Dry cells and batteries(192)	
48. Containers	Storage batteries(191)	
49. Acetylene black(I)	Dry cells and batteries(192)	
50. Manganese dioxide(I)	- do -	
51. Zinc chloride	- do -	
52. Ammonium chloride	- do -	
53. Die cast horn bodies	Electric horns(193)	



1	2	3
54. Power factor con- densors	Flourescent fittings(195), Ballasts(196)	
55. Wave band switches	Radio and Transisters(204)	
56. Cabinets	- do -	
57. Electrolytic con- densors	- do -	
58. Valves	- do -	
59. Tubes(I)	Heating elements(215)	
60. Tyres and tubes	Motor cycles(220), Auto cycles (222), Cycles(225)	+
61. Pistons	Motor cycles(220)	(+)
62. Polythelene mould- ing powder	Plastic household articles(233)	+
63. Polysterene mould- ing powder	- do -	+
Name not mentioned	47, 53, 93, 94, 117, 128, 135, 143, 164, 165, 180, 184, 194, 213, 220, 221, 222, 225, 232	

Note -

- (i) I in column (1) denotes that the material is to be imported according to Survey. Absence of this symbol does not mean that the raw material is necessarily produced, in India.
- (ii) The number in bracket, mentioned in column 2 is the serial number of the product.
- (iii) + and - in column 3 denote no unutilised and unutilised capacity of raw material, respectively, according to MSP. (+), (-) denote similarly, according to Survey, in respect of the raw materials not found in MSP.
- (iv) NA means that the figure of capacity is not given in MSP.

Table 8 - If Sulphur (4), Hydrochloric acid (7), Sodium Nitrate(8), Banxite(9), Rock(10) and Murate of Potash(12) are available, the capacity of the following products would be fully utilised.

Sr. No.	Product Name	Value of unutilised capacity in '000 Rs.	Reason
17	Sulphuric acid	14106	b
24	Nitric acid	508	b
28	Ferrous sulphate	10	b
29	Aluminium sulphate	3846	b
30	Chlorosulphonic acid	3586	b
41	Ammonium sulphate	33862	b
43	Ammonium chloride	12586	b
44	Superphosphate	11259	b
45	Ammonium phosphate	23359	b
46	NPK mixtures	83053	b
66	Alum	146	b
T o t a l		1186321	

The total value obtained above is 29.0% of the value of unutilised capacity due to 'b' only and 10.6% of the value of unutilised capacity affected by b (i.e. b + ba + bc)

Table 9 If raw materials, Zinc(18), Steel ingot(19), Tin ingot(20), Copper(21), Aluminium(22), Lead(26), Nickel(27), Steel sheets etc.(29), PVC(44), and Insulating paper(45) are available, the following products will not suffer on this count.

P r o d u c t		Reasons	Value of unutilised capacity in '000 Rs.	%
Sr. No.	N a m e			
93	Die casting	b	3661	
94	Foundry casting	b	3211	
105	Non-ferrous alloys	b	23467	
110	Aluminium ware vessels	b	18532	
111	Cycle chains	bb	368	
112	Jute baling hoops	b	5985	
113	Box strapping	bb	3583	
187	Solidal Underground power cables	b	7404	
Sub-total			66211	6.9
87	Rolling mill and foundry products(Steel)	ab	197805	
89	Heavy structurals	ab	321408	
90	Milt steel tubes	ab	158431	
109	200 litre capacity barrèls	ab	9948	
185	Aluminium conductors	ab	102143	
186	Electric cables and wires	ab	52758	
188	Paper insulated power cables	ab	9901	
Sub-total			852394	88.6
88	Transmission towers	bc	18125	
170	Power transformers	bc	20305	
172	Electric motors	bc	4692	
Sub-total			43122	4.5
Grand Total			961727	100.0

This is 54.8% of the value of the unutilised capacity of all the products affected by 'shortage of raw materials'.

Table 10 - Important products affected by lack of demand as well as shortage of raw materials.

Sr. No.	Name of the product affected	Value of unutilised capacity in '000 Rs.	U	O	No. of companies	According to individual companies		Value of unutilised capacity reasonwise		
						Lack of demand	Shortage...	a	b	
7.	Paper and paper board	12693*	10	7	6	Practically all	Negligible	12693	-	
87.	Rolling mill & foundry products (steel)	197805	17	3	6	1 reports 9%	5 reports 8%	104720	93085	
89.	Heavy structurals	321408	21	-	6	Practically all	Negligible	321408	-	
90.	Mild steel tubes	158431	71	-	2	1 reports 8%	1 reports 63%	17903	140528	
97.	Cast iron castings	15103	51	11	2	1 reports 8%	1 reports 43%	2369	12734	
109.	200 litre capacity barrels	9948	58	-	1	I reason	II reason	9948	-	
117.	Tractor	83515	59	-	3	1 report 31%	2 report 28%	43845	39670	
128.	Diesel engines	9959	36	-	5	2 report 28%	2 report 8%	7748	2211	
185.	Aluminium conductors	102143	61	-	3	1 report 25%	2 reports 36%	22676	79467	
186.	Electric cables and wires	52758	66	-	3	2 report 47%	1 report 19%	37564	15194	
188.	Paper insulated power cables	9901	47	-	1	II reason	I reason	-	9901	
								973664	580874	392790

\* The value of unutilised capacity is actually 25728 thousand rupees. The rest is due to various other reasons and hence not included here.

Note : U and O are based on physical units.

The value of unutilised capacity of the above mentioned important products is 97.3% of the value of all such products affected by both the reasons.

Table 11 - Products affected by various 'other' reasons

	c		ac		bc		c+ac+bc
	Serial number of products affected	Value	S.Nos.	Value	S.Nos.	Value	Total value
1.Labour troubles	23,27,85,86,122,138,147,148,159,160,161,169,173,199,216	490647	145146	6051	156157	N.A.	496698
2.Power shortage	18,86,98,122,147,148,159,160,161,169,199,216,234	131528			5588	21834	153362
3.Mechanical trouble	73,83,130	1458			84170	45327	46785
4.Fire,damage,etc.	3,37,85,86	398752			172		428523
5.Development stage	15,31,36,42,56,62,78,79,152,223	32374			84	29771	428523
6.Water shortage	50,51,52,54	1979			150	1716	34090
7.Delay in supply of raw material etc.	100,127,174,176	15795			170172	12502	28297
8.Other reasons	3,100,200,201,202,203	61282			175		61282
Total		1133815		6051	111150		1251016

Note : Whenever a product suffers from more reasons than one mentioned above, its value of unutilised capacity is equally distributed over the respective reasons.

- a - lack of demand
- b - shortage of raw material
- c - 'others'

Table 12 - Important industries having unutilised capacity and reasons affecting.

Name of the Industry	S.No. of products	No. of products	Value of unutilised capacity in '000 Rs.	U	Reasons affecting the unutilised capacity*		
					a	b	**
1.i) NPK mixtures	46	1	85053	69	-	100	-
ii) Other fertilisers	41-45	5	81066	36	-	100	-
2.i) Iron and steel basic metal	84-86	3	938550	12	-	-	6 bc
ii) Heavy structurals etc.	87-91	5	695769	24	64	34	94 c
iii) Castings etc.	92-100	9	122096	41	24	16	2 bc
3. Metal products	106-116	11	209491	49	15	85	60 c
4. Agricultural machinery & implements	117-122	6	90172	58	56	44	- cd
5. Diesel engines etc.	128-135	8	90078	36	9	90	1 c
6. Textile machinery	136-137	2	46039	62	100	-	-
7. Other machinery	138-142	5	48102	67	22	66	12 c
	144,169						
8. Cables & wires etc.	185-190	6	184255	62	33	67	-
9. Automobile	216-219	4	148518	17	22	-	38 c
							40 d
10. Other transport equipment	220-231	12	81586	58	24	76	-
Total		77	2818775				

Note: U - % unutilised capacity in the industry as a whole

a - lack of demand only

b - shortage of raw materials only

\*\* - 'other' reason or combination of reasons given here (c-'other reasons; d-no reasons given)

- - Nil

\* - The figures under these 3 columns are percentages to the value of unutilised capacity in the industry (given in the same row).

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Table 1\*

Details regarding products and by-products manufactured during the best year: \_\_\_\_\_196 to \_\_\_\_\_196

		1	2	3	4	5
Production during the best year	Name of product					
	unit					
	Quantity					
	Value in '000 Rs.					
Actual demand pattern for the product (based on sales during the best year)	(1) Use %					
	(2) Use %					
	(3) Use %					
	(4) Use %					
	(5) Use %					
	(6) Use %					
	(7) Use %					
Remarks						
Value of all products and by-products manufactured during the _____ best year (in '000 Rs.)						

Table 2\*

Details regarding products and by-products manufactured during the latest year: \_\_\_\_\_196 to \_\_\_\_\_196

		1	2	3	4	5
Production during the latest year	Name of product					
	unit					
	Quantity					
	Value in '000 Rs.					
Actual demand pattern for the product (based on sales during the latest year)	(1) Use %					
	(2) Use %					
	(3) Use %					
	(4) Use %					
	(5) Use %					
	(6) Use %					
	(7) Use %					
Remarks						
Value of all products and by-products manufactured during the latest year (in '000 Rs.)						

- \* Note : 1. Best year is the year since January 1960 in which the total production was the highest.
2. Latest year is the latest year possible for which particulars are readily available.
3. Demand pattern : The object here is to know the demand pattern for each product. Please write the uses to which the product was put to and the per cent of value of the product under each use to the value of the product itself. The different uses, for example, may be (1) for export (2) for direct and final consumption within India (3) as raw material or component for further manufacture of some other product (in such case specify those products separately) (4) as a capital equipment in certain industries (in which case specify those industries separately).
4. Please attach another sheet if the number of products and by-products exceeds 5.
5. Please ensure that the value of 'other' products and by-products is not more than 10% of the total value of all products and by-products.

Details regarding capacity and bottleneck during the latest year

1. Capacity during the latest year	Name of product					
	Unit					
	Quantity					
	Basis					
2. Unutilized capacity	%					
	Reasons 1. 2.					
3. If the reason is lack of demand mention the important ones that are lacking	i					
	ii					
	iii					
	iv					
	v					
4. If the reason is non-availability of materials, purchased components and accessories mention their (a) name (b) quantity required for full capacity (c) whether it is produced in India	(a)					
	(1) (a)					
	(c)					
	(a)					
	(2) (b)					
	(c)					
	(a)					
	(3) (b)					
	(c)					
	(a)					
	(4) (b)					
	(c)					
	(a)					
	(5) (b)					
	(c)					
5. Orders outstanding						
Remarks						

		Number of factories	
		Big	Small
Mention the number of factories for which particulars are furnished in	Table 1		
	Table 2		
	Table 3		

(If the number of workers employed is 100 or more without the use of power, or is 50 or more with the use of power, the factory is Big; otherwise it is Small).

- \* Note :**
- Capacity** means the optimum production possible with the equipment during the latest year assuming normal operating conditions. All the products and their quantity mentioned under this should be capable of being produced together during that year. Against basis, mention whether it is single, double or three shifts.
  - Unutilized Capacity** as a percent of capacity should be given under %. Reasons for unutilization may be lack of demand, shortage of raw materials, shortage of fuel, shortage of spares and parts, non-availability of requisite personnel, or any other. Specify two important reasons in order of importance.
  - Lack of demand :** The source of demand that is lacking may be any like export, etc., the uses to which your product were put to—(see Notes under Table 2). Mention them in order of importance against i, ii, . . . v.
  - Please attach sheets if the number of products is more than 5.
  - If there are outstanding orders for any of your products, please specify, for how many months' production they are.



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Appendix B

Nature and Extent of Response

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. Number of companies to which proforma was sent	1175		
. No. of letters addressed by us and returned to us by postal authorities because of the addressee being not found	12		1163
-----			
. No. of companies that sent complete details in the proforma			
Analysed	140		
Excluded (outside the study)	<u>18</u>	158	
. No. of companies that sent partial details (not in proforma)			
Analysed	11		
Excluded (outside the study)	3		
Excluded (very inadequate details)	<u>12</u>	26	
. No. of companies that sent no details except response in the following manner -			
a) Not able/willing to fill the proforma	19		
b) Return promised (but not sent)	4		
c) Production started recently	13		
d) Production not started	18		
e) Project dropped	2		
f) Not manufacturer	45		
g) Irrelevant reply	<u>2</u>	103	
Total response -			287
-----			

Response is 287 out of 1163, or 25%.

Appendix C

Table showing the number of companies analysed, according to the year-end of best and latest years.

Best year-ending	Latest year-ending							Total
	12-65	3-66	6-66	9-66	12-66	3-67	4-67	
5-60								
9-60								
12-60					1			1
3-61								
6-61								
9-61								
12-61								
3-62		1						1
6-62								
9-62								
12-62								
3-63						2		2
6-63								
9-63								
12-63					3			3
3-64		2				1		3
6-64		4	4					4
9-64				3				3
12-64					4	1		5
3-65		2				6		8
6-65			1				1	2
9-65				4				4
12-65	1				17			18
3-66		2				5		7
6-66			9	1			1	11
9-66				6				6
12-66			1		29			30
3-67						28		28
4-67								
*		1			3			4
Total	1	8	15	14	57	43	2	140

\*In respect of these 4 companies, the best years are shown to be different for different products.

Note - 1) 151 companies are analysed while the above table refers to 140 only. For the remaining 11 (giving partial details) the year ending was not available.  
 2) The entry against a row, say 12-66, indicates the number of companies whose year-ending falls anywhere between 1-10-1966 and 31-12-1966.

Appendix D

Number of products covered in MSP and Survey according to the industries

Code No.	Name of the industry*	No. of products covered in			
		MSP	Survey	Both	Survey but not in MSP
11	Coal mining	1	1	1	0
12	Metal mining	10	1	1	0
14	Non-metallic mineral products	15	2	1	1
27	Paper and paper products	7	2	0	2
29	Leather and fur products	5	2	0	2
30	Rubber products	29	0	0	0
31	Chemicals	106	57	24	33
32	Products of petroleum and coal	1	3	0	3
33	Non-metallic mineral products etc.	16	13	7	6
34	Basic metals	31	22	15	7
35	Metal products	15	12	4	8
36	Machinery(except electrical)	72	53	12	41
37	Electrical machinery etc.	22	40	13	27
38	Transport equipment	14	22	8	14
39	Miscellaneous	10	4	1	3
T o t a l		354	234	87	147

\* See MSP for full details of industry.

Appendix E

Distribution of products common to MSP and Survey according to the coverage(\*) by the Survey.

% Coverage -----	N products -----
0 - 10	18
11 - 20	14
21 - 30	12
31 - 40	9
41 - 50	6
51 - 60	6
61 - 70	3
71 - 80	2
81 - 90	1
91 - 100	4
Above 100	3
Not possible**	9
Total	87

\* The coverage given here is the production of a product given in the Survey expressed as percent of the production of the same product according to MSP

\*\* Not possible because of the unit of production mentioned in Survey is different from that of MSP.

Appendix F

The value of unutilised and overutilised capacity in case of those products each of which has both the unutilised and overutilised parts of the capacity.

Sr. No.	Name of the product	Value in '000 Rs. of	
		Unutilised capacity	Overutilised capacity
(1)	(2)	(3)	(4)
7	Paper and paper board	25728	16000
44	Superphosphate	11259	2363
80	Cement	31453	9279
85	Semi-finished steel	604703	113607
87	Rolling Mill and foundry products	197805	43655
97	Cast iron castings	15103	2633
137	Other textile machinery	35390	55
170	Power transformers	20305	6115
171	Other transformers	72	676
173	Electric motors	4596	3722
174	Switchgear	4424	2815
204	Radio transistor	2337	7791
232	Scientific testing instruments	685	685
T o t a l		953860	209396