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INDUSTRIALISATION PROGRAMME IN WEST BENGAL : POLICY AND THE PROBLEMS – SOME LESSONS FROM NEWLY INDUSTRIALISING COUNTRIES IN ASIA

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Abstract

The structural adjustment programme that hinges on state 'minimalism' and private investment-led growth is likely to end up in stabilisation problem since development experience suggest particularly slow speed of adjustment on the supply side by Indian big private capital. The programme so long it ignores market-adjustment programme in the non-formal traded goods sector would further dampen economic development. Moreover, market reform without human development that ultimately extends peoples' choice is a misnomer. West Bengal's comparative disadvantage *vis-a-vis* other states in human development is likely to hinder capital inflow. Briefly, the dominant concept of modernisation should take lessons from the post colonial development experience of the Asian NICs.

INDUSTRIALISATION PROGRAMME IN WEST BENGAL : POLICY AND THE PROBLEMS — SOME LESSONS FROM NEWLY INDUSTRIALISING COUNTRIES IN ASIA

The central government, and following in the footsteps the Government of West Bengal almost unequivocally resound the same rhetoric of 'development' that has been amplified in the literature produced by the two giant global institutions of 'economics studies', viz., the World Bank and IMF, during the last couple of years. The essence of the growth model suggested by the Fund/Bank is that it is the inward-oriented trade strategies – in income growth, export growth, employment, and savings – that acted as the greatest stumbling-block on the road to modernisation (see, e.g., *World Development Report 1987*). The 'new' development economics also question the role of government intervention, and suggests 'state minimalism'. Intervention has been equated with numerous distortions in the economy : most developing economies rely extensively on private ownership and markets, but temper this with substantial interventions to influence the way markets work. Once the capital markets are freed from all sorts of government regulations, the state owned enterprises would turn out to be uneconomic and the argument that public initiatives in the developing economies are substitutes for lack of private initiatives in high capital intensive and long-gestation projects, no longer holds good. Third, with public enterprises increasingly viewed as an inefficient drag on the economy, privatisation now figures prominently in the programme of structural reform sponsored by the World Bank/IMF. On the whole, once the 'controls' are removed, the rate of domestic saving supposedly would cease to be the crucial determinant of growth and development. Further, the freely mobile international capital would render the concept of independent 'technology policy' by any national government archaic.

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We begin by considering some broad aspects of development of industries in West Bengal. Since the inception of modern factory-based industry in the mid-nineteenth century a regional clustering of industries had occurred. The ownership of manufacturing industries in different regions also conformed to a pattern. In fact at the time of independence a regional capitalist class had developed to an extent in western India only. In south India and Bengal there were incipient stirring of an indigenous business class, but the Marwaris in the east were both mercantile in spirit and separate from the population of the region to which they had migrated. Consequently, when planned development was inaugurated it was these areas which both had some industrial growth (largely depending on the nature of industry-cluster) and a regional bourgeoisie that were able to draw further investments to these regions. This aggravated regional disparities (Banerjee and Ghosh, 1988).

In eastern India, especially Bengal, as long as the import substitution phase was not complete and foreign capital remained dominant, the region remained advanced industrially. But with the displacement and decline of European capital and the obsolescence of the product mix that the region used to produce, the industrial sector of the region plunged into a crisis which still persists. The Marwari capitalists who replaced the British had neither the legitimacy nor the hegemonic position to be the representatives of the region. They could neither identify with nor project the aspirations of the region before the central government. The intermediate class which had dominated the state's politics has been able to exercise power through a certain cultural hegemony but dissociated from productive enterprise. Moreover, their political supremacy has not jeopardized the accumulation of the Marwaris and other non-indigenous sections of the capitalist class in Bengal thus making for a situation of accommodation between the two classes. In contrast, the emergence of an integrated and indigenous capitalist class in western India has provided a boost to the development process of the region. Their hegemonic presence has enabled the region to articulate its aspirations before the Union Government. As a result, within the federal structure it has attracted more public resources for its development.

It is found that generally speaking, industries in West Bengal faced stagnation. The problem although became acute since the middle of the 1970s a slow process leading to industrial stagnation was operative since the mid-1950s. West Bengal even at the end of the 1950s was second among the industrially developed states in India. However, the assumption that the developed region should grow faster than the national average because the developed region provides certain economies that arises largely from 'agglomeration' failed to hold in this case of West Bengal. The overall performance of the state's organised manufacturing was largely the outcome of a much lower rate of growth of the large scale sector (ASI-Census Sector) than that at the all-India level. The medium scale manufacturing (ASI-sample Sector), on the other hand, maintained a higher than national average growth rate in West Bengal. However, as the relative weight of the medium scale sector was low, the dynamism in this sector failed to give an impetus to the overall growth prosperity of the manufacturing sector in the state.

The balance sheets, and profits and loss accounts of quite a sizeable numbers of small, medium and large scale firms in West Bengal's chemical and electrical goods industries – the two major industries whose relative importance in the country's manufacturing sector have significantly increased since the mid-1960s – have been analysed, for the period from 1960 to 1975 (Banerjee, 1983). And, we find that investment in the large and the foreign subsidiary sectors, during the period, constituted only a small part of the internally generated funds, and was not commensurate to the values of the variables that are important in the calculation of 'business returns'. The relatively high rate of accumulation in the these two sectors perhaps would indicate that the labour situation was hardly the reason behind the migration of big capital, so to say. The greater the all-India spread of large business-houses the more might particular areas under thir control suffer because the greater would their investment policies tend to be influenced by their India-wide profitability considerations and their strategic considerations for pleasing powerful political grouping in the central government – and in some cases,the regionally powerful political satraps. On the whole, the small and medium manufacturing sector in West Bengal

became potentially more important. But the concept of modernisation which is essentially urban biased and centred around heavy industry – based industrialisation, that has dominated the guiding principles of the state government failed to evoke an alternative development trajectory that is viable in economy, feasible in society, and acceptable in politics. This has been eleborated in Sections II and IV.

Secondly, there is the general supposition that the Fund/Bank prescription of 'state minimalism' would induce a 'converging' or 'catching-up' trend, resting on indigenous big private as well as foreign capital, at an uniform rate in all the third world economies which particularly had long experience of colonial rule. However, the foreign capital did not behave in the same manner in Chile as it did, for instance, in China largely due to the 'nature' of the indigenous capital, and the complementary role of the state. Besides, of the four East Asian newly industrialising economies (NIEs) that emerged as the most dynamic and competitive countries, viz., South Korea, Taiwan, and the two city-states, i.e., Hong Kong and Singapore, Korea seems to be most interventionist. She protected infant industries widely, directed resource allocation, tightly regulated inward foreign investment and created giant firms to spearhead its industrial deepening and export drive (see, e.g., Amsden, 1989). Indian situation, during the pre-reform period, was very much alike. The concentration and centralisation of Indian private capital, too showed discrete tendencies despite MRTP/FERA acts. Yet, as it is hypothesized (see, e.g., Nayyar, 1994), many Indian entrepreneurs, in fact, have revealed their preferance for rents instead of profits or for trading instead of manufacturing activities. Few entrepreneurs have sought to promote R and D. However, in the context of private investment-led expansion, it is perhaps the state action to disciplining private capital and the specific response of the latter to various public policies that distinguish the countries from each other. Of course, the experience of development in some of the far eastern Asian countries ought to be treated as potential lessons, keeping in mind that economic development, or successful transition growth, is a complex mosaic and no single part of it can really be treated in isolation. However, given the investment

climate, historical processes preceding the take-off, resource endowment (material as well as human), economic as well as social institutions, a comparative analysis would enable us to understand where exactly the economy needs intervention, what kinds of institutional changes are necessary before making any policy prescription effective, why changes in a few domains are necessary while others may continue, etc.

The idea that underdevelopment is a problem of too little saving is deeply embedded in the history of development economics. The argument seems simple enough, capital accumulation is a necessary and sufficient condition for growth, and capital accumulation is almost synonymous with saving, the route to development is then one of raising saving ratios. There are now many developing countries with saving rates that would have seemed unimaginably high to the development economists of the 1950s. In the decade of 1980s, the gross national saving of the low-income economies, on an average, was 24 per cent *plus*, of GNP, which was higher than that of the middle-income economies (*World Development Report* 1990 : Table A.7). However, across countries there is at best only very weak relation between saving and growth, although there is found to have a very high cross-country correlation between saving and investment. It is perhaps the *productivity* of investment that is crucial, not its volume (Deaton, 1989; Gersovitz, 1988). In Section III, the case of electronics industry has been discussed to highlight the issue that all developing countries may need access to considerable inflows of foreign technology, but import in the form of capital equipment or licensing, requires much larger local absorptive effort than in the form of direct foreign investment. In general, without enhancing the local absorptive capacity the speed of adjustment on the supply side is bound to be slow, particularly in the technology-intensive traded goods sector, and which may ultimately affect the macro economic stabilisation programme. The slow pace of development of the electronics industry at the all-India level notwithstanding the relatively poor performance of West Bengal *vis-a-vis* other states is the matter in Section IV. And, Section V discusses a few issues related to West Bengal's competitive disadvantage *vis-a-vis* states in India, so far as

industrial investment is concerned.

II

Since the mid 1970s, there has been a steady growth of sericulture in developing countries. Since silk production is a labour intensive activity especially in its initial agricultural phase, sericulture has either disappeared or on the wane in most of the developed countries. This is due to high opportunity cost of labour as compared to other activities in agriculture or industry, and simultaneously to price compitition from low-wage silk producing countries. In recent times, the decline of the silk production in Japan has made India the second largest raw silk producer with about 16 per cent share in the world outputs.[2] China by contributing about 63 per cent to the aggregate world outputs occupies the pride of place while Japan is the third largest producer with a share of 6.3 per cent, in 1992.

India has been able to increase her silk goods exports from Rs. 255 crore in 1987/8, to Rs. 789.10 crore in 1993/4 (at the trend rate of growth of 17.01 per cent per annum). As percentage of India's total export earnings, silk remained at a steady level of 1.4 to 1.6, during 1987/8 – 1993/4 (*Source* : DGCI&S). The exports to USA alone constituted 36.4 per cent of the total value of exports in 1993/4. The USA, UK, and the United Germany together consumed more than 63 per cent of the aggregate silk exports. Of course, one may be skeptic about the future trend but that uncertainty is true of all manufactured consumer goods, particularly when those are 'up-market' products like the silk goods. In brief, what we witness is a steady growth in the world market for silk goods, and India is gaining importance since some of the producing countries are withdrawing from it; the most recent example being that of South Korea.

West Bengal by virtue of being the second largest silk producing state in India, next to Karnataka, had the intitial advantage to gain

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[2] *Source* : Japan Raw Silk and Sugar Stabilization Agency, as quoted in Huan, *et. al.* (1994).

from the current spurt in demand. Silk production (we consider, here, mulberry silk only) including sericulture consists of a chain of activities, viz., mulberry cultivation, seed and commercial silkworm rearing, reeling, spinning/twisting, and finally weaving. This entire process of silk production in West Bengal is primarily located in rural hinterlands, and which provides employment, directly and indirectly, to nearly a million of the rural workforce. The development and growth of the sector is thus very crucial, more particularly when labour absorption capactiy of the agrcultural sector has almost reached its nadir.

The optimum rate of return in sericulture (mulberry plantation and silkworm rearing) is found to be much higher than any commonly practised crop production in West Bengal (the cost calculation includes the costs of family labour at the prevailing wage rate). The rich soil of the state yields the highest rate of mulberry per unit of land, in India, and that too, under rainfed condition. Notwithstanding, unlike in say, Karnataka, the cultivation in the state is concentrated in a very limited pockets only. The district of Malda alone constitutes about 50 per cent of the mulberry cultivation, and the bulk of the rest are shared by Murshidabad and Birbhum . Besides, sericulture in West Bengal is particularly characterized by the predominance of small and marginal cultivators. This is quite in contrast to, say, Karnataka where the size of sericulture is hardly correlated with the rural class hierarchy. The average mulberry land per cultivating household is only one-third of an acre in West Bengal. One of the reasons is, of course, the *nature* of the required capital investments. There is practically no market for mulberry leaves, and all the mulberry cultivators are in turn the silkoworm rearers, too.

Land, labour (physical, and the volume of silkworm 'seeds'), and fixed capital (mainly in the form of rearing space and other complementary equipments like racks, rearing trays) maintain strict complementarity (i.e., zero substitutability). In other words, in the short run there is only one method of production conforming to the Leontief production function. In the long run expansion of output may be obtained by varying all the factors, but in different proportions (i.e., non-homogeneous production function). In

particular, the rearing space can be created only in 'batches'. Thus if the fixed capital is already fully employed, any marginal expansion of mulberry cultivation would not be cost efficient. However, these characteristics of production only partially explains the small average size of plantation. The Muslims and the scheduled castes who together constitutes overwhelming majority of the sericulturists incidentally hold not only small plots of agricultural lands which are uneconomic for the cultivation of the major crops but often marginal lands (in terms of soil quality) in respective mauzas. Thus, in most of the areas of high-concentration of sericulture, further expansion of mulberry cultivation (which requires well-drained high lands) seems to be difficult without the participation of the substantial peasants. On the whole, despite comparatively high rate of return per unit of land the expansion of mulberry acreage in West Bengal remained substantially low.

Sericulture, particularly the silkworm rearing is a labour intensive activity, and it requires intensive supervision. The supervision cost minimization depends crucially on the participation of family labour. The family labour, particularly women in the agriculturist families, being engaged in various post-harvest foodcrops processing activities there is hardly any residual labour-time in such families to be engaged in rearing. But given the availability of surplus labour in the slack agricultural seasons, and given the fact that the rearing 'crop' schedules (four to five times in a year) do not overlap that of foodcrop cultivation, the relatively high supervision cost, if weighed against the lower costs of hiring labour, perhaps does not explain the sluggish growth in sericulture. Often the commercialisation process in rural West Bengal is highlighted on the basis of higher yield-rates of the foodcrops. But, if relative price induced crop-substitution is considered as one of the indicators of commercialistion one would certainly wonder why sericulture, unlike in Karnataka, Tamilnadu or Andhra Pradesh, has failed to attract capital and entrepreneurship in West Bengal.

As there is virtually no autonomous market for mulberry leaves, mulberry plantation and the silkworm rearing together constitutes one composite unit of production. Further, the use of the owned

cocoon outputs as inputs in owned reeling (producing silk yarn) units is quite widespread, because of the highly exploitative cocoon market. Most of the rearer households having very limited access to resources other than own labour apply very crude methods to reeling cocoons into silk yarn, resulting in low yield as well as low grades of yarn. It is also found that the reeling units which have installed improved machinery prefer not to produce finer counts of yarn. It is basically the underdevelopment of the yarn market which dissuades the producers from undertaking optimum utilization of the improved technique of production. The raw silk market, in its proper sense, is practically non-existent. Overwhelming majority of the weavers are not in a position to purchase directly from the reelers, even if the reeling centre was adjacent to the weaving centre. A battery of intermediaries operate in-between the producers and the users. The 'market' is such that the finer counts yarn do not fetch proportionally higher prices. The coarser yarn find ready markets in most of the weaving centres except in places such as Bishnupur (Bankura) which has specialized in up-market products like *Baluchari* sarees. The result is a very high proportion of low graded silk materials in the aggregate output of West Bengal. The weaving of better textured materials often requires import of yarn from other states, mainly from Karnataka. On the one hand, West Bengal is losing its export markets to other states. On the other hand, the low graded materials not being proportionally cheaper fail to have expanded domestic market. Here again, despite active role of such government sponsored apex cooperative agencies as Tantuja, Tantushree the local private silk merchants have a larger share of the market. The primary reason being that these private silk merchants have effectively linked up the production as well as consumption loans with the outputs of the weavers.

Let us look at Karnataka which is not only the largest producer of silk and silk goods but the largest producer of, to note, finer counts yarn. As early as in 1959, the state goverment (Department of Sericulture) established the first regulated cocoon market (at Ramnagaram) which was subsequently followed by a series of such markets in ares of concentration scattered across the state. Now, almost all of the cocoons are transacted through these very effective

auction markets where the public authority's role has been very crucial. The latter not only provides the required infrastructre but also acts as the arbitrator. Using mass media, the government tries to minimize the 'information gap' between the buyers and the sellers, of not only cocoons but of yarn as well. The process of dissemination of knowledge from laboratory to the fields in Karnataka is also noteworthy, which has effected large scale adoption of high yielding variety of mulberry, its improved method of cultivation, improved method of rearing of hi-yielding silkworms, and also improved techniques of reeling. As a result, although numerically the poorer households dominate the sector yet it is difficult to identify sericulture, there with poor peasant economy – large scale farming are quite frequent alongside of the average scale of operation on about 0.66 acre of land. Given the lower yield-rate of mulberry, the growth phenomenon in Karnataka certainly points to a *different* process of commercialisation as compared to that in West Bengal.[3]

With an aim to encourage sericulture development in India by fostering growth in prodcution, productivity and product quality, the National Sericulture Project (NSP) was launched in 1989 by the Government of India (Central Silk Board) with assistance of an IDA credit of SDR 113.8 million (equivalent to US $ 147 million) and a Swiss Development Cooperation grant of SwF 40 million (US $ 25 million) (which were subsequently enhanced), and which is scheduled to be completed by end – 1996. The project supports a wide variety of activities in the public and private sectors, including : (a) credit to mulberry farmers, silkworm rearers and silk reelers; (b) facilities for production of silkworm eggs and young silkworms (chawkie); (c) institutional support including training,

[3] From my own experience of working, in connection with the sericulture development project for a couple of years, with the state department of sericulture in both Karnataka and West Bengal, I would rather emphasise on the aspect of 'motivation' than on the token participation of the government in the development process. One has to look into the relationship between the form of governance and economic development (which has recently become an alluring area of research, see, e.g., Meier, 1991). The bureaucracy in the high-concentration sericulture district of Malda is found to be much more active than in. say, Cooch Behar (a less developed sericulture district). But this does not tell us about the causality.

technical assistance, monitoring and evaluation and administration; (d) extension; (e) research; and (f) marketing and quality testing. The project gives special emphasis to women and the poor. The project is being implemented in Tamilnadu, Andhra Pradesh, Karnataka, West Bengal, Jammu and Kashmir and in pilot districts of 12 other states. By the end of 1994 (i.e., the fifth year), the project targets were more than fulfilled in Tamil Nadu, Karnataka and Andhra Pradesh while the implementation in West Bengal remained far behind the schedule of the project targets within the time frame (see the *Review Reports* of the World Bank/SDC); the 'quality' of implementation also is open to question (see the Beneficiary Assessment Reports by CSSSC).

A bill on the regulation of production, supply, distribution and sale of silkworm seeds, cocoon and silk yarn in West Bengal was drawn up in April 1988. And only by the end of 1992 the Department of Sericulture (DOS) was able to set up the first regulated market. Since then a few regulated markets have been set up by the DOS in the the districts of Malda, Murshidabad and Birbhum. Following these attempts, the Khadi and Village Industries Commission (KVIC) and the Khadi and Village Industries Board (KVIB) have issued circulars instructing the khadi societies to purchase their requirements of cocoons from these markets. Despite having the assured participation of these big corporate potential buyers in the regulated markets the volumes of transactions so far remained abysmally poor in almost all the markets. One of the reasons, of course, is that these markets are not comparable to the typical well managed market in Karnataka. These markets do not operate on all the consecutive days during the harvest time, and are organized by the DOS officials only on request from the bulk purchasers. The sellers thus find it difficult to synchronize their schedules with that of the market. Secondly, the very few buyers who appear in the market often found to be colluding with each other and thus keeping the price depressed. One may expect some kind of intervention from the public authority but the problem is likely to persist so long as the buyers, in these markets, are few. The greatest hurdle in making the programme a success seems to be the strong linkage between production and

marketing of outputs through the credit mechanism, and other informal 'ties'.

While credit and output markets pose serious problems to productivity increase, the role of the state government agencies who act in between the government research organisation and the main actors at the grassroots level is subjected to a lot of criticism. The pyramidical structure of information flow from the laboratory to the government department(s) and then down to the recipients through intermediate channels, instead of a direct association in between the lab and the labour, often led to disfiguring of the basic information. Ultimately the cultivators have to incur the costs of mis-information. The perpetuity of which made them resistant to technological improvement.

The condition of production in silk weaving in the state is not much differrent from those in the backward linked sectors. Almost the entire output is produced with traditional wooden handlooms, excepting the few by the Jacquard looms in Bishnupur (producing *Baluchari* sarees). Capital though it appears as a coercive social relation, has not been the principal means of production (see Banerjee, 1994). The household organization of production constitutes the 'core'; yet its independent operation is found to be non-viable. The cost-effective internal organization of the households is linked up with the market by the putters-out, viz.. the private silk merchants, and the people's as well as other non-governmental organizations (NGOs) patronized by the state. The system despite generating considerable surplus has kept the artisan's income depressed.

Out of about 265 societies in the state, only 18 are cooperatives, and they together constituted about one-third of the annual outputs of finished silk of all the societies, during 1990-93, in fact, the share of the cooperative societies in the aggregate of societies' outputs declined during the period. The other form of society organization is that which the West Bengal Societies Registration Act, 1961 allows, any seven or more individuals to form a society for charitable purposes. Incidentally, most of the charitable societies engaged in weaving and/or reeling are floated with members who

are closely related to each other, and thus largely constitute family-based business organizations. The large number of charitable societies in the state together with the private silk merchants effectively determines the conditions of silk production. The bulk of the large amount of subsidies and 'soft' loans provided to the societies by the central government, through KVIC, have in fact gone to the charitable societies who performance-wise, in so many ways, are indistinguishable from the private silk merchants operating as putters-out. The khadi programme, in order to effectively organize the poor handloom weavers and protect them from the exploitative mechanism of an underdeveloped market institution has, in fact, proliferated an alternative institution which is not endowed with any visible dynamic element in it.

In a labour surplus economy, generally, the unpaid proportion of labour , which is nothing but self-exploitation, congealed in the commodity produced is considerably high. And that is the major source of competitive advantage of the production line. However, the capacity of this household organization is restricted by the distribution of initial endowments. They hardly generate any surplus over and above their own subsistence which would be utilized as working capital. In fact, most of the silk weavers' earnings are below the poverty line. They possess hardly any marketable collateral asset which would have yielded them the entitlement to seek institutional finance. Since their productive capacity remain grossly underutilized under the society form of organization, due to the resources crunch of particularly the cooperatives, their independent attempt to replenish that with borrowings from private credit market expose them further to acute unequal exchange. Notwithstanding, there is no discernible decline in the number of handloom units. Instead, there are newer additions. Of course, the new entrants into this sector are mostly weavers by caste. But since most of them are found to be at their 20's and most of them are educated (at least high school-passed), and also since their family had discontinued the job long before, there was necessarily no 'pull' forces for them to re-enter into this business unless some other economic compulsions were there. The fact that they are working at a comparatively much low wage yet they have no effective union

against their masters does indicate the weak bargaining position of these weavers. They have become only a marginal element in the productive process and are liable to be often unemployed or underemployed, and thus they could do little to inconvenience their masters by withholding their labour. Because of their habitual poverty they feel little temptation to migrate, also. The additional advantage in the handloom weaving industry is that it serves largely to occupy part of the family for part of the time; father, mother, wife and children, could all share in the work which would be carried on in the home itself.

The government's role is primarily confined to giving legal recognition to the society form of organization, and occasional distribution of subsidies, etc., to the societies. Even within the narrow boundaries of action the lackadaisical attitude of the government to this industrial outwork has been quite pronounced, not only regarding the review of, but also in the implementation of the stated policies. Organizations like Tantuja, Tantusree of the West Bengal Handloom and Powerloom Development Corporation Ltd, and the West Bengal State Handloom Weavers' Cooperative Society Ltd. (Apex Society) do provide the weavers' organizations with, limited though, marketing outlets. However, most of the outputs are transacted between them on credit, and the repayments take three to seven months and even longer time than that, leaving them with acute shortage of working capital. Moreover, following the government notifications, the societies allow 'festival discounts' (rebates) on their products which are supposed to be readily reimbursed by the apex body. However, particularly the KVIB, West Bengal as compared to the KVIC owes a huge sums of money to its affiliated societies on that account which has accumulated over last couple of years. The financial institutions, on the other hand, are very reluctant to extend credit to the societies whose creditworthiness is being seriously questioned while the apex organization (KVIC), as part of the reforms programme, has stopped flowing credit directly to the societies. Consequently, the system of transactions-on-credit in this sector as well as in the upstream production lines has precipitated with more strength (for more details, see Banerjee, 1994).

The Eighth Plan document states : 'main objective of khadi and village industries (KVI) programmes during the Eighth Plan would be to create additional employment opportunities in the non-farm sector and to ensure increased wages/earnings to rural workers. For this purpose, it would be necessary to reorient khadi programme and identify thrust areas among village industries" (GOI, Planning Commission, 1992 : Vol. II, p.135). But the reorientation of the current programme in desirable directions seems to be quite difficult task since only very limited 'information' on the detailed aspects of the functioning of the khadi societies are available to the otherwise huge sized apex organizations, viz., KVIC and KVIB. Even on the numbers of operating societies the information available to the two organizations differ considerably. The state of affairs of technical eduation in the textile college also calls for a review : although handlooms predominate the weaving sector in the state the curricula hardly reflects that. Further, when intervention in the credit market seems to be socially desirable it hardly constitutes the agenda of the government. On the whole, the power of representation of the artisans being far too weak the sector has failed to evoke more active intervention by the state. The post-colonial urban-biased development strategy of the state has, in fact, consolidated the persistent duality in the domestic economy. In place of the currently fashionable case for 'state minimalism', or *laissez-faire* what is required is a broad view of democracy, allowing the possibility of state action guided by motives of public interest.

The role that the non-farm rural small scale manufacturing could play is perhaps most strikingly evident in China. She is one of the most dynamic economies in the world; her gross domestic product (GDP) increased by 10 per cent per annum in real terms over the period 1981-90 (ADB, 1993). The most significant among the factors had been the performance of rural enterprises which grew at the rate of about 34 per cent per annum (at 1980 prices) during the period (Islam, 1991). The share of all types of rural economic entities in total industrial gross output increased from less than 10 per cent in 1978, to 18 per cent in 1985, and to about 27 per cent in 1990 (Lee, 1994). The reform which began in the agricultural

sector, in 1978, shifted the focus to rural light industry in the early 1980s. The latter began to absorb much of the labour force released by productivity improvements in agriculture. Moreover, the even higher growth of merchandise exports (at an annual average rate of 14 per cent in real terms) that accompanied China's rapid growth in the post-1978 period owes much to these rural small enterprises which contribute (items such as chemicals, machinery, and light manufactured goods such as textiles) about one-fifth to the total value of exports. In brief, the first element in China's success strategy was to create new economic entities domestically, and the Chinese relied on them for maintaining overall economic growth. Accumulation of wealth by rural families led to the widespread emergence of non-farm industrial production. In the non-farm private sector, individual enterprises constituted over 90 per cent of an estimated 12.5 million enterprises, in 1991 (ADB, 1993).

The growth was supported by the foreign trade corporations (FTCs) who provided these small enterprises the much needed vent-for-surplus. China's highly centralised control over foreign trade began to give way to a more diffused regime early in 1978, with the FTCs beginning to act independently of the centre. The practice was officially sanctioned and legislation soon followed to authorise entities other than the twelve national FTCs to engage in trade. Central ministries and departments, and provincial and municipal governments established their own FTCs, some being domestic joint ventures involving production units and trading corporations : more than 5,000 were in operation by the end of the 1980s (Wall and Fukasaku, 1994). In addition to the FTCs owned by the governments, large state-owned enterprises, initially those with exports in excess of $ 750,000, were given the right to export on their own account, as in the case of foreign-funded enterprises. Further, these FTCs under the new government policy (known as *contract responsibility system*)[4] were to bring the domestic prices of exports closer to those obtained on world markets on the other. Moreover, the agency system was introduced in the mid-1980s under

[4] FTCs were engaged in contracts that specified targets for foreign exchange earnings, remittances to the centre of foreign exchange from the FTCs, both provincial and national, and the balance of profits and losses from trade activities.

which the FTCs would simply act as agents for producers of export goods or consumers of imports. They would pass on the international price, in both cases converted *via* the exchange rate, and add on a service charge and any taxes payable.

If it was the export-led growth strategy that prompted the Chinese government to remove all obstacles from the growth of small scale enterprises, it was the import-subsititution strategy geared towards the national employment policy that triggered off the modernising effort in the unorganised manufacturing sector in the 1960s, in Taiwan and South Korea , the two private captial orientated economies. Both Korea and Taiwan moved to exporting labour-intensive manufactured products from traditional agricultural exports during the first half of the 1960s. The transition seems to be inevitable in a developing country with an abundance of labour. However, in course, real unskilled wages began to rise and surplus labour was gradually exhausted, bringing the economy to the commercialisation point.This threatened the competitive positon in world markets and necessitated technological upgradition of the whole economy; the focus shifted to more technology-intensive products. India has equally elastic supplies of unskilled labour. But such an advantage can apparently be converted into a real advantage only in the context of a favourable 'total' enviroment, including an industrial entrepreneurial class and the right policy package to moblize it effectively in a balanced growth context.[5]

III

Electronics has been the major growth sector in the world economy over the past two decades. Although the OECD countries have been the principal beneficiaries of that growth a growing number of firms from the NICs have been able to enter as technologies and markets have rapidly evolved (Ernst and O' Connor, 1992). There is the debate on whether the late-industrialising countries should focus their efforts in the promotion of their electronics capabilities. It would not be meaningful to enter into

[5] For a comparative analysis of the historical processes of development in some of the Asian countries, see, e.g., Ohkawa and Ranis (1985).

the debate here, since that issue cannot be answered in the abstract, but must be addressed at the level of sector and country specifics. Nevertheless, a few would maintain that some indigenous design capabilities are essential for effective use, given the need for close interaction between system designers and users (*ibid*) . Technology is obviously a strategic factor at all levels of economic and social development. Today technology has become a major instrument of domination. This applies both to power relations within a society (in the context of gender relations, see Banerjee, 1993) and to international relations, especially in the North-South context. In the absence of own technological capabilities, the proliferation of new technologies into developing countries would lead to new and qualitatively intensified forms of technological dependence, thus further increasing the economic and political hierarchisation of North-South relations but also of South-South relations,with all the implications for underdevelopment, misery and global conflict potential (Ernst, 1980).

It is argued that the ability to cope with newly emerging technologies will depend in large part on the capabilities revealed to cope with industrial technologies in the past (Lall, 1990). The building of industrial competitiveness in developing countries. as Lall (1990) analyses, depends on both firm-level technological capability (FTC) and national technological capabilities (NTC). FTC consists of investment , production and linkage capabilities in addition to entrepreneurial and managerial capabilities.[6] On the other hand, NTC depends on the incentives provided to industry, the supply of skills available, the efforts undertaken to master, adapt and improve upon technologies, and the institutions set up to support the functioning of markets. However, technological effort

[6] *Investment capabilities* refer to the skills required to identify, prepare, design, set up and commission new industrial projects : they determine how efficiently investible resources are deployed and how all the firm understands the technologies it is utilising. *Production capabilities* cover the skills needed to run a plant efficiently and to improve it over time, including the financing of R and D. *Linkage capabilities* refer to the skills needed to transfer knowledge and technology between enterprises and from enterprises to technology infrastructures : they determine how effectively the individual firm can specialise and receive support down the larger industrial structure and the economy as a whole.

is only partially captured by national expenditures on R and D. On the whole, it has been found from the experience of the NICs that FTC and NTC depend on each other and that great capability in one without the other is not effective (Bradford, 1993).

In the neoclassical trade theory, ' technology' is treated to be freely available to all countries and, within countries, to all firms. Countries simply settle on appropriate levels of capital/labour intensity in accordance with their factor price ratios, determined by their relative endowments of physical capital and labour. Firms in a given industry are all on the same production function and select their technologies according to relative factor prices, shifting costlessly along the function as the *ratio* changes. To the extent that technology lags are admitted, developing countries are taken to receive all relevant improvements from developed country innovators : there is no problem in assimilating the transferred technology. Even the appropriate technology literature assumes that efficiency would reign in all firms if only the relevant techniques were 'discovered' and factor price distortions removed. This sort of assumption induces the transfer of technology literature to focus attention on the terms of the transfer and imperfections in international technology markets, rather than on the efficiency with which the technology is used by the importer. The traditional approaches fail to explain why the same technology is applied with widely ranging productivities in different countries, and also by different firms in the same country, developed or developing (Nelson, 1981).

The Korean electronics industry is widely acknowledged to be one of the most successful examples of industrial latecomer strategies. The early phase of the industry's development was almost exclusively domestic. Assembly of AM radios for the domestic market started in 1958 in small-scale operations. The industry began to change noticeably in the mid – 1960s. During the past twenty five years, the Korean electronics industry has developed extremely rapidly. Throughout the history of the Korean electronics industry, exports have been its focal point (Bloom, 1992). However, this is not to overemphasise the debate about trade policies for industrialisation, rather to get out of the false dilemma and examine

the home market question in its wider context. The relative importance of the internal market and of external markets in the process of industrialisation is crucially determined by the size of the economy, in terms of the real per capita income.[7] Since many industrial technologies are characterized by increasing returns to scale, only a sufficiently large domestic market will allow for efficient growth. However, Korean market remained much too small for cost-effective production of many electronic products. As a result, for the major export items, exports represented at least 75 per cent of production until recently (Ernst and O'Connor 1992; Bloom, 1992).

Access to overseas markets is almost as important as access to technology for the late industrialisers. Korean companies were thus heavily dependent on original equipment manufacturer (OEM)[8] export agreements with foreign companies. The latter enabled the Korean industry to (a) overcome the limitations of domestic market, and (b) obtain technology. In many OEM deals, the buyer specifies design and advises on machinery and equipment. Especially where the agreement is tied to a joint venture, the buyer will often train the employees of the Korean company to use and maintain the equipment, as well as in other relevant skills, and will provide its own engineers to act as troubleshooters. During the course of development in Korea, the per capita real income increased significantly resulting in expanded effective demand. And she is now in a position to depend on the domestic market, in case of export barriers, for a steady growth rate. The abilities of the Korean companies themselves to acquire and absorb technology, to produce and to develop new products, and to adjust to changing circumstances, is partly a reflection of the level of development of Korea's research infrastructure, as well as of the nature of their corporate organisation.

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[7] The proportion of disposable income available for industrial goods apart from basic necessities (of course, it changes alongwith economic transformation), is crucial.

[8] OEM or Original Equipment Manufacture occurs when a company arranges for an item to be produced with its logo or brand name on it, even though the company is not the producer. It is a type of subcontracting relationship. It is especially prominent in the consumer electronics industry where retailers like to promote their image or manufacturers want to extent their product range. It is equivalent to own brand merchandise in food retailing.

The electronics industry in India was nucleated during the early 1960s with the manufacture of radio receivers by a few private firms. That the Government of India was aware of the prospect of the electronics industry and keen on developing the domestic base of the industry are evident from the fact that it constituted the Bhabha Commission as early as in the mid–1960s whose main concerns were to locate areas of competitive advantage, and suggest future plans. The government set up a separate Department of Electronics (DOE) in 1970 and in February 1971, the Electronics Commission was constituted. The Bhabha Committee estimated that the annual electronics output would reach to a level of Rs. 480 crores (at 1966 prices) in a ten year period. However, only 50 per cent of the target was fulfilled by 1975. The limited progress prompted the government to set up another committee in 1979 (Sondhi Committee) in order to review and suggest new directions of policy, and organisational structures in the DOE. Further, a committee under the chairmanship of M.G.K. Menon was formed in 1978 to examine the existing production capacity for exportable electronic products in terms of quality/quantities, identify technology gaps that existed and suggest remedial measures to eliminate these, suggest measures to augment the existing capacity, recommend the role of export houses, suggest fiscal incentives, and any other recommendation to ensure a major export thrust in electronics with particular emphasis on diversification of products and destinations.

The government accepted most of the major recommendations of both the Sondhi Committee and Menon Committee. By the early 1980s, the electronics industry was relatively free from many of the regulatory mechanisms/institutional constraints which have been held responsible, by many, as the major obstacles to private investment-led expansion during the pre-reform period, and enjoyed a great deal of export incentives. Foreign collaborations were quite liberally approved. The import of fully assembled and ready-to-use electronic equipment, excluding test equipment, like in Korea, was restricted. Capital goods not available endogenously were placed on OGL. Substantial reduction in import duties on certain electronic raw materials was allowed. And, a bunch of other fiscal and financial relaxations were allowed to the industry by the beginning

of the 1980s. Allowing more and more concessions to the industry was a distinct trend in the eighties. Although the Sondhi Committee recommended to raise the investment limit for delicensing from Rs. 30 million to Rs. 100 million the government turned down the recommendation on the ground that 95 per cent of the industrial licence applications involved investment of less than Rs. 30 million. The latter perhaps amply reveals that the electronics industry in India, unlike in other Asian late-industrialising countries, had failed to attract domestic big capital in the 1970s.. The emphasis on the public sector-led growth during the period may partly explain the phenomenon but one has to look beyond that and examine the question of technological capabilities at the firm-level.

On the whole, if the period upto 1980 is marked by government intervention the following years definitely showed distinct trend towards market orientation. Going by the value of outputs at current prices, the growth rate during the 1980s was considerably higher than that in the 1970s; although the tempo tapered off since 1987. The higher values of output during the 1980s was largely accounted for the quick profit-yielding consumer electronics sub-sector with considerable pent-up demand, and also higher production costs in most of the sub-sectors. Interestingly while in the seventies all the major sub-sectors (viz., consumer, professional and components) had grown more or less in a balanced manner the higher growth of outputs in the eighties was at the cost of that inter-sectoral balance : the growth in the consumer electronics was far ahead of both professional and components sectors (see DOE, *Electronics Information & Planning*, various issues). The different branches of electronics production are highly interdependent, performance-wise. And there is high probability that the disproportional growth in any particular line of production, in the absence of a strong domestic base of R and D, ultimately ends up with an adverse trade balance in all the branches of prodction. Joseph (1995) has estimated the import content in electronics production in India during 1981-89. The trend clearly indicates increasing import dependence which really began with the introduction of colour TV in 1982 and its subsequent growth (*Report of the Working Group on Electronics Industry for Eighth Five Year Plan*, chp.1). As such,

import dependence means outflow of foreign exchange. But it has greater implications.

In the early years of Korea's electronics industry, emphasis was placed on products assembled from imported parts and components, especially products for exports. In 1968, almost 92 per cent of all the raw materials and components needed by the Korean electronics industry were imported from Japan and the United States (Bloom, 1992). This dependency on imported components was of concern to the Korean government. As a result, the key part of an eight-year plan for the industry introduced in 1969, was devoted to a planned increase in domestic parts production. The aim was to increase localisation level to 95 per cent in consumer electronics, 85 per cent in industrial electronics and 80 per cent in components and materials. However, by 1987, the level had only achieved 40 per cent for the industry as a whole (*ibid*). The reason for this failure, and for the continuing dependence on imported components is completely different from that of the case in India. In Korea, the dependence accounted for changes in the product range conforming to the changes in export markets. As products have been superseded by more advanced types, domestic parts production appeared to be inadequte for the new products, and the process has to start all over again. In fact, not only Korea, in some of the other far eastern Asian countries namely, Taiwan, Singapore, Malaysia, Thailand and Philippines, where significant growth of the electronics industry took place during the 1980s, electronics imports as percentage of domestic electronics production remained significantly higher than that in India. Yet, because of their ability to export, all these countries had been able to yield substantial positive trade balance while India consistently imported much greater amounts than her exports, by value, in all the branches of production, viz., office automation equipment, industrial controls, communications equipment, consumer electronics, and electronic components (Ernst and O'Connor, 1992, as cited from the *Yearbook of World Electronics Data 1988 and 1990,* Oxford, 1990).

These much smaller far eastern Asian countries, particularly Korea, Taiwan, Singapore, Hong Kong, and Malaysia far outstripped India in values of electronics production. In 1988, for

instance, the value of electronics production in Korea was $18,944 million, in Taiwan $13,764m., Singapore $10,653m., Hong Kong $6,929m., Malaysia $4,401m. while that in India was $4,038m.; of the latter more than 40 per cent constituted consumer electronics. Moreover, of the total Indian consumer electronics production, i.e., $1,637m. only $19m. were expoprted, in 1988 (*ibid*). The overall trend during the following years remained almost unchanged; perhaps the only exception being significant growth in production of national communication equipment in, and software export (about 40 per cent of the national aggregate electronics exports) from India[9] (*Electronics Information & Planning*, various issues; DOE, Chopra, *et.al.*, 1994). What is being emphasised here is that these successful countries have been able to overcome the limitations imposed on the growth of the sector by the initial size of the domestic market by simply internalizing the external market. This has been possible because of the abilities of the domestic companies, in these far eastern countries, to acquire and absorb new technology, to produce and to develop new products and to adjust to rapidly changing circumstances in the international markets. Data for Korean electronics production in the late 1980s, for instance, show that about 65 per cent of the aggregate production were shared by the domestic companies while the share of the joint-venture companies was 24 per cent and that of the foreign companies was limited to 11 per cent only. Further, about 91 per cent of the consumer electronics production was under the control of domestic companies (Bloom, 1992, as compiled from data provided by the

[9] Indian software export, however, is basically what has been called a 'body shopping' or 'professional services' where the Indian professionals are contracted to overseas concerns on time and management basis. The government approved imported hardware, in other words the installation of computer by the software units have been normally used for training the professional on these computers and using them for domestic data processing activities. The 'body shopping' activity has been contributing up to 80 per cent of the total software exports from India. In other words, much of India's export work developing custom software is actually carried out at the clients's site overseas ('onsite') rather than offshore in India. In general terms, India's software export trade has been characterised by an international skill division of labour such that the majority of software contracts allocate only the less-skilled coding and testing stages to Indian workers. That is to say, Indian workers have far more often been used as programmers rather than as systems analyst or designers (DOE, Oberoi and Raghunathan, 1991; Heeks, 1992).

Electronics Industry Association of Korea). On the other hand, the low FTC in India is perhaps most revealing in the computer industry, and which remain hidden behind the phenomenal increase in turnover; the turnover in hardware had incresed from Rs. 9,250 million in 1989-90 to Rs. 17,600 million in 1993-94. Almost all of the major components and units are imported[10] :

Imported	Indigenous
Central Processing Units	Cabinets
Multilayered PCBs	Keyboards
Disk drives	Power supply units
RAM chips	Floppy diskettes
Colour monitors	Black and white monitors
Mouse	Cables

Electronics industry accounted for between five and six per cent of the total foreign collaborations in India which had been approved between 1957 and 1977 (Gulati and Bansal, 1980). This proportion has been increasing over the years. In the 1960s and 1970s the average number of foreign collaborations in electronics industry annually was 16 while the scenario drastically changed in the 1980s. Altogether 1,132 foreign collaborations were made by Indian firms during 1981-90 (Table 1), the bulk of which are classified as 'technological'. It is also noteworthy that industrial electronics, and electronic components constituted about 64 per cent of the total number of collaborations.

For reasons such as access to uptodate technology, cost effectiveness given the limited domestic market, and improved export earnings to finance the essential electronic imports, the government, in the early 1970s, imposed export obligtions in the case of foreign collaboration in the sector. To the extent the export obligation imposed on the domestic firm is shared by its foreign collaborator by assuming responsibility to buy back a portion of the domestic firm's output, the foreign collaboration too will develop a stake in cost-effective production by its partner firm. In

[10] In this context, the impact of the massive reductions in import duties on major computer importables, over the last three years and particularly in 1995-96, seems to be far-fetched.

most of the cases the obligation to export was within the narrower range of 40 per cent to 60 per cent of annual output. However, the policy of imposing export obligation on foreign collaboration never yielded the desired results (Gulati and Bansal, 1980). The report prepared by the Association of Indian Engineering Industries (AIEI) (1984) perhaps bears testimony to the fact that Indian big capital was opposed to the policy of export obligations. The report states :

> 'Growth experience in the Far East makes us often believe in a rather distorted policy prescription– export—led growth in electronics. All things considered, this is not possible in India till 1990 (or even later) – the existence of SEEPZ and the setting up new EEPZs will not alter this picture in any great way.'

While the slow growth in per capita real income restricted the expansion of domestic market it is perhaps the weakness of Indian private capital that compelled them to hinge on the internal market. Electronic exportable should embody the latest in technology which incidentally the Indian products were not.

Table 1

Foreign collaboration in Indian electronics industry, 1971-93

Sector	1971-80		1981-85		1986-90		1991-93	
	Pub.	Pri.	Pub.	Pri.	Pub.	Pri.	Pub.	Pri.
1. Control instrumentations and Industrial electronics	7	21	22	104	27	249	7	145
2. Electronic components and materials	17	21	19	96	20	185	6	107
3. Communication and Broadcast equipment	10	7	44	22	63	91	20	73
4. Consumer electronics	–	2	–	11	1	21	–	32
5. Data processing systems	1	3	4	33	8	112	2	57
TOTAL	35	54	89	266	119	658	35	414

Source : DOE, 1993.

Notes : The actual number of collaborations seems to be greater than tabulated above since a number of companies later ceased operation while the above figures, in the *Source*, are based on the units still in operation (cf. Joseph, 1995).

Pub = Public sector units; Pri = Private enterprises

In place of the problem of low growth of FTC, one may argue that the constraint on export expansion originated in the incentives offered by the home market; lower profitability of exports as compared to domestic sales. It may so happen that all the export incentives put together still fell far short of the effective protection for import substitution. However, in the light of the recommendation of the Sondhi Committee (1979), which the government took note of: 'the industry should be put on notice that tariff protection would be gradually reduced so that they might take steps to reduce their cost of production and build up their competitive strength in definite time frame', and the fact that since the mid-1980s there has been definite threat of liberalization looming large over the sector, it is difficult to accept such a proposition unless one is very sceptical of the long term behaviour whatsoever of Indian private capital. Moreover, if protection is isolated as the key factor then one has to explain the growth in Korea and Taiwan which are known for *high* trade protection regimes, at least up to the end of the 1980s. Public planning for industrialisation is found to be a common phenomenon in most of the late-industrialising countries. However, it is the state action to disciplining private capital and the specific response of the latter to various public policies that distinguish, to a great extent, the countries from each other. Public intervention in the form of subsidies and rewards has been aimed at distorting relative prices in pursuance of broader social objectives. This has been as true in South Korea, Japan and Taiwan as in India and many other late-industrialising countries. However, in, say, Korea the state used/ to impose performance standards on the subsidy/incentives receiving private firms. This kind of a principle of reciprocity is hardly evident in India and so, among other factors, is the distinguishing behaviour of private industrial capital.

Any attempt to hold the government policies responsible for the failure of building up technological capabilities in the country should also take into account the cases of success of a few public sector units. In 1984, for instance, the government established the Centre for the Development of Telematics (C-DoT) to design, develop and commercialise digital electronic switching systems (ESS). Until then practically all equipment were either imported

or produced domestically with imported knowhow. Since the launching of the C-DoT programme the government froze new collaboration agreements in the area, and blocked the expansion in local production of Alcatel-Cit's E-10B main automatic exchange (MAX). By 1992 the C-DoT had successfully commercialised its family of ESS like the RAX, EPABX, and MAX (up to a capacity of 10,000 lines), and a total of over two million telephone lines are now connected to C-DoT exchanges, which is close to the global frontiers in terms of size (Chandra, 1994). A large part of the success was due to the role of the government in protecting the nascent organisation against unequal competition from the TNCs.

On the whole, the case of electronics is only indicative of the general trend in Indian industries : the technological efforts associated with the imports have focussed mainly on adapting the imports and that involved almost all of the R and D expenditures incurred : the building-up of in-house technological capabilities is rarely evident. The situation is not peculiar to electronics industry (see, e.g., Katrak, 1994, for the empirical results on the technology-intensive chemical and allied industries). It is in this perspective that Lall's (1990) hypothesis, based on the experience of ten developing countries in Asia, Latin America, and Sub-Saharan Africa, that the ability to cope with newly emerging technologies will depend in large part on the capabilities revealed to cope with industrial technologies in the past, seems to be relevant in the context of recent thrust to industrial development, overtly or covertly with foreign capital, in India, in general, and in West Bengal, in particular. Foreign capital may act as the substitute of domestic surplus (generated in a process which involves all aspects of an economy). But one cannot ensure that that would not jeopardise the sovereignty of the nation-state, particularly when the lessons of some of the Latin American countries bear testimony towards that end. Despite early beginning, more liberal approvals of foreign collaboration, a good deal of incentives, and having a wide network of institutional infrastructure, private investments in the electronics industry in India maintained a low profile. The total cumulative investments in electronics in India up to 1991 is estimated to be about Rs. 5,000 crore, of which a little over Rs.

2,000 crore were invested during the Seventh Plan period (1985-90). In contrast, an estimate shows that over Rs. 7,200 crore were invested in the sector in Malaysia in just five years during 1987-91 (DOE, Chopra, *et.al.*, 1994). Further, out of the total gross fixed capital formation of about Rs. 135,260 crore in 1991-92, electronics could attract only about 0.37 per cent (about Rs. 500 crore) (*ibid*). Such low investments only encouraged large imports, and thus substantially eroded the long term competitive position of the Indian electronics industry. Thus, there is hardly any reasons to be optimistic about the future prospects of the industry as well as other technology intensive industries if the current trend of public policies towards assigning major role to Indian big private capital continue.

IV

Within this general framework of success and failure let us look into the relative performance of the electronics industry in West Bengal. Since 1971, the Electronics Commission have been encouraging all the state governments to set up state electronics development corporation (SEDC) with a view to (a) develop their own production units, and (b) promote private investments in the sector by providing them with necessary R and D, and marketing infrstructure. The first SEDC was set up in Kerala (Keltron) in 1972, and subsequently followed by West Bengal (Webel), Uttar Pradesh (Uptron), Maharashtra (Meltron), and other states. Before the SEDCs were set up, the industry was located mainly around Bangalore, Bombay/Pune, and Delhi. Bangalore was the site of major public sector corporations in defence and telecommunications. Bombay and Pune were the traditional locations of private sector, largely foreign-owned firms. The Delhi region became important in the sixties with the emergence of a dynamic SSI sector making radios, components for radios, and later black and white TV.

The latest data available (i.e., for the year 1993) show that about 58 per cent of the production is accounted for by the three states, viz., Karnataka, Maharashtra and Uttar Pradesh. However, Karnataka and Maharashtra had over 75 per cent share in 1971. The growth in Uttar Pradesh though to a large extent owes to the

eight central public sector plants, the role of privte investments in the NOIDA free trade zone is quite significant. On the other hand, as is evident in Table 2A, West Bengal has been steadily losing its relative position, in terms of electronics production, since, say, 1971. That there is only one (till 1992, two units) central public sector plant in the state, may provide an explanation. But then one has to explain the factors behind the significant growth in, say, Kerala, Punjab (having only one central public sector plant each), or Gujarat, Delhi (having no such units) (see, Table 2B).

In fact, to reduce regional disparity, the SEDCs were supposed to act as the nodal agencies. So far as the number of electronics producing units is concerned, in almost all the states, bulk of the units belong to small scale category (Table 2B). And that demands much more supportive role of the SEDC. That the SSI units have been able to enter into technology as well as capital intensive areas of production is evident from the fact that the high-growth states are those where product-mix is oriented more towards such areas as control instrumentation and industrial electronics, data processing systems, communication and broadcast equipment, strategic electronics, and components, rather than consumer elctronics. Among the top five states in all these sectors of production, West Bengal appeared only once in consumer electronics in 1981, as third in the rank. In 1993, she has even lost that position, although consumer electronics constituted about 65 per cent of her domestic production (DOE, Rastogi, *et.al.*, 1994).

Given the high level of participation of SSI units in electronics production in almost all of the states, the relative decline of the industry in West Bengal also assumes significance from the perspective of agriculture-industry relationship. Punjab whose agricultural growth had been substantial, during the period, also improved her position in electronics production from 13th in 1981 to 7th, among the states, in 1993. On the other hand, the agricultural growth notwithstanding which seems to be significant, West Bengal experienced a set back in electronics. While it is largely the small and medium capital that induced growth in Punjab one wonders why West Bengal failed on that account.

That the SEDC in many states have been instrumental in promoting the industry is perhaps most strikingly evident in Kerala,[11] which otherwise is an industrially backward state. Most of the subsidiary units of Keltron are engaged in the production of component electronics. And Keltron has actively promoted small producers' cooperatives (particularly women's cooperatives) in the districts to get components, either own-produced or procured from the market, assembled by them. Keltron started producing radio-sets in its own factory, in 1976. Later, in 1980, it decided to shift from low technology-based products to more technology-intensive areas. In collaboration with the State Social Welfare Board, Keltron then implemented the scheme to supply the materials and components to the cooperatives and get the radio-sets assembled by them. The scheme was later extended to TV, voltage stabilizer, public address system, etc. Electronic calculator is another instance where Keltron was proved to be successful in promoting small scale units. In the late 1970s, Keltron undertook the production of calculators in its own factory. Calculator market is highly competitive, and Keltron products with their high overhead costs failed to be competitive. Keltron then decided to discontinue with its production, and market the prodcts of the SSI units under its brand name.

Table 2A
Statewise Production of Electronics, 1971-1992

State	1971		1981		1993	
	Share in aggregate production (%)	Rank	Share in aggregate production (%)	Rank	Share in aggregate production (%)	Rank
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Andhra Pradesh	5.4	3	7.3	5	4.6	6
Delhi	2.9	7	14.6	3	9.4	4

..... contd.

[11] Keltron and Uptron together accounted for about 20 per cent of the total public sector production (*Electronics Information and Planning*, November 1991).

Though it requires a thorough investigation as to why some of the Keltron subsidiaries have recently gone sick, the success and failure of Keltron must be judged in the light of the overall situation in the country. Secondly, one cannot underestimate the role played so far by Keltron in promoting the industry in such an industrially backward state.

..... contd Table 2A

State	1971		1981		1993	
	Share in aggregate production (%)	Rank	Share in aggregate production (%)	Rank	Share in aggregate production (%)	Rank
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gujarat	0.4	11	3.5	8	3.8	8
Kandla (FTZ) : Production (Rs. Crore)	(–)	–	(–)	–	(0.2)	–
Haryana	4.7	5	1.8	12	1.2	13
Karnataka	56.5	1	20.7	2	20.7	1
Kerala	0.6	10	2.5	10	3.7	9
Cochin (FTZ) : Production (Rs. Crore)	(–)	–	(–)	–	(13.5)	–
Madhya Pradesh	1.1	9	1.8	11	1.7	12
Maharashtra	16.7	2	23.8	1	17.3	3
SEEPZ (FTZ) : Production (Rs. Crore)	(–)	–	(25.5)	–	(481.5)	–
Punjab	–	–	0.7	13	4.0	7
Rajasthan	5.0	4	2.6	9	3.0	11
Tamil Nadu	2.6	8	4.1	7	6.5	5
Madras (FTZ) : Production (Rs. Crore)	(–)	–	(–)	–	(58.5)	–
Uttar Pradesh	0.3	12	11.0	4	19.6	2
Noida (FTZ) : Production (Rs. Crore)	(–)	–	(–)	–	(78.1)	–
West Bengal	3.7	6	5.0	6	3.3	10
Falta (FTZ) : Production (Rs. Crore)	(–)	–	(–)	–	(0.17)	–

Sources : Cols. (2) and (3), Datta Chaudhuri (1995) ; Cols. (4)–(7), *Electronics Information & Planning* (December 1994).

Notes : 1) Production of FTZ is not included in calculating the percentage share of different states.

2) For the calculation of the share of different states in production, physical location of the plant (and not the registered office) is considered.

Table 2B

Statewise Production of Electronics, 1993

State/Union Territory	No. of units			Industrial license approved (No.)	Central PSU plants (No.)	State PSU plants (No.)	Major Production centres • (No.)
	Total	SSI	Employment				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh	141	106	27,000	113	5	2	Hyderabad, Viskhapatam, Patancheru, Medak.
Delhi	317	285	40,000	45	–	–	Delhi.
Gujarat	193	153	14,000	110	–	2	Gandhinagar, Vadodara, Naroda, Ahmedabad
Haryana	68	45	6,150	69	1	1	Faridabad, Panchkuba, Mohindergarh, Gurgaon.
Karnataka	288	225	48,000	208	5	4	Bangalore, Mysore, Doddaballapur, Tumkur.
Kerala	74	48	10,000	79	1	11	Palghat, Trivandrum, Cannanore, Mulanthurthy.
Madhya Pradesh	42	25	7,000	20	2	1	Bhopal, Jabalpur, Raisen, Indore, Richhai, Bhilai.
Maharashtra	716	616	60,000	252	1	6	Bombay, Pune, Thane, Ahmednagar, Nasik.
Punjab	47	31	7,800	46	1	8	Mohali, Ludhiana.
Rajasthan	80	57	10,000	41	1	2	Kota, Bhrwadi, Udaipur, Jaipur.
Tamilnadu	269	210	16,700	.92	2	2	Madra, Hosur, Coimbatore, Chencalpati.
Uttar Pradesh	179	105	41,500	117	8	10	Ghaziabad, Mankapur. Noida, Naini, Lucknow, Rae Bareili, Kashipur, Rampur, Kotdwra, and 5 others.
West Bengal	152	119	13,500	52	1	10	Calcutta.
All India	2,064	2,081	310,000	1,334	29	71	
Falta (FTZ)	2	--	50				
Cochin (")	5	--	70				
SEEPZ (")	97	--	1,220				
Madras (")	13	--	50				
Noida (")	21	--	150				

Source : Electronics Information & Planning. December 1994.

There are many reasons why Webel/WBEIDC failed to promote the industry in the state. First, most of the Webel units are found to have making huge losses. It primarily concentrated on capital intensive components and professional electronics sectors the products of which, unless are exported to other states or to abroad, seem to be profitable only when state domestic electronics sector are able to create adequate demand. It is true that private big investments in electronics in West Bengal fell far behind many other states. Yet, Webel failed to capitalize on the limited market because of organisational inefficiency, poor quality or higher prices of products, and faulty production planning (Datta Chaudhury, 1995). Small TV manufacturers in West Bengal, for instance, prefer to purchase capacitors from ELCOT (Electronics Corporation of Tamil Nadu) rather than from Webel due to price difference (*ibid*). Further, Webel Telematics Ltd., was formed with a view to produce electronic teleprinters as its major product. After long delays when the company actually started commercial production, Fax machines had already dominated the market. All these resulted into poor financial performance[12] which, in turn hindered the expansion of the Webel units or product diversification.

To conclude, the freight equalisation scheme and the discriminatory action in approving industrial licenses by the central government have always been the chief arguments, by many, for industrial decline in West Bengal. However, the freight equalisation scheme perhaps had least impact on the growth pattern in electronics industry. The distribution of industrial licenses also cannot be the major factor to explain regional disparities in growth. First, one has to show that there was effective demand for industrial licenses from the state. Secondly, India's electronics industry is largely based on small-scale units. The Government of West Bengal, it seems, relied heavily on fiscal incentives in order to attract large scale investments in the sector while all the states maintained

[12] Most of the Webel units such as Webel Crystals, Webel Electronics Communication Systems, Webel Power Electronics, Webel Business Machines, Webel Video Devices have been showing negative net worth for about last 10 years. Their existence and operation to a great extent now depends on the crores of rupees as loans from the Government of West Bengal (Renu Kakkar, *The Telegraph*, 31 January 1995).

almost similar incentive schemes. The general industrial climate in different states while provided the crucial'externalities' to investments in electronics the promotional projects of respective SEDCs, which include R and D and facilities centres, computer centres, manpower development and training centres, nucleus projects, instruments servicing and repair centres, and marketing the products of small scale units, etc., have been instrumental in the unevenness of growth across the states. One instance may highlight the general lacunae in the state's developmental programme. Instrumentation Ltd., a central public sector enterprise, continuously insisted on having a course on instrumentation in the state's technical institutes, and they even promised to share some of the financial liabilities. But till recently, none of the technical institutes came forward to oblige.

On the whole, as it appears, there may have a few more foreign collaborations, in future, but unless the technological capabilities of the nodal agency (Webel) are improved it would be difficult for the state to achieve a sustained growth. Up to 1993, the Webel units/ WBEIDC entered into 20 foreign collaborations, mostly technological (*Source* : DOE, itemwise foreign collaboration approved in electronics) but that did not lead to any discernible degree of R and D support for the industry in the state, particularly small scale units, neither the competitive advantage of Webel over other SEDCs. And, this perhaps would explain the very poor performance of the Falta FTZ as compared to Cochin, SEEPZ, Madras and Noida FTZs. Finally, what makes West Bengal electronics industry significantly different from others in another account is the spatial concentration. As it is evident in Table 2B, all the states other than West Bengal have a number of major growth centres. The entire industry in West Bengal, however, is concentrated in and around Calcutta although it is a footloose industry and dominated by SSI units. The pattern of urbanization in the state coupled with the ineffectiveness of WBEIDC/Webel beyond the boundaries of the capital-city perhaps would explain the phenomenon a little further.

V

One aspect of industrialisation i.e., human development often remain neglected in policy formulation. Many a time it is assumed that industrial development itself would attend to human capital formation and human resource development. However, historical experience does not allow us to take on to such a sequencing of growth strategy. Human capital refers to the productive capacities of human being as income producing agents in the economy, and it is, by definition, the stock (like non-human capital) of skills and productive knowledge embodied in people (see, e.g., Schultz. 1961; Becker, 1964). However, the UNDP, *Human Development Report* captures human development as something more than the concept of human capital formation entails. Human development brings together the production and distribution of commodities and the expansion and use of human capabiliteis (for a detailed discussion, see *Human Development Report 1990* : chp. 1; Dasgupta, 1993).

Three elements of human life, such as life expectancy at birth, knowledge, and decent living standards have been focused as the key issues of human development (*ibid*). So far as 'knowledge' is concerned, literacy figures are only a crude reflection of access to education, particularly to the good quality education. The third key element, i.e., a decent living, however, is related to such things as access to land, credit, income and other resources as well as to market.

By the human development index, India belongs to the 'low development' category. The successful NICs in east and south-east Asia, on the other hand, also maintains a pretty high level of human development. It would perhaps help us to understand the causality if we look back to the situation in these countries in the early 1960s, at the time when most of them took to greater efforts towards industrialisation through essentially land reforms. In sum, they were in a far better position than India was, so far as the various indicators of human development are concerned (see Table 3). However, the *causality* needs to be carefully interpreted : human development can at best be the necessary condition of economic development. Nevertheless, it is quite likely that the location-choice

of foreign investment in Asia, unless it is heavily weighed by mineral resources which involves high transportation from one country to another, would largely follow the human development index in respective countries, in the era of global trade liberalisation. A higher level of human development not only supports an expanded output market, but also ensures higher degree of technology adaptability of the workers, in general, and the small scale/ancillary units, in particular.

In India, there is a wide varition in human development across the states. The statewise distribution of birth and death rates shows that all the states are going through the demographic transition, with both birth rates and death rates dropping steadily. The pace of change from 1985 onwards is especially rapid. While the decline in the death rates owes to the improvement of sanitation and public health system that in birth rates certainly to the access of the people to education. We have summarized in Table 4 some of the indicators of the level of human development in order to locate the relative position of West Bengal among the 25 states in India. On the whole, West Bengal performance-wise certainly belongs to the category of relatively poor states. As to the number of primary health centres, West Bengal's position is relatively better. But if that is compared to, say, the position in respect of death rates or infant mortality rates, the poor correlation would, for obvious reasons, put the quality of public health sevices in question. That this is not unwarranted is amply evident from the fact that West Bengal stands behind 17 other states as regards the per capita public health expenditure, or behind 23 states as regards the per capita expenditure on water supply and sanitation, in 1991-92. Similarly, in respect of per capita expenditure on education (revenue and capital account combined) West Bengal's rank is 20th. She has even excelled 22 other states in the event of school drop out rate. Here again, one may question the quality of education which perhaps would explain the high rate of drop outs. However, the latter is usually related to the economic conditions of living, and that prompts us to carefully examine the agricultural performance of the state.

Table 3
Population, demography, life expectancy, health, and education in selected countries

Item		India	Indonesia	Philippines	Malaysia	Korea	Singapore
1. Avg. annual growth rate of population (%)							
	1965-73	2.3	2.1	2.9	2.6	2.2	1.8
	1973-83	2.3	2.3	2.7	2.4	1.6	1.3
2. Crude death rate per 1,000 population							
	1965	20	20	12	12	11	6
	1985	12	12	8	6	6	5
3. Life expectancy at birth (years)							
Male	1965	46	43	54	56	55	64
	1985	57	53	61	66	65	70
Female	1965	44	45	57	60	58	68
	1985	56	57	65	70	72	75
4. Infant mortality rate (aged <= 1 year) (per thousand live births in –)	1965	151	138	72	55	63	26
	1985	89	96	48	28	27	9
5. Population per physician :							
	1965	4,880	31,700	–	6,200	2,680	1,900
	1984	2,520	9,410	6,570	1,930	1,160	1,410
6. No. enrolled in school as % age of age group :							
Primary	1965	74	72	113	90	101	105
	1985	92	118	106	99	96	115
Secondary	1965	27	12	41	28	35	45
	1985	35	39	65	53	94	71

Source : World Development Report (various issues)

Table 4
Human development : West Bengal vis-a-vis other states

	Year	Rank (among 25 states)
1. Per capita public health expenditure	1975-76	20
	1991-92	18
2. Number of primary health centres	1980	7
	1992	5
3. Persons per bed in hospital	1974	9
	1989	15
4. Per capita state government expenditure on water supply and sanitation	1975-76	23
	1991-92	24
5. Death rates (per '000)	1979-81	13
	1989-91	9
6. Infant mortality rate (per '000 live birth)	1981	9
	1991	9
7. Literacy rate (literate population as a percentage of total pop. aged 7 yrs & above)	1981	12
	1991	11
8. Drop out rates (%)	1988-1989 cl. I–V	23
	cl. I – VIII	23
9. Per capita state govt. expenditure on education (revenue & capital a/c combined) :	1975-76	16
	1991-92	20

Source : CMIE, Basic Statistics Relating to the Indian Economy : States, September 1993.

Table 5
Agriculture in West Bengal

In West Bengal	Rank of West Bengal out of 25 states
1. Annual rate of increase of foodgrains production during 1970-73 – 1989-92 · 2.56% (A.I : 2.69%)	7
2. Per capita foodgrains production, 1989-92 175 kgs. (A.I : 203 kgs)	8
3. Gross irrigated area as percentage of GCA, 1989-90—22.9% (A.I : 32.9%)	12
4. Irrigated area as percentage of total area under rice, 1988-89 – 22.2% (A.I : 44.7%)	15
5. Area under HYV as percentage of total area under rice, 1988-89 – 49.6% (A.I : 60.7%)	11
6. Per capita (Rural) income from agriculture	
1970-73 : Rs. 414 (A.I : Rs. 384)	6
1986-89 : Rs. 1,264 (A.I : Rs. 1,302)	12

Source : CMIE (as under Table 4)

Notes : A.I. = All-India

A few indicators, as arranged in Table 5, show that West Bengal, in general, lagged behind the agricultural growth performance in some other states, and also the all-India average, over the last two decades. To the extent human development is related to the per capita income of the pupulation, the relatively poor human development in the state is self-evident. Notwithstanding, so far as human development corresponds to command over resources needed for a decent living, income indictor is only a partial measure. One should also consider the diminishing/increasing rate of transforming income into human capabilities which is related to, among others, the forms or development of the credit and output markets. For instance, if a producer had to fall back upon the informal credit market for borrowing at a rate of interest which is

much higher than the rate of return he/she yields out of the investment of the borrowed capital, the *choice* gets narrowed down[13] (whereas human development is supposed to be a process of enlarging people's choice). Similarly, if the output market did not reflect the demand conditions, or the supply conditions either, the public provision for training and manpower development programmes for the poor would fail to accelerate the diffusion of improved technology, since the adoption does not seem to be a rational choice to the user. That the output markets in the hinterlands are still considerably discriminatory have been analysed in the case of not-so-generalised commodities like silk (Banerjee, 1990, 1994), and even in such generalised commodities as rice (Palaskas and Harris – White, 1993). Strikingly, as it is revealed in the latter study, the prices in the rice markets in Bardhaman, Katwa and Memari all in the agriculturally most advanced district of Bardhaman in West Bengal does not show a converging trend; variations in physical infrastructure and in information costs, by themselves cannot explain the lack of integration (*ibid*).

One may argue that the size of the population is particularly a drag on the resources of the state. Statistically, the annual rate of growth of population between 1981 and 1991, in particular, in West Bengal was 2.4 per cent; a rate which exceeded the all-India averge by 0.1 per cent. But, so to say, Maharashtra or Haryana or Uttar Pradesh (excluding the Union Territories) had a greater rate of population growth. Secondly, the pupulation density in 1981 was highest in Kerala, among the 25 states. But due particularly to the literacy programme and improvement in the public health system that the population growth rate in Kerala became the lowest (1.3 per cent) in India, during 1981-91. In fact, in almost all the states which improved upon human development during the period had also experienced a lower rate of population growth. The current population control programme either ignores this aspect of the human development programme, or pays only a token attention to it. Thirdly, the population in West Bengal in 1991 constituted 8.04 per cent of the national aggregate which certainly is quite

[13] If public health system fails and one has to buy the costlier private health care the welfare implications of increased income would be similar.

significant. Yet that perhaps would not explain the low key management of human development in West Bengal, since Uttar Pradesh with 16.44, Maharashtra with 9.3, Andhra Pradesh with 7.86, or Tamilnadu with 6.60 per cent of the all-India population has performed relatively better on account of human development. On the whole. The Government of West Bengal have schemes whatsoever of human development but perhaps due to the general lack of motivation those have hardly translated into a real growth. It is particularly alarming to find that the committee set up by the Union Human Resource Development Ministry to review various schemes under the Integrated Child Development Programme (ICDP), in its report (as quoted and reported in *The Telegraph*, 25 February 1995) mentions that while the overall performance of all the states and Union Territories which were sanctioned Rs. 870.99 crores under the ICDP, had not been very satisfactory, the work done in West Bengal, Bihar and Orissa was 'disappointing and disastrous ... Not only have their performances been disappointing, but in several cases, the funds released to these (West Bengal, Bihar and Orissa) governments have not been properly utilised'. To conclude, this comparative disadvantage in the field of human development is likely to hinder capital inflow in West Bengal.

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