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CORPORATE PLANNING IN THE CONTEXT OF NATIONAL PLANNING

by

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Identifying the opportunities and constraints in the environment is considered as the essential first step in formulating a corporate plan. To what extent is this task rendered easy when a national plan exists for a country? What are the additional factors that are brought into play in such a situation? The nature and content of planning vary from country to country. At one extreme there are countries like the Soviet Union and China where nearly all the sectors of the economy are brought under the direct purview of the planning authorities. Contrasted with this are countries like France which have attempted only to indicate the desired lines of development in relation to various sectors. Even in a seemingly unplanned economy like the United States, the government takes appropriate steps to formulate integrated schemes whenever the nation is faced with certain severe shortages or difficulties. In this paper we shall focus on the implications of national plans for corporate planning in a mixed economy like ours where both the private sector and the public sector have a role to play but with the latter playing an increasingly important role.

In charting the future course of action an enterprise scans the environment for suitable opportunities. The external information that an enterprise needs to collect for this purpose can be enormous. Thus scanning by an enterprise ranges from what is described as 'undirected viewing' to 'formal search'. The national plan indicates the broad lines of development a country is expected to follow and as such contains valuable information for a corporate planner. But, however, to interpret meaningfully a plan, it is necessary to have a clear understanding of the process by which the plan objectives and much more so the targets for individual sectors have been arrived at. We therefore present first a brief review of the technique of planning adopted in India followed by an analysis of those aspects of the national plan which have a bearing on corporate planning.

Concept of Plan Formulating

Planning as a means of accelerating economic development particularly in developing economies has been advocated on two grounds. First, because of the sharp inequality in income found in these countries the market signals may not be good indicators of what the country needs to produce. This is apart from the fact that the markets themselves may be imperfect. What should be produced in the economy should therefore be governed by socially determined priorities which can be done only by a central planning authority. Second, planning by promoting a balanced growth of development could result in the avoidance of wastage of resources. The different sectors of the economy will develop in a balanced framework so that over-expansion in certain sectors which may occur under a decentralized decision making system can be avoided. For these reasons, while adopting the mixed economic system, it was also decided that our country should follow a planned course of development.

In formulating a national plan like in all other endeavours, the first task is to set the long run and short run objectives. In most of our plans, ensuring a particular rate of growth has been the dominant objective, even though other considerations such as reducing inequalities in income or securing a certain minimum level of employment opportunities have also been stressed. A second decision to be taken by the planning authority is on the strategy to be followed for achieving this rate of growth. At the time of the formulation of the Second Five Year Plan, an issue that was widely debated in our country was on the strategy to be followed in our plans. It was stressed at that time that an emphasis on the development of basic and heavy industries was the best way to accelerate the long run growth of the country. There is no one standard route to be followed for achieving economic growth. Economic history reveals that there are many roads to economic progress. The planners have, however, to make a decision as to what they consider to be the best strategy to be adopted for the country. The third step involved in the formulation of a plan is to fix the magnitude of investment to be made during a plan period and the pattern of priorities to be followed in allocating this investment. To a very large extent these would be determined by the objectives and strategy. And finally the planners will have to decide on the proportion of the total investment that must be made by the government sector and by the private sector. All these four decisions are to some extent inter-dependent and cannot therefore be viewed in isolation. However, these constitute the major basic considerations that must be resolved by the planners before embarking on a detailed sector-wise allocation of investment and output.

The Indian plans have very often been described as falling under the category of 'consistency' models. This is so because the endeavour has always been to construct a plan that is mutually consistent. This consistency demands that the different sectors of the economy grow in a given ratio. The input-output table incorporating the flow of goods from one sector to another determines what the output of the different sectors should be, given the final demand for consumption and investment. The plan also attempts to strike a balance between the total investment required for achieving a given rate of growth in income and the domestic savings that can be generated and the external aid. The total savings that are to be generated within the economy are themselves contingent upon the realization of the physical targets. Thus a plan emerges which matches a mutually consistent set of physical targets with a scheme of mobilization of financial resources based on the fulfilment of the physical targets. It is this consistency which is at the same time the strength and weakness of a plan. If all the targets are fulfilled this leads to the most efficient use of the resources. But if targets are not achieved, the entire balance is upset and can result in a considerable waste of resources.

The Indian plans in striking a balance between savings and investment or between the rates of growth of different sectors of the economy view the nation as a total entity, though the plans make a distinction between investment in the public sector and that in private sector. While the plan is spelt out in detail as far as the public sector investment is concerned, the investment to be made by the private sector and the production targets to be achieved by it are only 'indicated'. The desired amount and type of investment to be made by the private sector are sought to be achieved through the various policy instruments available to the government. These tools vary from direct controls such as licensing to the traditional investments of monetary and fiscal policies.

Implications for Corporate Planning

The significance of the national plans for corporate planning is not the same for the enterprises in the public sector and those in the private sector. In the case of public sector enterprises, the national plan incorporates the major expansions contemplated. The work of the corporate planner in these enterprises begins even as the national plan is being formulated. Their expansion plans have to be approved in the first stage by the ministry to which they are attached and later by the Planning Commission. In the case of new enterprises, the ministries and the Planning Commission become the 'promoters'. Therefore in the discussions that follow, the primary focus will be on the implications of the national plan for the enterprises in the private sector, even though some of the issues raised are also relevant for the corporate planner in the public sector.

Informational Content of a Plan

In examining the environment every firm is looking for opportunities in fields in which it has a distinctive competence. This exploration involves identifying the emerging new demands, assessing the technological developments that are likely to occur and estimating the possible actions by its competitors. The firm must also appraise the plans of other complimentary enterprises such as those which supply inputs to it or absorb its output. In a decentralized decision-making system all these information can be gathered only imperfectly. It is from this point of view that the existence of national plan is a great advantage. The purpose of drawing up plan is to indicate in very clear terms the directions in which the country must grow. The plan specifies the investment to be made in the various sectors. One may disagree with the strategy adopted by the Planning Commission but once the plan is approved by the government and the Parliament, it is a commitment as far as the government is concerned. It is a blue print for action. As mentioned earlier, with respect to investment in the public sector, the plan provides not only the magnitude of total investment to be made in each sector but also the details of the specific projects to be undertaken in each sector. The plans of the government in various fields, so to say, become an open book and this is of considerable importance with the emergence of the government as the dominant investor. Thus through the plan document, a firm obtains an idea of where the investment is considered to be desirable. In addition, it also knows where there is already a commitment in terms of investment on the part of the government. These two together must constitute valuable set of information for any corporate planner. Obviously, the scope of activities of a firm in the private sector is limited compared to the scope available in a purely capitalist system. In so far the state preempts part of the resources available and also specifies the areas in which it alone can enter, the scope for the private sector becomes limited. In fact, it is the Industrial Policy Resolution of the government of India which has attempted to delineate the areas in which each of these sectors is to operate. Each Five Year Plan, based on this, indicates broadly the industries in which the private sector can enter. The issue that is very often raised is not so much whether a firm in private sector can enter a particular field or not but that whether some segment of the private sector such as the big industrial houses can enter it. It must be admitted that government's policy on this has not been steady. It has fluctuated between a 'severe' and a 'liberal' attitude. However, the plan as a whole tells what can be done and what cannot be done by the private sector. To the extent the investment in private sector is dovetailed to the investment in the public sector, the latter is readily available to it. In Table 1 we have attempted to classify industries according to expected growth rates specified in the draft Fifth Plan document. It can be seen that while some industries are expected to grow only at about 4% per annum there are industries like fertilizers which are expected to grow at 20% per annum.

It is however, worthwhile to note that the physical targets for output indicated in the plan for the various sectors and within the industrial sector for the various industries are largely aggregative in character. Targets set for, let us say, electric transformers need to be further broken up into transformers of different sizes. The Planning Commission while arriving at these targets has the help of study groups in which industry representatives are involved. The need to estimate the product mix within each broad category is a task that must be done by the individual firms. More recently the Ministry of Industrial Development has been publishing a document entitled 'Guidelines for Industries,' which indicates the product-wise demand as well as the existing capacity and the current status of licences applied for addition to capacities. These are useful information. Nevertheless the need for doing a more intensive analysis of the targets relative to individual products cannot be escaped. The broad aggregates given in the plan provide the necessary starting points.

<u>Nature of the Targets</u>

With respect to the targets indicated in the plan, there are two aspects which need careful examination. The targets set for each industry grouping, for example, in the plan are in physical terms arrived at in order to establish a balance between inputs and outputs. Thus this balance results in a congruence between physical outputs and inputs. The targets set in the plan are therefore more like requirements than demand in the economic sense of the term. There is attempt made on the part of the planners to indicate whether entering into a particular field would give the necessary return on investment. More recently with respect to projects in the public sector, detailed analysis of cash flows is being done before they are incorporated in the plan. Obviously the analysis is not confined to a private cost-benefit basis. The planner is much more interested in a social cost-benefit analysis. Private costs and benefits are suitably modified to take into account the opportunity costs to the society. Whether or not the targets fixed for the various industries would be fulfilled depends upon whether the firms in the private sector that enter the field would find it profitable. This is an aspect of the problem which the planners themselves would need to look into. It is pointless to fix targets for various industries if the fulfilment of such targets does not generate the required level of profitability. While it may be fair for the planners to decide on what the appropriate level of profitability should be, enough attention should be paid to see whether pricing and other policies pursued would ensure this fair rate of returns. However, as of now the physical targets laid down in the plan must be treated by the firms in the private enterprise an output levels necessary, if all the sectors are to grow according to the plan.

We have emphasised repeatedly that an essential characteristic of our plans is its consistency. Output of one industry becomes the input of another industry, unless it is directly consumed. Thus viewed from the point of view of the economy as a whole, there should be a balance between the rates of growth of the various sectors if waste is to be avoided. Consistency in this sense is like the music produced by an orchestra where every instrument is to be so controlled that the total action results in harmony. As mentioned earlier, if all the targets are not simultaneously fulfilled, there will result not only a waste of resources but also put individual firms in considerable difficulty. In this context one is reminded of the observation that used to be made of the Nazi government, namely, that the Nazi government was so tightly organized that it could not commit mistakes but could only commit blunders. The study groups appointed by the Planning Commission for various industries arrived at the total estimate of demand based on the assumption that the growth rates fixed for all the sectors of the economy would be achieved. For example, the demand for tyres is based upon the estimate of originating traffic which again depends on the increase in agricultural and industrial output. A substantial fall in agricultural output or industrial output can therefore have a very serious impact on the demand for tyres. Instances of serious short falls in the various sectors are not uncommon in our planning experience. In order to emphasize the gravity of the situation, we have provided in Table 2 the difference between targetted growth rates and the actual growth rates for a variety of industries during the Fourth Plan period. It is revealing to note that there are only four industries whose actual growth rates were equal to or better than the targetted growth rates. We have given in Table 3 the details of shortfalls in the fulfilment of capacity creation during the Fourth Plan period for approximately 24 industries. We have summarised the shortfalls in terms of certain categories of industries in Table 4. Output shortfalls can occur in any particular year due to a variety of factors some of which can be purely temporary. A severe drought can result in a crippling power shortage which may have an effect on output. But persistent large shortfalls in output as compared to the targets must alert a corporate planner. It would be idle to pretend that the plan as enunciated would be maintained. It is unfortunate that the Planning Commission itself does not bring out at the time of mid-term appraisal revised sets of targets. Very often the mid-term appraisal is an exhortation to fulfill the targets than to make a serious effort to alter the targets themselves in the light of the experience in the first few years of a plan. It is, therefore necessary for the individual firms to understand clearly the process by which targets have been arrived at and to make necessary alterations in their own calculations if some of the basic assumptions go wrong. This is a matter of importance not only to the firms in the private sector but also to those in the public sector.

Totality of a Plan

We have emphasised the previous section on the nature of the interdependence among the targets set for the various industries and the need for understanding the consequence that results when the required balance is not maintained. This argument holds good with respect to the totality of the plan also. Income growth is linked to the level of required investment which in turn must be balanced with domestic savings and external assistance. Thus the fulfilment of a plan as a whole depends on the fulfilment of a number of basic assumptions. At the time when the draft Fifth Plan came out very serious doubts were expressed on various aspect of the plan. Those who thought that the plan was unrealistic raised the point that the physical targets laid down in the plan could not be fulfilled with the mobilization of resources contemplated. Some regarded that the targets with respect to savings were set too high and that they were not supported by past experience. Questions were also raised at that time on the calculations that had been made with respect to import requirements, doubting thereby the possibility of being able to reach the target of net zero aid at the end of the Fifth Plan. It is not our intention here to examine the various questions that had been raised. But, it is necessary for any corporate planner to examine these issues and form his own judgement regarding the feasibility of any given plan. Inability to implement the Plan as originally contemplated would call for revisions which may have serious implications for the expansion plans of individual firms.

Conclusion

The concept of a mixed economy, as practised in India, by its very definition limits the area of operations of the private sector. But the national plan, viewing the economy as a whole both from the short run and the long run point of view indicates the appropriate fields of development for the firms in the private sector as well. Depending on the vigour with which the policy instruments are used, these indications can become much more than mere expectations. However, the targets set in any plan for the various industries and sectors must be treated with some circumspection. This caution applies as much to industries in the public sector as they are to those in private sector. First of all the targets set for various industry groupings are highly aggregative and therefore must be broken into product-wise demand. Second, the implications of the physical targets laid down in the plan need to be translated into economic and financial terms to determine the profitability or otherwise of entering a particular field. Finally, the targets set for the various industries are highly interdependent and shortfalls in the output of some of the crucial sectors can completely upset the targets set for most of the industries. Our past plan experience quite clearly warns us to be on the guard on this score.

It is only legitimate that a corporate planner should treat the national plan as given and make his own schemes of expansion in that context. But at the same time, it is important for him to understand the strategy and assumptions underlying the national plan because that will enable him to quickly reassess the segment of the plan he is interested in, if some of the underlying assumptions go wrong. In this he might be even a few steps ahead of the national planners, if he is perceptive enough. Without doubt, the plan provides the broad framework within which the corporate planner can draw his own plans. But in so doing he cannot escape from making his own judgement on the key assumptions of the plan.

TABLE 1

Classification of Sectors and Sub-sectors by Range of Rates of Growth of Gross Value Added (r) Over the Fifth Plan Period

Sl. No.	Sectors/sub-sectors	r
	2-5%	
1	Food Products (Total)	4.78
2	Vegetable Oils	4.80
3	Tea and Coffee	3.47
4	Other Food Products	4.59
5	Textile (Total)	4.10
6	Cotton Textiles	4.27
7	Jute Textiles	3.77
8	Other Textiles	4.79
9	Miscellaneous Textiles Products	3.76
10	Wood and Paper Products (Total)	4.93
11	Wood Products	4.58
12	Cosmetics and Drugs	4.64
13	Radios	2.03
	5-10%	
14	Petroleum Product	9.79
15	Mining and Manufacturing (Total)	8.11
16	Mining (Total)	9.86
17	Iron Ore	8.87
18	Crude Petroleum	8.76
19	Other Minerals	8.79
20	Manufacturing (Total)	7.98
21	Sugar and Gur	5.70
22	Paper and Paper Products	7.70
23	Leather and Rubber Products (Total)	7.32
24	Leather Products	5.73
25	Rubber Products	8.41
26	Man-made fibres	5.61
27	Other Chemicals	8.71
28	Coal and Petroleum Products	6.87
29	Non-metallic Mineral Products (Total)	8.20
30	Cement	8.89
31	Other non-metallic Mineral Products (Total)	7.96

Sl.No.	Sectors/sub-sectors	r
32	Metal Products (Total)	8.64
33	Bolts and Nuts	9.89
34	Metal Containers	5.58
35	Other Metallic Products	8.67
36	Agricultural Implements	8.03
37	Electrical Engineering Products (Total)	8.91
38	Electrical Motors	9.83
39	Electrical Wires	8.90
40	Batteries	7.74
41	Electrical Household Goods	6.73
42	Transport Equipment	7.24
43	Motor Cycles	6.90
44	Motor Vehicles	5.97
45	Ships and Boats	9.65
46	Railway Equipment	7.47
47	Other Transport Equipment	6.63
48	Instruments (Total)	8.20
49	Watches and Clocks	7.84
50	Miscellaneous Scientific Instruments	8.37
51	Miscellaneous Industries	8.41
52	Printing	5.20
53	Electricity	9.87
54	Construction	8.70
55	Transport (Total)	8.70
56	Transport Railways	5.73
57	Other Transport	5.55
58	Services	5.65
	10 - 15%	
59	Coal	10.63
60	Chemical Products (Total)	12.35
61	Inorganic Heavy Chemicals	13.54
62	Organic Heavy Chemicals	10.65
63	Plastics and Paints	10.19
64	Miscellaneous Coal Products	12.14
65	Refractories	10.44
66	Basic Metals (Total)	11.76
67	Iron and Steel	10.78
68	Non-ferrous Metals	14.90
69	Non-electrical Engineering Products (Total)	13.56
70	Ball Bearings	14.53

Sl. No.	Sector/Sub-sector	r
71	Office and Domestic Equipment	10.86
72	Other Machinery	14.59
73	Electronics	11.60
74	Telephone and Telegraphic Equipment	10.02
75	Other Electricals	12.08
76	Aircraft	11.06
	More than 15%	
77	Fertilizers	27.69
78	Machine Tools	15.91
	All Sectors	5.50

Source : Draft Fifth Five Year Plan 1974-1979; Vol. 1; pp 34-35

TABLE 2

Extent of Fulfilment of Production Targets During the Fourth Plan Period

Sl. No.	Industry	W_i	r	r'	D (r'-r)	% of r
More than 100% underfulfilment:						
1	Cotton Cloth (mill made)	9.3900	3.48	-0.43	-3.91	-112.3
2	Leather Footwear	0.0500	3.55	-10.79	-14.34	-403.9
3	Coking Coal	1.6000	8.23	-0.40	-8.63	-104.8
4	Zinc	0.0054	21.62	-2.67	-24.29	-112.3
5	Bicycle Tyres	0.0930	7.33	- 4.06	-11.39	-155.3
6	Cement Machinery	0.0232	18.36	-24.20	-42.56	-231.8
7	Sewing Machines	0.2230	7.04	- 7.47	-14.51	-206.1
8	Railway Wagons	2.3700	35.44	- 9.84	-15.28	- 280.8
	Total Index	13.7546	4.486	- 2.265	-6.752	-143.53
80-100% under-fulfilment						
9	Pig Iron for Sale	0.1300	23.93	1.32	-22.61	- 94.4
10	Mild Steel	3.8000	11.50	0.32	-11.18	- 97.2
11	Cotton Yarn	11.7900	3.70	0.34	- 3.36	- 90.8
12	Sulphuric Acid	0.0088	19.22	3.15	-16.07	- 83.6
13	Paints and Varnishes	0.2159	16.58	1.50	-15.08	- 90.8
14	Rayon Philament	0.0260	11.28	1.56	- 9.72	- 86.1
15	Steel Castings	0.4800	34.88	4.46	-30.42	- 87.2
16	Condensors (Electronics)	0.0002	60.36	6.53	-53.83	- 89.1
17	Ferrits and Magnites (Electronics)	0.0002	30.26	5.74	-24.52	- 81.0

Sl. No.	Industry	W_i	r	r'	D (r'-r)	% of r
18	Rubber Industry	0.0003	134.28	10.12	-124.16	-92.4
19	Commercial Vehicles	2.5100	19.01	2.31	- 16.70	-87.8
20.	Electric Locomotives	0.2960	7.84	1.03	- 6.81	-86.8
	Total Index	19.2584	8.377	0.729	- 7.648	-91.536

60-80% underfulfilment:

Sl. No.	Industry	W_i	r	r'	D (r'-r)	% of r
21	Copper	0.0000	26.95	6.29	-20.66	-76.6
22	News print	0.0000	37.07	7.89	- 29.18	-78.7
23	Petroleum products (and Lubricants)	0.9490	11.04	3.83	- 7.21	-65.6
24	Phosphatic Fertilizers	0.1200	33.78	11.62	- 22.16	-65.6
25	Synthetic Rubber	0.0090	35.59	5.33	- 16.58	-75.6
26	Polyster Philament and Staple	0.0090	35.59	5.33	- 21.62	-60.7
27	Refractories	0.4200	14.72	4.63	- 10.09	-68.5
28	A.C.S.R. and A.A. Conductors	0.2000	14.87	5.83	- 9.04	-60.7
29	Storage Batteries	0.1930	13.87	4.08	- 9.79	-70.5
30	Resisters	0.0002	64.37	17.41	- 46.96	-72.9
31	Semi-conductors	0.0002	58.49	18.17	- 40.32	-68.9
32	Agricultural Tractors	0.0050	27.23	7.59	- 19.64	-72.1
33	Electric Motors	0.2700	5.27	1.21	- 4.06	-77.0
	Total Index	2.3304	14.365	4.540	- 9.825	-68.147

40-60% underfulfilment:

Sl. No.	Industry	W_i	r	r'	D (r'-r)	% of r
34	Sugar	3.5800	5.71	2.31	- 3.40	-59.5
35	Cotton Cloth (decentralized sectors)	3.7500	3.47	1.67	- 1.80	-51.8
36	Bicycles	0.5100	9.97	4.79	- 5.18	-51.9

Sl. No.	Industry	W_i	r	r'	D (r'-r)	% of r
37	Non-coking Coal	5.6700	4.63	2.36	-2.27	- 49.0
38	Iron Ore	1.6600	12.84	5.64	- 7.20	- 56.1
39	Jute Manufactures	3.9700	5.18	2.270	- 2.47	- 47.7
40	Nitrogenous Fertilizers	0.3360	35.81	18.31	- 17.50	- 48.8
41	Rayon Staple Fibre	0.2870	8.45	4.04	- 4.41	- 52.1
42	Transmitting & Receiving Tubes	0.0002	9.86	4.66	- 5.20	-52.7
43	Thermister and Electronics Varisters	0.0002	43.10	18.92	- 24.18	- 56.1
44	Printing Machinery	0.0003	140.22	73.21	- 67.01	- 47.7
	Total Index	20.1437	6.155	2.927	- 3.277	- 52.00
	20-40% underfulfilment					
45	Motorcycles, Scooters Mopedes	0.8200	19.66	14.86	- 4.80	- 24.4
46	Crude Petroleum	0.3910	7.00	5.12	- 1.88	- 26.8
47	Cement	1.1700	8.09	6.00	- 2.09	- 25.8
48	Aluminium	0.5700	11.91	8.80	- 3.11	- 26.1
49	Automobile tyres	1.1880	9.86	7.19	- 2.67	- 27.1
50	Caustic Soda	0.1699	10.46	7.50	- 2.96	- 28.2
51	Soda Ash	0.1324	6.31	4.93	- 1.38	- 21.8
52	Nylon Phylament and Staple	0.0069	34.86	21.57	-13.29	- 38.1
53	Wireless and Microwage Equipment	0.0002	20.84	12.74	- 8.10	- 38.1

Sl. No.	Industry	W_i	r	r'	D (r'-r)	% of r
54	Paper and Pulp Machinery	0.0039	37.97	23.00	- 14.97	-39.4
55	Diesel Locomotives	0.8340	17.52	12.83	- 4.69	-26.7
	Total Index	5.0773	11.854	8.757	- 3.097	-26.173

<u>0-20% underfulfilment</u>

Sl. No.	Industry	W_i	r	r'	D (r'-r)	% of r
56	Vanaspathi	1.0900	6.05	5.67	- 0.38	- 6.3
57	Paper and Paper Board	1.6100	5.62	5.56	- 0.06	- 1.1
58	Electric Fans	0.4110	15.16	13.67	- 1.49	- 9.8
	Total Index	3.1110	7.031	6.669	- 0.361	- 4.071

<u>% over fulfilment</u>

Sl. No.	Industry	W_i	r	r'	D (r'-r)	% of r
59	Oxygen Gas	0.1140	7.77	14.97	+ 7.20	+93.5
60	Tool, Alloy and Special Steel	10.1170	32.61	74.64	+ 36.03	+93.3
61	Dry Batteries	0.1870	6.57	9.69	+ 3.12	+47.4
62	Sugar Mill Machinery	0.1440	13.44	+14.03	+ 0.59	+ 4.4
	Total Index	0.5620	15.244	25.395	+ 10.151	+55.29

Notes:

W_i = Value added proportions as used in the official series of Index of Industrial Production.

r = Planned Growth Rate during Fourth Plan period (1969-70 to 1973-74)

r' = Achieved growth rate during Fourth Plan period (1969-70 to 1972-73)

Source: Government of India, Draft Fifth Five Year Plan Vol. I pp. 30-40 and Vol. II pp. 156-157

TABLE 3

Extent of Fulfilment of Capacity Targets During Fourth Five Year Plan Period

Sl. No.	Industry	w_i	r	r'	D (r'-r)	D as % of r
More than 100% underfulfilment						
1	B.H.C.	0.0388	11.17	- 2.12	- 13.29	-118.9
2	Zinc	0.0054	14.86	0	- 14.86	-110.0
	Total Index	0.0442	11.62	- 1.86	- 13.48	-116.6
70-100% underfulfilment						
3	Phosphatic Fertilizers	0.1200	23.30	5.87	- 17.43	- 74.8
4	Pig Iron for Sale	0.1300	28.47	6.58	- 21.89	- 76.8
5	Sulphuric Acid	0.0098	16.05	3.21	- 12.84	- 80.0
6	Metallurgical and other Equipment	0.0410	6.23	1.15	- 5.08	- 81.5
	Total Index	0.3008	22.97	5.45	- 17.52	- 76.4
40-70% underfulfilment						
7	Newsprint	0.0800	40.63	20.11	- 20.52	- 50.5
8	Mild Steel (finished steel)	0.0800	5.46	3.26	- 2.20	- 40.2
9	Steel Ingots	0.0100	5.92	3.33	- 2.59	- 43.7
10	D.D.T.	0.1116	23.36	8.45	- 14.91	- 63.8
	Total Index	4.0016	6.66	3.74	- 2.92	- 41.07
20-40% underfulfilment						
11	Petroleum Products (and Lubricants)	1.3400	9.85	6.52	- 3.33	- 33.8
12	Nitrogenous Fertilizers	0.3360	23.98	17.40	- 6.58	- 27.4

Sl. No.	Industry	w_i	r	r'	D (r'−r)	D as % of r
13	Aluminium	0.5700	14.47	10.76	3.71	−25.6
14	Agricultural Tractors	0.0050	27.73	18.64	−9.09	−32.7
15	Caustic Soda	0.1699	6.96	5.31	−1.65	−23.7
16	Thermal Turbines	0.0500	22.46	15.74	− 6.72	−29.9
17	Coal and Other Mining Machinery	0.0130	9.85	7.71	− 2.14	−21.7
	Total Index	2.4839	12.91	9.10	− 3.81	−30.2
	Less than 20% underfulfilment					
18	Paper and Pulp Machinery	0.0009	19.91	16.53	− 3.38	−16.9
19	Soda Ash	0.1324	8.61	7.52	− 1.09	−12.6
20	Hydro Turbines	0.0500	27.73	22.87	− 4.86	−17.5
	Total Index	0.1833	13.88	11.75	− 2.13	−13.9
	% underfulfilment					
21	Tool Alloy and Special Steel	0.1170	37.97	55.18	+ 17.21	+45.3
22	Copper	0.0800	37.68	42.80	+ 5.12	+13.6
23	Power Tillers	0.0025	87.76	88.82	+ 1.06	+ 1.2
24	Machine Tools	0.3865	8.73	13.70	+ 4.97	+56.9
	Total Index	0.5860	18.86	26.27	+ 7.42	+40.4

Notes: w_i = Value added proportions as used in the official series of index of industrial production.

r = Planned growth rate of capacity during Fourth Plan period (1969-70 to 1973-74).

r' = achieved growth rate of capacity during fourth plan period (1969-70 to 1972-73).

Source: Same as Table 2

TABLE 4

Capacity Fulfilment According to Types of Industry

Sl. No.	Industry	No. of Industry	$\bar{w}_i$	r	r'	D (r'-r)	D as % of r
1	Capital Goods	8	0.5489 (7.2)	12.10	14.03	+ 1.93	+ 28.8
2	Basic Industries	5	4.5854 (60.3)	7.81	4.97	- 2.83	- 32.5
3	Intermediate Goods	5	2.4655 (32.4)	15.14	10.62	- 4.52	- 32.8
	All Industries	24	7.5998 (100.0)	10.50	7.46	- 3.03	- 31.0