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PUBLIC SECTOR INDUSTRY AND THE POLITICAL ECONOMY OF INDIAN DEVELOPMENT

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Public sector industry and the political economy of Indian development

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Public sector industry and the political economy of Indian development

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1. Introduction

The public sector has exerted an influence on Indian industry for a long time. Over that period it has changed in so many ways and its operation has become so entangled with India's political economy at so many levels that it is difficult to decide where to begin and how to end the convoluted story, -- a story, of course, which continues as this paper is being written. An economist can claim that many of the relevant data are not in the public domain, and that where they are, no intermediate structures of analysis exist with which to build up a credible design. But an economist has also to admit that even with the data he generally works on, his usual tools fail to reveal the underlying forces. Layer after layer of debris and of misleading accretions from casual observation of movements of social forces have to be removed before the true foundation can be uncovered. But by the time the foundation has been exposed, the digger begins to suspect the existence of other structures.

Take, for example, the question of efficiency : how does one judge it when every single variable is open to manipulation by arbitrary regulations, illegal diversions, abrupt decisions and refusal to take action at critical moments? How does one look at figures of profitability when many of the prices entering into the final revenue and profit figures reflect anything but opportunity costs ?

When we enter these caveats, we see at once that whatever conclusions we arrive at must be regarded as highly tentative. But since most official or semi-official analysts seem to be unaware of these very real complications, their 'authoritative' pronouncements must also be regarded as terribly wobbly. This particularly applies to those statements which presume an automatic damnability of any productive activity in the public domain.

2. The genesis and growth of the public sector

In all capitalist and protocapitalist economies, the public sector now occupies a prominant position, in terms of its contribution to GDP, its draft on national resources and its influence on the total expenditure flows and their composition. India is no exception. The public sector contains many enterprises producing private goods and 'club' goods as well as what could be called irreducibly public goods, that is goods which involve strong external effects in production or consumption.(1) In India many public enterprises produce what theoretically could have been produced by private firms as well. Some of these enterprises had earlier been privately owned, but had been brought under public ownership and control later on. Such cases of 'nationalisation' can be found from days of British rule (railways are a prominent example). Some were nationalized after independence (the Imperial Bank of India, life insurance, general insurance, coal mines are notable examples). In some other cases, the state started enterprises on its own : the examples, of atomic power, sophisticated machine tools, heavy engineering, railway locomotives can be cited here. The actual structure of the public sector has evolved as a

result of many ad hoc decisions taken at different moments of time. As a consequence, in a number of sectors both public and private enterprises operate, producing very similar goods.

There is no single index which can be used to measure the importance of the public sector, or its changes over time. Tables 1, 2 and 3 provide some information which is relevant for analysis of the public sector in India.

Table 1 : Intermediate consumption, gross value-added (i.e. without deducting capital consumption) and gross output of public sector, 1960-61, 1970-71 and 1979-80 (Rs. million, at current prices).

	1960-61	1970-71	1979-80
1. Producers of government services (Central & State)			
a) Intermediate consumption	4650.00	17540.00	50550.00
b) Consumption of employees	7230.00	23690.00	68550.00
Gross input	11880.00	41230.00	118990.00
c) Services produced for own use	10860.00	38010.00	110410.00
d) Sale of goods and services	1020.00	3220.00	8580.00
Gross output	11880.00	41230.00	118990.00

table contd. 4/

Table 1 contd.

	1960-61	1970-71	1979-80
2. Departmental enterprises			
a) Intermediate consumption	2410.00	6840.00	24970.00
ai) Railways	1110.00	2990.00	9120.00
b) Gross value added[(a)]	5560.00	12720.00	26990.00
bi) Railways	3490.00	8690.00	14360.00
c) Gross output	7970.00	19560.00	56650.00
ci) Railways	12610.00	11680.00	23480.00
3. Non-departmental non-financial enterprises (NDNFE)			
a) Intermediate consumption	2070.00	2937.00	21040.00
b) Gross value added	1160.00	1636.00	7922.00
Gross output	3230.00	4573.00	28962.00
4. NDNFE in mining			
a) Intermediate consumption	126.10	781.90	5841.20
b) Gross value added	191.80	1245.70	13836.70
c) Gross output	317.90	2027.60	19677.90
5. NDNFE in manufacturing			
a) Intermediate consumption	935.50	11120.20	109976.40
b) Gross value added	564.40	9052.10	37009.80
bi) Operating surplus	57.60	963 .50	7093.40
Gross output	1499.90	20172.30	146986.20
6. NDNFE in electricity			
a) Intermediate consumption	845.30	2100.10	11619.70
b) Gross value added	853.10	2862.40	11957.10
bi) Operating surplus	486.70	1302.80	6858.00
Gross output	1798.40	4962.50	23576.80

Table1contd. 5/

Table 1 contd.

	1960-61	1970-71	1979-80
7. Non-departmental financial enterprises			
a) Intermediate consumption	180.00	780.00	4450.00
b) Gross value added	640.00	4180.00	22170.00
bi) Operating surplus	360.00	1780.00	12540.00
Gross output	820.00	4960.00	26620.00

Source : CSO : Transactions of the Public Sector 1960-61 - 1979-80 Central Statistical Organisation, Department of Statistics, Ministry of Planning, Government of India, September 1983, Statements 1, 5, 25, 31, 34, 40 and 58.

Notes : (a) Less subsidy, imputed to enterprises other than railways. Gross value added = compensation of employees + operating surplus.

* Figures of 1960-61 are not available; figures given are for 1965-66.

Table 2 : Percentage share of the public sector in GDP, saving, capital formation and final consumption expenditure from 1980-81 to 1985-86 (at current prices).

	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86
1. Gross domestic product	19.8	20.9	22.8	22.6	23.8	24.9
2. Gross domestic saving	16.2	21.5	22.6	16.5	14.7	14.1
3. Gross domestic capital formation	42.5	42.5	48.6	45.1	48.3	44.8
4. Final consumption expenditure	11.7	11.9	12.7	12.7	13.2	14.4

Source : CSO : New Series on National Statistics with 1980-81 as Base Year, New Delhi, Department of Statistics, Ministry of Planning, Government of India, February 1988, Statement 20.

Table 3 : Employment provided by the public and private sectors in organized industry (in thousands)

End of December	Central govt. establi-shments	State govt. establi-shments	Total public sector[a]	Private sector		
				Large[b]	Small[c]	Total
1971	2,836	4,217	11,099	6,018	716	6,734
1976	3,074	4,931	13,616	6,063	724	6,787
1978	3,128	5,238	14,501	6,374	731	7,105
1980	3,188	5,546	15,384	6,656	787	7,443
1982	3,250	5,929	16,278	6,725	800	7,525
1984	3,333	6,284	17,217	6,530	825	7,355
1986	3,341	6,556	17,913	6,565	836	7,401

Source : Reserve Bank of India : Report(s) on Currency and Finance for the Year(s) 1983-84 and 1987-88, Vol(s). II (Bombay, 1984 and 1988).

Notes : (a) Includes Central government, State government, Quasi-government (Central and State) enterprises and establishments controlled by local bodies.

(b) Establishments employing 25 or more workers.

(c) Establishments employing 10 - 24 workers.

Table 1 shows the enormous growth in the gross output of different components of the public sector from 1960-61 to 1979-80, and also the role of the public sector (through intermediate consumption) as the customer for goods and services of the rest of the economy. Table 2 gives an idea of the contribution of the public sector to gross domestic saving and investment in the first half of the 1980s. xxxxxxxxxxxxxxxxxxx The methodology of the construction of the national income series has been revised recently and so it is difficult to compare the more recent figures with the figures from earlier years. However, it has been roughly estimated, by using earlier national income data, that the share of the public sector as a whole, including defence and administration, in the net domestic product (NDP) increased from 7.5 per cent in 1950-51 to 23.1 per cent in 1983-84, and over the same period, the contribution of the public sector engaged in the production of goods and services (that is, excluding defence and administration) to NDP increased from 3.0 per cent to 17.7 per cent.(2)

The importance of the productive part of the public sector to employment in the organized sector is indicated by Table 3. From those figures, it is obvious that employment creation in the organized sector has proceeded faster in the public than in the private sector. However, the different components of the public sector differ tremendously in their contribution to employment creation. In particular, there is little increase in employment in central government enterprises between 1978 and 1986, and in this respect their performance is very similar to that of the organized private sector.

The figures in Tables 1 - 3 by themselves provide only a very partial picture of the importance of the public sector at a moment of time and of the changes in that importance over time. Apart from the contribution of the public sector to gross national expenditure, GDP, gross domestic capital formation and gross domestic saving, there are several other dimensions that may be considered relevant for a reasonably comprehensive analysis. The first is the set of forward and backward linkages of the public sector with the rest of the economy over, let us say, an annual production cycle. A comprehensive input - output transactions matrix should be able to capture these linkages. The second is a portrayal of changes in these linkages over time. The description of such changes may pose problems, for the nature and strength of the linkages are themselves affected by changes in government policies, leading to changes in the public - private divide, even when the basic input - output transactions remain the same. Secondly, changes relating to import - export policies can lead to changes in the linkage patterns obtaining in the economy. Thirdly, any positive or negative effects on productivity and prices resulting from attempts to build up new linkages in the economy will lead to further changes in the linkages. For example, if the attempt to build up an integrated steel industry leads to the growth of ancillary industries which can supply inputs at a lower cost, then there will be an inducement for more such linkages to be forged; the opposite will be the case, if attempts to build linkages lead to proliferation of high-cost units. Finally, even if government policies regarding /the public - private divide remain the same, the attempt to change the composition of products and import technologies rather than

develop them locally may change the public - private divide through the pressure of suppliers of foreign credits and technology. It has been found, for example, that while the linkages of agro-based industries such as jute textiles, cotton textiles, leather and leather products, and food and food products are strong enough for them to generate above-average levels of employment and income, the rest of the manufacturing industries have much weaker linkages and generate below-average income and employment (compared with the resources deployed). Moreover, the latter also tend to be much more import-intensive than the agro-based sectors. Thus if public investment is concentrated in the relatively more modern product-groups, then its linkage effects may appear to be lower than for the rest of the manufacturing sector. Contrariwise, if sick jute and cotton textile mills are taken over by the government, the linkage effect of the public sector would appear to go up with no change in the underlying input-output relations.

3. Some forces acting on the public - private divide

We have in the above only indicated the complications in analysis arising out of a consideration of the linkage effects of public sector activities and their changes. If we turn to the political economy of government decisions regarding the strategic policy variables, including the public-private divide, then further complexities crop up.

Take, for example, employment effects of public sector investment. It may be argued that despite the formulation of the Mahalanobis four sector model, in which employment creation was taken care of through labour-intensive cottage industries.

and the services sector, it as income rather than employment that was the major target variable of public sector investment. The government's major intervention in the field of protection of employment took the form of according fiscal privileges to, and the reservation of particular product groups for, a broad range of village and cottage industries. However, initially, the construction of large integrated steel plants and heavy engineering complexes generated a considerable amount of employment, especially in the resource-rich but backward eastern and central regions of the country. In fact, overmanning plagued many of these plants from the time they began operating,[4] because the economy failed to provide many alternative avenues of employment at a decent wage and because a politics of accommodation naturally emerged under such conditions.

Employment as a target variable for public sector investment has, since then, been further downgraded by a two-fold change in policy. First, the policy of protection of employment in the cottage industrial sector has been greatly diluted from the beginning of the 1980s. This has meant a relative, if not absolute, diversion of many of the fiscal subsidies provided by the central government. (However, the state government activities may have partly compensated for the scaling down of central government support). Secondly, as I have argued earlier,[5] increasingly (from the middle of the 1970s), public enterprises were told to behave like private firms. This meant among other things, accepting more or less <u>in toto</u>, the highly capital-intensive designs provided by the consultants and technology suppliers from OECD countries.

This relative shift in the central government's critical target variables within the productive public sector is linked to the more general shift in the political economy of Indian developments and policy choices. We can no more than touch on some of these shifts in this paper, concentrating only on those that have directly affected the public-private divide.(6) To start with, the private sector, and in particular many of the old monopoly houses, have grown enormously. New groups with command over financial resources and ability to manipulate the state apparatus for their ends have come to the fore. The growth of such groups has in turn been facilitated by a number of factors. First, the growth of public sector provided expanded markets for the private sector. Secondly, the provision of basic goods such as pig iron, finished steel, coal, etc. and of infrastructural facilities such as railway transport, electricity, roads, and water at subsidised rates increased the legitimate profits of the private sector. Thirdly, the provision of cheap term loans through banks and other financial bodies and foreign exchange at a price which did not reflect its real degree of scarcity also added to the profits of the private sector. Fourthly, the government has increasingly treated the private sector with tenderness and lightened its fiscal burden through various devices. Finally, private businessmen and industrialists have used a whole set of devices such as tax evasion, reneging on their statutory commitments to workers, black marketing of goods in short supply and illegal speculation in real estate to amass illicit profits.

The relative growth in the power of the large-scale private sector has also been facilitated by defaults of the public sector - defaults which can again be traced in many

cases to the engrossing activities of private businessmen. The defaults did not occur all at the same time, or in all the areas of production or technology development and transfer. This temporal and areawise differentiation within the public sector makes it all the more necessary to carry out a mesolevel analysis - an analysis that acts as a bridging device between the micro-study of particular public enterprises and the macroeconomic and macropolitical analysis of the public sector as a whole.

Take, for example, the case of the iron and steel industry. The justification for building it up could be couched in terms of the availability within India of some of the basic resources such as coal, good-quality iron ore and cheap labour. Further justification could be sought in the necessity of giving priority to capital and intermediate goods industries (those belonging to Department I in Marx's schemes of expanded reproduction) by invoking the logic of the Feldman-Mahalanobis two-sector model of growth. Yet other arguments would centre on the claim that in the long run it was cheaper to develop integrated steel and associated engineering industries than to depend on imports, especially when traditional exports might be relatively stagnant. The plea could be expanded to argue that India could instal more and bigger steel plants and export steel.

The correctness of such arguments cannot, however, be established by studying government decisions as a once-for-all act, or by taking just two snapshots of the economy : one, the economy without public sector industry and two, the economy augmented by the public sector steel plants and associated engineering industries. What was happening in between the two

snapshots would be essential in finding out whether ultimately it was better for the economy to have those plants, whether the benefits derived could have been considerably larger if the plants had been implicated in a different history, and whether, if there were major shortfalls between the feasibly optimum patterns of growth and the actual pattern, the fault lay in developments within the steel sector or in developments in the sectors immediately linked to it or in developments in the economy and polity as a whole (with attendant repercussions on the steel and associated sectors as well). What I am trying to say can be put in another way : the history of the public sector steel plants and their success or failure are intimately tied up with questions of (a) the choice of projects and their appropriateness in terms of economies of scale, input composition etc., (b) the trajectory of execution of the projects, including delays and unscheduled alterations in equipment or technology, if any, and the establishment of ancillary plants for supplying inputs domestically, (c) the manner and content of transfer of technology from abroad (and in rare cases from within the country), (d) formalization of regular procedures of maintenance and overhauling of plants, (e) implantation of formal methods of learning and improvement of productivity through better operating procedures and marginal changes in design or layout, (f) institutionalization of technological development through R & D in the plants or in laboratories to which plant personnel have ready access and from which scientists and technologists can have ready access to the plants, and (g) regularization of cost-effective investment decisions for modernization and expansion of the plants (since many of them involve process technologies, economies of scale tend to become stronger over time).

Some technologists who were associated with the public sector steel industry almost from its inception have argued that many of the decisions with regard to the two plants at Rourkela and Bhilai were on the right lines. The German firms associated with Rourkela had a long experience in steel production on a competitive basis, and they were eager to re-establish their credentials and establish German engineering technology as a front-runner in the postwar period of reconstruction and growth. For political reasons, in order to show her goodwill to non-aligned India, the Soviet Union wanted to establish a plant which would be a showpiece of socialist aid for development in a non-aligned country. The British effort at Durgapur was, however, much more of a patched-up affair, lacking either the political drive of the Soviet project or the competitive edge of the German steel and engineering giants.

In the case of the Rourkela and Bhilai plants, there was an attempt from the very beginning to develop a technical cadre which could not only read the drawings handed down by the consultancy organizations and the foreign contractors of the plants, but also could themselves learn how to design at least parts of the plants. This technical cadre, whose beginnings can be traced to 1954, formed the core of what became first the Central Engineering and Design Bureau (CEDB) of Hindustan Steel and later on, a separate central government undertaking, the Metallurgical and Engineering Consultants (MECON). The Soviet Union also helped set up two heavy engineering complexes, the Mining and Allied Machinery Corporation at Durgapur and the Heaving Engineering Corporation at Ranchi. The latter was equipped to provide all the heavy machinery that would be required to set up an integrated steel plant of the vintage that was prevalent in the Soviet Union in the 1950s. However,

the implementation of these twin objectives of fully absorbing (and when necessary, upgrading) the technology transferred by the foreign suppliers and of establishing engineering complexes that would supply the machinery needed for large integrated steel plants became increasingly difficult. Briefly, the difficulties originated in (a) the shortage of foreign exchange which forced the government to seek foreign help even in the areas where technical expertise and domestic capital goods were available, and (b) the failure to mobilize domestic resources and keep up the tempo of growth envisaged in the second and third five year plan periods. These lapses rendered much of the capacity of the MAMC and HEC idle. These failures in turn hamstrung the efforts of the CEDB and other Indian consultancy organizations to acquire practical experience in designing and constructing plants. Without such experience, these organizations could neither accumulate the 'learning capital' nor the goodwill which would allow them to compete on more equal terms with foreign contractors and consultants based in Europe, Japan or North America.

Even though such difficulties surfaced already in the 1960s and persisted throughout the 1970s, it can be argued that the idea of acquiring the expertise for constructing and designing large industrial plants in steel or fertilizers was not given up, although the tilt of the government policy towards turnkey projects supplied by foreign consultants could be detected even from the end of the 1960s. This tilt has been more marked in recent times : the government has often accepted a situation where practically all inputs, barring the unavoidable civil engineering works in situ, are supplied by foreign contractors, while the capacity of domestic capital goods industries and domestic technical cadres remain grossly under-utilised and the latter are forced to undergo a de-learning process.

We have dwelt on these problems at a greater length than is usually done, because such a lack of learning and productivity growth through sustained utilisation of domestic capacities is often ignored in the literature. Moreover, in the context of larger debates about the political economy of India where intellectuals are sometimes put forward as a component of the ruling class, it is often forgotten that there are enormous differences among intellectuals in respect of power, orientation and even narrow self-interest. While a few intellectuals may accumulate power by remaining close to the top politicians and businessmen and acting as their minions, there is a much greater number even within the public sector establishments who are more the victims of the system and its failures than beneficiaries of its mode of functioning.

The failure to realize much of the potential of the public sector in terms of building viable linkages and facilitating absorption and diffusion of technology in turn gave a relative advantage to the advocates of a greater role for the private sector. Other forces besides the ones we have already referred to earlier favoured a policy shift towards the private sector. These included the draining of the surplus of the public sector through legal and illegal subsidization of private interests (at the cost of the former), and the strengthened hold of transnational corporations (TNCs) as suppliers of technology. Private business groups with financial and political clout were often able to utilize the power of the TNCs to bargain for their own investment projects at the cost of the public sector. It should, however, be remembered that the tendency towards increasing centralization of state power in India also gave an additional advantage to large, ambitious business groups. They could concentrate their pressure on a few strategic points

and seek to reorient policies to suit /their own convenience/. The trend towards economic liberalization also strengthened the large private interest groups /working in collaboration with TNCs/. The same liberalization and the increasing dependence on foreign loans favoured the implementation of more and more foreign-financed and foreign-constructed turnkey projects in public enterprises, especially those under the control of the central government. Many large public enterprises have begun to resemble large private firms in their utter dependence on foreign technology, without, however, acquiring an autonomy in management or long-term investment decisions.

4. Large-scale industry and the problems of investment failure: problems with the utilization of public sector steel capacity

When the Government of India decided to step up the pace of industrialization and set up large-scale units in the public sector, its action could be interpreted as a gap-filling exercise or as an antidote to investment failure. In the government's perception, the private sector had neither the resources nor the incentive to develop what have been called 'capital-dominated' industries,(7) that is, industries characterized by strong economies of scale and requiring large volumes of capital for a viable scale of operation. It turned out that public investment or expenditure was also required in the long run for solving a macroeconomic investment failure problem. This sounds paradoxical for an economy that is continually plagued by deficits in balance of payments. But the paradox vanishes if we realize that what we are talking about is an ex ante saving-investment gap. What is observed ex post is a positive import-export gap (by accounting definition also equal to the ex post investment-saving gap) that

results from a downward adjustment of the rate of saving and an upward adjustment of imports to strike a balance with a partly foreign-financed rate of investment.(8)

While it would require a long exegesis to provide full empirical validation of the proposition of investment failure, some rough-and-ready indicators may be provided here.

Throughout the period from 1950-51, and especially from the Second Plan period, the public sector has accounted for a much larger fraction of gross investment than of gross or net domestic saving. This has normally been seen as a symptom of the failure of the public sector to generate enough internal resources for financing its own investment. Many economists have pointed to deliberate underpricing of public sector goods and services, various open and concealed subsidies provided by the public to the private sector, in addition to inefficiency and under-utilization of capacity in the public sector as reasons for the persistent excess of public sector investment over its saving.(9) xxxxxxxxxxxxxxxxxxxxxxxxxxxx The true surplus of the public sector would have been considerably higher, if the implicit and explicit subsidies to the private sector were added to the nominal income of the public sector. But even after taking such transfers into account, there would probably remain a large and positive gaps between the gross domestic capital formation of the public sector and its saving.

A similar gap characterizes the gross capital formation of the organized private sector and the internal savings generated by it and more generally, the generation and the use of funds by the private corporate sector. xxxxxxxxxxxx xxxxxxxxxx A situation where the household sector accounts

for most of the saving in the economy whereas the organized sector, whether the ownership is private or public, invests most of the surplus, characterizes the process of commercialization and financial deepening in a market-oriented economy. In India, however, much of the capital formation in the private corporate sector is financed by loans and equity capital provided by the public to the private sector.(10) The proportion financed by equity capital and debentures from sources other than public financial institutions has gone up dramatically in recent years. This is also connected with the change in the political economy of India shifting the line of public-private divide that we have already touched on. Moreover, the private corporate sector also is a net user of funds provided by the households. To take a crude indicator, in 1981-82 and 1982-83, the household sector was the source of Rs. 16075 million and Rs. 16370 million respectively of funds used by the private corporate sector while it received only Rs.1081 million and Rs.1244 million in 1981-82 and 1982-83 respectively from the private corporate sector.(11) Thus we have to recognize a continual process of transfer of resources from the household sector to the private corporate sector and to the government. Some of the government policies in recent years can be seen as being aimed at increasing the net revenue available to the private corporate sector, and disposable income in the hands of households who come within the purview of direct taxes, and facilitating the investment of such surpluses by the private sector. Naturally if these changes come about, even if partially, the household sector surplus available for public sector investment will shrink. Some of the policy changes discussed above would affect both the total volume of public sector investment and its allocation.

The attempt to fill the gaps in industrial investment by using the instrument of public enterprises was made, from the very beginning, on some wrong premises. It was assumed that foreign assistance could be sought and obtained to finance the purchase of plant and equipment and to set up the new units of production without affecting the quality of absorption of technology by the new enterprises or without affecting their operational characteristics. Very soon the import bill of capital /goods for the capital-dominated units, in addition to the other demands for foreign exchange generated by the government and private expenditure programmes, outran the supplies of foreign exchange. Indiscriminate use was /then made of foreign aid. The aid was normally tied to purchases of equipment and materials from the countries giving loans and grants. Only halting and ineffective attempts were made to insulate the choices of technology and product-mix against pressures exerted by foreign firms and their agents. As a result, foreign suppliers often got away with misspecifying the capacity of the plants set up and their operating characteristics. In some cases, for example, that of the Durgapur Steel Plant, Indian managers of the plants could not master fully even the operating technology of those plants, let alone learn how to replace them or expand them so as to take full advantage of economies of scale or advances in technology occurring in the fields concerned.(12)

The failure to effectively monitor the activities of foreign contractors involved in setting up the new plants often showed up as a difference between design capacity and effective capacity. While many public sector units suffered from underutilization of capacity as a result of macroeconomic policy failures, the degree of underuse was also exaggerated because of a failure to distinguish effective from design

capacity. Capital costs were calculated on design rather than effective capacity and their burden was all that much greater because of the shortfall of effective from design capacity. The losses suffered by the public sector from this source were compounded by the pricing policy governing the outputs of public sector units. Thus, prices of most varieties of steel were deliberately kept below the effective costs of production. Such underpricing was supposed to be a means of encouraging private investment. For the same reason, the product mixes imposed on the public sector plants were also different from what they would have chosen if they had to maximize the revenue, if only the prices but not the quantities of different products were regulated. Thus in terms of current revenue generation also public sector units had to bear a double burden - control of prices as well as quantities and product-mixes produced by them.

The losses imposed on the public sector by these types of policies are illustrated by a series of calculations made by Ramprasad Sengupta and his team regarding the effective capacities and the optimal revenue levels pertaining to the three integrated steel plants located at Bhilai, Rourkela and Durgapur and owned by the central government company, Hindustan Steel Limited (Tables 4 and 5).

In Table 4, the three variants of optimum capacity refer to the capacities worked out by taking the internal and external constraints into account, and rendering them increasingly binding in the optimizing exercises. In the case of both Rourkela and Durgapur steel plants, the optimizing exercises even with the loosest of constraints throw up effective capacities which were much smaller than the rated capacities,

Table 4: Rated capacity, optimal effective capacity and actual production of steel ingots in three Indian steel plants in 1973-74 (figures in million tons).

	Bhilai Steel Plant	Rourkela Steel Plant	Durgapur Steel Plant
Rated capacity	2.50	1.80	1.60
Optimal capacity :			
Variant 1	2.24	1.11	0.96
Variant 2	2.15	0.99	0.86
Variant 3	1.81	0.96	0.68
Actual ingot production	1.89	1.08	0.78

Source : R. Sengupta and others : Problems of Production and Investment Planning in Indian Steel Industry - Hindustan Steel Limited - a Case Study, Vol.I, Centre for Economic Studies, Presidency College, Calcutta, 1978, pp.296-297.

Table 5. Optimum revenues and net profit with or without social priority stipulation (SPS) of three Indian steel plants, 1976-77 (figures in Rs.'000).

	Bhilai Steel Plant		Rourkela Steel Plant		Durgapur Steel Plant	
	At JPC prices(a)	At stock yard prices	At JPC prices	At stock yard prices	At JPC prices	At stock yard prices
1. Optimum revenue in the presence of SPS(b)	658,743	996,538	1,201,190	1,656,570	529,083	774,560
2. Optimum revenue in the absence of SPS	1,154,640	1,297,120	1,474,390	1,767,960	595,357	916,477
3. Optimum net profit with SPS (c)	-207,064	130,731	138,551	593,931	-148,982	96,496
4. Optimum net profit without SPS	34,040	413,063	-	-	-	-

Source : R. Sengupta : Problems of Production and Investment Planning in Indian Iron and Steel Industry - Hindustan Steel Limited - a Case Study, Vol.3, Centre for Economic Studies and Planning, Jawaharlal Nehru University, 1978, Tables 5.1.1A - 5.1.1C.

Notes: (a) JPC = Joint Plant Committee
(b) Optimum revenue = value of optimum gross output minus variable costs.
(c) Optimum net revenue = optimum revenue minus fixed cost.
(d) For Rourkela Steel Plant, no feasible solution was found if the social priority stipulation was obeyed but steel slabs could not be procured in desired quantity from outside the plant.

and it can be seen that the degree of capacity utilization is far higher than is indicated if the actual output is compared with the nominal capacities. It is not accidental that while the Rourkela and Durgapur steel plants were built by a German and a British consortium respectively, with tying of the construction to sales of equipment by principals and their affiliates, the far more effective and larger Bhilai steel plant was built by the Russians at a time when they were eager to demonstrate their friendliness and technological prowess. (For various external and internal reasons, the experience with the Bokaro and the Visakhapatnam steel plants, built with Russian aid - the latter is still under construction - has not been as happy as with the Bhilai plant).

In Table 5 (in which social priority atipulation refers to compulsory production of specified quantities of particular types of product under government direction) are given the figures of gross revenue earnings and net profits by the three steel plants under alternative price and quantity regulation regimes. The prices set by the Joint Plant Committee which allocated minimum quantities of outputs to be produced and sold ex-factory at controlled prices to the different steel plants were considerably lower than those the steel plants realised from sales at regulated stockyards. It is seen that even sales at the regulated prices of the stockyards would have made a large difference to the revenue and net profits of the steel plants, but, of course, public sector steel plants were not free to sell most of their output in the stockyards. Moreover, it is seen that with the socalled social priority specification (SPS) even the best plant, viz., Bhilai, would have realised a negative profit with the optimum product-mix, and so would the Durgapur plant.

Rourkela is shown as making a positive profit with SPS, but only on the assumption that it had an external source of supply of slabs at unchanging prices - otherwise its product-mix with SPS turns out to have been altogether infeasible. If we contrast the experience of the public sector units with that of, say, the Tata Iron and Steel Co. (TISCO), several advantages of the latter come out clearly. First, TISCO chose those products which promised the largest net revenue per unit of cost incurred, while the public sector units were not permitted to do so. The TISCO could also make other products such as chrome ore outside the purview of price control and boost its profits further.(13) It has also been suggested that the Tata enterprise could make marginal investments in the name of maintenance and thus keep up, and even augment, its effective capacity. Such managerial autonomy is as not yet a characteristic of most public enterprises. Finally, it has been suggested that TISCO could obtain more power from the public electricity /utilities and better railway service and even a more profitable product-mix by using various methods which were not open to the public sector units.

5. <u>The macroeconomic crisis of the 1960s and effects on public sector planning</u>.

Detailed conjectural exercises comparable to those for the steel sector are not available for all major public sector enterprises. /But by now a considerable amount of analysis has been carried out on the excess costs and dynamic inefficiency imposed on most of the public sector projects because of the failure of the government to break out of dependence on foreign sources of funds tied to sales of particular types of technology for setting up the installations.

For example, the Hindustan Machine Tools (HMT) is known as one of the most successful public enterprises Government support was needed to create an indigenous machine tool industry since most private machine tool enterprises collapsed after the second World War. The initial collaboration agreement of the HMT with Oerlikons of Switzerland restricted the development of machine tools by the former to only a few varieties and impeded the transfer of technology.(14) Similar problems, but of a less serious import, arose with a later collaboration agreement of HMT with Marwin Machine Tools (of the U.K.) for the development of CNC Machine Centres.(15)

HMT illustrates both the troubles public sector units have faced because of dependence on foreign technologies and because of an initial specialization in the production of capital goods, and the strategies the more successful units have followed to overcome the difficulties. Since initially the HMT specialised exclusively in the production of machine tools, the recession in Indian industry, starting in 1965-66, seriously affected its output and profit. However, the firm then diversified into the production of watches, which was a consumer good and into tractors. The latter became a major capital good for agricultural production in the states of India which underwent the processes of the Green Revolution, and in which the average size of operational holdings was large. HMT was more successful in the production of watches than of tractors, but made enough profits from its watch division to avoid going sick, a fate that has overtaken a number of firms in the engineering industry both in the private and the public sectors.

The causes of the recession in Indian industry in the middle of the 1960s have been debated intensively in the literature.(16) The following factors have been stressed in

various degrees as causing the recession : (a) a stagnation in the demand for the most important mass consumer good produced by industry, viz. cotton textiles; (b) a stagnation or fall in demand for some of the most elementary producer goods used by the poorer strata of producers, leading to a sales crisis in certain sectors of engineering industry; (c) a fall in public investment, especially investment in railways, causing a sales crisis in the basic and capital goods sold by both private and public firms; (d) a fall in agricultural output, first aggravating factors considered under (a) and (b) but eventually also accentuating a decline in public expenditures and helping to turn a temporary recession into a long-term stagnation; and (e) an adverse movement in the terms of trade of industry as against agriculture causing a further erosion of the purchasing power of those people in whose budgets expenditure on food looms large, and aggravating the fall in the profits of private industrialists through narrowing of the margins between prices and (enhanced) wage costs.(17)

I do not want to debate the relative importance of these factors in causing the recession or the long-term stagnation, which many economists have claimed, ended only in the 1980s. What is important to note is that several different chains of causation are postulated in these accounts, and several types of limits are imposed implicitly or explicitly on the autonomy of state action. The question of the degree of freedom enjoyed by the state in India is of vital importance in understanding the pattern of growth of the public sector and indeed of the whole Indian economy and society. If we simply confine our attention to the recession of 1965-67 and the years of stagnation of industrial growth, one question

naturally arises : what prevented the public sector from spending more on its capital programmes and thus generating demand for at least the public sector enterprises ? Several answers could be provided for this. The first is that, as has been argued by Prabhat Patnaik and others,[18] there was a serious danger of inflation exceeding politically safe limits if public expenditure was pushed too high in the face of a rather inelastic supply of wage goods.

As the Green Revolution and creeping inflation helped loosen the wage goods constraint in two ways, viz. by imparting a greater degree of stability to the supply of foodgrains and by helping concentrate assets and incomes in the hands of the more affluent sections of the peasantry, the 'inflationary barrier' (to borrow Joan Robinson's phrase) receded. However, this took quite a few years to accomplish. Moreover, the more narrowly economic conflicts have increasingly tended to take the form of overt social, ethnic and communal clashes in many regions of India : inflationary instability is not the only kind of instability social scientists have to worry about while programming the unleashing of an unbridled state apparatus in India. The experience of the Emergency period showed that a state which suppressed social conflicts forcibly and was able to keep inflationary pressures at bay because of good harvests could step up public investment and production by capital goods industries. But the accumulation of stocks of unsaleable steel over the Emergency period also showed that unless appropriate action was taken to change the product mix of the capital goods industries and stimulate the demand for them from other sectors of the economy, such acceleration of industrial growth would be temporary, and hence a purely <u>etatist</u> strategy of industrial growth would not work in India.

However, it is very probable that a perception of the receding of the inflationary barrier encouraged the policy-makers to step up expenditures in recent years, and give a boost to certain kinds of manufacture.

5. The balance of payments and fiscal constraints on policy-making, and their consequences.

A purely domestic and macroeconomic limit is not the only constraint that may come into operation in India. The other two constraints are an external balance of payments constraint and a domestic, class-determined fiscal constraint. I have in the past tried to find hierarchies of these constraints at different junctures of industrial growth.(19) For building up a general model of industrial growth and stagnation, we have to go on searching for constraints which become binding at different points as the structure of industry, the international linkages and macroeconomic balances change. We need to look more specifically into institutional and class-related factors at critical points in order to measure the relative stringency of the binding constraints, and the strategies used by the decision-makers to loosen those constraints or render them in-effective by discovering new exit routes.

To go back, for example, to the years of industrial and economic recession in the second half of the sixties, the reason why the fall in agricultural output and the marketed surplus unnerved the decision-makers so much is that they had become far too dependent on food aid, and that their demand for foreign inputs for investment in critical growth-augumenting areas (such as production of fertilizers) had become quite inelastic and inflexible. At the same time,

the rulers despaired of being able either to contain the demand for food within the limits of domestic availability or to mobilise a large marketable surplus by procuring grain from the countryside at controlled prices.

If we turn to more recent developments, we see that the government of India has resorted to very large doses of deficit financing in order to find the wherewithal for financing its burgeoning levels of un-productive expenditure. Most of India's leading economists have lamented this phenomenon.(20) Prabhat Patnaik and several other economists have talked of a 'fiscal crisis'. In the Indian context, the crisis is equivalent to the government not being able to meet its expenditures through market borrowing and tax and non-tax revenue and having to resort to the printing of notes and to arbitrary increase in administered prices, which in turn seriously erode the real value of the government's resources. On the other hand, politically, the government is not in a crisis as far as the financiers of the party apparatus are concerned. From the days of Liaquat Ali Khan's budget, through the covering up of the findings of the Income Tax Investigation Committee, and the abortion of the tax reform proposals of Nicholas Kaldor, the Indian upper classes have shown a strong disinclination against direct taxation in any form. The net disposable incomes of the upper classes have increased through legal and illegal channels, and the governments 'fiscal crisis' internally is largely a mirror image of the propensity of the Indian businessmen, landlords, top bureaucrats and politicians to pass on the burden of government administration and government subsidies to the shoulders of the majority of the people whose incomes are below the minimum exemption limit for income tax purposes.

The ironical fact is that since major commercial banks and term-lending institutions are nationalised and are seen as a source of cheap, and in sticky situations, non-repayable, loans, the private sector is quite happy with keeping them in public hands. In a recent paper, Mihir Rakshit[21] has shown that the actual net liability of the public to the private sector is quite low when we take account of the assets of the public enterprises and the liability of the private sector to the nationalized banks and other financial institutions. Thus the 'debt trap' of the government could be regarded as primarily a matter of internal household management of the upper classes but for three facts. The first is that there is an accelerated tendency to gouge out the public sector, including the budgetary resources of the government, for the benefit of private sector profits, and thus increase the burden of exploitation of the common people. The second is a tendency to use the public sector as a base for the consumption of superior types of goods by the upper classes (Maruti Udyog is a prime, but not the only, example of this tendency). The third is an increasing resort to external resources as a budgetary supplement and as a means of evading the other constraints.

This brings us back to the problem of limits imposed on the freedom of action of the state and more narrowly, of the public sector, by dependence on external resources. This dependence, let it be noted, has been as much policy-induced, as 'structural'. If we take a view of the whole development experience of India over the period from 1947, we find several occasions when the choices were muffed, and easy ways out were taken. In 1947, the Indian capitalist class or the Indian government showed no determination to exclude foreign capital

from control of major sectors of the economy. In fact, in 1949, the then Prime Minister of India went out of his way to make a special policy statement telling existing foreign businesses not to worry. This policy sprang not from a shortage of foreign exchange - India had large sterling balances, and during the Korean War, there was a boom in Indian exports - nor from consideration for high technology. Most Anglo-Indian businesses in India were in relatively low-technology industries. The existing foreign business and their local collaborators truly acted as Trojan horses, rigging local markets, importing obsolete technologies and obstructing the development of local technology.

The blinkered nature of Indian policy even in its 'nationalist' phase was shown up in the way the government planned to develop India's steel industry. Almost at the same time that the Japanese were sending out their own teams to Austria to buy up and absorb the knowhow of the L - D process on their own, the Indian government was looking for firms which would make new steel plants for India on a turnkey basis and allowing - nay, encouraging - the two private sector steel firms to seek foreign aid with packages of foreign consultancy in all aspects of plant construction and design for expanding and modernizing their plants. The story of the Central Engineering and Design Bureau of Hindustan Steel (later, Mechanical and Engineering Consultants) which we have summarized earlier is one of a very grudging encouragement by the state : whenever some foreign suppliers promised credit for plant construction, they were allowed their way as regards design and construction in most respects.(22)

In the fertilizer industry, as in the case of the iron and steel industry, attempts had been made almost from the time the first public sector unit was set up to both absorb the foreign technology for production of ammonia and urea and to produce new catalysts for ammonia synthesis and other processes inolved in fetiliser production.(23) The P & D division of the Fertilizer Corporation of India also tried to build up design and construction expertise in collaboration with a few foreign consultants and contractors not only for petroleum and natural-gas based plants, but also for coal-based plants. A study of capacity utilization in three plants, two constructed by the P & D Division of the Fertilizer Corporation of India as the prime contractor (now Projects and Development India Ltd.) and one constructed by a transnational corporation (TNC) as the prime contractor found no dominating superiority of the plant designed and commissioned by the TNC.(24) However, a decisive difference did occur in the costs of construction of some plants for which the P & D division had been the prime contractor. These costs were generally higher than those for comparable plants for which the TNCs had been the prime contractors. The reasons were all external, and they were connected with the fact that while the TNCs came equipped with ready foreign credits (including loans from the World Bank) and could choose their equipment and sub-contractors freely, the P & D Division could not choose their equipment suppliers freely and had to depend on tardy and uncertain releases of foreign exchange by the Indian government. Embroiled in an endemic foreign exchange crisis, and unable to stick to a long-term plan for technological development through the agency of indigenous consultancy and R & D set-ups, the Indian government allowed the TNCs to pick their subcontractors and obtain the lion's share of the foreign exchange ear-marked

for public sector industry. Much of the latter was in any case negotiated on the premise of the involvement of the TNCs. Hence the indigenous consultancy firms had to bear the brunt of intermittant and uncertain supply of equipment and foreign exchange : it was found that in most cases, the cost escalation of projects for which the P & D Division (or its successors) was supposed to be the prime contractors (but effectivity were not) was due to external factors[25] and these in turn aggravated the internal problems of control and further development of the consultancy organization.

Not only in the steel industry and the fertilizer and machine tool industries, but also in the pharmaceuticals industry, and in many other less prominent areas, the development of both the capital goods industry and the processes of effective absorption, adaptation and upgradation of technology have been impeded by the continued and ever-renewed dependence of the Indian government on foreign loans and grants.[26]

Although the efficacy and the dynamic sustainability of both the public and private sector projects are hampered by foreign exchange shortages and tying of the projects to particular foreign countries or companies, there is some evidence that the long-run financial costs of foreign collaboration agreements for import of knowhow tend to be lower for public than for privately controlled enterprises.[27] At the same time, the R & D effort mounted by public enterprises has been far more impressive in terms of absolute expenditure per firm, proportion of those expenditures to sales and growth since 1976-77.[28]

However, as we have already argued, the effectiveness of public enterprises as agents of growth in output and productivity is obstructed continually by the resource-constrained regime that the government imposes on all long-term investments, by private interests distorting the nature of the projects, by the additional costs imposed on public enterprises because of both legal and corrupt extortion of their funds by private interests, and finally, because of the social setting in which they have to operate. Managerial failures also contribute to the debility of public enterprises, but they are in turn largely caused by unresolved tensions between managerial autonomy, public accountability and political manipulation.

In the above account, we have not referred to industrial licensing and import controls as independent determinants of either the rate of growth or the public-private balance. Critics of industrial licensing, import controls etc. often write as if the Indian government operates in a world payments system where it could draw on an unlimited supply of capital and other resources at a going price. Since that situation does not obtain, means have had to be found for rationing investible resources : current prices of such resources cannot be relied on to do the job in a world in which most futures markets do not exist, and the law of one price does not obtain for most goods.(29) We can discuss the relative efficiency of various methods of rationing by devices other than prices alone, but the need for such rationing has to be taken for granted. If private investment in India has been rationed through devices of industrial licensing, control over capital issues and the regulation of imports of capital goods, public sector investment has had to cross the hurdles of scrutiny by a number

of ministries and by bodies such as the Expenditure Finance Committee, the Foreign Investment Board and the Public Investment Board.(30) The dependence of the public enterprises on release of funds by the central government on a rather arbitrary basis, the tying of many of their proposals to external sources of aid (which the recent Sengupta Committee took simply as an unalterable fact of life), the sabotaging of any fixation of responsibility because of lack of identification of a prime contractor who takes charge of all major decisions relating to investment, and the subversion of many public sector projects because of leakage of resources to the private sector - these factors have acted repeatedly to prolong the gestation and fruition periods of public sector projects and enormously increased their costs.(31) When we take into account the fact that in most public enterprises the ratio of equity to loan capital is rather low, and that many of them operate in sectors in which there are large fluctations in demand leading to unpredictable revenue losses, it is not surprising that many public enterprises run at a loss. These losses impede their investment plans and often hold up needed modernization programmes, since, generally speaking, a loss-making enterprise is considered guilty unitl it is proved innocent. And with the new stress on financial accountability of the public sector, the concerned authorities very often take a long time to scrutinize programmes for technical upgradation. Such delays in turn aggravate the problems of the concerned public enterprises (as, for example, has happened in the case of the programme for modernization of the Durgapur and Burnpur steel plants).

6. Profitability and social responsibility : inadequacy of managerial solutions

We have already pointed out that comparing the profitability of public and private sectors poses many difficulties, because the prices of many of the public sector goods and services are deliberately kept low as a policy measure. Despite this, some attempts have been made to compare the profitability of those public enterprises which are not simply the new legal cover for bankrupt private firms (the taken-over sick units). One such recent study by Sankar, Tilak and Sai[32] enquired into the profitability of the 541 public and private limited companies whose balance sheets are analysed by the Reserve Bank of India and the profitability of the central government public enterprises whose accounts are published by the Bureau of Public Enterprises. The study was limited to the three years from 1983-84 to 1985-86. It was found that the privately owned firms realized a larger return on capital (measured as a ratio of profit before tax plus interest to total capital employed) than public enterprises, but that the difference shrank considerably after the sick uits were excluded. Public enterprises in petroleum and related sectors were far more profitable than others, but even when those particular enterprises were taken out and but taken-over sick enterprises were excluded, the difference in rates of return between public and private enterprises was not all that large (being generally of the order of 1 - 2%).

When damming comparisons between the nominal profitability of private and public enterprises are made, it has also to be kept in mind that the Reserve Bank of India's sample of large private firms does not include the sick units, large or small. The magnitude of sickness, even among the larger private firms can be seen from the fact that at the end of June 1985,

the total outstanding debt of 597 private firms, each with a bank credit limit of Rs.10 million or more came to Rs.26,553.9 million[33]: for getting an idea of the magnitude of the problem it should be noted that the total capital employed by the private firms studied by Sankar, Tilak and Sai in 1984-85 was Rs.202,990 million, so that the outstanding debt of this group of sick units accounted for considerably more than 10 per cent of the total capital employed. The problem has become more, rather than less, acute since then.

We have pointed to some of the reasons for the excess costs incurred and the loss of profitability suffered by public sector units. Overmanning and above-average earnings of workers have been cited as two of the major factors behind losses suffered by public enterprises not only in India but also in other countries of South Asia.[34] The constraints on the freedom of managers to hire and fire workers are also seen as reasons for the malfunctioning of public enterprises. First of all, it should be pointed out that the growth in real earnings of public enterprise employees and of the workers in the organized sector in general have often been exaggerated. As the recent report of the Economic Advisory Council of the government of India (Chairman : Sukamoy Chakravarty) has pointed out,[35] over the period from 1970-71 to 1985-86 the real wages of the employees of public enterprises increased at around 2.4 per cent per annum as against a growth of 1.6 per cent per year in Indian real income per head over the same period. Bagaram Tulpule and R.C. Dutta estimated in a recent paper that taking three-year moving averages over the period from 1960 to 1983, real wages per head of workers in the organised manufacturing sector had increased by 37.5 per cent while per capita real income had increased during

the same period by 30.8 per cent.[36] There is no reason to believe that wages of workers in public sector manufacturing industry increased any faster. In assessing the significance of these figures, we have to remember that they are not normalized for changes in skill composition : over the years, the proportion of skilled personnel to unskilled workers has risen in virtually all sectors, and the weight of skill-intensive industries in the industrial structure has also increased. Secondly, there are enormous variations in the average earnings of different public enterprises, with workers in mines and crude engineering generally earning much less than workers in financial and purely trading companies. Of course, not all skill-and capital-intensive technologies are optimal and permanent workers in the organized sector do get a better deal than workers in the unorganized sector. But the above-average earnings of skilled workers in most firms are not the cause of the lower profitability of public enterprises.

Overmanning in public enterprises must be also seen in its proper context. Some overmanning is certainly caused by the natural desire of workers threatened by unemployment to protect their jobs. But quite a part of it is connected with the same managerial and planning failures that have led to the overestimation of initial capacity, delays in construction, holding of excess inventories and unplanned shutdowns and breakdowns. Some is directly attributable to the inabilit or unwillingness of the ruling class seriously to alter the pre-capitalist, inegalitarian and highly exploitative social setting in which the enterprises are situated. One of the bes examples of the harmful effects of such a policy is the workir of mines in the coal belt of Bihar. At the time of nationali-zation of the private coal mines, many of the contractors and

political bosses managed to put their own men as regular employees in the mines. But this overmanning could have been absorbed as the coal output expanded, and it has been argued that if mining was properly carried out, the existing labour-force would be fully needed for raising the coal.(37) What has happened, however, is that the whole coal belt has become infested by a group of private operators who systematically steal good-quality coal from the mines, in the name of buying 'shaley' coal, and the nationalized coal companies lose hundreds of millions of rupees in the process. However, the manufacturing or metallurgical or electricity generating industries - many of them under public ownership - get rocks, shale and coal with very high ash contents in the name of coking coal, and naturally they also incur enormous losses through damage of boilers, turbines, and through breakdowns. This operation is conducted, of course, only with the connivance and active collaboration of corrupt company officials and under the protection of political bosses, who are themselves often leaders of the mafia. The government has tried to meet the situation in several ways : by raising the price of coal, by resorting to increased degrees of mechanization, introducing open-cast mining and as a last desperate measure, importing foreign coal for the metallurgical industries and thermal power stations. The first measure feeds the forces of inflation. The second two measures have helped in raising output growth; however, lack of proper maintenance of the machinery has meant that the capital cost of the operation has gone up enormously and eroded the anticipated profits of the units. Moreover, open cast mining in the middle of villages populated by socially and politically weak ethnic groups (mostly belonging originally to autochthonous tribes) and with little control over irresponsible mine officials and local

authorities is leading to environmental degradation at an alarming rate. The import of foreign (mostly Australian) coal at prices higher than those paid for Indian coal of the same quality is straining India's balance of payments further while depriving the coal companies of badly needed revenues.

In the areas of mining and exploitation of forest produce, the conflict between the modus operandi of public enterprises or public authorities in charge of forests and the ordinary people (a large proportion of whom belong to the socalled tribal groups) becomes most evident. In the operation of steel plants the use of contract workers who are paid by the contractors of the concerned public enterprise and have little security of employment is widely prevalent. In a number of cases, the attempt by contract labourers to organize trade unions and go on strike in fulfilment of a demand for higher wages and better working conditions has been resisted violently by the contractors with the help of the police and the local public enterprise authorities.

On 2 June 1977, for example, the police fired on the striking workers of the Dhalli Rajahara mines in the Durg district of Madhya Pradesh killing 10 persons, including a woman and 2 children.(38) These were the captive mines of the Bhilai Steel Plant. Almost a year later, on 5 April 1978, at Kirandul, in the district of Bastar, the police were sent to arrest the leaders of striking workers of the Bailadilla iron ore mines (located in the Bastar district of Madhya Pradesh) and facing resistance, they fired upon the workers, killing between 11 (official figure) and two dozen workers (unofficial estimate) and set fire to the huts of some two hundred families.(39) These mines were owned by the National Mineral Development Corporation, and the ore was exported to Japan : the striking

workers again were contract labour many of whom had been retrenched because of a fall in demand for the ore from Japan.

Similar examples could be given of how the police, acting on behalf of vested interests brutally repressed workers in forests taken over by the state. Such struggles and repression illustrate vividly the difficulties of using public enterprises as means of transforming the nature of the economy and society in a country in which many citizens are still to be accorded full civil rights, even though such rights are guaranteed to them by the constitution. They also bring out again the inadequacy of purely managerial solutions to the problem of rendering public enterprises publicly accountable and making them contribute to the development of national economy in proportion to the resources they command.

Even were we to sweep the problem of a radical transformation of the Indian society under the carpet, the present ad hoc strategy for using public enterprises as instruments of economic development and the suggested alternative of treating them as simply profit maximizing firms under public ownership would both be condemned if we look at the macroeconomic setting of these enterprises.

The Chakravarty Report of 1987 we have already referred to did not examine the role of public enterprises in the social transformation of the country but did suggest that public enterprises could be made more profitable and more productive if a macroeconomic strategy of growth was followed in which the fuller exploitation of capacities of public enterprises in all sectors of the economy played an important role. The report envisaged the linking up of public sector enterprises

through a process of mutual demand generation and supply support. Such a strategy would be a necessary part of a programme of better integration of public enterprises in the national economy. To be sustainable over time, such a programme has to be embedded in a more general policy regime aiming at dynamic self-reliance, a regime that has been conspicuously absent, especially since the 1970s.

As a first requirement of such a strategy, the private expenditure flows, income generation processes and asset holdings have to match the redirection of economic activities implicit in the Chakravarty recommendations. The government has to subsidise the private sector less and tax it more; it has also to exercise the credit regulation powers it theoretically possesses, instead of mostly adapting them to private sector demands. Secondly, at the stage of project choice and construction, effective absorption of technology has to be ensured through the elimination of control by foreign firms, through back-up R & D efforts, and through the support of a continuous process of technological adaptation and upgradation in all industries. The recent report of the CSIR Review Committee has rightly stressed the need to scale up and commercialize technologies produced by the CSIR laboratories.(40) However, the report does not make a binding recommendation that all public and private sector firms importing technologies must put in an effective programme of R & D , in collaboration with CSIR laboratories or such consultancy organizations as the PDIL, PEDO or the MECON. The immediate prospect is the further decimation of civilian R & D effort and acceleration of the process of import of imperfectly absorbed, obsolete and inappropriate technologies. The costs imposed by such a policy regime on public sector firms and on the economy in general will further damage the ability

of public enterprices to be an important ingredient for accelerating industrial growth in the long run. As we have noted already, the Chakravarty Report (1987) does not also address the question of social transformation of states such as Bihar, Uttar Pradesh and Madhya Pradesh, whose societies and politics are dominated by landlords. Without that kind of transformation, "rational" labour processes of the early American, late American or Japanese variety cannot be firmly implanted in either public or private sector firms. Even if the managerial regime of a firm is initially patterned along any of those lines, its actual working will either be subverted by osmosis of the 'irrational' relations of the surrounding society or will be protected only by invoking the repressive features of the state apparatus. In practice, repression and osmosis of surrounding social relations exist side by side, provoking violent conflicts from time to time.

7. Evolution of the industrial structure, increasing centralization of political power and capital, increasing import dependence and a further tilt towards internationalized domestic capital.

During the period since 1951, Indian industry, including public sector industry, has grown in size and diversity. Over the years the weights of capital goods industries and of consumer durables in the composition of aggregate industrial output have increased at the expense of the simpler types of consumer goods.(41) International factors, deep-seated forces of changes in the expenditures of different income groups and deliberate central government policies have all played a part in this structural evolution.

International factors have had their impact through numerous channels, of which the most important are the following. First, technical changes occurring mainly in the OECD countries have altered the composition of final goods. The emergence of synthetic textiles and of electronic goods are perhaps the most striking of these changes during the last thirty years. Secondly, technological change has also affected the nature of imports entering into industrial production and the intensity of their use. The use of oil and natural gas as a base for a large variety of products, of plastics as raw materials for many products where metals or natural fibres had been used before, the spread of microelectronics into every department of production of capital goods, the increasing diffusion of fuel-efficient engines - these are some of the forces shaping the linkages within the industrial sector : new linkages lead to the destruction of old linkages in a continually evolving pattern. Thirdly, the technologies for most of the new products and processes have come to be controlled by a small group of TNCs based in the OECD block. This has meant that unless the government is able to pursue a consistent policy of excluding the TNCs from controlling the implantation of new factories or having a say in their management, the pattern of import of technology is very largely shaped by the strategic choices of the TNCs rather than the host government. Neither the public nor the private sector is immune to this kind of external influence. We have provided illustrations of how central government defaults have led to the hobbling of the bargaining power of public sector enterprises in a number of industries which have been at the forefront of structural change in India.

Fourthly, in recent years, the entanglement of most Latin American countries in a debt trap has made India a more attractive proposition for penetration of foreign loan capital and, to a lesser extent, of foreign equity capital. The policy of wooing foreign capital that the Indian government has pursued since the late 1970s has at last began to bear fruit in inducting more foreign capital as a motor for Indian industrialization. Such penetration has inevitably tilted the effective balance in favour of large-scale private industry, but it has also made Indian industrialization much more vulnerable to changes in the external payments scenario than before.

Over the last thirty years, a class of people have grown up in India who can command, with their incomes, most of the new consumer durables that the middle income groups (say, from the third upto the seventh decile) can afford in OECD countries. This class may not exceed 10 percent of the population, but 10 per cent of a country of 800 million forms a sizeable market. Growing incomes have been concentrated among upper income groups, and in particular regions. Agricultural incomes of some states such as Punjab and Haryana have grown much faster than the all-India average, whereas large parts of central, southern and eastern India have fallen below the all-India average. Industrial incomes in such states as Gujarat and Maharashtra and the region in and around Delhi have tended to grow faster than the rest of India. Again, while employment in the organized formal enterprises (including those in manufacturing, transport, banking etc.) has tended to grow slowly, incomes generated in both the secondary and tertiary sectors have grown far faster. Since real wages in those sectors have not expanded as fast, there is reason to believe that these incomes, especially incomes in the tertiar sector have tended to be more unevenly distributed over time.(42) Deliberate policies

pursued by the central government such as a steady raising of values of saving that entitle income-earners to tax benefits and the effective freeing of a large fraction of dividend incomes and incomes from other types of corporate instruments from tax payments have helped further concentration of disposable incomes among richer people. On the other side, deliberate encouragement of the production of consumer durables such as cars, motorized two-wheelers, TV sets, etc. through the selective freeing of control over investment in these sectors, the selective raising of import quotas for the components of these durables and selective lowering of tariff rates on many of the imported components, and encouragement of investment in socalled high technology areas have helped promote the growth of such industries and the industries linked to them on the supply or on the demand side. Such policies have encouraged the growth of particular public sector units such as Maruti Udyog which produces cars, almost exclusively for the domestic market with Japanese technology and with a very large component (often effectively exceeding 60 per cent of the cost of production) of imports from Japan. But since the private sector is far more specialized in the newer types of consumer goods, on the whole, the combination of income concentration and 'liberalizing' government policy has tilted the balance in favour of the private sector.

It should be noted in this connection that although India has a quasi-federal constitution, the trend of the dominant political party policy since independence has been towards further and further concentration of power in the hands of the central government.(43) Successive constitutional amendments and the record of central intervention to topple democratically elected state governments have increased the effective power of a central government which was already made

the decisive authority in the constitution of 1950. One justification for providing overriding financial powers to the federal government was thought to be that only such powers would enable it to set up capital-dominated enterprises in the public sector and to help the private sector with credits (both in local currency and foreign exchange) to set up such units. The minimum size of process plants capable of breaking even has been increasing in many sectors. This fact has provided further justification for the tendency towards centralization of financial and regulatory powers. However, in this whole process, the question of diffusion of both purchasing power and technical change tended to get a short shrift.(44)

On paper, public sector units were told to subcontract out as much of their input requirements to ancillary units as possible, but the proportion of inputs procured in this way has remained very low (less than 10 per cent) for most units. Any synergy that might have accrued through increased productivity and purchasing power generated by such linkages with small producing units was largely lost. Moreover, many of the presumed economies of scale failed to materialize because of delays, inappropriate choices of technology and overmanning.

The centralizing prowess of the public sector has been used in recent years to strengthen organized private industry, and in some cases, to help the process of extreme centralization of private economic power. Over the years, in course of the business activities of public term-lending institutions and other investing agencies such as the Life Insurance Corporation, the General Insurance Corporation and the Unit Trust of India, the public sector has become the chief shareholder and creditor of many, if not most, term-lending institutions. In some cases, they have become even the majority shareholders.(45) Yet the

public sector financial agencies have refused to exercise any real control over these enterprises, and seem to have intervened only to carry out the partisan objectives of powerful politicians in the central government. In a recent notorious case, the Reliance Industries which had grown explosively through a combination of dynamic enterpreneurship and clever manipulation of the regulatory functions of the government was allowed to acquire the control of a major engineering and construction group, viz., Larsen and Toubro, through the active co-operation of public sector banks and term-lending institutions.(46) It has been widely suggested by many analysts including an ex-Finance Minister and ex-Defence Minister of the central government that the nexus between the Reliance group and the party in power in New Delhi extends far beyond stock-jobbing and corporate raids.(47)

The rise of Reliance is, however, significant in another respect. The group has been able to raise far more capital through shares and convertible debentures than practically all other firms or conglomerates in Indian history. But the achievement of the group is not unique in this respect. It is an aspect of the deliberate fostering of an equity capital market through all kinds of special favours granted to investors.(48) But there is as yet very little control over insider trading and other practices which have been subjects of a considerable amount of regulatory activity in capital markets of advanced capitalist countries.

The hectric promotion of a private capital market is yet another aspect of the strategy of income concentration and nurturing of private business followed by the central government (and the state governments in their competitive race to attract private investment have also doled out considerable volumes of

largesse to private capital). It has been recently claimed that there was a significant acceleration in the rate of industrial growth in India in the 1980s.(49) Despite some reservations about the comparability of data between the 1980s and the 1950s and 1960s,(50) it is undeniable that there has been an upswing in the rate of industrial growth in the 1980s, compared with the stagnation between the mid-1960s and the mid-1970s. But this upswing is connected not only with the general concentration of incomes and financial power and the strategies fostering such concentration pursued by the central government noted above but also with a steep increase in the dependence on imports and foreign loans compared with the 1960s and 1970s. Imports have been deliberately encouraged by the Indian government in the name of liberalization. Since exports have not expanded in step, and since concessional aid has contracted as a proportion of the accumulated balance of payments deficits, both the value of interest-bearing external debt and debt service charges have expanded over time.

There have been attempts in official circles to underplay the growth of India's external debt. The foreign currency deposits of the non-resident Indian (NIR) which can be withdrawn at short notice are, for example, excluded in the calculation of external debt by the Reserve Bank of India.(51) However, the latter did provide a separate table of NRI deposits. Taking the official figures of external assistance and commercial borrowing together, we find that the external debt increased from Rs.39,619 crore at end-March 1985 to Rs.83,835 crore at end-March 1989. The real burden of the debt has increased faster because the rates of interest and the average maturity of the debt have gone up.

Moreover, non-official estimates and estimates by the Washington-based Institute of International Finance have put the figure even higher, ranging up to Rs.100,000 crore or US $ 60 billion in the beginning of 1989 : the difference between the official and the non-official estimates is due to the fact the latter include short-term trade credits and defence related loans from East European countries.(52) The debt-servicing charges have also gone up considerably over time.

It may be argued that neither the increase in external debt nor the rise in the debt-servicing charges need be alarming, if thereby the economy acquires the capacity to generate a much larger value of exports and bring down the balance of payments deficit. As yet, there is no sign of such a development. Imports have increased considerably faster than exports in the 1980s; and the current account deficit has accordingly widened from 1.2 per cent of GDP in 1980-81 to 1.9 per cent in 1987-88 and 2.8 per cent in 1988-89.(53)

The increased dependence on foreign credits has tended to change the ideological balance and the balance of political forces in favour of the private sector and foreign firms hoping to dominate the Indian market. Such organisations as the IMF and the World Bank, and TNCs,including transnational banks,have long preached the virtue of economic liberalization and privatization and in general favoured the private customers. They have also pushed for abolition of such measures as a separate patents law, or treatment of trade in services on a different footing from commodity trade. The Indian government's stand in recent years on these issues has been considerably weakened by the pressures exerted by the TNCs, the US government etc.(54)

Ironically enough, government policies of liberalization, with a consequentially increased dependence on foreign firms, were supposed to encourage the induction of high technology which would in its turn lead to the replacement of imports and growth of exports at a faster rate than before. Similar arguments were also used to accord virtually indiscriminate - though often bureaucratically delayed - permission to both public and private enterprises to enter into collaboration agreements with foreign firms. Such agreements have been made mostly for limited licence rather than outright purchase, of knowhow, and very rarely, for purchase or licence of foreign patents except when they have become economically obsolete.

However, studies by the Reserve Bank of India have demonstrated that the net foreign exchange spent by the aggregate sample of firms entering into foreign collaboration have been massively negative, that this negative balance has tended to grow over time, and that their exports have not grown any faster than before.(55) (There is also some suspicion of a growing wastage of factors of production since the proportion of value-added to gross output declined over time). A study by Chalapati Rao has also come out with the finding that while total Indian exports expanded by more than 100 per cent between 1975-76 and 1983-84, the export earnings of the top 405 private sector companies expanded only by 49 per cent but the foreign exchange expenditures of those same companies expanded by more than 250 per cent : in fact, from being net earners of foreign exchange, they turned into massive spenders of foreign exchange during these years.(56) Chalpati Rao's study also confirms a hunch that the Indian small scale sector generates most of the increase in export earnings, and that large, socalled technology-intensive (meaning import-intensive) firms are

responsible for much of the increase in imports on corporate account. Within the group of large-scale firms, except for the petroleum enterprises in the public sector, it is mainly the private sector units which are still the major spenders of foreign exchange. However, since there are firms such as Maruti Udyog nominally in the public sector, the net foreign exchange balance of the latter has also tended to worsen over the years.

The tendency towards induction of imports of foreign knowhow, goods and control, with the active collaboration of private firms and many influential civil servants and politicians, has been aggravated in recent times. This has had a severe impact on the degree of utilization of capacity of major public sector units, and on the ability to gain from learning and increase the productivity of agents of production. Two recent examples will illustrate this. The BHEL, for example, had emerged as the principal builder of electrical power equipment in India, and had been responsible for erecting the major part of the capacity for electricity generation in the country until very recently. But as the Indian government decided to import project equipment on preferential terms, a large amount of imported equipment has been installed in India already. And as the Indian debt situation has worsened, while massive excess capacity exists in the global electrical equipment industry, there has been increasing pressure for import of thermal, hydroelectric and gas-based power equipment under bilateral aid. The Chakravarty Report of 1987 had already pointed to the threat to the BHEL's capacity utilization posed by these developments. Most recent reports indicate that this threat is likely to be realized during the Eighth Plan period, when a major public enterprise with a good track record will be rendered sick.(57)

Because of endemic balance of payments problems, shifts in the balance of political power favouring the private sector and capitalists concentrated in particular regions,(58) and because of an unthinking enthusiasm for socalled high technology, there have been delays in the modernisation of many public sector enterprises. One of the units for which a decision to modernize was made is the Durgapur Steel Plant. This contract has reportedly been granted to a consortium of foreign firms, and the main agents for inducting them are reported to be two Indian private consultancy organizations with little expertise but with considerable political backing (one of them is a Birla firm).(59) This will mean a further set-back for Indian public sector (or private) consultancy organizations with some real expertise, and a big blow to the publicly-owned Heavy Engineering Corporation, which is likely to receive few orders from the foreign consortium.

One of the most ironical aspects of the industrial growth scenario as projected by central government spokesmen in recent times is that the pace-setters for growth have been two sectors under public control, viz., mining (and quarrying), and electricity. These two have a combined weight of 22.89 in the new index of industrial production (with 1980-81 as base). Over the years from 1980-81 to 1987-88, while the indices for mining and electricity rose from 100 to 184.3 and from 100 to 181.0 respectively, the index for manufacturing rose from 100 to 162.0 only. The acceleration of the rate of industrial growth looks less impressive when the two major public sector industries are taken out. Moreover, many of the manufacturing industries which have experienced strong rates of growth, such as, for example, the electronics industry have a high import content : if import duties are included in the cost of imports (as they should be for comparability,

since the values of final products are estimated at domestic prices), the share of imports to the production of electronic goods works out at 24 per cent in 1986.(60) The marginal import share must be much higher, since import substitution has been virtually complete in older types of goods such as radio sets, black and white TV sets etc.

The public and private sectors in India were, during the first two plan periods, mostly in a complementary if mostly asymmetrical, relationship. To the private sector in India, the growth of the public sector provided markets, capital and intermediate goods at low prices, and opportunities for making windfall gains as middlemen, mostly of foreign firms. It was earlier a means of channelling public resources for private gain by other devices such as outright subsidies and cheap credit. The public sector may have benefited occasionally through the infusion of managerial talent from the private sector. But in some phases of its development, large business groups have viewed the public sector as a predatory accumulator of resources. Later on, as the private sector fattened on these gains, and the central government failed to gear up its fiscal machinery to garner any significant fraction of the increased incomes of the rich, it appeared to big business interests that the government stood in their way in denying them an unfettered freedom for expansion. From time to time, the private sector complained of the crowding out of its investment. It is not surprising that some studies have found evidence of competitiveness between the public and private sectors in recent years for scarce finance, or foreign exchange.(61) However, as it has been rightly argued, from the point of view of the performance of the economy as a whole, it is the differential impact on total investment and on growth that should be considered the decisive criterion for choosing between

public and private sector investment.[62] From that point of view, public sector investment is still found to be superior because of its linkage effects and its distributional impact.

One key area in which the public sector could play a critical role is that of R & D and learning by doing in the capital goods industries and consultancy enterprises. In both these fields in India, it is the public sector which has set the pace, and there is no sign that the private sector can displace it in the near future. Some factors which we have already mentioned already, eroded the effectiveness of public sector industry as the builder of linkages, generator of investment and promoter of technical change and productivity growth. First and foremost, the refusal of the ruling classes to carry out peasant-oriented land reforms and to adopt any other measures for redistribution of assets towards the lower income groups continued to depress the purchasing power of the population, and their ability to work with productivity-raising technologies. The illiteracy of the majority of the Indian people aggravated these problems. Secondly, the fattening of the large-scale private sector at the expense of the poor and the public sector increased the ability of the former to sabotage the public objectives pursued by the public sector. Thirdly, the excessively centralizing policies of the federal government and the associated reliance on socalled high technology increased its tendency to rely on foreign firms as the ability of the public sector to adapt imported technologies, absorb them effectively or generate (or use, where they were available) technologies appropriate to the environment was impaired by the default of the ruling classes and the policies of income concentration pursued by the government.

However, in spite of all these problems, it is unlikely that public sector industry will be phased out soon. Even the large-scale private sector needs the public sector industry as a prey (as a source of subsidized inputs, as a field for making quick money out of contracts, and even as a collaborator in financial deals). Any sustainable predator-prey relationship, as any student of ecology knows, has to go through cycles : if the prey disappears, the predator may also face extinction. Moreover, the private sector cannot replace the public sector in most areas of infrastructural investment. Again, small businessmen and industrialists depend a lot on various kinds of support given by the public sector. Hence even if the cries of the poor are not heard in the corridors of power in New Delhi, there are other forces which will prevent a rapid privatization of the public sector in India.

8. Epilogue

The strengthening of domestic industry by public sector operations has been increasingly subverted by the internationalization of domestic capital, and the continued obstruction of capitalist growth by the prevalence of landlordism, and speculative motivations of domestic capital, often in association with the state apparatus. Apart from massive flights of domestic capital, the encouragement provided by a government increasingly dependent on foreign credits to the activities of non-resident Indians, and the agents of foreign firms, has posed new threats to the prospects of building up an integrated and technically dynamic industrial sector in India. But the Brazilian predicament in which India is likely to find herself may be part of the plan of some very powerful elements in the private sector and the central government.

Building on the experience of the Soviet Union, Indian planners envisaged the growth of a basically resource-constrained, administered economy. A series of measures to stimulate scientific and technological research mighthave reinforced the investment-powered growth to let loose a process of cumulative causation similar to the one for which Nicholas Kaldor had theorized in several papers. But markets interfered to punctuate resource-constraints with demand-constraints; private profit motives and policy-reinforced dependence on external resources repeatedly messed up cumulative causation. Semi-feudal relations blocked the working of free markets in land, labour, credit and commodities ,and arbitrageurs and speculators prevented the predictability of the 'administered' man. There are no perfect markets out there somewhere to provide magical escape routes out of this messy, ever-interrupted process of cumulative causation. What has been offered as a market solution is mainly putting the public exchequer at the service of internationalized domestic capital. Public sector industry has become another milch cow in that farm. But, in a non-socialist, underdeveloped economy, a relationship of alternate conflict and complementarity between the public and private sectors is only to be expected : ending these phase-differentiated or even simultaneously operating processes would need radical political solutions.

/Clarification : The paper was completed before the Lok Sabha elections of November 1989./

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FOOTNOTES :

1. For an exposition of the distinctive features of public and club goods, see R. Cornes and T. Sandler : The Theory of Externalities, Public Goods and Club Goods, Cambridge, Cambridge University Press, 1986.

2. Centre for Monitoring Indian Economy : Public Sector in the Indian Economy, Bombay, November 1986, p.7.

3. Atul Sarma and Kewal Ram : 'Income, output and employment Linkages, as import intensities of manufacturing industries in India, Journal of Development Studies, 25(2), January 1989. Similar findings had been recorded by Lily Bandyopadhyay in her Ph.D. thesis : An Examination of Some Alternative Policies for increasing Employment in the Industrial Sector of India (Calcutta University, 1979).

4. The Durgapur Steel Plant, for example, was designed to operate with a workforce of 7,500 in fact operated with a workforce of 15,000 by the 1970s, a comparable best practice plant, taking the world as a whole, might have operated with a workforce of 3,500. I owe these figures to Nigel Crook, the designated discussant of my paper.

5. 'Public sector industry and the quest for self-reliance in India', Economic and Political Weekly, (EPW from now on) Vol.17, Annual Number, 1982.

6. For a more extended analysis, see A.K. Bagchi : 'Towards a political economy of planning in India', Contributions to Political Economy, Vol.3, March 1984.

7. B. Gold : 'Changing perspectives of size, scale and returns : an interpretative survey', Journal of Economic Literature, XIX(1), March 1981, p.26.

8. For exploration of some of these problems of the adjustment of the ex ante saving-investment and export-import gaps see J. Vanek : Estimating Foreign Resource Needs for Economic Development (New York, McGraw-Hill, 1967), chapters 3 and 6; for an exploration of effective demand issues in the context of underdeveloped economy, see A.K. Bagchi : 'Problems of effective demand and contradictions of planning in India' in Bagchi (ed) : Economy, Society and Polity : Essays in the Political Economy of Indian Planning (Calcutta, Oxford University Press, 1988).

9. See, for example, A Bagchi and Govinda Rao : 'The role of the public sector in India', paper presented at the Indo-French Seminar on 'The role and arrangement of the public sector', New Delhi, Jan.27-29, 1988; and S.K. Goyal : Public Sector in India (mimeo), Corporate Studies Group, Indian Institute of Public Administration, New Delhi, c. 1987.

10. Public and Private Sectors in India (A Comparative Study in Characteristics and Trends), Corporate Studies Group, Indian Institute of Public Administration, New Delhi, 1988, especially Chapter III.

11. Report on Currency and Finance for the year 1983-84, Vol.II, Bombay, Reserve Bank of India, 1984, Statements 7 and 8.

12. Japanese economists, such as S. Ishikawa and M. Sato, have tried from time to time to define different levels in the process of acquiring self-reliance in technology. For a discussion of some of these ideas and their application to the context of third world countries, see A.K. Bagchi : The Differential Impact of New Technologies on Third World Countries : A Framework of Analysis, World Employment Programme Research Working Paper, WEP 2-22/WP176, Geneva, International Labour Office, June 1987; and A.K. Bagchi : Technological Self-reliance and Underdevelopment, Centre for Studies in Social Sciences, Calcutta, Occasional Paper No.97, October 1987.

13. See in this connection, the annual reports of the TISCO as summarized in The Stock Exchange Official Directory (Bombay), No.XXII/39(2/3) Supplement, 26 September 1988 and earlier issues.

14. Committee on Public Undertakings : Hindustan Machine Tools Ltd, Thirtyeighth Report of the Fifth Lok Sabha, Lok Sabha Secretariat, New Delhi, 1972-73; and Sunil Mani : Technological Dependence in Indian Public Sector, Institute of Public Enterprise, Hyderabad, February 1988, chapter 7.

15. Ibid., pp.110-111.

16. See A.K. Bagchi : 'Long-term constraints on India's industrial growth 1951-68' in E.A.G. Robinson and M. Kidron (eds.) : Economic Development in South Asia, London, Macmillan, 1970; P. Patnaik : 'An explanatory hypothesis on the Indian industrial stagnation' and D. Nayyar : 'Industrial development in India : Growth or stagnation ?' in A.K. Bagchi and N. Banerjee (eds.): Change and Choice in Indian Industry, Calcutta, K.P. Bagchi & Co., 1981; N.K. Chandra, 'Long-term stagnation in the Indian economy, 1900-75', in Chandra : The Retarded Economies, Sameeksha Trust and Oxford University Press, Bombay, 1988; and C.P. Chandrasekhar : 'Aspects of growth and structural change in Indian industry', EPW, Vol. XXIII (Nos. 45-47), Special Number, November 1988.

17. S. Chakravarty : Reflections on the Growth Process of the Indian Economy, Hyderabad (India), Administrative Staff College, 1974; and A. Mitra : Terms of Trade and Class Relations, Calcutta, Rupa & Co., 1979.

18. See, for example, P. Patnaik : 'Current inflation in India', Social Scientist, Vol.3, January/February 1975; and P. Patnaik, S.K. Rao and A. Sanyal : 'The inflationary process : Some theoretical comments', EPW, Vol.XI, 26 October 1976.

19. A.K. Bagchi : 'Reinforcing and offsetting constraints in Indian industry', in Bagchi and Banerjee (eds.): Change and Choice in Indian Industry and Bagchi : 'Problems of effective demand and contradictions of planning in India', in Bagchi (ed.): Economy, Society and Polity.

20. We are citing only some representative articles here : B. Datta : 'The central budget and the new economic policy', EPW, XX (16), 20 April 1985; idem : 'Central budget : only the first phase'?, EPW, XXII (15), 11 April 1987; A. Ghosh : 'The 1987-88 budget : A birds-eye view of central expenditure', EPW, XXII(15), 11 April 1987; A. Kumar : 'Union budget 1985-86 : Haves have while have-nots nought', EPW, XX(16), 20 April 1985; idem : 1986-87 budget : Signs of growth pains without growth', EPW, XXI (16), 20 April 1985; C.T. Kurien : 'Caught in contradictions of mixed economy', EPW, XXI (16), 20 April 1986; 'A floundering budget', editorial, EPW, XXII (10), 7 March 1987; and P. Patnaik : 'The 1984-85 budget : Gathering fiscal crisis', EPW, Vol. XIX, 24 March 1984.

21. M. Rakshit : 'Internal debt trap : The shadow and the substance', (mimeo.), The S.N. Sen Memorial Lecture presented at the annual conference of the Bangiya Arthaniti Parishad, 18 February 1989.

22. B. D'Mello : 'Soviet collaboration in Indian steel industry', EPW, XXIII (10), 5 March 1988.

23. Our sketch is based on some internal documents of the P & D division and special committees of enquiry to vet its activities, and on two detailed studies carried out on the fertilizer industry in recent times. See Biswajit Dhar : Problems of Technology and Development in the Indian Fertilizer Industry, Ph.D. thesis, Jawaharlal Nehru University, New Delhi, 1989.

24. Dhar : Problems of Technology and Development in the Indian Fertilizer Industry, Chapter IV.

25. Institute of Financial and Management and Research : Cost and Time Overruns in Fertilizer Projects Executed by the P & D Division Madras, 1977; and Dhar : Problems of Technology and Development in the Indian Fetilizer Industry.

26. It may be argued that exclusion of foreign capital from domination of local industry and the processes of technology transfer is a romantic goal. It should be pointed out, however, that the leading East Asian capitalist country, viz., Japan and two at least of the four dragons of East Asia, viz., South Korea and Taiwan, had this 'romantic' component as an integral aspect of their industrialization strategy. See, this connection,

A.K. Bagchi : Public Intervention and Industrial Restructuring in China, India and Republic of Korea, New Delhi, ILO-ARTEP, 1987; and Political Economy : Studies in the Surplus Approach, Vol.3, No.2, 1987, a special issue devoted to East Asian capitalism, edited by A.K. Bagchi.

27. Sunil Mani : Technological Dependence in Indian Public Sector (mimeo), Hyderabad, Institute of Public Enterprise, February, 1988, chapter 3. See also S. Khanna : The Petrochemical Industry and Industrialization in India : a study of transnational Corporations and dependent industrialisation (Fellowship thesis, Indian Institute of Management Calcutta, 1984), chapters 5 and 6. Although the whole petrochemical industry was adversely affected by the oligopolistic strategies followed by transnational corporations who controlled the knowhow and patents globablly, there was at least some attempt by the public sector firm, the Indian Petrochemical Corporation Limited (IPCL) to unpackage the technologies and to establish some domestic linkages. By contrast, the private sector firms were happy to fall in line with their dominant foreign collaborators. The direct cost of technology transfer was also lower for the IPCL.

28. Sunil Mani : Technological Dependence in Indian Public Sector, chapter 1.

29. See the discussion of violation of the law of one price in R. Dornbusch : 'Purchasing power parity', in J. Eatwell, M. Milgate and P. Newman (eds.) : The New palgrave Dictionary of Economics, Vol.3, London, Macmillan, 1987.

30. For a description of the procedures involved, and suggestions for simplification, see Report of the Committee to Review Policy for Public Enterprises (Arjun Sengupta Committee), New Delhi, Ministry of Finance, 1984 and Sabastian Morris and G.V.G. Raman : The Process of Investment Decisions in the Public Sector : a Study of the Delays and Cost Overruns (mimeo), Hyderabad, Institute of Public Enterprise, c. 1986. There has been a considerable amount of criticism of management failures in the public sector. It should however, be emphasized that in many cases, there was management failure because there was no team or no chief executive with an appropriate career commitment to the interests of the firm to perform the management function. Such findings were highlighted, for example,

in the Report of the Committee on the Working of Public Sector Undertakings under the Department of Heavy Industry (mimeo), New Delhi, February 1985. The failure to equip public undertakings with appropriate management structures sprang from several sources. First, most of the public undertakings which grew out of 'sick' private firms had a weak management structure to start with, and found it difficult to attract professionals of the right calibre. Secondly, the chief executive was often chosen on extraneous 'political' grounds : he had to be somebody who would be pliable and would either be actively corrupt, or connive at corruption and nepotism. So the appointment was often delayed till the 'right' person was found, and good professionals left the firm in the meantime. Thirdly, short time horizons and lack of any corporate planning functions contributed to management failure.

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