OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

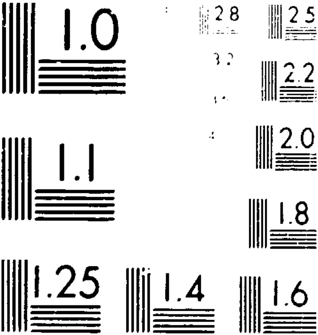
FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org


1.0
2.8
2.5
2.2
2.0
1.1
1.8
1.25
1.4
1.6

Distr.
LIMITED

UNIDO/ICIS. 176
18 August 1980

ENGLISH

UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION

EXPORT PROCESSING ZONES IN DEVELOPING COUNTRIES* ,

Prepared by the
Global and Conceptual Studies Section
International Centre for Industrial Studies

UNIDO Working Papers on Structural Changes
No. 19, August 1980

* This document has been reproduced without formal editing.

80-42657

with
09950

UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION

Distr.
LIMITED

UNIDO/ICIS.176/Corr. 1
16 October 1980

ENGLISH

EXPORT PROCESSING ZONES
IN DEVELOPING COUNTRIES

Corrigendum

Page 18, line 10

For developing read developed

Page 24, line 20

For million read billion

Page 25, line 21

For cannot read can

80-44783

LIST OF CONTENTS

LIST OF TABLES

PREFACE

In UNIDO's research programme on redeployment of industries and industrial restructuring, a series of studies is being undertaken to identify redeployment opportunities and obstacles and to examine the ongoing and future industrial restructuring process. These studies will provide a basis on which to formulate recommendations, policy and action conducive to increased, non-disruptive redeployment. 1/

Surveys of companies in developed countries indicate that among the major obstacles limiting the redeployment of their manufacturing activities to developing countries are the comple bureaucratic procedures and the lack of physical infrastructure in the developing countries. 2/ Export processing zones (EPZs) combine an elaborate package of incentives which remove the administrative and physical obstacles to redeployment of industrial activities into the host country. In addition, the zones frequently provide financial concessions and subsidies to foreign companies which establish capacities in the zones.

The emergence of EPZs in developing countries raises many questions. The basic question is to what extent EPZs are an efficient instrument that may be used by a large number of developing countries to stimulate their long-term industrial and socio-economic development. In the international debate concern has been expressed about social conditions in EPZs and the possible disruptive effects that the officially supported exports from the zones might have on the developed market economies. This debate was referred to in the 13th session of the Industrial Development Board. On this occasion the Secretariat was asked to prepare a report on the EPZs and their impact and to submit it to the Industrial Development Board.

In preparing the study it became obvious that the data available would not permit the Secretariat to meet the ambitious task of presenting a comprehensive picture of the EPZs and a thorough assessment of their benefits and costs. Since - due to resource limitations - it was not possible to survey directly each of the existing zones, the study had to be confined to presentation and analysis of the available, and largely incomplete, data and supplementing these by qualitative observation.

1/ For an overview of findings and recommendations, see "Structural Changes in Industry", UNIDO/ICIS.136, December 1979.

2/ See for instance, UNIDO Working Papers on Structural Changes No. 2, "Industrial Redeployment in Sweden: Prospects and Obstacles", UNIDO/ICIS 54/Rev.1, December 1979 and UNIDO Working Papers on Structural Changes No. [illegible], "Industrial Redeployment Tendencies and Opportunities in Switzerland", UNIDO/ICIS.115, July [illegible].

The present report aims to:

- highlight the prevalence and features of EPZs in developing countries;
- delineate the benefits and costs of the socio-economic effects of EPZs on the host countries;
- draw the attention of developing countries to key issues.

Some further remarks are necessary. First, the report deals only with EPZs located in developing countries although developed countries, including Ireland, Greece, Spain and U.S.A., have also established zones.

Second, it is difficult in practice to distinguish between the EPZs and other related phenomena such as free trade zones and other incentive and policy packages designed to attract international business. Third, it is not within the scope of the study to treat the subject of export-oriented industrialization or transnational corporations' operations in developing countries in general. However, these issues are of direct relevance for a discussion on EPZs per se. Thus, although the study attempts to single out those issues which refer exclusively to EPZs, many arguments and findings contained in this study may apply also to export industries or transnational corporations in general, direct foreign investment, international subcontracting, etc.

Fourth, a dominant feature of the zones is the large scale employment of women. The broader questions concerning the social and economic role of women in the industrialization of the developing countries is therefore illustrated starkly in terms of their role in export-oriented industry and in the zones in particular. The issues are treated in a paper entitled "Women in the Redeployment of Manufacturing Industry to Developing Countries" (UNIDO/ICIS.165, 8 July 1980), which may be read in conjunction with the present paper.

INTRODUCTION

Background

An increasing number of developing countries regard their active participation in foreign trade - and hence in the international division of labour - as essential to their economic growth. The dramatic growth of world trade in manufactures compared to primary commodities during the post-war period has strengthen the belief that manufacturing for export is the engine of growth. The export processing zone (EPZ) represents one particular means of a government for pursuing export-led industrialization.

An EPZ is a relatively small, geographically separated area within a country, the purpose of which is to attract export-oriented industries by offering them especially favourable investment and trade conditions as compared with the remainder of the host country. In particular, the EPZs provide for the importation of goods to be used in the production of exports on a bonded duty free basis. By far the largest part of investors are foreign companies which have their origin in developed countries. In some of the zones, nationals are even discouraged from investment unless they are engaged in a joint venture with foreign firms. 1/

The EPZ is a development and modification of the earlier free ports and free trade zones, and in practice it is difficult to distinguish between zones engaged in manufacturing activities and those engaged in commercial activities. On the one hand, not all zones in which full-scale industries are actually operated are designated as EPZs. On the other hand, many so-called free trade zones are concerned with manufacturing as well. 2/

The analysis and discussion in this paper adopts a narrow definition of EPZs which focusses on those engaged primarily in manufacturing activities. That is, on zones intended to increase and enlarge the scope of manufacturing activities in host countries.

1/ For example, domestic ownership is limited to joint venture ownership in the zones in the Republic of Korea and in the newly established Karachi Export Processing Zone in Pakistan.

2/ Thus a very broad definition of EPZs is given by the World Export Processing Zone Association (WEPZA) covering quite different types of zones:

> "All government authorized areas such as, free ports, free trade zones, custom free zones, industrial free zones or foreign trade zones, or any other type of zone as the Council may from time to time decide to include."

See Article 1 of the Statutes of the World Export Processing Zone Association, UNIDO document ID/WG.266/6, 28 February 1978.

Main Issues

From the viewpoint of the developing countries, the key questions are:

- Do the EPZs represent a catalyst or a dead-end method of export-led industrialization? Under what conditions are they likely to be a catalyst and under what conditions are they likely to fail?
- From a national point of view, what is the social impact of setting up a modern industrial complex in an enclave in a developing country? What are the economic consequences of establishing an EPZ?
- From a financial point of view, is the investment of the scarce capital resources of the developing countries in creating EPZs warranted? That is, does this investment pay, especially in the light of potential competition between the increasing number of zones?

Within these main issues there are specific questions. These include the extent to which the zones -

- generate employment and foreign currency surpluses;
- link and integrate with the remainder of the domestic economy;
- stimulate the transfer of technology and managerial skills;
- stimulate the training of workers in industrial skills;
- aid or detract from other national objectives, including regional policy.

Chapter I outlines the main features of EPZs noting the substantial growth in their number during the 1970's and their concentration in Asia. Chapter II examines the objectives of the host governments in establishing EPZs and the factors affecting companies' decision to invest within the zones. Chapter III describes the impact of the EPZs in terms of their economic and social consequences in the host countries. The paper concludes in Chapter IV by summarizing the main observations and outlining suggestions to host governments when establishing or operating EPZs so as to include these to fulfil their expected role as a means of fostering export-led industrialization.

I. MAIN FEATURES OF EXPORT PROCESSING ZONES

A. Number and Location

A wide range of developing countries have established or are establishing EPZs. In 1980 more than 55 countries had EPZs or were planning to set up an EPZ. These countries are mainly the more advanced of the developing countries.

In table 1 of Annex I export processing zones engaged primarily in manufacturing are listed. As this table shows there are more than 50 zones in operation, whereof 6 are in Africa, 20 in Asia, 20 in the Carribean and Latin America, 6 in the Middle East and 1 in the Pacific Islands. Since it is difficult to differentiate between the EPZs and other free zones, table 2 of Annex I lists those other zones presently in operation. These other zones in operation total 25 of which Africa has 3, Asia 1, Carribean and Latin America 12 and the Middle East 9. From Table 3 in Annex I it can be seen that some 30 zones which are EPZs and free zones are under development. This will bring the total operating zones to over 100.

B. Industrial Activities in Zones

Industrialization in EPZs is currently concentrated in relatively few industries, the two most prominent being textiles and garments and electronic products. While the garments industry employs a relatively low technology and is labour-intensive because it (so far) is difficult to mechanize, the electronics industry - producing both intermediate components like semi-conductors and final consumer goods like radio and television receivers, cassette tape and record players, hand-held calculators, watches, clocks and electronic games - combines high technology with unskilled labour-intensive processes in certain stages of production, such as assembly. 1/ About 300,000 workers, nearly half the total labour force in Asian Export Processing Zones, are employed in electronics factories. 2/

1/ The electronics industry has been the most studied of redeployed industries. See for example UNCTAD, "International Sub-Contracting Arrangements in Electronics Between Developed Market Economy Countries and the Developing Countries", TD/B/C.2/144 Supplement 1, New York 1975; Moxon, R.W., "Offshore Production in Less Developed Countries - A Case Study of Multinationality in the Electronics Industry", The Bulletin, No. 98-99, July 1974, New York University Graduate School of Business Administration, Institute of Finance; North American Congress on Latin America, "Electronics: The Global Industry", April 1977; Lim, L.Y.C., "Multinational Firms and Manufacturing for Export in Less Developed Countries: The Case of the Electronics Industry in Malaysia and Singapore", unpublished Ph.D. dissertation, Department of Economics, University of Michigan, Ann Arbor 1978.

2/ Ping, H.K., "British of the Second Generation", Far Eastern Economic Review, May 19[illegible], Page [illegible].

More recent data for Mexico indicates that 60% of the "maquiladoras" industries in the Border Industrialization Programme are in electronic and electrical assembly, while 30% are in textiles and garments. 1/ In the Philippines in 1975, virtually all the firms in the EPZs were involved in textiles, garments and footwear manufacture; beginning in 1976, transnational electronic companies also moved into the zones. 2/ A similar dominance of these two industries is found in zones in other countries. Table 1 shows the distribution of manufacturing activities in EPZs in developing countries in 1975.

Table 1

DISTRIBUTION OF MANUFACTURING ACTIVITIES BY NUMBER OF EPZs (1975) 3/

ISIC GROUP CODE	COMMODITY GROUPS	ASIA	AFRICA	LATIN AMERICA	TOTAL
311-312	Food	4	2	2	8
321	Textiles	7	2	3	12
322	Clothing	7	4	7	18
323	Leather	2	1	2	5
324	Shoes	3	-	2	5
331	Wood Products	3	-	1	4
332	Furniture	1	1	2	4
341	Paper Products	2	-	1	3
342	Printing	1	-	-	1
351-352	Chemicals	4	1	3	8
345	Petroleum	1	-	-	1
355	Rubber	3	1	-	4
356	Synthetic Textiles	6	1	-	7
361	Fine Ceramics	-	-	1	1
362	Glass	1	1	-	2
369	Non-metallic Mineral Products	1	-	-	1
371-372	Basic Metals	3	-	-	3
381	Metal Products	8	1	2	11
382	Machinery	7	-	2	9
383	Electronics	7	2	5	14
384	Transport Equipment	3	1	3	7
385	Precision Instruments	6	2	3	11
390	Miscellaneous	5	1	3	9

Source: Fröbel, F., Heinrichs, J. and Kreye, O., Die Neue Internationale Arbetisteilung, Hamburg 1977, pages 625-626.

1/ Kelly, M.P.F., "Mexican Border Industrialization, Female Labour Force Participation and Migration", revised version of a paper presented at the Annual Meeting of the American Sociological Association, San Francisco, California, September 1978 (mimeo), to be published in International Migration Review (forthcoming).

2/ Snow, R., "Dependent Development and the New Industrial Worker: The Export Processing Zone in the Philippines", unpublished Ph.D. dissertation, Department of Sociology, Harvard University 1977

3/ It should be noted that due to the problem of definition, the EPZs referred to in this table may include some of the "other zones" that are listed in Annex I, Table 2.

C. Employment

Direct employment in all EPZs located in developing countries is estimated to have exceeded 645,000 persons in 1978, but it is currently estimated to be slightly less than one million persons. Asia accounts for approximately 70% of EPZ employment, with Singapore and the Republic of Korea accounting for some 35%.

The importance of EPZs in relation to total employment in manufacturing varies and there is no one general pattern. In smaller countries, such as Mauritius, endeavouring to industrialize by systematically using an export-oriented strategy, EPZs usually account for a high proportion of manufacturing industry employment. In countries following an import-substitution strategy, employment is mainly in the domestically oriented industries and the zones are relatively unimportant. In countries with a large export-oriented industry, the zones obviously play a minor role. In Hong Kong, for instance, the overwhelming majority of the labour force of two million people is involved in some export-oriented manufacturing activity. Thus the 59,000 employees in Hong Kong's seven industrial estates represent only a small fraction. Similarly, the the Republic of Korea, the build-up of an export-oriented manufacturing sector has taken place mainly in parallel process outside the EPZs. 1/

Age and sex

For the particular industrial activities that dominate the zones, the companies have, at least to date, shown an overwhelming preference for employing young women.

In Malaysia, 85% of the workers in the Bayan Lepas Free Trade Zone are aged between 18 and 24, with many factories having nearly 100% of their workers between the ages of 16 and 25. One sample survey of electronics workers in the Sungei Way-Subang Free Trade Zone found 93% of them to be between 16 and 25 years. In Mexico, 85% of the workers in the maquiladoras along the border of the U.S.A. are women aged between 17 and 23. 2/ Of 67,000 direct labour

1/ Laestadius, S., Den Internationella Arbetsfoerdelningen och Frizonerna, Stockholm, 1979.

2/ The upper age limit seems to be largely determined by the mean age of marriage of factory women, which is somewhat higher than that for other women in their societies. In Mexico, 70% of the maquiladora workers are single. In the Masan Zone of the Republic of Korea, 78% of the women workers are unmarried. In one survey of electronics workers in Malaysia, 68% of them were unmarried. In Hong Kong and the Philippines, a large majority of workers in export industries, and especially in the zones, are unmarried. In general, it is estimated that up to 85% of the labour force in the Asian Zones is under 30 years of age, unmarried or married without children.

Table 2

EMPLOYMENT IN EXPORT PROCESSING ZONES (1978) 1/

COUNTRY/TERRITORY	EMPLOYMENT		% OF TOTAL EMPLOYMENT IN ALL EPZs
Africa			
Mauritius	17,500		
Senegal	600		
		18,100	3%
Asia			
Hong Kong 2/	59,600		
India	3,200		
Malaysia	56,000		
Philippines	24,600		
Republic of Korea	120,000		
Singapore	105,000		
Sri Lanka	5,200		
Other Asia	77,400		
		451,000	69%
Carribean and Latin America			
Brazil	27,300		
Colombia	2,800		
Dominican Republic	14,400		
El Salvador	2,900		
Haiti	40,000		
Honduras	1,500		
Jamaica	1,000		
Mexico	70,000		
Nicaragua	5,000		
Panama	600		
		165,500	26%
Middle East			
Egypt	10,000		
Jordan	500		
Syrian Arab Republic	600	11,200	2%
TOTAL		645,800	100%

Sources: Currie, Jean, "Investment: The Growing Role of Export Processing Zones", The Economist Intelligence Unit Ltd. Special Report No. 64, June 1979, page 6.
Frobel, et. al., op. cit., 1977, pages 611-612.
Export Processing Zone Authority, Philippines - Annual Report 1978.

1/ This table includes only those countries for which employment figures in export zones are available. With the exception of Singapore - 1974, Mauritius 1977, Hong Kong - 1975, all figures are for 1978.

2/ Includes only employment in foreign-owned firms.

employees in various EPZs in another part of Asia, in mid-1977 women constituted 85%, with the following breakdown: 14-15 years - 6.1%; 16-19 years - 40.4%; 20-24 years - 31.1%; 25-29 years - 12.1%; 30-39 years - 6.7%; 40 years and over 3.6%. 77.6% of the women were under 25 years of age and 90% under 30.

The companies' preference for employing young women seems to be based on three main considerations:

- women's wages are generally below male wages;
- women are generally more productive than men in labour-intensive operations requiring 'dexterity' and nimble fingers;
- young women seem more willing and able to adapt to the monotony of repetitive assembly operations. 1/

This pattern of employment is by no means confined to industries located in EPZs. It prevails also in export-oriented industries located outside the zones. Thus, for instance, about one-third of the total industrial labour force in the Republic of Korea consists of young women aged between 16 and 25.

D. Foreign Participation

Since the main aim for establishing an EPZ is to attract foreign export-oriented companies, it is obvious that manufacturing activities located in EPZs are predominantly foreign owned and/or linked up with transnational market corporations (TNMCs). As an illustrative example the Masan Zone (Republic of Korea) can be mentioned: Japanese companies in one way or another related to TNMCs represented 90% of all companies in the zone and 85% of total investment in 1975. These companies are generally active in electronics and metal products. 2/

It should be noted though, that the EPZ in this regard does not constitute any significant exception from the prevailing pattern of export-oriented manufacturing activities in general in developing countries. Foreign industrial companies and TNMCs play a major role in these activities.

For Hong Kong and the Republic of Korea it is estimated that manufacturing establishments with overseas interests were responsible for approximately 10% and 15% respectively

1/ For a more detailed discussion see UNIDO Working Papers on Structural Changes No. 18, "Women in the Redeployment of Manufacturing Industry to Developing Countries", UNIDO/ICIS.165, 8 July 1980.

2/ Kelleher, T., Handbook of Export Free Zones, UNIDO/IOD.31, 22 July 1976, page 76.

of total exports. 1/ These figures exclude multinational buying groups which are a very important outlet for manufactured exports from the South-east Asian countries. 2/ An industrial survey of Singapore for 1970 found foreign companies' share in total manufacturing exports as high as 70%. 3/ A similar study on Brazil revealed a share of 43%. 4/ In spite of the methodological problems involved, the material presented clearly suggest that the increasing exports of manufactures from developing countries are intimately linked with the activities of transnational corporations and TNMCs.

1/ Nayyar, D., "Transnational Corporations and Manufactured Exports from Poor Countries" The Economic Journal, Vol. 88, March 1978, page 77; Hone, A., "Multinational Corporations and Multinational Buying Groups: Their Impact on the Growth of Asia's Manufactured Exports", World Development, February, 1974, page 147; Cohen, R., Multinational Firms and Asian Exports, New Haven 1975, page 10.

2/ Hone, op. cit. 1974, pages 148-149.

3/ Fan, W.S., "The Multinational Enterprise in Singapore" in Multinational Corporations and Their Implications for South-east Asia, Current Issues Seminar Series No. 1, Institute of South-east Asian Studies, Singapore 1970, page 264.

4/ Fajnzylber, F., Sistema Industrial y Exportacion de Manufacturas: Analisis de la Experienca Brasiliera, Comision Economica Para America Latina, Rio de Janeiro 1970, page 264.

II. OBJECTIVES, POLICIES AND INCENTIVES

A. Host Government Objectives

At the broadest level, "a Free Zone is created for the purpose of promoting the development of industry and trade in the country..." 1/ More specific, target-oriented objectives are stated by most host governments. For instance, the Mexican Government considers the industrialization of the border region "as one of the means directed toward providing employment of available labour, and an opportunity to use raw materials of national production." 2/

Many governments in Asia are very specific about the objectives of their zones. 3/ The zones aim to:

- encourage export-led industrial development;
- attract foreign capital, advanced technical know-how and management skill, increased production and international marketing;
- increase production and marketing to enhance export earnings;
- provide new employment opportunities;
- upgrade managerial and technical skills;
- increase utilization of domestic raw materials and semi-manufactures.

In some cases other objectives are important. For instance, India's Santa Cruz Zone was established specifically to acquire technological know-how in the electronics industry. Regional objectives have also been important in several cases notably for the Bataan Zone in the Philippines and for the Kandla Zone in India.

B. Factors Affecting Decisions to Invest in EPZs

The competitive pressure of world trade implies a continual search for cheaper, more cost effective ways of producing manufactured goods. The transnational corporations, in particular, are able to seek actively new locations for their products or parts of the products to be manufactured at lowest possible costs. The EPZs generally offer a favourable location, together with a package of incentives to attract investment in manufacturing for export. There are two elements to this package:

1/ Organic Law of the Santa Tomas de Castilla Free Zone for Industry and Trade, Decree 22-73 of the Congress of the Republic of Guatemala, Act 1, Chapter 1, 1973.

2/ Mexican Border Industrialization Programme, Secretaria de Industria y Comercio, Mexico 1971, page 9.

3/ Export Processing Zone Karachi: Scheme and Objectives, Karachi, undated.

- provision within the zones of the general pre-requisites for industrialization;
- provision of financial concessions and subsidies to ensure that the potential rate of profit is sufficiently attractive to induce the investment.

The pre-requisites for industrialization include:

- the availability of a disciplined labour force with a wage level commensurate to productivity and skill;
- physical infrastructure such as harbours, water supply, international air ports, communications;
- proximity to markets and/or international trade routes;
- political stability and a favourable attitude towards foreign investment;
- simplified, stream-lined administrative rules and regulations covering the import and export of goods, capital and profits.

These pre-requisites need involve no element of subsidy but as outlined below, their provision would appear to be essential to the successful establishment of manufacturing activities. From the point of view of the host government, the zone is a cost-effective method of meeting these pre-requisites. Particularly in terms of infrastructure, where public investment expenditures can be massive, the concentration of a sophisticated infrastructure in a tightly defined geographical area can have very substantial cost advantages. 1/

Concessions and subsidies are also a feature of EPZs. They may include:

- tax concessions;
- provision of utilities and infrastructural services and factory space at subsidized rates;
- duty free import and export of goods;
- provision of labour at suppressed/subsidized rates and conditions.

The concessions and subsidies offered vary considerably between different zones. Annex II lists the concessions and subsidies available in two zones (Karachi EPZ in Pakistan and Bataan EPZ in the Philippines).

1/ The economies offered by zones and industrial estates are frequently stressed in World Bank lending appraisals. For instance:

> "The concentration of industries on the estate, as opposed to the haphazard and dispersed pattern which would occur otherwise, greatly facilitates rational planning and installation of external infrastructure (power, water, telephones, severage and roads). Costs will be lower since the external network will be less dispersed and time schedules for both planning and implementation can be compressed. Within the estate, there will be internal economies resulting from lower capital cost per factory because of common utilities and services. While no attempt has been made to quantify these project-induced savings in both public and private resources, they are real and significant."

A decision to locate industries manufacturing for export in a developing country is largely dictated by the availability of low-cost labour. The remaining factors, however, are of crucial importance in determining whether to locate inside or outside the EPZ or whether to locate in one developing country or another. The following sections discuss the relative importance of each of these factors.

Wage costs

The available evidence indicates that there are no significant differences in wage levels in the zones and the rest of the economy. Recent surveys 1/ on wages paid in EPZs show that semi-skilled and unskilled labour were paid an average of under $0.50 per hour. The only exceptions with wage rates above this level are Colombia, Mexico, Panama and the Middle East countries (Jordan, Syria and Egypt). In most cases the unlimited supply of labour from the traditional sectors of the economy by itself makes it possible to maintain these low wages.

Table 3 gives an example of comparative figures for 1970 of earnings of workers processing or assembling materials in the U.S.A. and developing countries. It indicates the low relative labour costs of which the international firms investing in a developing country can take advantage. Across industries, hourly wages in developing countries averaged 14% of comparable U.S. earnings. Recent data, 2/ however, indicates that wage costs in the U.S.A. are between 16 and 57 times greater than in the developing countries. It must be noted, of course, that international comparisons in this field with a high degree of accuracy, are hard to make, particularly for countries outside the OECD area. Nevertheless, the differences in relative wage costs are so large that there can be little doubt of the role that these differences play for relocating labour-intensive operations to developing countri s.

If a trainee system is practiced in the zone, the wage levels presented here are not applicable, as trainees are paid less during their period of training. This can lead to malpractices. The example from one country shows that in 1974 trainees constituted 40% of the labour force in assembly industries, in 1977 their share had only decreased to 30%. The trainees were hired for a period of three months apprenticeship (evidence from other zones indicates that training periods usually do not exceed a few weeks), and paid 60% of the legal minimum wage, which was US$1.60 per 8-hour day in 1977. Companies were said to constantly hire, fire and rehire people as trainees, thus creating a permanent reduction of 40% of wages. 3/

1/ ILO Yearbook 1978.

2/ Currie, J., op. cit., 1979, page 25.

3/ Delatour, L., "The Evolution of International Sub-Contracting Industries in Haiti", presented at UNCTAD seminar on North-South Complementary Intra-Industry Trade, Mexico, 16-20 July 1979.

Table 3

AVERAGE HOURLY EARNINGS OF WORKERS PROCESSING OR ASSEMBLING U.S. MATERIALS OVERSEAS AND IN THE UNITED STATES (US$) (1970)

COUNTRY AND PRODUCTS	(a) AVERAGE HOURLY ABROAD 1/	(b) EARNINGS IN U.S. 2/	(a) AS A PERCENTAGE OF (b)
Consumer electronic products			
Hong Kong	0.27	3.13	9
Mexico	0.53	2.31	23
Other Asia	0.14	2.56	5
Office machine parts			
Hong Kong	0.30	2.92	10
Mexico	0.48	2.97	16
Republic of Korea	0.28	2.78	10
Singapore	0.29	3.36	9
Other Asia	0.38	3.67	10
Semi-conductors			
Hong Kong	0.28	2.84	10
Jamaica	0.30	2.23	13
Mexico	0.61	2.56	24
Netherlands Antilles	0.72	3.33	22
Republic of Korea	0.33	3.32	10
Singapore	0.29	3.36	9
Wearing apparel			
British Honduras	0.28	2.11	13
Costa Rica	0.34	2.28	15
Honduras	0.45	2.27	20
Mexico	0.53	2.29	23
Trinidad	0.40	2.49	16

Source: United States Tariff Commission, "Economic Factors Affecting the Use of Items 807.00 and 806.30 of the Tariff Schedules of the United States." Washington 1970.

1/ Including supplementary compensation.

2/ Including supplementary compensation. Estimates by firms of earnings for comparable job classifications.

The attractiveness of wage costs in the developing economies compared to the industrialized economies is generally reduced when wage costs per unit of output are considered since the productivity of labour in the developing countries is usually below that of the labour in the industrialised economies. This is not the case with many assembly operations typically undertaken within the zones for which it is possible to achieve high productivity with unskilled, low-cost labour. Several sources state explicitly that for the type of export production undertaken in the zones and the developed countries, there are no significant differences in labour productivity. 1/

Labour productivity in developing countries is most likely to compare favourably with developing countries in machine-paced jobs. Presumably in such cases the lack of prior industrial experience of the average industrial worker in a developing country is less of a handicap. Also, in a developed country workers dislike machine-paced jobs; hence such tasks may be performed either by inherently low-calibre workers, or by workers who insist on working at a leisurely pace. Because most developing countries lack an industrial tradition, it may however often be necessary to have a higher ratio of supervisory personnel to manual workers than would be required in a developed country. Also, it may be found desirable to split up tasks done by one operative in a developed country, so that each worker has a more limited (and hence similar) set of operations to perform. 2/ Productivity levels in the Mexican Border zone 3/ are estimated to be around 80-140% of U.S. levels and similar high productivity levels have been noted in Korea. 4/

The combination of high productivity and low wages makes the location of labour-intensive activities, in particular, in the zones extremely attractive. There is a concern that in their attempts to increase further the attractiveness of the zones, host governments may have restricted the application of existing labour laws in the zones, to ensure the investors of a docile labour-force which can be utilised to its fullest extent. However, a survey by the Swedish Ministries of Foreign Affairs and Trade suggests that existing labour laws were applied in most EPZs. 5/ Nonetheless, its results should be interpreted carefully since only the general lines of the countries' labour legislation were examined. Moreover, in some countries, at least, the existing labour laws are such that no modifications are necessary to

---

1/ U.S. Tariff Commission, "Implications and Multinational Firms for World Trade and Investment and for U.S. Trade and Labour". Report to the Committee on Finance of the United States Senate and its Subcommittee on International Trade, Washington 1973; Sharpstone, M., "International Sub-Contracting", Oxford Economic Papers, Vol. 27, No. 1, 1975, page 98; Baerresen, D.W., The Border Industrialization Programme of Mexico, Lexington 1971.

2/ Sharpstone, op. cit., 1975, pages 101-102.

3/ Baerresen, op. cit., 1971.

4/ Ranis, G., "Some Observations on Economic Framework of Technology", Working Paper, Princeton, September 1972.

5/ Utrikes- och Handelsdepartementens Enhet II (UHD), "Industriella Frizoner - en Förberedande Undersökning", Promemoria, 21 July 1978, pages 14-15.

attract investors to the EPZs. In these countries, strict control is maintained over trade unions, strike holidays for employees of transnational corporations, special labour laws ruling out industrial disputes with foreign firms etc. 1/

Availability of infrastructure and services

In common with industrial estates, EPZs can facilitate and accelerate factory investment, particularly in comparison with foreign firms acting alone or in joint ventures with local capital. Even in countries where the bulk of the factory investment would still have taken place outside the zone or estate, prepared sites and services accelerate the investment decision process and in some cases might be a plus factor inducing a company "go" decision or investment which otherwise might have been a "no go" or "wait". 2/

From a market survey for the planning of one industrial estate, for instance, it was concluded that, on average, developed estate land ready for construction would reduce the time between approval of a factory investment by a firm and startup of operations by up to 18 months. It was further concluded that perhaps one out of five potential projects would either be aborted or seriously delayed for years if no viable alternative (an industrial estate) were available to the discouraging task of finding and developing a suitable factory site independently. The problem is equally acute in other countries where inadequate records and rules concerning land ownership and use, bureaucratic processing of land purchase agreements and applications for power, water and telephone services prevail. These deterrents are greatly magnified for small to medium size firms since these firms do not normally have the resources - management, legal, capital - to persist in their objectives as do large-scale operations.

Under such adverse conditions, in the absence of a zone or estate, many of the factories located in a zone or estate would be delayed and some of them might never be built. On the other hand, this incentive to locate in zones and estates is much smaller in the more developed of the developing countries. To have achieved their current levels of industrialization, they have generally already removed many of the obstacles that make location of foreign investment within a zone essential in the least developed countries.

1/ See for example, Fayyar, op. cit., 1978, page 77; Frank, C.R., Kim, K.S. and Westphal, L.E., Foreign Trade Regimes and Economic Development: South Korea, Volume VII, National Bureau of Economic Research, New York 1975, pages 242-243.

2/ The emphasis given by transnational corporations to the availability of infrastructure is illustrated by their initiating role in some zones and industrial estates. For instance, one corporation's interest in developing an industrial estate in Indonesia led to its early involvement in the major feasibility studies and subsequently a management and technical assistance contract to assist in the management of the Pulo Gadung Industrial Estate. Similarily, La Romana Free Zone in the Dominican Republic was established in 1969 by a 30 year contract between the Dominican Government and a U.S. Corporation, empowering the latter to manage and operate the zone. (Remma Consultants Limited, "Kingston Export Trade Zone", A report for the Port Authority, Kingston, Jamaica, UNIDO Contract - 74/37, Project IS/JAM/74/005, page 25).

Concessions, subsidies and stability

Financial concessions and subsidies although sometimes very generous, seem to play a limited role in the decisions of companies to invest in a particular zone. The attractiveness of financial incentives offered by a particular host government is reduced by the increasing competition between developing countries seeking investment from the same companies. The tendency for most developing countries to offer financial incentives to attract foreign investment within their boundaries may simply emphasize the importance of other factors such as geographical location, freight charges and non-financial aspects like political/administrative considerations. Moreover, tax concessions are only one of several ways for a company to reduce its taxable profit, e.g. by offsetting losses in early years against future profits, or by reinvesting profits in expanding production. Profits found in one country can also be reduced by their transfer to holding companies in low-tax countries.

A related point is that the appropriate level of concessions and subsidies from the point of view of the individual country may be unnecessarily generous from the view point of the developing countries collectively. Some part of the extensive concessions available from individual countries is due to competition amongst developing countries for foreign capital and therefore not directly related to the level of incentives needed to attract foreign capital into the developing countries collectively. There seems, however, little likelihood that collective action by the developing countries could be successful in reducing the magnitude of concessions and subsidies unless agreed maximum levels of such concessions could be enforced. There is some prospect that this could be achieved amongst countries participants in regional trade groupings but there remains the problem of the "free-riders" - the numerous countries in close proximity but outside the trade group - who would benefit substantially by offering more favourable terms than those agreed for collective action.

Taxation concessions offered in the zones include tax holidays with maximum periods ranging from 5-20 years, with the majority offering a maximum tax holiday of 5 years. It should be noted that some zones (e.g. Bataan in the Philippines) offer no taxation concessions at all, while others offer tax holidays of unlimited periods (e.g. Senegal offers tax exemption until 1999, Egypt for an unlimited period and Dominican Republic offers total exemption). Some of the tax concessions may be overgenerous. On the other hand, where zones are established in non-preferred areas and/or lack the pre-requisite for industrialization, very generous taxation concessions may be essential. However, slow development of zones such as those in Egypt, where in the last decade there has been active warfare, indicates that very generous taxation concessions are unlikely to overcome basic disabilities in attracting foreign capital.

As a selective policy involving the negotiation of terms and conditions, the successful establishment of an EPZ requires considerable skill and expertise on the part of the administration of the host country. Too stringent a package of infrastructure, terms and conditions will leave the potential EPZ unattractive to potential investors. Too generous a package means that a poor developing country is subsidizing the profits of investors, generally from a much richer developing country.

Political stability and a traditionally positive policy towards private foreign investment is of major importance in the investment decision. Policy statements by the host country favouring foreign investment, cannot be regarded by the investor as a long-run guarantee, particularly when the country is known to have a strong traditional attitude against foreign influence. Indeed, as has been found in various surveys 1/, companies attach particular weight in their investment decisions to the estimated degree of continuity of government rules and regulations affecting foreign collaboration. The establishment of a zone or an estate may be regarded by a potential foreign investor as a long-term commitment by the host government to collaboration with foreign companies and institutionalized means for continuous safeguarding of operations. In that sense the successful establishment of a zone or estate is a method of "showing the flag", an incentive for foreign companies to invest generally in the host country.

The foreign corporations have not been the only groups to notice the EPZ flag raised by the developing countries to signal their serious efforts at industrialization. In particular, the labour movements of many developed countries have expressed their concern over the zones. In the fifties and the sixties, the relocation of economic activities by firms based in the developed countries to gain market access or to secure supplies of natural resources and other raw materials in the developing countries did not greatly concern trade unions in developed countries. However, the relocations of labour-intensive activities to the developing countries during the seventies has occurred during a deep and sustained economic recession. Structural unemployment in some developed countries has also become obvious.

The favourable conditions for producers in EPZs give them a competitive advantage on important markets in developed countries. This advantage has been seen by the labour movement to be based on a massive trade concession and wage levels and working conditions below acceptable international standards. The zones are seen as unsocial enclaves exempted from the social obligations, rules and controls that the host country has otherwise established. In this view, the zones practice "social dumping", which in combination with their "tax haven" status, enables the systematic pursuance of unfair competition in international trade. Trade unions generally feel that the welfare of their membership, particularly in labour-intensive industries and activities, such as textiles and garments, is threatened by unfair competition based on the exploitation of "sweated" labour. 2/ The trade union movement therefore demanded

---

1/ "Structural Changes in Industry", UNIDO/ICIS.136, December 1979; UNIDO Working Papers on Structural Change No. 2 - "Industrial Redeployment in Sweden: Prospects and Obstacles", UNIDO/ICIS.54/Rev.1, December 1979; No. 5 - "Industrial Redeployment Tendencies and Opportunities in the Federal Republic of Germany", UNIDO/ICIS.90, May 1978; No. 7 - "Industrial Redeployment Tendencies and Opportunities in Switzerland", UNIDO/ICIS.115, July 1979; No. 9 - "Industrial Redeployment Tendencies and Opportunities in Belgium", UNIDO/ICIS.131, November 1979.

2/ See for example, the trade journal Schuh-Technik, September 1978, pages 781-782.

the insertion of a "social clause" in the General Agreement on Tariffs and Trade (GATT), prescribing minimum acceptable working conditions in affiliated countries.

While the concern over labour conditions in the zones may be justified, it should be emphasized that labour conditions in the EPZs in the developing countries are generally better than in the host country outside the zone. It is likely that much of the initial criticism in the developed countries may have been prompted more by the fear of increasing competition from the developed countries than by the serious concern about social conditions in the EPZs. Accordingly, the developing countries probably regard the attempts of the affluent industrial workers in developed countries to introduce a social clause as a self-interested guarding of their jobs against the poor workers in the developing countries. 1/ Indeed, more recent discussion in the labour movements of the developed countries suggest that the insertion of a social clause into the GATT is no longer seen as a means to exert an influence on the process of structural change and that the free zones are not the major problem. 2/ They are merely a minor expression of more fundamental changes in the international division of labour.

It has also been increasingly recognized that competition in general from developing countries has so far had only minor effects on manufacturing employment in developed countries and that the failure of demand growth to offset the loss of job opportunities due to productivity and technological change constitute the more serious threat to jobs. 3/

1/ See for instance, LO-Tidningen, No. 3, 18 January 1979, page 2.

2/ UNIDO Working Papers on Structural Changes No. 14, "Future Structural Changes in the Industry of Sweden", (to be published).

3/ UNIDO Working Papers on Structural Changes No. 3, "The Impact of Trade with Developing Countries on Employment in Developed Countries", UNIDO/ICIS.85, 23 October 1978.

III. THE IMPACT OF ZONES ON HOST COUNTRIES

The major benefit to developing countries establishing EPZs is the capital investment in manufacturing activities and the associated growth of employment opportunities.

Before proceeding further to describe some of the main effects of EPZs, a cautionary comment is required. The simple statement that investment in a particular zone totals $X million may be quite misleading as an indicator of the net effect of establishing a zone on investment in the host country. Much of this investment may well have taken place within the country but outside the zone. Thus a rigorous assessment of the economic and social consequences of an EPZ would require a comparison of the situation with the zone and the hypothetical situation in its absence but under an alternative set of industrial policies and incentives. For the individual zones a rigorous assessment requires considered, case by case, judgments on the situation which would have pertained in the alternative situation. Moreover, to provide a comprehensive assessment of EPZs in general would require a careful overview of the net effects in many individual zones. As already noted, however, such an assessment was beyond the scope of the resources available for this exploratory paper. Nevertheless, the distinction between gross and net effects is not merely academic but is an essential discipline in assessing the performance of the zones. For instance, it would be unrealistic to credit the zones because of their substantial export growth if the same or better export growth could have been achieved in their absence. Similarly, criticism of the zones on the basis that they employ workers in conditions which, by the standards of Western countries, are sub-standard, must recognize that a high proportion of these workers would have been either unemployed under worse conditions in the absence of the zones.

A. Net Increment in Capital Investment and Employment

To the extent that investment expenditure is financed by the inflow of foreign capital which would not have otherwise occurred, the investment in plant and machinery is achieved with zero opportunity cost to the developing countries own scarce capital resources.

The extent to which the zones draw on untapped sources of labour and capital or compete with alternative activities for labour and capital varies considerably between countries. In the case of zones located in the least developed countries, it seems likely that very little - if any - of the inflow of foreign capital associated with the zones would have occurred in the absence of the zones. Indeed, domestic capital may have flowed out for lack of profitable investment in plant and machinery in the zone - and the associated employment - can be regarded as net additions.

The situation differs in the more advanced developing countries, that is in the so-called newly industrialized countries, such as Singapore and the Republic of Korea. These countries are already preferred locations for transnational corporations seeking a low-cost manufacturing base to produce their labour-intensive products and components. There is already substantial domestic and foreign investment in manufacturing activities outside the zones and it seems likely that much of the investment located within the zones would still have located within the national boundaries in the absence of the zones. For these countries the proportion of investment and associated employment opportunities in the zones which can be regarded as net additions is likely to be considerably lower. Just how much lower can not be determined without detailed analysis of individual zones and host countries.

Some impression of the possible magnitude of the net gain in employment in developing countries associated with the zones can be derived from the number of direct employees which in 1980 is around one million persons. This estimate is an upper limit to the extent that the associated investment would still have occurred in the absence of the zones but an under-estimate to the extent that it does not include indirect employment outside the zones. On balance it seems likely to be an upper estimat . An equivalent estimate for the net addition to foreign investment in developing countries as a result of the zones is around $10-15 million. 1/

B. Financial Return on Investment in the Estate

Rigorous assessments of the full economic and social benefits of the EPZs are few. There is, however some evidence on the profitability of the investment in the zone itself i.e., the benefits and costs of investing in the industrial estate on which the zone is physically located. Lending appraisals undertaken by the World Bank suggest internal rates of return around 13-15% but ranging up to 36% depending on the assumptions used.

Mauritius - Coromandel Industrial Estate (1973)	15%
Colombia - Cartagena Industrial Export Processing Zone	13-36%
Thailand - Minburi (Lat Krabang) Industrial Estate (197?)	14%

1/ Based on an assumed net addition to employment of one million persons and an investment/employee ratio of US$10-15,000.

It is unclear whether or not these rates of return are typical of the commercial returns available to governments acting as entrepreneurs in establishing industrial estates and zones in developing countries. Projects submitted to the World Bank for lending appraisals are likely to be the more certain, more profitable. Development projects undertaken for political or prestige reasons are more likely to be financed by the host governments themselves, avoiding external scrutiny. In addition, rates of return will vary between countries and locations. Moreover, rates of return on past investments in individual estates may provide little or no guidance to the returns available in new projects.

These rates of return compare favourably with rates of return available from alternative investments in the developing countries. A similar benefit-cost analysis for Korean zones suggests a rate of return of comparable magnitude. 1/ On the basis of these four appraisals, it appears that the physical establishment by host governments of the estate on which the zone is based may well be justified purely in terms of the commercial return alone, that is, without reliance on the less certain long-term benefits dependent on the EPZs playing a catalytic role in the countries' industrialization.

C. Linkages with the Domestic Economy

The nature and extent of the linkages between industrial adtivities in the zones and activities in the domestic economy is probably the key issue concerning the zones. The more extensive these linkages become the more likely it is that the zones can generate longer term benefits. On the other hand, if these linkages remain limited it is unlikely that the zones cannot generate the longer term spin-offs required for a catalytic role.

The major linkages with the host country economy concern construction, electricity supply, domestic transport and the like - i.e., service-oriented activities. In addition, there are multiplier effects through the expanded incomes of the labour force, primarily through the purchase of host country consumption goods. If this demand however, tends to be directed towards imported consumer goods, this effect on local industry will obviously be limited. 2/ In general, forward linkages (processing of products from the zone in the host country) cannot be realized, because the zones are restricted by regulation to produce for export only. An exception was found in Malaysia, where one company in a survey covering the Batu Berendan and Tanjong Kling Free Trade Zones (Malacca) sold a minor part of its output inside Malaysia. 3/

1/ Choe Boun Jong, "An Economic Study of Masan Free Trade Zone", in Krueger, A.O., Trade and Development in Korea, Korean Development Institute, 1976.

2/ Helleiner, G.K., "Manufacturing for Export, Multinational Firms and Economic Development", World Development, Vol. 1, No. 7, 1973, page 16.

3/ Naerssen, A. van, Location Factors and Linkages at the Industrial Estates of Malacca Town, Publication No. 10, Department of Geography and Physical Planning, University of Nijmegen, 1979, page 83.

Backward linkages with domestic production activities are also limited: Companies in the zones have a high propensity to import their supplies of intermediate goods and materials. In part this is due to the special concessions for importing inputs, the close affiliation with foreign corporations, the type of manufacturing activity, and the underdeveloped character of many host economies, particularly the domestic manufacturing companies which cannot always meet the requirements of the zone companies.

The available evidence indicates that the backward linkages, although initially very limited, can, at least in some cases, increase. In the Masan Zone in the Republic of Korea, imports constituted 72% of exports in 1971. By 1978 this ratio had fallen to 52%. 1/ In the same zone the share of domestic raw materials in total foreign currency earnings increased from 6% in 1971 to 37% in 1975. 2/ Similar figures for Shannon in the Republic of Ireland, (the oldest EPZ in operation) reveal a similar pattern. 3/ Shannon's imports averaged 81% of the export value between 1953-1963; for the period 1964-1975 they had fallen to 63%. Imports included both raw materials and capital equipment. Irish raw materials account for about 8% of total materials used. Firms processing large quantities of Irish raw materials are located outside the zone, close to the source of raw materials.

The proportion of imports to the value of exports is probably lower in Masan and Shannon than in other zones because of the differing distribution of industrial activities. In Masan and Shannon a large proportion of the firms are in the engineering and machinery industry, while in other zones electronics, clothing, and textiles industries dominate. Nonetheless, a tendency for the ratio of imports to exports to fall progressively as the zone developes has been noted in some of the newer, more typical zones. Thus, in the Kaoshiung zone in other Asia, the use of domestic supplies has increased quite considerably, from US$43,000 in 1966, to US$2.5 million in 1969. These include rayon and polyester for the textile industry and plastic film for the electronics industry. Similarly, a case study of Malaysia's Batu Berendam and Tanjong Kling Free Trade Zones, which selected 10 companies for detailed investigations, found that backward linkages in some instances had reached some importance. 4/ Four companies brought varying proportions of their inputs from local suppliers; in three cases the proportions varied between 20-30% of total inputs. The Malaysian firms supplied goods like paints, chemicals, electronic parts, mild steel, formica, plywood, labels, yarn and leather. As might be expected, the companies with no backward direct production linkages were those where

1/ Kelleher op. cit., 1976, page 81.

2/ Lee, Hoil, A Case Study on the Ineustrial Redeployment from Developed Countries to Korea, Korean Institute of Electronics Technology, September 1979, page 75.

3/ Newton, J.R., and Balli, F., Mexican In-Bond Industry, Paper presented at an UNCTAD seminar on North-South Complementary Intra-Industry Trade, Mexico, 16-20 July 1979, pages 21-22; Asian Development Bank, South-East Asia's Economy in the 1970's, London 1971, page 307; and Vittal, N., Export Processing Zones in Asia: Some Dimensions, Asian Productivity Organization, Tokyo 1977, page 89.

4/ Naerssen, op. cit., 1979, page 24.

intra-firm trade played an important role. The study also examined other than direct production linkages. It was found that companies spent considerable amounts on services provided by local firms, like repairs, stationery and maintenance on cars. The amounts spent on these items were larger than those spent on purchases resulting from direct production linkages, and it could be concluded that wholesalers, agents, retailers, building and construction industries of local origin benefitted from the activities in the zones. 1/

Although there are linkages from the zone back to domestic suppliers, their potential has only been realized to a small extent. The major reasons are the predominantly partial type of production line in the zones and the competitive pressure on the world market. The extensive use of local suppliers presupposes a reputation and tradition for reliable supply of assured quality at world market prices. Unless companies based in developing countries are contemplating producing for the world market, it is most unlikely that they can meet these specifications. At least in the initial stages of industrialization, intermediate products tend to be imported from international sources. In addition, the transnational corporations can utilize their advantage of acquiring within their own production network high quality, standardized products. 2/ This guarantees the supply of inputs on their terms and offers also the possibility of using transfer pricing practices whenever found profitable. Since the transnational corporations in the EPZs are operating according to the framework of their own international production and marketing network, it would seem unrealistic to expect the development of greater linkages without strong inducements. 3/

The extent of local purchase is also dependent on the overall corporate strategy, particularly policy towards intra-firm trade and national preference. 4/ In zones in South-east

---

1/ Naerssen, op. cit., 1979, page 32.

2/ The question could also be raised whether there would be "demonstration effect" exercised by the foreign companies on the industrial activity outside the zone. Off hand, the effect of EPZ companies for inducing industrial activity outside the zone would seem to be very limited primarily because of the very substantial differences in quality and quantity between production processes in the two areas. However, it is very hard to verify the presence of a demonstration effect empirically.

3/ UNCTAD, "The Use of Free Zones as a Means of Expanding and Diversifying Exports of Manufactures from the Developing Countries", TD/B/C.2/125, 18 June 1973, page 11.

4/ Intra-firm trade can be defined as "transactions involving international shipments of commodities (including capital, intermediate and finished goods, but excluding technology and services) between branches or affiliates under the control of one firm". In this connection it would be pointed out that there are possibilities for the host country to exercise some control on intra-firm trade. Clearly, the declared export prices must exceed the sum of declared import prices. This difference must be at least the size of labour costs as they constitute the major part of value-added generated in a typical EPZ enterprise. Labour costs possess the advantage of being easy to control for the zone authorities. This leaves the profit component of value-added to be manipulated by the foreign firm. (Helleiner, op. cit., 1973, page 14.)

Intra-firm trade raises additional issues from inter-firm trade since the items traded between subsidiaries of one corporation may be valued according to considerations other than those determining competitive market prices. The chief considerations will be taxation, tariffs, exchange rates, political and social pressures and [illegible] ventures with local shareholders. (Streeten, P., "Multinational Enterprise and the Theory of Development Policy", World Development, Vol. 1, No. 10, 1973, pages 6-7.)

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. They have strong preferences for forming joint ventures with local partners; the exports of the joint venture are channelled through the network of the trading houses. 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%, in the electronic consumer sector nearly 67% and in the case of precision instruments and automobiles an average of 77% and 82% respectively. 1/

The relative export performance and value-added contribution by enterprises associated with foreign companies located in the Santa Cruz Zone in India was examined in terms of the degree of foreign control. 2/ The performance of the highly foreign controlled units in the zone, in terms of value-added contribution, is much lower than other units. Indian units relying on foreign technology collaboration have performed badly. However, units with minimal foreign control showed the best performance record in terms of value-added. Indigenous firms using indigenous technology as a whole not only gave a better average performance as compared to all other groups, but also achieved more than the anticipated value-added content of 60%. 3/

Other studies on Asia found that foreign firms imported significantly more intermediate inputs than domestic counterparts, a pattern consistent on the enclavistic nature of foreign direct investment. 4/

1/ Ministry of International Trade and Industry, "A Survey of Foreign Activities of Japanese Enterprises, Fiscal Year 1974", Tokyo, no date.

2/ The zone offers all the standard incentives to facilitate increased linkages with the domestic tariff area (DTA). Thus, supplies of goods to the zone from the DTA are treated as imports. In this way they become eligible for concessions such as duty draw-back and cash assistance, with the result that imports from the rest of India are available at prices comparable to international levels. The zone's performance can be judged in terms of the value-added creation. On the assumption that imported raw materials would be equal to raw material consumption, the difference between the value of exports and the value of raw material imports over a period of time was taken as a rough indicator of the value-added created.

At the inauguration of the zone, an average value-added content of output of 60% was expected to be within reach of the companies. This approach is, of course, debatable, as it excludes other value-added components such as profits, wages, services and rents. However, profits can be assumed to be transferred abroad, wages - which moreover contain a foreign element - are generally very low, rents and services are offered at subsidized prices. Taking this into account, the error margin of the study's measure is reduced. (This is not exactly correct as it does not take into account stock adjustment both in output and input, which are assumed to be cancelling out.)

The Korean government has established a similar measure, a so-called net-foreign exchange ratio. The ratio measures the relationship between the amount of domestic raw or secondary materials used and wages and rent and services and the export value. This ratio should exceed 20%. (Lee, op. cit., 1979, page 63).

3/ Subrahmanian, K.K. and Mohanan Pillai, P., "Multinational Firms and Export Processing Zones", Economic and Political Weekly, 26 August 1978, pages 1476-1477.

4/ See for example, Riedel, J., "The Nature and Determinants of Export-Oriented Direct Foreign Investment in a Developing Country: A Case Study of Taiwan", Weltwirtschaftliches Archiv, Band III, Heft 3, 1975 (a), page 521.

Table 4

VALUE-ADDED CONTRIBUTION BY SEEPZ UNITS

OWNERSHIP CHARACTERISTICS	NO. OF UNITS	WEIGHTED AVERAGE VALUE-ADDED AS % OF OUTPUT
Cluster 1: Foreign majority equity (high degree of foreign control)	[illegible]	48.20
Cluster 2: Joint ventures (Medium degree of foreign control)	5	58.66
Cluster 3: Technical collaboration (Low degree of foreign control)	3	41.15
Cluster 4: Indian firms (Minimum foreign control)	5	61.02

Source: Subrahmanian and Pillai, op. cit., 1978, page 1476.

In summary:

- Forward linkages are precluded because of the EPZs total export-orientation;
- Integration of the EPZ in the host economy takes place primarily through purchases of labour and infrastructural facilities. The nature of the production process in the zones is the main limiting factor to the development of backward linkages;
- Limited backward linkages with industries in the domestic tariff area have developed in some cases, but are limited, especially where local supplies tend to be high cost.

D. Balance of Payments

The EPZs can make a significant net contribution to the balance of payment portion of a developing country. As noted, however, the importation of a very high proportion of raw materials and intermediate goods means that the net contribution is very much less than the gross contribution implied by the increase in the value of exports.

On the other hand, it has also been suggested - on the basis of factor intensity analysis - that imports of intermediate products tend to reduce overall capital requirements of the economy and entail a greater demand for labour than would be the case if intermediate inputs were produced locally. 1/

1/ Riedel, J., "Factor Proportions, Linkages and the Open Developing Economy", The Review of Economics and Statistics, Vol. 57, 1975 (b), page 489.

Estimates provided in World Bank lending appraisals show the projected contribution of the zones to foreign currency earnings rising sharply as occupancy of a zone increases and rising again once loan commitments have been fully met. The caution already expressed about generalizing from the few results available is again relevant but the available evidence is consistent with the enthusiasm of host governments.

With regard to foreign exchange earnings from the initial provision of infrastructural facilities, it is also necessary to measure the import content of these investments. Investments in such facilities as factory buildings, water and electricity, etc., are often considerable. For the Masan zone in the Republic of Korea, the initial investment costs amounted to US$16.8 million, but for the more expensive Bataan zone in the Philippines, they amounted to US$48.1 million.

Increasing energy prices, especially oil prices, are an extra burden. Most developing countries are dependent on petroleum for electricity generation, the subsidized rates will have to be changed so as to compensate for oil price increases; if not, or if rates only partially reflect oil price increases, governments will be adding to the investment incentives quite considerably with serious repercussions on the balance of payments.

It should be noted that provisions of infrastructural facilities to investors at subsidized rates has offsetting effects on the balance of payments. On the one hand, they may be an essential incentive for the success of the zone in attracting investment. On the other hand, they may be an unnecessary incentive. In this latter case, government subsidization of these facilities has two effects: the time before the initial investment has been recouped is prolonged; and the inflow of foreign exchange decreases. The non-application of trade duties in EPZs forms an important incentive to the firms, as they are producing for the export market, requiring imports of raw materials and intermediate supplies. However, due to the "external" character of the productive activities in the zones, even a light application of trade duties would yield substantial revenue to the government.

In summary, the zones have a positive impact on the host country's balance of payments but the net contribution is limited by several factors:

- The structure of production in the zones which focusses on activities with a low ratio of domestic value-added to output.
- The usually close links of EPZ companies to foreign corporations and their intra-firm trade. This reduces the positive effects on the balance of payments, as purchases of local raw materials and semi-processed goods are severely limited.
- Where the investment incentives offered in EPZs are unnecessarily generous, there is a reduction of the net inflow of foreign exchange.

E. Technology Transfer

The acquisition of technology and skills is a major concern of host governments in implementing their industrialization strategies. Foreign investment in the zones provides a further channel through which technological skills might be acquired. However, the technology transfer is directly linked to the character of the production process. A production strategy which locates only parts of the total production process in a developing country is likely to result in a limited transfer of technology only. This is illustrated by the results of an investigation of transfer effects from U.S. investments in South-east Asia. 1/ As this investigation shows, the subsidiary operations in developing countries are predominantly assembly activities using general machinery which would be available also from other sources. Both the preassembly stages requiring advanced technology and the related research and development activities remain located in the companies' centres. 2/

In addition, even if complex, modern techniques are used in EPZs, the host country does not automatically gain access to them. In the electronics industry, for instance, the assembly process in the zone is physically separated from, but totally dependent on, the higher technology aspects of the production process. (In semi-conductor manufacturing the two high technology processes, mask-making and wafer fabrication, are undertaken in the home country.)

Consequently, potential technological spin-offs are limited to the relatively low-level technologies incorporated into the assembly operation. 3/ On the other hand, much of the technology applied in the zones has been developed for processes and products which may not be relevant for the developmental needs of the domestic economy.

In common with the operations of foreign subsidiary operations, generally there is little or no research and development undertaken within the zones: research activities are rarely located with minor assembly operations in remote locations. The economics of research and development typically dictate a centralized location, generally within the company's head office in an industrial country.

1/ Allen, T.W., Direct Investment of United States Enterprises in South-east Asia. A Study of Motivations, Characteristics and Attitudes, The Economic Co-operation Centre for the Asian and Pacific Region, Bangkok, 1973.

2/ Allen, op. cit., 1973, pages 32-34.

3/ Lester, M., The Transfer of Technological and Managerial Skills Through Multinational Corporations: A Case Study of the Vertically Integrated Electronics Industry in Export Processing Zones, East-West Center, Culture Learning Institute, Honolulu 1979, page 6.

As is pointed out in an ILO study, [1] the central handling of research and development by the parent company implies that resulting scientific knowledge is disseminated only within the firm. In joint-venture relationships where the foreign partner disseminates technological know-how to the local partner, it usually takes the form of outright sale, such as in the Santa Cruz Electronics Export Promotion Zone, in India, where it was established that a lump sum is charged for technical know-how in addition to a recurring royalty related to sales and that there are separate payments of the training of Indian personnel. [2]

It should also be noted that the dissemination of technology from the foreign companies located in EPZs to enterprises in the host country is partly dependent upon the building up of commercial relations between enterprises inside and outside the zone. [3] Where the enclave nature of EPZs persists in the larger terms, however, the establishment of such a relationship is obviously problematic.

In summary, the diffusion of technology to the host country is severely limited by the following factors:

- The predominance of assembly line type of operations and the lack of complex production processes and local research and development.
- The concentration of research and development within the head offices of the transnational corporations, strengthening the external control over the technology used.
- The outward-oriented enclave character of an EPZ can prevent the transfer of technology through the establishment of a commercial relationship between companies in the zone with local firms outside it.

F. Social and Regional Consequences

The social and regional implications of industrial redeployment in general and the zones in particular, may differ according to the socio-economic conditions prevailing the the host country and the location of the zones. However, in virtually all countries the growth in employment opportunities associated with the zones - and export-oriented industrialization generally - has been met by the large scale entry of young women into the labour force. In many cases the women enter factory employment direct from their rural communities or even in some cases as migrant workers from adjoining countries. The women do not remain in employment

---

1/ International Labour Office, "The Impact of Multinational Enterprises on Employment and Training", Geneve 1976, page 25.

2/ Subrahmanian and Pillai, op. cit., 1978, page 1476.

3/ Statement by V. Paterno to participants at the WEPZA meeting in Manila, 30 January - 4 February 1978.

long. The rate of turn-over is high. Employment which is unstable and temporary in nature can lead to substantial social disruption and costs. Moreover, the uprooting of the labour force from its traditional setting into the modern industrial sector and its dismissal after a few years without significant upgrading of skill is likely to involve further and more substantial social costs. 1/

While industrialization always brings with it some social tension and conflicts, the concentration of employment in the zones on women would appear to generate additional tensions. First, there are conflicts between traditional local communities on the one hand, and the women workers, their employers and the host government on the other, regarding the desirability and necessity of factory jobs, especially for women. This conflict is exacerbated by the sexual imbalance in the zones which can lead to difficulties finding suitable marriage partners and a high proportion of unwed mothers.

Second, there are potential and actual conflicts between the sexes on many levels. Unemployed males may resent the employment of females, feeling that this constitutes their own employment opportunities and lowers the general wage level; thus, for example, male-dominated unions are often hostile to organizing female workers. Family relationships may be affected as women increasingly become important or sole supporters of the family, since they can obtain jobs while men - fathers, brothers and husbands - remain unemployed.

Social conditions, involving wages, social security and other social services are generally found to be rather better than worse in EPZs than in local firms outside the zones. The managed environment of many zones and industrial estates results in a general improvement in factory building standards and working conditions, waste disposal control and greater attention to social infrastructure needs such as housing, clinics, schools and recreation facilities. On the other hand, relative to the standards of factories in industrialized countries, conditions obviously are poor. In the assembly operations there is evidence to suggest that a more stable work force would not maintain the pace of work. That is, to some degree the young workers are "burnt out" by the inherent monotony and adverse conditions. 2/ In the absence of the very rapid turnover and the young age of the labour force, companies would be unable to maintain the very high pace. 3/

A concern relating to the enclave character of EPZs is the concentration of employment opportunities in the zones which induce migration of workers from surrounding regions thereby

---

1/ The dimension of the social consequences of the employment of women in export associated industries, particularly in the zones is explored further in UNIDO Working Papers on Structural Changes No. 18, "Women in the Redeployment of Manufacturing Industry to Developing Countries", UNIDO/ICIS.165, July 1980.

2/ "Women in the Redeployment of Manufacturing Industry to Developing Countries", op. cit. 1980.

3/ LO-Tidningen - Rapport from LO's Ostasien - delegation (Manuscript), page 72.

adversely affecting the future development potential of these regions. On the other hand, zones and estates can directly assist regional objectives by encouraging industrialization away from established centres. Thus, the Lat Krabang estate in Thailand is seen as contributing directly to reducing the congestion and critical over-loading of utilities in the city core of Bangkok. Nonetheless, the location of zones specifically to meet regional objectives can have adverse consequences on the success of the zone unless the prerequisite conditions for industrialization are met. For instance, the initial delay in the development of the Bataan zone in the Philippines is partly attributable to its location in an area lacking a readily available work force and the housing to accomodate the new work force after its expansion. 1/

1/ Currie, J., op. cit. 1979.

IV. DISCUSSION OF ISSUES

The governments of developing countries increasingly view EPZs as an efficient means for attracting foreign export-oriented companies which are expected through their investments and operations to provide investible resources, technology, employment and foreign exchange to the host country and thus to contribute to industrial and economic development. Foreign companies view EPZs as a preferred location in developing countries for selected production lines using low-wage labour and aimed at export markets. There are now more than 55 zones with more than 20 being planned.

There obviously seems to exist a basic convergence of interests between host country governments in developing countries and foreign companies with respect to the establishment of EPZs. However, from the side of the host country, a number of questions can be raised:

1. Is an EPZ an efficient and viable means for attracting those industrial activities in search for a low-wage export base?
2. Do the EPZs represent a dead-end method of beginning export-led industrialization?
3. What are the social and economic consequences in the host country of production and activities in an EPZ?
4. What is the role of EPZs in the context of the total trade and industrial policies of the host country?
5. Are those product lines and those organizational forms which are attracted to an EPZ an appropriate choice for the industrial development process of the host country?

Regarding the first question as to the efficiency of EPZs as a set of incentives for foreign investment, it may be noted that EPZs generally have succeeded in attracting foreign industrial companies to set up production and employ local labour. Studies on redeployment opportunities in developing countries show that some of the most significant obstacles faced by companies when considering redeployment were the lack of well functioning administrative system, import controls and the socio-political conditions. 1/ In the zones these obstacles are largely removed. As is shown in various surveys 2/, companies which have located production in the zones regard the unbureaucratic, centralized public administration of the zone

---

1/ UNIDO Working Papers on Structural Changes No. 2, "Industrial Redeployment in Sweden: Prospects and Obstacles", UNIDO/ICIS.54/Rev. 1, 10 December 1979, pages 8-10; UNIDO Working Papers on Structural Changes No. 5, "Industrial Redeployment Tendencies and Opportunities in the Federal Republic of Germany, UNIDO/ICIS.90, 30 May 1973, page 32.

2/ See for example, Laestadius, S., op. cit., 1979, pages 46-48.

activies and the physical infrastructure as essential advantages. Wage levels and regulation of labour conditions seem to constitute criteria of less significance for enterprises in their choice of locating inside or outside a zone in a particular country. Indeed, as already noted, wage levels and social conditions on the whole tend to be better in the large foreign companies in EPZs than in smaller indigenous companies outside the zones. On the other hand, wage and productivity differences between various EPZs would appear to be of substantial importance for companies' locational decisions.

The important influence that the administrative and physical infrastructure in EPZs have on companies location decision provides the essential justification for a developing country to develop a geographical enclosure equipped with the necessary facilities rather than waiting for the country's entire administration and infrastructure to be developed first before foreign industries can be attracted. It follows, that the EPZs would loose their importance when these infrastructural developments in the country have taken place and reached the satisfactory level.

Do the EPZs represent a dead-end method of beginning export-led industrialization or are they a catalyst for ongoing industrialization? Moreover, under what conditions are they likely to be a catalyst and under what conditions are they likely to fail? The difficulty in answering this set of questions is that the experience with EPZs has been very short and thus the answers must be conditioned on the short period of operation over which they can be observed. However, a detailed knowledge of the existing EPZs is but a precondition to answering these key questions, which require a careful and systematic evaluation of the EPZs in the context of the trading environment and development stages in each country.

The question also arises to what extent companies in EPZs are "footloose" i.e. do they tend to relocate from one EPZ to another as wage costs increase and/or labour supply decreases in the first location. Again, there seems to be insufficient evidence to answer this question. On the one hand, there would be reasons to believe that in production activities in which labour costs are crucial for the international competitiveness and where capital investment is relatively low, companies would be inclined to move to a more favourable location if the wage differential reaches a certain level.

On the other hand, the experience with EPZs in Europe suggests that while activities may be footloose, the company operations may be more permanent. That is, heavy industry and high technology activities will develop as the wage level rises. The Shannon experience indicates that companies may instead move into more sophisticated, capital-intensive operations requiring a higher skill level among the workers. In 1962, 13% of the labour force in Shannon were occupied in clerical and managerial positions and increased to 19% in 1975. Three of the largest companies employed 47% female labourers in 1962, the figure fell to 9% in 1975. 1/ This is consistent with the experience of some of the older EPZs in

1/ Kelleher, op. cit., 1972, page 52.

Asia. For example, in the Bataan EPZ in the Philippines, a stamping plant for motor vehicle body panels was established ahead of the commencement of the second and third stages of the zone's development which are aimed at medium and heavy industry. Singapore has made a major effort to attract higher technology activities since at least 1975 and the Indian Government has achieved its objective in establishing the Santa Cruz Zone specifically to ensure India a share in the development of the electronics industry. The governments and zone authorities in Singapore, the Republic of Korea, Sri Lanka and Pakistan increasingly discouraged further investments in developed markets, particularly textiles and clothing. In part this is a response to protectionist pressures of the developing countries, but more generally it reflects a confidence in the ability of their EPZs to attract activities requiring greater human and physical capital.

The successful operation of an EPZ over the longer term may depend crucially on the extent to which the skills and education of the labour force are upgraded. Thus the fact that companies which have come easily to a zone may just as easily go, is more likely to be a problem in the least developed economies where the education system is inadequate and unable to upgrade education levels at the rate and direction required by the industrialization process. In this view a significant responsibility for the longer term success of the EPZ lies in the education and man-power policies and practice of the host country.

The third question concerns the social and economic impact of the EPZ on the host countries. The success of the EPZs in generating employment and investment is obvious. However, the employment structure was heavily geared towards employment of low-skilled, young female labour. Furthermore, due to the outward-oriented production, the employment level is sensitive to conditions outside the control of the host country.

The quantity and quality of training offered in the zones is primarily limited by the nature of the production process used by the investors, i.e., assembly of semi-processed imported components. The factor endowment in most EPZs encourages the establishment of "production plants". These plants are characterized by their lack of complex production processes, where skill-oriented training is not generally required.

The diffusion of technology emanating from investors is primarily limited by the lack of complex production processes. Regarding the integration of the EPZ in the surrounding domestic economy, through linkages, it was found that sub-contracting of single processes generates very few backward linkages with production activities in other parts of the economy. This is largely due to the nature of the production process and the outward-oriented character of the production. Forward linkages are, in accordance with the definition of an EPZ, precluded. The net impact of an EPZ on the host country's balance of payments is therefore considerably less than the value of exports. Export earnings are off-set to a very large extent by the importation of raw materials and components. In the extreme case, the net addition to the balance of payments may be limited to the wage bill.

A crucial question for the host governments therefore is how the backward linkages can be strengthened. The acquisition of "spill-over" effects from the international sub-contracting activities in the zone depend on the nature of the operations and the policy environment in which it is carried out. 1/ Sub-contracted production involving single processes generates, in itself, very little backward linkages. Thus, it is unlikely that subcontracted assembly of, for instance, semi-conductors would develop any backward linkages to the production of wafers. However, if a transition to more integrated production processes - "total product sub-contracting" - or even component sub-contracting would take place, the positive effects on economic development could be stronger. 2/ Governments in host countries may need to consider ways of increasing integration of activities in zones with activities in domestic economy. This could involve explicit assistance to local suppliers through the imposition of tariffs on key imports or less transparent assistance in the form of a minimum local contract scheme. 3/ Long-term integration of the zone with the domestic economy, however, requires serious attempts to strengthen the ability of local suppliers to meet EPZ demand by using institutional, educational and financial means.

Regarding the fourth question as to the role of EPZs in the context of the total trade and industrial policies of the host government, the most successful EPZs are located in countries with outward-looking policies favouring manufactured exports across the board. These policies include low or moderate tariff protection; a realistic or undervalued exchange rate; and, a favourable attitude to foreign investment and participation; access to financial and capital markets. In these countries, the structure of incentives encourages all industries, both whether located within or outside the zones to take advantage of the country's endowment of labour and resources. The result - as typified by the economies of the Republic of Korea and Singapore - has been rapid expansion of exports and increased employment and earnings in the manufacturing sector.

The industrial development policies of many countries continue to favour import substitution against exporting activities. Although the benefits of export-led industrialization are attractive, they may be outweighed by real or perceived costs of a change in policy. For a government, part of these costs are the costs of offending established interests. In this situation an EPZ appears to offer a ready solution to the country in the form of a policy enclave. By creating an area isolated from the rest of the economy, it is possible to create

1/ UNCTAD, op. cit., 1975, page 8.

2/ Sharpstone, op. cit., 1975.

3/ For example, the Mexican Government in the set of regulations for in-board industry put into effect in October 1977, intends to encourage location in priority areas, production of complementary goods, and use of Mexican materials. Licensing seems to be the major instrument for achieving these goals. The regulations imply, among others, that production has to be in line with the planned industrial structure of the country, i.e., directed towards heavy industry and automotive products.

a special set of incentives that are not applicable outside the zone. The EPZ in effect locates part of the country's manufacturing sector in the international market, in competition with other countries, exploiting its advantages of wages, skills and resources.

In this enclave the host government can allow production of goods not intended for the domestic market, such as unacceptable from a social point of view and as distorting the consumption pattern and goods that might conflict with the vested interest of producers in the domestically oriented part of the economy. 1/ Moreover, it is possible to limit the influence of foreign dominated entities on the society.

However, the limitation of export-led industrialization to a policy enclave may similarly limit the economic benefits to that enclave. That is, in the absence of a general trading and economic environment conducive to manufactured exports, the desired longer term stimulation to industrialization (through backward linkages and integration with the domestic industries) may not eventuate. This view raises a dilemma for developing countries contemplating investment in zones: the poorer the industrial infrastructure of the country and the greater the incentives for import substitution, the more necessary a zone may be to achieve any significant growth of manufactured exports at all. On the other hand, the more a zone is an enclave, atypical of the infrastructure and incentives available outside, the less successful the zone is likely to be in achieving wider economic benefits.

This view therefore denies the zones a large part of the catalytic role more popularly assigned to them: in essence the zones have been most successful where the trading environment generally was most conducive to their success and to the growth of manufactured exports generally. 2/

On the fifth question concerning the appropriateness of the product lines and organizational forms found in the zones to the needs of a developing country there is little agreement. A typical feature of the zones is the heavy involvement of transnational corporations. In fact, most zones have been established specifically to attract transnational corporations to locate in the host country. The active soliciting of the transnational corporations by the developing countries contrasts with the moral call by the developing countries for an international code of conduct for the transnational corporations. In some countries the zones

---

1/ Full adherence to the "enclave" concept also requires protective tariffs or licensing to prevent later imports of these unwanted goods.

2/ To assess the role and importance of EPZs in the total context of the trade and industrial policies of the developing countries requires detailed analysis of the policies and experiences of zones. The growth of the zone is a feature of the seventies and perhaps for this reason zones are not mentioned (at all) in either the major surveys of the foreign trade regimes and economic development covering the sixties and seventies.

See Little, I., Scitovsky, T., Industry and Trade in Some Developing Countries: A Comparative Study, Oxford University Press, New York, 1970.

and Krueger, A.O., Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences, Volume X, National Bureau of Economic Research, New York 1978, and companion volumes.

provide the transnational corporations with a base virtually unregulated by the host governments. The social and political implications of such enclaves need careful consideration.

In some countries the zones are totally an enclave of the international market located with national boundaries using labour skills and technology which may not be transferable to the domestic industry to produce goods which by, both design and regulation, are not sold on the domestic market. At the other extreme, the zones are merely another form of industrial estate, only slightly more oriented toward the international market than the remainder of the export-oriented domestic industry. In this case labour skills and technology acquired in the zones may be directly transformable to activities outside the zones.

Concluding comments

The EPZs would appear, as a first stage, to offer an attractive investment to developing countries embarking on a growth strategy based on export-led industrialization. In addition to generating employment and contributing to foreign exchange earnings, they are a cost efficient method of demonstrating their countries' firm commitment to foreign collaborators' investments.

However, there are dangers in this limited view since it ignores the social costs and benefits of the zones. Moreover, investing in the establishment of the zones may involve a large potential cost. This potential cost lies in the distraction of the host governments attention and interest away from alternative special policies of attracting foreign investment in manufacturing, particularly in export-oriented production. These include the formation of industrial estates, the use of duty draw-back schemes and possibly direct negotiation between host governments and foreign companies. Such courses of action may be equally successful without the same costs. Similarly, there is a danger that the immediate advantages of the zones may distract the attention of the host governments away from the broader policy questions concerning the economy as a whole. These include industrial and education policy, the physical and administrative infrastructure and the structure of incentives throughout the economy.

The ability of the zones to act as a catalyst leading to further stages in the process of industrialization clearly depends upon the general orientation of the economy towards trade and foreign investment. The disadvantages of the EPZ would appear to lie in the continuation of their enclavistic nature. The choice facing host governments is whether to retain the enclave or to remove it. Perpetuation of the enclave will retain the problems, the social and economic costs, without the obvious off-set of further benefits. The enclave is most likely to be preserved where conditions in the domestic industry are the antitheses of those in the zone: viz., bureaucratic, lacking good communications and transport and with inward-looking industrial policies and incentives favouring production for the domestic market.

Realization of the long-term benefits offered by the zones depends on a progression from the initial enclave stage to a point where the zone offers little from any other industrial estate in an export-oriented economy. The progression from the first enclave stage to a fuller integration with the domestic economy should be seen as a process of dynamic adjustment in response to changes in the trading environments within and outside the zones.

In terms of advice to host governments contemplating the establishment of new zones: An EPZ cannot be the sole solution for countries endeavouring for export-oriented industrialization. It should be seen as one possible instrument which jointly with other measures may at a given stage of development have a positive impact on the economy. Second, there is a need to account not only for all pertinent costs and benefits directly, but also for the indirect and longer term aspects. In this regard a comprehensive social benefit cost analysis is a pre-requisite before scarce funds are committed to the physical planning and establishment of a zone.

In terms of advice to host governments operating established zones and seeking to obtain the potential long-term benefits: A prime task is to integrate the zone with the remainder of the economy. This implies that the participation of domestic companies in and around the zones should be encouraged. Policies and regulations precluding domestic investment and participation within the zones may maximize the net short term contribution of the zones to foreign exchange earnings but their retention minimizes their longer term secondary benefits.

Second, greater integration between the zone and the domestic economy requires that domestic firms can deliver goods and services of the required quality at internationally competitive prices. One approach to directly promoting commercial integration would be to establish industrial estates around the periphery of the zone and thus gradually to reduce the enclave nature of the zone. 1/ This approach could be complemented to regular reviews by the host governments, domestic enterprises and the zone authorities of the possible additional services, materials and goods which could be commercially supplied to companies operating in the zone. In addition, the zone authorities and companies should be encouraged to indicate where they see scope for greater domestic involvement and to identify the obstacles precluding it. An alternative approach would be to specify minimum levels of local content. Such an approach, however, requires special care since unrealistic stipulations for increased local content are more likely to impair the viability of the zone than to lead successfully to greater integration between the zone and the domestic economy.

If the zones are to be a forerunner of general industrialization in the host country, then the country as a whole must be equipped accordingly. That is, the physical and administrative infrastructure of the economy as a whole must be shifted in the direction of those of the zone. The challenge facing the governments of developing countries is how to break the distinction between the zones and the remainder of the economy.

1/ This strategy was successfully used, for instance, by the Republic of Korea.

R E F E R E N C E S

ALLEN, T.W., Direct Investment of United States Enterprises in South-east Asia. A Study of Of Motivations, Characteristics and Attitudes, The Economic Co-operation Centre for the Asian and Pacific Region, Bangkok 1973.

ASIAN DEVELOPMENT BANK, South-east Asia's Economy in the 1970's, London 1971.

BAREERSEN, P.W., The Border Industrialization Programme of Mexico, Lexington 1971.

CHO BOUN JONG, "An Economic Study of the Masan Free Trade Zone", in KRUEGER, A.O., Trade and Development in Korea, Korean Development Institute, 1976.

COHEN, R., Multinational Firms and Asian Exports, New Haven 1975.

CURRIE, Jean, "Investment: The Growing Role of Export Processing Zones", The Economist Intelligence Unit Ltd., Special Report No. 64, June 1979.

DELATOUR, L., "The Evolution of International Sub-Contracting Industries in Haiti", Presented at UNCTAD seminar on North-South Complementary Intra-Industry Trade, Mexico, 16-20 July 1979.

EXPORT PROCESSING ZONE AUTHORITY, PHILIPPINES, Annual Report 1978.

EXPORT PROCESSING ZONE, KARACHI: Schemes and Objectives, Karachi, undated.

FAN, W.S., "The Multinational Enterprise in Singapore", Multinational Corporations and their Implications for South-east Asia, Current Issues Seminar Series No. 1, Institute of South-east Asian Studies, Singapore 1970.

FAJNZYLBER, F., Sistema Industrial y Exportacion de Manufacturas: Aralisis de la Experienca Braziliera, Comision Economica Para America Latina, Rio de Janeiro 1970.

FRANK, C.R., KIM, K.S., and WESTPHAL, L.E., Foreign Trade Regimes and Economic Development: South Korea, Volume VII, National Bureau of Economic Research, New York 1975.

FRÖBEL, F., HEINRICHS, J., and KREYE, O., Die Neue Internationale Arbeitsteilung, Hamburg 1977.

HELLEINER, G.K., "Manufacturing for Export, Multinational Firms and Economic Development", World Development, Volume 1. No. 7, 1973.

HONE, A., "Multinational Corporations and Multinational Buying Groups: Their Impact on the Growth of Asia's Manufacturing Exports", World Development, February 1974.

INTERNATIONAL LABOUR OFFICE, "The Impact of Multinational Enterprises on Employment and Training", Geneve 1976.

INTERNATIONAL LABOUR OFFICE, Yearbook 1978.

KELLY, M.P.F., "Mexican Border Industrialization, Female Labour Force Participation and Migration", revised version of a paper presented at the Annual Meeting of the American Sociological Association, San Francisco, California, September 1978 (mimeo), to be published in International Migration Review (forthcoming).

KELLEHER, T., Handbook of Export Processing Zones, UNIDO/IOD.31, 22 July 1976.

KRUEGER, A.O., Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences, Volume X, National Bureau of Economic Research, New York 1978, and companion volumes.

LAESTADIUS, S., Den Internationella Arbetsfoerdelingen och Frizonerna, Stockholm 1979.

LEE, Hoil, A Case Study on the International Redeployment from Developed Countries to Korea, Korean Institute of Electronic Technology, September 1979.

LESTER, M., The Transfer of Technological and Managerial Skills Through Multinational Corporations: A Case Study of the Vertically Integrated Electronics Industry in Export Processing Zones, East-West Centre, Culture Learning Institute, Honolulu 1979.

LIM, L.Y.C., "Multinational Firms and Manufacturing for Export in Less Developed Countries: A Case of the Electronics Industry in Malaysia and Singapore", unpublished Ph. D. Dissertation, Department of Economics, University of Mighigan, Ann Arbor 1978.

LITTLE, I., and SCITOVSKY, T., Industry and Trade in Some Developing Countries: A Comparative Study, Oxford University Press, New York 1970.

LO-Tidningen - Rapport from LO's Ostasien - delegation (Manuscript).

LO-Tidningen, No. 3, 18 January 1979.

MEXICAN BORDER INDUSTRIALIZATION PROGRAMME, Secretaria de Industria y Comercio, Mexico 1971.

MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY, "A Survey of Foreign Activities of Japanese Enterprises, Fiscal Year 1974", no date.

MOXON, R.W., "Offshore Production in Less Developed Countries - A Case Study of Multinationality in the Electronics Industry", The Bulletin, No. 98-99, New York University Graduate School of Business Administration, Institute of Finance, July 1974.

NAERSSEN, A. van., Location Factors and Linkages at the Industrial Estate of Malacca Town, Publication No. 10, Department of Geography and Physical Planning, University Nijmegen, 1979.

NAYYAR, D., "Transnational Corporations and Manufactured Exports from Poor Countries", The Economic Journ..., Vol. 88, March 1978.

NEWTON, J.R., and BALLI, F., Mexican In-Bond Industry, Paper presented at an UNCTAD seminar on North-South Complementary Intra-Industry Trade, Mexico 16-20 July 1979.

NORTH AMERICAN CONGRESS ON LATIN AMERICA, "Electronics: The Global Industry", April 1977.

ORGANIC LAW OF THE CONGRESS OF THE SANTA TOMAS DE CASTILLA FREE ZONE FOR INDUSTRY AND TRADE. Decree 22-73 of the Congress of the Republic of Guatemala.

PING, H.K., "British of the Second Generation", Far Eastern Economic Review, May 1979.

RANIS, G., "Some Observations on the Economic Framework of Technology", Working Paper, Princeton, September 1972.

RENMA CONSULTANTS LTD., Kingston Export Trade Zone, A report for the Port Authority, Kingston, Jamaica, UNIDO Contract - 74/37, Project IS/JAM/74/005, August 1975.

RIEDEL, J., "The Nature and Determinants of Export Oriented Direct Foreign Investment in A Developing Country: A Case Study of Taiwan", Weltwirtschaftliches Archiv, Band 111, Heft 3, 1975 (a).

RIEDEL, J., "Factors Proportions, Linkages and the Open Developing Economy", The Review of Economics and Statistics, Vol. 57, 1975 (b).

SCHUH-TECHNIK, September 1978.

SHARPSTONE, M., "International Sub-Contracting", Oxford Economic Papers, Vol. 27, No. 1, 1975.

SNOW, R., "Dependent Development and the New Industrial Worker: The Export Processing Zone in the Philippines", unpublished Ph.D. dissertation, Department of Sociology, Harvard University, 1977.

STREETEN, P., "The Multinational Enterprise and Theory of Development Policy", World Development, Vol. 1, No. 10, 1973.

SUBRAHMANIAN, K.K. and MOHANAN PILLAI, P., "Multinational Firms and Export Processing Zones", Economic and Political Weekly, 26 August 1978.

UNCTAD, "International Sub-Contracting Agreements in Electronics Between Developed Market Economy Countries and the Developing Countries", TD/B/C.2/144 - Supplement 1, New York 1975.

UNCTAD, "The Use of Free Zones as a Means of Expanding and Diversifying Exports of Manufactures from the Developing Countries", TD/B/C.2/125, 18 June 1973.

UNIDO Working Papers on Structural Changes No. 2, "Industrial Redeployment in Sweden: Prospects and Obstacles", UNIDO/ICIS.54/Rev. 1, December 1979.

UNIDO Working Papers on Structural Changes No. 3, "The Impact of Trade with Developing Countries on Employment in Developed Countries - Empirical Evidence from Recent Research", UNIDO/ICIS.85, 23 October 1978.

UNIDO Working Papers on Structural Changes No. 5, "Industrial Redeployment Tendencies and Opportunities in the Federal Republic of Germany", UNIDO/ICIS.90, May 1978.

UNIDO Working Papers on Structural Changes No. 7, "Industrial Redeployment Tendencies and Opportunities in Switzerland", UNIDO/ICIS.115, July 1979.

UNIDO Working Papers on Structural Changes No. 9, "Industrial Redeployment Tendencies and Opportunities in Belgium", UNIDO/ICIS.131, November 1979.

UNIDO, "Structural Changes in Industry", UNIDO/ICIS.136, December 1979.

UNIDO Working Papers on Structural Changes No. 18, "Women in the Redeployment of Manufacturing Industry to Developing Countries", UNIDO/ICIS.165, July 1980.

UNIDO Working Papers on Structural Changes No. 14, "Future Structural Changes in the Industry of Sweden", (to be published).

UNIDO, "Statutes of the World Export Processing Zone Association", Article 1, UNIDO/ID/WG.266/6, 28 February 1978.

UTRIKES- OCH HANDELSDEPARTEMENTENS ENHET II. (UHD), Industriella Frizoner - en Fröberedande Undersökning, Promemoria, 21 July 1978.

UNITED STATES TARIFF COMMISSION, "Economic Factors Affecting the Use of Items 807.00 and 806.30 of the Tariff Schedules of the United States", Washington 1970.

UNITED STATES TARIFF COMMISSION, "Implications and Multinational Firms for World Trade and Investment and for U.S. Trade and Labour", Report to the Committee on Finance of the United States Senate and its Subcommittee on International Trade, Washington 1973.

VITTAL, N., Export Processing Zones in Asia: Some Dimensions, Asian Productivity Organization, Tokyo 1977.

YOSHIARA, K., Foreign Investment and Domestic Response, A Study of Singapore's Industrialization, Singapore 1976.

ANNEX I

DEVELOPING COUNTRIES OPERATING OR PLANNING ZONES

Table 1

DEVELOPING COUNTRIES OUTSIDE EUROPE OPERATING EXPORT PROCESSING ZONES (1980)

COUNTRY/TERRITORY	NUMBER OF ZONES/AREAS	LOCATION	
Africa			
Liberia	1	Monrovia	
Malta	1	Various sites	
Mauritius	1	Various sites	
Senegal	1	Dakar	
Tunisia	2	Mégrine Ben Arous	
Asia			
India	2	Kandla Santa Cruz	
Malaysia	10	Malacca	(Batu Berendam (Tanjong Kling
		Jahore	Senai
		Penang	(Pulan Jerejak (Prai (Prai Wharves (Bayan Lepas
		Selangor	(Sungai Way/Subang (Ampang/Ulu Klang (Telok Panglima Garang
Philippines	1	Bataan	
Republic of Korea	2	Masan Iri	
		Export Industrial Estates	(Gumi (Gurudong (3) (Bug Yong (Juan (2)
Singapore	1	Various sites	
Sri Lanka	1	Katunayake	
Other Asia	3	Kaohsiung Nantze Taichung	

COUNTRY/TERRITORY	NUMBER OF ZONES/AREAS	LOCATION
Carribean and Latin America		
Barbados	1	Various sites
Belize	1	Belize City
Brazil	1	Manaus
Chile	1	Iquique
Colombia	3	Barranquilla Buenaventura Palmaseca
Dominican Republic	3	La Romana San Pedro de Macones Santiago de los Caballeros
El Salvador	1	San Bartolo
Guatemala	1	Santo Tomás de Castillo
Haiti	1	Port-au-Prince
Honduras	1	Puerto Cortes
Jamaica	1	Port of Kingston
Mexico 1/	3	Coatzacoalcos Salina Cruz Border regions - various sites
Nicaragua	1	Las Mercedes Airport, Managua
Puerto Rico	1	Mayagüez
Middle East		
Egypt 2/	2	Cairo (El Nasr) Alexandria
Jordan	1	Aquaba
Syrian Arab Republic	3	Aleppo Lattakia Tartous
Pacific Islands		
Western Samoa	1	Western Samoa

Source: Various UNIDO information and Currie, J., op. cit., 1979.

1/ In Mexico there are many so-called "maquiladora" located in a strip within 31 km of the United States of America mainly in industrial parks situated in towns such as Agua Prieta, Ensenada, La Paz, Mexicali, Tijuana, Nogales.

2/ EPZ facilities can also be granted for factories located elsewhere.

Table 2

DEVELOPING COUNTRIES OUTSIDE EUROPE OPERATING
OTHER FREE ZONES (1980)

COUNTRY/TERRITORY	NUMBER OF ZONES/AREAS	LOCATION	TYPE OF FACILITY
Africa			
Sudan	1	Various sites	Duty Free Shops and some processing for export.
Togo	1	Lomé	Export Zone
Yemen	1	Aden	Duty Free Shops
Asia			
Hong Kong	1	Various sites	Commercial Free Port/ Duty Free Shops
Carribean and Latin America			
Bahama Islands	1	Grand Bahama Island	Commercial Free Zone
Bermuda	1	Ireland Island	Commercial Free Zone
Colombia	4	Cúcuta	Commercial Free Zone
		Leticia	Commercial Free Zone
		San Andrés Island	Commercial Free Port/ Duty Free Shops
		Santa Marta	Commercial Free Zone
Netherlands Antilles	2	Aruba	Commercial Free Zone
		Curacao	Commercial Free Zone
Panama	1	Colón	Commercial Free Zone
Uruguay	2	Colonia	Commercial Free Zone
		Nueva Palmira	Commercial Free Zone
Venezuela	1	Sta Maguerita	Duty Free Shops
Middle East			
Bahrain	1	Mina Sulman	Commercial Free Zone
Egypt	2	Port Said	Commercial Free Port/ Duty Free Shops
		Suez	Commercial Free Port/ Duty Free Shops
Lebanon	3	Beirut	Commercial Free Zone
		Beirut International Airport	Commercial Free Zone
		Tripoli	Commercial Free Zone
Syrian Arab Republic	3	Damascus Airport	Commercial Free Zone
		Adra	Commercial Free Zone
		Deraa	Commercial Free Zone

Source: Various UNIDO information and Currie, J., op. cit., 1979.

Table 3

DEVELOPED COUNTRIES WITH ZONES
PLANNED OR UNDER DEVELOPMENT (1980)

COUNTRY/TERRITORY	NUMBER OF ZONES/AREAS	LOCATION	TYPE OF FACILITY
Africa			
Cameroon	1	Bassa (near Douala)	Export Processing Zone
Ghana	1	Near Accra	Export Processing Zone
Kenya	1	Site not decided	Export Processing Zone
Sierre Leone	1	Site not decided	Export Processing Zone
Sudan	1	Port Sudan	Export Processing Zone
Zaire	1	Site not decided	Export Processing Zone
Asia			
Bangladesh	1	Chittagong	Export Processing Zone
Indonesia	1	Various sites	Export Processing Zones
Pakistan	1	Karachi	Export Processing Zone
Philippines	2	Baguio City Mactan Island	Export Processing Zone Export Processing Zone
Sri Lanka	1	Biyagama	Export Processing Zone
Thailand	1	Minburi (Lat Krabang)	Export Processing Zone
Carribean and Latin America			
Chile	1	Punta Arenas	Free Zone
Colombia	1	Cartagena	Export Processing Zone
Costa Rica	2	Puerto Limon Caldéras	Export Processing Zone Export Processing Zone
El Salvador	1	Cuzcatlan	Export Processing Zone
St. Lucia	1	Port Castries	Export Processing Zone
Venezuela	1	Punto Fijo	Export Processing Zone
Europe			
Cyprus	1	Limassol	Export Processing Zone
Romania	1	Site not decided	Export Processing Zone
Yugoslavia	1	Sezana	Export Processing Zone jointly with Italy

COUNTRY/TERRITORY	NUMBER OF ZONES/AREAS	LOCATION	TYPE OF FACILITY
Middle East			
Bahrain	1	Sitra Island	Free Zone
Egypt	2	Ismailia Mersah Matrouh	Free Zone Free Zone
Jordan	1	Jordan/Syrian Border	Free Zone
Pacific Islands			
Fiji	1	Site not decided.	Export Processing Zone

Source: Various UNIDO information and Currie, J., op. cit., 1979.

ANNEX II

CONCESSIONS AND SUBSIDIES

KARACHI EXPORT PROCESSING ZONE - PAKISTAN 1/

Banking and Insurance

The State Bank of Pakistan allows both foreign and Pakistani banks as well as insurance companies to operate branches in the Zone.

Branches of Pakistani banks and insurance companies in the Zone are subject to the same regulations as those applicable to overseas branches of Pakistani banks and insurance companies.

Transactions by banking and insurance companies are conducted in foreign convertible currency like all industrial concerns within the Zone.

The provisions of Foreign Exchange Regulation Act 1948, the State Bank of Pakistan Act 1956 and Banking Companies Ordinance 1962, have been modified accordingly. Preliminary expenses for the opening of branches will be met from the external resources of the banks and insurance companies.

Branches within the Zone do not benefit from any financial assistance from the State Bank of Pakistan.

Foreign exchange funds of the enterprises may be kept by the banks in the zone in any currency.

Foreign currency notes and other forms of foreign exchange may be freely exported from Karachi Export Processing Zone.

Export/import of Pakistani currency from, or into the Zone from abroad will be subject to the normal currency regulations of Pakistan.

Free Exports

Exports from the Zone will be completely free from exchange controls. Exporters in the Zone will be exempt from the 'E' form procedure. They will be free to export merchandise overseas without obligation to repatriate their export earnings back to Pakistan.

Merchandise directed from the Zone to the tariff areas of Pakistan will be subject to the same controls and regulations applicable to imports into Pakistan. With the exception of a development surcharge of 1% on the FOB value to meet the administrative expenditure of the Zone, there will be no duty on tax on exports.

Free Imports

Imports of machinery, components, spare parts and raw materials for industrial concerns in the Zone as well as imported items destined for re-export are freely allowed into the Zone.

1/ The following list of incentives is a direct quote from an information booklet produced by the Export Processing Zone Authority, Karachi, Pakistan.

These items are exempted from all Federal and Provincial taxes and duties including customs, excise, sales tax, provincial and municipal taxes.

The restrictions of the Import Trade Control Act are not applicable to import into the Zone.

Items imported from the tariff area into the Zone will benefit from customs, excise, sales tax rebates, etc. normally sanctioned to similar exports from Pakistan.

Income Tax Relief

Investors in the Karachi Export Processing Zone benefit from the following income tax relief measures:

- A five year tax holiday, from the date commercial production begins, is extended on profits. This is also applicable to the income of foreign personnel attached to concerns operating in the Zone.

  The tax holiday period may be extended by the Federal Government on a case-to-case basis depending on the capital investment, development of technology, creation of employment and exports of value-added of the relevant enterprise.

- After the termination of the tax holiday period, income tax will be levied at the rate of 25% of the normal rate applicable in Pakistan.

- Capital gains including gains from the sales of shares is taxable.

- Trading losses will be allowed to be carried forward indefinitely.

- Justifiable expenditure on overseas advertising, market research etc., qualifies for income tax deduction.

- There will be no taxation on overseas income when remitted to Karachi Export Processing Zone.

BATAAN EXPORT PROCESSING ZONE - PHILIPPINES 1/

- Duty free importation of machinery, tools, raw materials and semi-finished goods.
- Exemption from overseas export taxes.
- Exemption from municipal and provincial corporate taxes and fees, but not from national corporate income and realty taxes.
- Allowance for more rapid depreciation (up to double the normal rate).
- Losses during the first five years may be deducted from taxable income during the following five years.
- Priority in the allocation of foreign exchange for the importation of machinery, tools, and raw materials.
- Priority in the allocation of loans from Philippine financial institutions.
- Right for wholly owned foreign firms to establish subsidiaries in the Zone.
- Relaxed import and export procedures.
- Right to repatriate foreign investments and profits.
- Guarantee against expropriation of foreign property.

It should be added that a number of these incentives can be granted also to foreign firms investing outside the zone but in areas the government wishes to give priority. It should also be added that the government has gone as far as to suspend local labour laws to the benefit of foreign manufacturing companies. 2/

1/ The special privileges listed below were given in "Presidential decree No. 66, sections 17 and 18", Government of the Philippines.

2/ "South-east Asia - Pouring in the cash", Financial Times, 18 October 1978, page 23.