Export Processing Zones : Engines of Growth or Frontal Bases of Multinational Corporations?

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Introduction

The vast majority of developing countries were under colonial rule at one time or the other. A colonial economy in its international dealings had to rely on primary product exports. The long epoch of colonialism alternated between active and passive growth phases, depending on the state of foreign demand for primary goods. The declining role of these primary exports and the phenomenal growth of manufactures in world trade necessitated diversifying the structure of these economies through industrialisation. However, the very nature of these economies and the relatively small share of capital goods production in them called for attracting industrial corporations of the developed countries, both for technology and capital, in their concern for industrialisation. Though various strategies have been followed what has come to attract attention in the recent years is the export-led growth strategy in which the establishment of Export Processing Zones (EPZs). These are 'enclaves' within the developing countries to which goods may be imported freely without the payment of customs duties and processed for export markets with a minimum of restrictions.

EPZs are proliferating throughout the developing countries since 1966, although the first such zone was set up in a developed country (Ireland) in 1957. By 1970 there were eight such zones situated in eight developing countries.[1/] From 1971 to 1975 23 zones were set up in 11 countries mainly in Asia; from 1976 to 1978 further 21 zones were set up mainly in the Middle-East, followed by Africa, Central and South America and Carribean in the recent past. By the early 1980s the number was around 100. (OECD, 1984: 22).

The proliferation has led to a surge of competition among the developing countries in offering the most liberal status and inducements resulting in higher domestic resource cost of these zones. Also in a bid to attract foreign investments the respective governments have been harsh on the labouring populations in these countries. Thus, a time has come for putting together the whole experience of EPZs and in that light evaluating the role of EPZ as an instrument of development. A modest attempt in this direction is made here.

The paper is organised as follows: Section I traces the growth of incentives and investigates the relationship between foreign direct investment flows and the incentives. Section II analyses the investment in the zones by type of activity and its impact on export growth and net foreign exchange earnings. In Section III the 'externalities' of EPZ are dealt with. The externalities considered are technology transfer, linkages, transfer of skills .....etc. Finally an attempt is made at putting together all these in the Benefit-cost form.

1. Growth of Incentives and Flow of Foreign Investments

As is well known, the main objective of setting up EPZs is to attract foreign investment, especially Multinational Corporations (MNC) and the main instrument of attracting such investment is thought to be incentives of various types -- tax holidays, customs-free imports and export, ... and most importantly cheap and docile labour which is not subject to the laws of the land. The benefits of such a strategy are thought to be the following:

(i) flow of foreign capital, advanced technical know-how and management skill;

(ii) generation of new employment opportunities;

(iii) upgradation of managerial and technical skills;

(iv) increased utilisation of domestic raw material and semi-manufactures.

Regional development objectives have also been important in several cases [UNIDO / ICIS, 1980: 6-7].

The first issue that needs to be taken up is, are EPZs really effective in attracting foreign private investment. The issue is of some significance because there is already some analysis of it with conflicting conclusions. Reuber, et.al, point out the failure to attract foreign investments not because the incentives are unimportant for the developing countries generally but only that the differences among developing countries is rather small and uncertain over the time horizon the firms have in mind. Further, the spread and growth of incentive measures is ineffective in evoling new capital flows of any substantial magnitude [Reuber, et.al, 1973 : 119]. In an attempt to analyse this issue in the context of the EPZs, the growth

and spread of incentives in Ireland, Taiwan, Philippines and Sri Lanka is traced and then the growth of foreign private investment is related to the same.

The whole logic of incentives is that they should be sufficiently attractive to divert investment flows from the areas to which they are flowing. By the very logic of it the late-comers were to strive harder to attract fewer and fewer investors. The instruments used to make EPZs more attractive is by offering more incentives and by offering cheaper and more docile labour.

The incentives offered in the EPZs, to begin with, were only:

tax holiday for a certain initial period;

exemption from paying import duties on raw materials, machinery ..... etc;

simplified administrative procedures; and

subsidised infrastructure facilities.

This was the case with the early EPZs in both Ireland and Taiwan. However, by the time Philippines was setting up EPZs in the early 1970s the above incentives were thought to be too inadequate thereby calling for the following additions:

net operating loss carry over;

accelerated depreciation;

exemption from local taxes and licenses;

tax free and duty free imports of materials and supplies.

By the time Sri Lanka was setting up its EPZ in the late 1970s, a few years after Philippines, even these were commonplace. So Sri Lanka had

to add the following to make its zone attractive enough:

no tax on incomes of foreign personnel;

no tax on royalties and dividends;

concessionary tax -- ranging between 2 to 5 per cent on turnover -- upto 15 years following the initial period of tax holiday;

investment guarantees;

double taxation relief;

settlement of disputes at the International Centre for Settlement of Investment Disputes.

Computing the monetary benefits accruing from these incentives is the best method to evaluate the attractiveness of the zone. Such an exercise is, however, not attempted here for it is too cumbersome. What is attempted here instead is a tabular presentation, which portrays the spread and growth of incentives across these zones effectively.

Table 1: Growth of Incentives in the EPZs

Incentives	Country and Year of establishment of FTZ				
	Sri Lanka (1978)	Philippines (1972)	Malaysia (1972)	Taiwan (1965)	Ireland (1957)
1. 100 pc tax holiday for upto 10 years	✓		✓		until 1990
2. No tax on incomes of foreign personnel	✓				
3. No tax on royalties, dividends	✓				
4. Concessionary tax upto 15 years after the tax holiday	✓				
5. No limits on equity holidays of foreign investors	✓	✓			
6. Free transfer of shares			✓	✓	✓
7. No import duty on raw materials, machinery .... etc.	✓	✓			
8. Transfer of capital and procceds exempt from exchange control	✓	✓	✓		
9. Investment Guarantees	✓				
10. Double taxation relief	✓	✓	✓	✓	✓
11. Subsidised Infrastructure	✓	✓	✓	✓	✓
12. Zone as the local government	✓				
13. Disputes settled at the International Centre		✓	✓	✓	✓
14. Simplified procedures	✓				
		Carry over of operating losses.			Non repayable grants upto 100 pc of training costs. 35 pc grants for machinery/ buildings

Source: Respective Zone Authorities

Note: A tick represents the availability of the benefit.

Ireland was exceptionally successful in attracting multinational investment since the late 1950s. The share of manufacturing employment in the new foreign industry (NFI) [2] which was around 2 per cent in the early 1960s shot upto around 5 per cent by 1966, to about 16 per cent by 1973 and to 25 per cent by 1980. By 1984 NFI was accounting for about three - quarters of manufactured exports of Ireland.

Table 2: Manufacturing Employment in NFI, 1960 - 80 (000s)

	1960	1966	1973	1980
NFI	4	10	36	61
Total	172	198	222	243
Share of NFI in total (%)	2.3	5.1	16.2	25.1

Source: IDA Employment Survey for NFI in 1973 and 1980.
Estimated from Survey of Grant Aided Industry (1967) for 1960 and 1966.

In this phenomenal growth of foreign investment EPZ at Shannon had a rather large role to play, at least in the early years. In 1966 Shannon accounted for nearly 38 per cent of the employment in NFI and about 30 per cent of the national exports of manufactured goods. By 1973 the share of employment had declined to 13 per cent and the share of exports to about 11 per cent, partly because by 1973 the incentives offered to foreign investment to locate in Shannon were not significantly different from those available through out the country (as Ireland had joined the EEC by 1973).

The rapid growth of multinational investment in Ireland in general and Shannon in particular seems to have come to an end by the early 1980s.

New, first time foreign invesemtnt seems to be declining in the 1980s -- not only in absolute terms but also relative to mobile foreign investment in Western Europe. In absolute terms it has come down from 376 m.dollars in 1978, 337 mi.dollars in 1979 to 286 m.dollars in 1980 and to 240 mi.dollars in 1982-83. In relative terms the share of Ireland in Developed market economies has come down from 8 to 9 percent in 1978-79 to 4.8 per cent in 1982-83 [UNCTC, 1985: Table A1_7. The reason for such sharp decline seems to be the comparatively cheap labour in Greece, Spain and Portugal, having other conditions similar to Ireland, having joined the EEC.

Taiwan, which claims to have fathered the idea of EPZs closely, followed Ireland in setting up one. But even prior to that,i.e., in the early 1960s itself Taiwan had provided a package of incentives to foreign investment. Private foreign investment responded immediately -- the flow of investment which was an average 2.3 million US dollars per year during 1952-54 and 2.64 during 1955-59 climbed to 14.6 between 1960-64. With the setting up of the zone in Kaohsiung in 1965 the investment had risen to 65.4 millions between 1965-69. In fact, the rush of investors was so great that the government decided to set up two more zones in 1969.

The picture for South Korea is no different. Foreign Direct Investment which was around 13 million US dollars per year between 1967-69 shot up to 134 million during the period 1970-73 when most of the invetment in the zone was taking place. Since then investment has declined -- it was 111 millions during 1972-76, 110 millions during 1977-79 and only 101 millions during 1980-82. In South Korea Zone investment was a substantial part of the total investment during the early years of its growth -- zone investment was 7.37 percent of the total foreign investment in 1970, 24.01 in 1971, 66.38 in 1972, and 30.18 in 1973.

The flow of foreign investment to Sri Lanka was low and unsteady till the late 1970s. The setting up of the zone in 1978 seems to have made a difference to the flow (see Table 3).

Table 3: Foreign Direct Investment in Sri Lanka (Rs. million)

Year	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974
Amount	929	1377	1003	753	769	24	NA	0.5	4.3	10.8

Source: Central Bank of Ceylon, Review of the Economy, various issues.

The sharp rise since 1978 is in response to the liberal incentives offered. The initial spurt seems to be tapering off with the setting up of the numerous factories in the zone. Regarding the decline in investment since 1982 the Bank of Ceylon had the following to say,

> "The reduction in private sector non-monetary capital inflows was due to a slowdown of direct investment especially to enterprises under the GCEC and FIAZ and a substantial drop in private sector suppliers' credit ....." [Bank of Ceylon, 1983: 212]

Though in the case of most of the zones there was a sharp rise in the flow of investments with the setting up of the zone the record of the Batan Zone in Philippines is startling. Most of the capital invested in the zone was raised domestically. The data for the period 1972-77 shows that only 8.8 per cent of the total investment originated abroad (see table 4). Part of the reason for the poor inflow of foreign investment seems to be access of enterprises to the domestic capital market.

Table 4: Composition of Investment in Batan, 1972-77
(million , current prices)

	Foreign	Domestic	Total
Equity Investment	24.8	74.2	99.0
Borrowings	112.2	1342.4	1454.6
Total Investment	137.0 (8.8)	1416.6 (91.2)	1553.6 (100)

Source: Warr, P.G., "Export Promotion via Industrial Enclaves: The Philippines' Batan Export Processing Zone", Australian National University, 1984.

One of the reasonable conclusions that may be drawn from the country experiences is that the setting up of the zone with all the attendant incentives does attract foreign investments contrary to the findings of Reuber et.al. that incentives are unimportant. But in all the cases investigated the enhanced flow seems to be a temporary phenomenon and petered out after the initial spurt in the activities of the zones.

II. Type of Production Activity, Exports and Net Foreign Exchange Earnings of the Zones

The first EPZ in Shannon (Ireland) attracted, in the initial years, firms engaged in manufacturing and the investment was almost entirely foreign. Over the years, a large number of service companies have been established -- in 1981 out of 89 companies 43 were in the service sector -- and the investment is mostly Irish. Within manufacturing the type of activity was changed considerably over the years. In the early years clothing and textiles predominated but currently majority of the firms

are in engineering/machinery followed by electronics. Whatever be the type of manufacturing the typical production process at Shannon,

> "..... is built around a single procedure, or small set of procedures, ... A firm typically comes to Shannon to perform a particular manufacturing act on specified material(s) which necessarily involves no more than a semi-skill". [Stanton, 1978: 19_7.

The type of manufacturing activity carried out in the EPZs of Taiwan are no different from those in Shannon. Electronics, textiles and plastics together account for two-thirds of the enterprises in the zones (see table 5). The typical production processes carried out are soldering parts or testing in the electronics firms, or sewing and knitting in the textiles and leather firms.

Table 5: Enterprises by Product Types in the EPZs of Taiwan

Product Type	Number of Enterprises	Percentage
Electronics	90	33
Plastics	36	13
Textiles/Leather	57	21
Total	275	100

Source: Export Processing Zone Administration, Essential Statistics, 1982.

The Masan Zone in Korea is basically an electronics zone with 47 per cent of the investment in the zone accounted for by electronics. (see Table 6).

Table 6: Masan EPZ: Distribution of Total Investment by Industry (December 1982)

Industry	Investment (Percentage)	Number of Firms
Electronics and Electric goods	47.2	20
Metal products	24.2	18
Non-metal products	1.5	6
Machinery	4.1	5
Precision Machinery	8.4	8
Textiles	2.7	10
Shoes	5.0	5
Others	7.0	11
Total	100	83

Source: Warr, P.G., "Korea's Masan Free Export Zone: Benefit and Costs" The Developing Economies, Vol.22, No.2.

The Malaysian EPZs are also basically electronics zones. But the composition in Philippines is rather different: though textiles and clothing account for 30 per cent of the employment 17 of the 41 firms are engaged in miscellaneous light manufactures (see table 7). Sri Lanka, in contrast with Philippines, is a textiles zone with 88 per cent of the zone employment accounted for by textiles (see table 8).

Table 7: Batan EPZ : Distribution of Employment by Industry (1980)

Industry	Employment (No. of persons)	Percentage
Garments and wearing	512	11.52
Apparel Footwear	554	12.47
Transport Equipment	516	11.61
Sporting goods	125	2.81
Cork & Wood Manufacturers	349	7.86
Paper/paper board	191	4.30
Optical goods	74	1.67
Artificial Rexin	217	4.88
Textiles	272	6.12
Food	156	3.51
Electronics/Electrical	352	7.92
Base metal	55	1.24
Miscellaneous articles	1070	24.08
Total	4443	100

Source: Export Processing Zone Authority.

Table 8: KIPZ : Distribution of Employment by Industries (1981)

Industry	Total Employment (No. of persons)	Percentage Share
Apparel Products	15698	88.1
Fishing Gear & Accessories	199	1.2
Rubber Thread	101	0.6
Gem Cutting	141	0.8
Electrical Goods	186	1.6
Others	1365	7.7
Total	17813	100

Source: Greater Colombo Economic Commission, Annual Reports, various issues.

The predominant activity located in the EPZs is related to the industrial groups of electronics and textiles with some light manufactures here and there. These predominant activities are concentrated in specific EPZs, with Ireland, Taiwan, Korea and Malaysia reporting heavy concentration of electronics and the late comers like Philippines and Sri Lanka reporting the concentration of textiles. Thus, the type of activity or the magnitude of investment does not seem to be influenced by the incentives offered at the EPZs. These seem to be following a pattern dictated by the global reorganisation of production operations by the multinationals. Further, the operations carried out in these units are often simple assembly or fabrication which are in no way related to the structure of the host economies but rather integrally related to the global operations of the multinationals.

Although fragmented industrialisation incidental to the EPZ activity might succeed in boosting exports the import content of such exports is bound to be high. The value added, hence, is little and the import dependence is very high.

The data on exports of the zones as a percentage of the national exports clearly point to the fact that in none of the countries, except Ireland, and Taiwan to some extent, did the share of the zone exceed 6 percent even in the best of the years (see table 9). In Taiwan, as well, the share of exports from the zone in total is around 6 per cent as the industrial exports account for over 85 per cent of the total exports. In Philippines and Sri Lanka these seem almost insignificant.

Table 9: Contribution of EPZs to Total Exports in Selected Countries

Ireland		South Korea		Taiwan		Philippines		Sri Lanka
	Zone Exports		Masan Zone Exports		Zone Exports		Bataan Exports	
Year	National Exports	Year	National Exports	Year	Manufacturing Exports	Year	National Exports	
1959-63	12.3	1970-71	0.25	1975	8.65	1972	.04	
1965-69	29.3	1973	4.51	1976	8.28	1973	.05	
1970	20.5	1974	6.62	1977	8.13	1974	.08	The percentage was less than 3 for 1979-81
1971	15.4	1975	5.04	1978	7.39	1975	.32	
1972	12.00	1978	4.56	1979	7.48	1976	.89	
1973	10.90	1981	3.12			1977	1.29	
1974-81	6.52					1978	2.13	

Sources: Respective Zone Authorities.
For Taiwan OECD (1984)

Volume or growth of exports in itself does not say much about the net foreign exchange earnings which may be analysed only by looking at the import content of these exports. In the initial years the import content is fairly high in all the zones considered, they do come down over the years (see table 10), but the ratio tends to stabilise around 0.50 for even the most advanced of these countries. For the others, who do not have much of an industry outside the zone, the ratio is higher and does not show any tendency to decline. The apparent low figures for Korea or Ireland need to be seen in the context of the nature of these economies. Ireland and Taiwan have a large segnemt of MNC enterprises outside the zone and Korea has a large and booming industry outside the zone, all of which have high import intensities. In fact in Korea the import intensity of exports has been rising in recent years -- the ratio has increased from 0.26 in 1970 to 0.38 in 1980 [Park, 1985 : 294]

Table 10: Import Content of Zonal Exports (Percentages)

Ireland		S.Korea		Malaysia		Philippines		Sri Lanka	
Year	Import Content	Year	Import Content	Year	Import Content	Year	Import Content	Year	Import Content
1959-63	80.75	1970-71	79.17	1973	94.4	1974	138.1		
1965-69	66.90	1972	69.04	1974	96.86	1975	106.9		
1970	60.21	1975	53.60	1975	90.16	1976	70.5	1979-81	76
1971	56.76	1978	46.74	1976	92.29	1977	96.9	(for garments)	82
1972	57.02	1981	44.54	1978	87.10	1980	63.0		
1973	50.96	1982	46.85			1982	76.63		
1974-81	48.50								

Sources: For Malaysia (OECD) (1984)
For S.Korea and Philippines Warr (1984 a, b)
For Ireland and Sri Lanka respective Zone Authorities.

It is evident, then, that though EPZs are instrumental in attracting foreign direct investments and boosting exports at least in the initial years the import intensity of these exports tend to be rather high. The net foreign exchange accruals, then, tend to be low. So, it seems, the major objective of attracting foreign investments to boost foreign exchange earnings is not achieved. Then the question to ask is are there any other 'externalities' of these zones, such as linkages, technology transfer, employment generation ..... etc.

III. 'Externalities' of the Zones

Linkages with the Domestic Economy

Forward linkages are ruled out by the very logic of Export Processing Zones -- they are set up to export most of their output; backward linkages and duty free imports are a contradiction. Still some linkages have developed their intensity varying across the countries. The major linkages with the host country economy are through construction, electricity supply and the like. But they are, in fact, built prior to or as preparatory to the setting up of the zone and cannot be exclusively considered as linkages developed due to the growth of EPZ industries. Backward linkages, in any real sense, are those established through the movement of raw materials.

One important reason why backward linkages cannot develop to any meaningful extent is the nature of the process in operation in the EPZs in comparison with the structure of the economy. As already mentioned these are so many isolated processes rather unconnected with the domestic economy. Consequently, little could be expected to flow from the domestic economy into the zone.

The import intensity of the zones are also largely dependent on the policies of the MNCs, who operate in these zones. Most often, it is found that the MNCs resort to a very high degree of intra-firm trade:

> "In zones in South-east Asia where Japanese transnational corporations play a significant role, Japanese trading houses control a very large percentage of the imports of materials, parts and components of their affiliates.... An extensive survey carried out in 1973 indicated that companies in the textile sector purchased about half of

> their raw material supplies from their Japanese partners. In the steel sector the production was 60 pc, in the electronic consumer sector nearly 67 pc and in the case of precision instruments and automobiles an average of 77 pc and 82 pc respectively" [UNIDO/ICIS, 1980: 27-8].

In sum, forward linkages are precluded by the thrust of the policy of exports as desired by the developing countries and backward linkages by the thrust of MNC policy.

Technology Transfer

The transfer of technology involved is often of a partial process involving assembly or simple fabrication. As observed (see p.11) even in the case of a EPZ like that of Ireland, which had been in existence for over two decades, there were few firms carrying out complex (multistage) fabrication. For example, the semiconductor production involved the following steps, viz., research/development, fabrication, IC assembly, and product testing. And often the processes transferred to the EPZs are the last two, which are highly labour intensive. Such transfers do not add upto any integrated process of transfer and are not useful in producing the necessary dynamics of export growth. These are only so many isolated production processes in the industrial map of the country without any structural linkages between them, the linkages are with the firms producing the prior and posterior processes lying elsewhere in the globe. Thus, the industrial structure in itself does not undergo the necessary change which is basic to changes in the structure of a country's exports.

Learning of New Skills

What is often claimed as a benefit of the technology transfer and foreign investment is the learning of new skills. This, again, is not a useful process. Without an integrated process of transfer of technology and development the partial transfer only develops a partial skill which has no place in the domestic structure of production — they are only so many juki machine operators, or solders. The learning of these skills calls for a few weeks' training and no more. Most of the senior level jobs are held by outsiders and even when host nation citizens hold management jobs they only assist their foreign seniors. All the key decisions are taken by the MNCs in their central offices elsewhere. Further, the most crucial of all, the R & D set up is never transferred and there is very little that the host nation gains out of it. Even for a long established zone like Shanon:

> "Foreign enterprises have not so far generated the spin-offs in terms of employment in domestic firms that were anticipated; neither have these enterprises generated the native core of professional engineering and other managerial talent which was expected to serve as both the instrument and catalyst for output and employment expansion outside the foreign sector. In essence learning effects from the foreign by the Irish sector have been notably weak and both sectors have existed side by side and developed almost independently of each other" [Dineen, et.al, 1982: 12]

Employment Generation

The employment generated in the EPZs is often a miniscule percentage of the total labour or industrial sector employment (see Table 11).

Table 11: Contribution of Selected EPZs in terms of Employment (1981)

Country	EPZs considered	EPZ Employment as percentage of total active population	EPZ Employment as a percentage of total industrial sector Employment
South Korea	Masan, Iri	0.23	0.7
Philippines	Batan	0.15	1.01
Malaysia	Penang, Kualalumpur, Malacca	1.67	8.4
Taiwan	Kaohsinng, Nantze Tantze	1.27	4.7
Sri Lanka	Katunayake	0.24	1.62
Mauritius	Enterprises with EPZ status	6.72	27.42
Senegal	Dakar	0.03	0.38
Egypt	Enterprises	0.03	0.12
Mexico	"Maquiladores"	0.72	2.88
Brazil	Manaus	0.14	0.68
Dominican Republic	Laromana Santiago San Pedro, De Marcoris	1.71	10.68
India	Kandla, Santa Cruz	.002	.02

Source: Table .12, OECD, 1984

Note: In column 6 figures for Philippines and Brazil have been corrected.

The employment generated is often far below the numbers projected initially, the exception being Shannon. In Sri Lanka as per projects approved at the end of 1981 employment should have been around 55,000, but in actuality the employment at the end of 1983 was no more than 26,000. In Philippines approximately the same number of jobs were created in the three FTZs, at an extremely high domestic cost of US $4000 per job during the first eight years of its operation.

Also it is not unusual to have violent fluctuations in the total employment in the zones. For instance, in Philippines since 1977 employment has been decreasing, and between November 1980 and September 1981 alone some 4237 workers (or 20 pc of the EPZ workforce) were laid off or placed on forced leave. Reports from Malaysia speak the same: Between 3 to 10 pc of the EPZ workforce seem to have lost jobs and those working seem to have been undergoing cuts in various ways:

> "Many workers have "voluntarity" accepted 20 pc reductions or more in weekly take-home pay, others ..... took a 10 pc cut in pay earlier this year while keeping a five-day work week" [FEER, 1985: 79]

What is tragic, however, is that the EPZs are not providing employment to workers who are unemployed and looking for employment. It is, infact, creating a new workforce consisting largely of young women who have been drawn into the EPZ employment from their rural homes. Their working conditions are explorative and living conditions dehumanising. Their basic human rights are severely curbed [D. Narayana, 1986]. Thus, EPZs instead of providing employment to the unemployed are creating a new mass of unemployed waiting to be absorbed into a system which is insignificant in comparison with the total manufacturing employment and which could never hope to accommodate even a minute fraction of them.

Costs and Benefits

Considering both direct and indirect costs and benefits and by carrying out the by now common benefit -- cost analysis it was found that though the EPZ of Korea was breaking even, the EPZ of Philippines was showing a rather high negative benefit, or it was becoming a drain on the economy. In the case of the Masan Zone in Korea,

"…….under the assumptions we have described the FEZ generates an internal rate of return of around 14 pc. This is a high rate of return by the standards of public projects. This result is not particularly sensitive to assumptions about the life of the zone".

[Warr, 1984a: 183]

The high rate is obtained owing to the high net benefits derived from employment and foreign exchange earnings. And one of the crucial assumptions underlying this computation is the estimated wage differential between EPZ firms and firms outside the zone. When no wage differential is assumed the EPZ generates negative net present value for rates of discount above 6 to 8 pc, which is higher than the real international borrowing rate. The sensitivity of these rates to the wage differentials needs to be taken along with our own conclusions on wage differentials [3].

As to the Bataan EPZ in Philippines the result is conclusive:

"Under all combinations of assumptions examined the zone generates negative net present value. Equivalently, it generates an internal rate of return below the estimated real discount rate. Indeed, in almost all cases the internal rate of return is negative. In the central case we find a net present value of -3.5 billion and an internal rate of return of -3 pc" [Warr, 1984b: 36].

Thus, even the pure economic argument that EPZ is a net benefit to the host country does not stand the test. Only in exceptional cases, like that of the Korean Zone which had essentially filled by mid 1970s and was not accepting new firms, it just breaks even; while most of the others are simply eating into the already scarce resources of the host country.

IV. EPZs and Their Future

There may be little disagreement on the need for export expansion and export diversification for the developing countries. The question, however, is regarding the strategy to be adopted to achieve this goal: How effectively does a strategy emphasising relatively free play of market forces achieve this? As the setting up of EPZs is a culmination of such a strategy the above question by its very nature deals with the FPZs as well.

An inextricable component of export diversification is the international transfer of technology. However, it is only a proper transfer, adoption and assimilation of technology bringing about changes in the structure of domestic production of the developing countries which would change the composition of manufactured exports. But the reality is that technology is owned by the MNCs and any transfer involves questions of payment for the technology or MNC investment and MNC control. This is the context in which the strategy of free play of market forces and the EPZs in developing countries needs to be viewed.

As elaborated, in all the EPZs studied the developing countries hardly had any control as to the choice of the technology or the processes to be set up. All were at the mercy of the MNCs: in almost all the countries it was textiles and clothing which predominated with electronics following; in Sri Lanka it was largely textiles following the quota free conditions prevailing initially and the specific calculations of the investors from Hongkong and Korea; inspite of the wide-ranging incentives MNCs have not shown much of a keenness to set up firms in the EPZs of Philippines or Sri Lanka.

Also the future does not look very bright for some of the growing or already established EPZs. There are various structural and technological changes taking place both in the textile and electronics industries, which it is feared, would result in drastic relocations and joblosses. It is already happening in some of the FTZs. The classic case is that of the EPZ in Penang. Penang, and generally Malaysia, is the world's largest exporter of 64k memory silicon chips accounting for about 70 pc of the world market share. Most of the firms accounting for it are of US parentage. With the current intense competition by Japanese giants in the field and the technological advances making for automation of the operations existing in EPZs, it is feared that these MNCs would relocate their operations in the US or in other developed countries where they have their markets. /FEER, 1984: 84_7. In the textiles the forces operating are slightly different, basically cyclical falling off of demand and fierce competition from new low cost suppliers. Whatever be the forces operating the effect is the same. Thus, the future looks rather bleak for some of the /EPZs: they would hardly be able to maintain the employment, leave alone generating new ones.

Notes

1. The eight zones were Kandla in India, Mayaguez in Puerto Rico, Kaoshsiung in Taiwan, Batan in the Philippines, La Romana in the Dominican Republic, the zones along the Mexican border, Colon in Panama and Manaus in Brazil.

2. NFI is defined to be the majority foreign owned firms grant aided under the Industrial Development Authority's New Investment.

3. Our own findings are that once hours of work and the intensity are taken into account the wage rates prevailing inside the zones cannot be higher than those ruling outside [See Narayana, 1986].

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