

Free Trade Zones in Malaysia

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PREFACE

In June 1984, the author submitted a short paper entitled "Free Trade Zones in Malaysia" to the Socio Economic Research Unit of the Prime Minister's Department in Malaysia, following one year study at University of Malaya, sponsored by the Rotary Foundation of Rotary International. This article combines the above-mentioned paper and subsequent study.

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I. INTRODUCTION

Malaysia, a member of ASEAN (Association of Southeast Asian Nations), recorded steady and rapid economic growth

after gaining independence in 1957. Its growth was sustained by its rich natural resources and export of them. In the 1970s, its annual real GDP growth rate averaged 7.8% and the contribution of the manufacturing sector to the economic growth was significant, posting an annual growth rate of 12.5%. Because of the high growth rate of Malaysia's manufacturing sector during the 1970s, it is widely believed that this nation will become a member of the so-called NICs (Newly Industrializing Countries) in the near future. (For basic data concerning Malaysia, see Appendix 1.)

As is well-known, Malaysia is a multi-racial nation composed primarily of three distinct ethnic groups: Malays (Bumiputera), Chinese, and Indians. In 1984, the population shares of each race in West Malaysia (Peninsular Malaysia), where 82.8% of the population is concentrated, were 56.3%, 32.9%, 10.1% respectively. Since the riot of May 13, 1969, the racial conflict has quieted. However, Malaysia's most important task remains the establishment of stability and national unity, through correction of disparities in economic power among the races. In 1971, the Government announced the New Economic Policy (NEP) to achieve the two-pronged purposes of eradicating poverty irrespective of races and restructuring the society to eliminate the identification of races with economic function by 1990. Along with the NEP, the Government announced various economic targets.

In the pre-NEP period, the Government had been concentrating only on economic growth, —i.e., the expansion of the economic pie. It was thought that problems of distribution would naturally become less intense with the growth of the overall economy. In the post-NEP period, however, more attention has been paid to the distribution of the economic pie among the races, especially to Bumiputera, as well. Under the NEP, the

manufacturing sector has been expected to be a leading sector as it was considered to be relatively productive.

The industrialization strategies of Malaysia, like those of other East and Southeast Asian countries, can be understood in the context of transition from import-substitution to export-orientation.¹⁾

This article examines the concept of Free Trade Zones (FTZs),²⁾— industrial estates forming enclaves within the national customs territories — one of the measures proposed to promote export-oriented industrialization, along with its use as part of development strategy in Malaysia.

NOTES

- (1) For a general discussion of import-substitution and export-oriented industrialization see the following:
 Suzuki Nagatoshi, "Ajia no Kogyoka to Yushutsu Shiko Kogyoka Seisaku" (Industrialization in Asia and Export-oriented Industrialization Policies), Suzuki Nagatoshi. ed., *Ajia no Keizai Hatten to Yushutsu Shiko Kogyoka (Economic Development in Asia and Export-oriented Industrialization)*, Institute of Developing Economies, 1974, ch.1.
 Watanabe Toshio, *Kaihatsu Keizaigaku Kenkyu (Studies on Development Economics)*, Toyo Keizai Shinpo-sha, 1978, chs.3 and 4.
 Lee Eddy, "Export-Led Industrialisation in Asia: An Overview," Lee Eddy ed., *Export-Led Industrialization and Development*, ILO Asian Employment Programme, 1981.
 Murakami Atsushi, *Kaihatsu Keizaigaku (Development Economics)*, Daiyamondosha, 1971, ch.4.
 Inukai Ichiro, "Nihon no Keiken wa Keizai Hatten no Sanko Tariuru ka" (Does Japan's Experience Suffice as a Reference for Economic Development?), Okita Saburo ed., *Nanboku Mondai (The North-South Problem)*, Chuo Koron-sha, 1984.
- (2) In other less developed countries, they are generally called Export Processing Zones (EPZs). In this article, however, the word FTZ will be used throughout, as the function of EPZs is almost identical to that of FTZs in Malaysia.

II. EXPORT-ORIENTED INDUSTRIALIZATION AND FTZS

At the beginning of the 1970s, Malaysia shifted its industrialization strategy away from import-substitution as practiced in the 1960s toward export promotion,

including an incentive programme for export-oriented firms for the first time, under the Investment Incentive Act of 1968. In this section, we shall first consider the reasons for this shift in Malaysia's industrialization strategy. We will then examine the reasons for introducing the FTZ concept into Malaysia.

In the 1960s, Malaysia's manufacturing sector recorded a rather high real annual growth rate of 10.2%. Import-substitution occurred readily — in some industries, using the indigenous technology, management and labour skills prevailing at the time, and in other industries by attracting foreign firms. As Dr. Lutz Hoffmann and Dr. Tan Tew Nee have pointed out, import-substitution was the most important factor contributing to industrial growth in the 1960s. They divided the sources of industrial growth into three categories: import-substitution, export expansion, and expansion of domestic demand. Their calculations revealed that from 1959 to 1968, these factors explained 52.0%, 7.9%, and 40.1% of industrial growth respectively.³⁾ By 1968, the main industries (food, wood products, tobacco, chemicals, rubber products, etc.) had already completed the process of import-substitution and were showing high potential self-sufficiency rates.⁴⁾ Meanwhile, the other industries were still in the process of import-substitution. As the domestic market became saturated with the domestically produced goods in the main industries during the late 1960s, the growth rates of these industries started to decline. This, in turn, reduced the growth rates of the manufacturing sector as a whole. It can be said that in Malaysia the "easy phase" of import-substitution in the main industries had come to an end by 1970. As Dr. Helen Hughes has mentioned, "In Malaysia, where achievements in import replacement are also substantial, industrial growth is in danger of slowing down in the 1970s because the relatively easy import-substitution possibilities have

been exhausted." On the other hand, "an outward-looking strategy promises the possibility of competitive costs, exports of industrial products, and continuing self-sustaining industrial growth with far greater long-term impact on employment than an import-substitution policy."⁵⁾ Export-oriented industrialization was used to expand the manufacturing sector, which was targeted for promotion under the NEP. Resource-based industries (food, wood products, and rubber products), which enjoy a comparative advantage, were expected to contribute to export-substitution.⁶⁾ The other industries expected to be export-oriented were labour intensive. Such industries also have a comparative advantage based on the given factor endowment in Malaysia.⁷⁾

Unlike the other East and Southeast Asian countries, Malaysia has seldom faced a shortage of foreign currency, a factor which provided one of the main motivations for other less developed countries (LDCs) to employ export-oriented industrialization strategies, sustained by the export of primary products. The Malaysian economy, on the other hand, depended too much on exports of a few primary products since the nation's independence. Export dependency rates (exports/GNP) averaged 44.6% in the 1960s. Natural rubber was the most important export commodity in the 1960s, though its share in total exports had been decreasing during the period (In 1960, its share was 55.1%; in 1970, 33.4%). In the 1960s, the export prices of natural rubber showed a downward trend, which affected the entire Malaysian economy, due to its high export dependency rate. The Government made efforts to correct the economy's high dependence on the export of a few primary products, such as natural rubber and tin, by diversifying Malaysia's commodity exports. Within the primary sector, the diversification strategy was successful, with increasing exports of palm oil, wood, and petroleum. At the same time, expansion of the export of

manufactured goods was also encouraged.

The import-substituting industrialization of the 1960s caused the manufacturing sector to become rather capital intensive, as has generally been the case in other LDCs as well (see Section V for details). Given Malaysia's factor endowment, (scarce capital and relatively abundant labour), creating a capital intensive manufacturing sector led to misallocation of factors. Though domestic capital could be supplemented by foreign capital, the manufacturing sector failed to provide enough employment opportunities for the labour force. The unemployment rate reached 7.8% in 1970, with the rapid growth in the size of the labour force because of the high growth rates of population. The expansion of labour intensive industries was undertaken not only to absorb surplus labour, but also to bring about a more optimal factor allocation. Since these industries were thought to have a comparative advantage, by becoming export-oriented, they were expected to develop without the restriction of the small domestic market.

For the above-mentioned reasons, Malaysia assumed a programme of export-oriented industrialization. In the early 1970s, exports came principally from resource-based industries that had already finished the import-substitution stage, due to the fact that some labour intensive industries (e.g., textiles and clothing, which were generally the major export-oriented industries in most LDCs) were still underdeveloped and had not yet finished the import-substitution process at that time. The Government was forced to attract labour intensive export-oriented industries from abroad for the rapid expansion of this sector and especially had its eye on electronic component assembly industry. It was anticipated that foreign firms would bring a ready market with them, and that as a result, Malaysia could save on costs while cultivating the world market. For this purpose,

Malaysia introduced the "Special Incentive for Electronics Industry" in 1971. This "Special Incentive" was merely a variant of the Pioneer Industry Incentive, except that longer tax holidays (two more years) were granted to approved firms. In 1973, it was extended to other labour intensive export-oriented industries as well. Along with the "Special Incentive," the FTZ concept was introduced, in an attempt to encourage labour intensive export-oriented industries.

Prior to the establishment of the first FTZ in Malaysia in 1972, some LDCs had already introduced FTZs to encourage export-oriented industrialization. The first FTZ in the LDCs was established at Shannon Airport in Ireland in 1959. From a very modest start, the Shannon FTZ has grown into a large industrial complex, in which some 100 firms employ about 5,000 persons and total exports exceed US\$ 200 million per year. The successful development of the Shannon FTZ showed that an FTZ could play a leading role in export-oriented industrialization. By 1980, about 55 FTZs were in operation in some 30 LDCs and 33 additional FTZs in 21 LDCs were being planned or in the process of development.⁸⁾ In the Asian region, the history of FTZs can be traced back to the Kandle FTZ in India and the Kaoshung FTZ in Taiwan, both of which were established in 1965. Though the Kandle FTZ has not been developed for various reasons (including its unfavourable location), the success of the Kaoshung FTZ encouraged LDCs in East and Southeast Asia including Malaysia to introduce FTZs as an effective means of promoting export-oriented industrialization. This industrialization strategy was employed in the late 1960s in South Korea and in the early 1970s in ASEAN countries (excluding Singapore). The success of the Kaoshung FTZ in attracting foreign firms was especially important in convincing other countries that an FTZ could be a viable center for foreign investment. Spurred by the success of the Kaoshung FTZ,

Taiwan established the Nantz and Taichun FTZs in 1970 and 1971 respectively. The Masan and Iri FTZs were established in 1970 and 1973 in South Korea, while the Battan FTZ was set up in 1973 in the Philippines. The first FTZ in Malaysia, the Bayan Lepas FTZ, was established in 1972.

Table 2-1. Manufactured Exports

	(million ringgit)			
	1970	1975	1980	1982
Food	105.1(19.6)	362.3(16.7)	647.9(9.8)	801.0(9.3)
Beverages	13.5(2.5)	25.8(1.2)	114.4(1.7)	110.7(1.3)
Tobacco	34.8(6.5)	52.0(2.4)	113.4(1.7)	151.2(1.7)
Textiles & Clothing	41.7(7.8)	205.0(9.4)	756.8(11.4)	808.5(9.3)
Footwear	10.3(1.9)	52.4(2.4)	115.9(1.7)	86.1(1.0)
Wood	67.3(12.5)	164.9(7.6)	355.5(5.4)	385.5(4.5)
Furniture	1.7(0.3)	13.4(0.6)	50.0(0.8)	23.5(0.3)
Paper Products	6.7(1.2)	12.3(0.6)	38.3(0.6)	40.8(0.5)
Rubber Products	23.7(4.4)	62.3(2.8)	151.9(2.3)	166.8(1.9)
Chemicals	52.7(9.8)	128.7(5.9)	331.9(5.0)	406.3(4.7)
Petroleum Products	42.3(7.9)	41.4(1.9)	94.8(1.4)	377.4(4.4)
Non-metallic Products	27.6(5.2)	34.4(1.6)	93.9(1.4)	115.4(1.3)
Basic Metals	20.8(3.9)	45.1(2.1)	125.5(1.9)	102.4(1.2)
Metal Products	13.1(2.4)	47.7(2.2)	140.4(2.1)	216.9(2.5)
Machinery	19.2(3.6)	154.2(7.1)	224.8(3.4)	319.1(3.7)
Electronics & Electrical Products	18.3(3.4)	317.8(14.6)	2,631.9(39.7)	3,781.1(43.7)
Transport Equipment	18.9(3.5)	45.9(2.1)	215.9(3.3)	303.7(3.5)
Others	18.8(3.5)	405.3(18.7)	434.4(6.5)	456.5(5.3)
Total	536.5(100.0)	2,170.9(100.0)	6,637.6(100.0)	8,652.9(100.0)

() share %

Source: The Malaysian Industrial Development Authority (MIDA) Annual Report various issues.

With the introduction and development of FTZs, Malaysia's manufactured exports increased rapidly in the 1970s. This was accompanied by changes in the export structure of the manufacturing sector, as seen in Table 2-1. The labour intensive industries, especially electronics and electrical products showed tremendous growth, from 18.3 million ringgit⁹⁾ in 1970 to 2,631.9

million ringgit in 1980 and 3,781.1 million ringgit in 1982. On the other hand, resource-based industries (food, wood products, rubber products, etc.) showed steady growth in absolute terms, but reduced their shares because of the rapid growth of the labour intensive industries. Manufactured exports increased more than twelve-fold in the 1970s, while their share in the total exports grew from 11.9% in 1970 to 21.7% in 1980.

NOTES

- (3) Hoffmann Lutz and Tan Tew Nee, "Pattern of Growth and Structural Change in West Malaysia's Manufacturing Industry 1959-1968," Lim David ed., *Readings on Malaysian Economic Development*, Oxford Univ. Press 1975, pp.142-45.
- (4) Chee Peng Lim, Donald Lee, Foo Fok Thye, "The Case for Labour Intensive Industries in Malaysia," Rashid Amjad ed., *the Development of Labour INTensive Industry in ASEAN Countries*, ILO Asian Employment Programme, 1981, pp.252-57.
- (5) Hughes Helen, "The Manufacturing Industry Sector," Asian Development Bank, *Southeast Asia's Economy in the 1970's*, Longman, 1971, p.232.
- (6) Export-substitution in this case was cited by Hla Myint, not by Paauw and Fei. See Myint Hla, "Over Report," Asian Development Bank, *op.cit.*, and Paauw Douglas S. & John C.H. Fei, *The Transition in Open Dualistic Economies*, Yale Univ. Press, 1973, p.18.
- (7) Kasper Wolfgang, "A New Strategy for Malaysia's Economic Development in the 1970s?," Lim David ed., *op.cit.*, p.133.
- (8) UNCTAD, "Export Processing Free Zones in Developing Countries: Implications for Trade and Industrialization Policies," TD/B/C. 2/211, 18 January 1983.
- (9) Malaysian currency, 1 ringgit=97 yen in 1984.

III. FTZS IN MALAYSIA

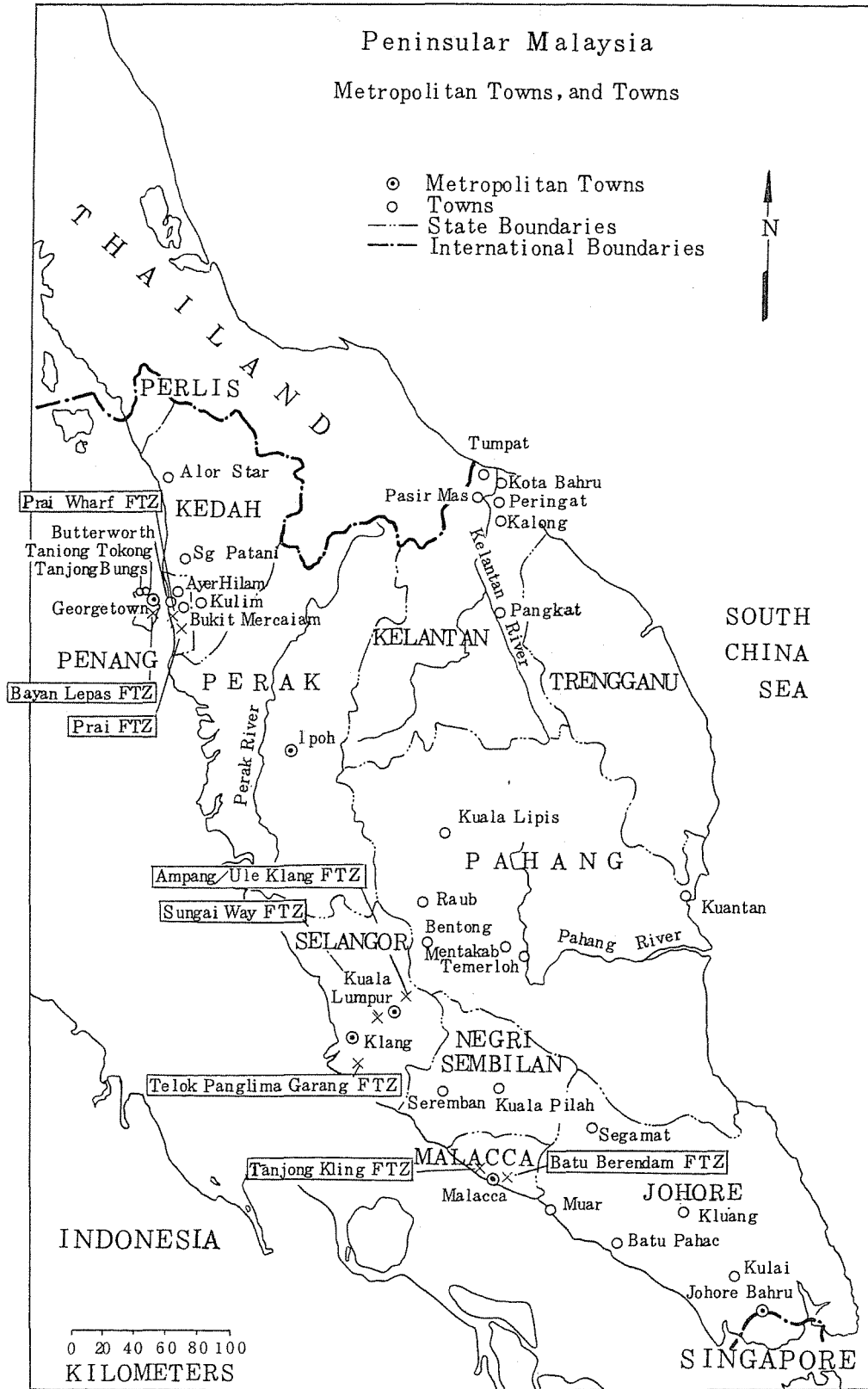
FTZs are industrial estates forming enclaves within the national customs territory. They are specially designed to house manufacturing establishments producing or assembling products essentially for export. Import of raw materials, intermediate goods, machinery, and other equipment for export production is not subject to the payment of customs duties. Goods exported from FTZs are

also exempted from customs duties. In Malaysia, FTZ firms are required to export at least 80% of their products. In cases where they sell their products to the domestic market, they are subject to the payment of customs duties. The export-oriented firms can also enjoy almost the same privileges outside of FTZs if they are granted the status of "Licenced Manufacturing Warehouse" (LMW).

In 1971, the Free Trade Zone Act governing the establishment and operation of FTZs was enacted. Under this legislation, the Federal Government may declare any industrial estate to be an FTZ. Construction and daily operation are generally overseen by the State Economic Development Corporation (SEDC), statutory body of the State Government.¹⁰⁾

Under the FTZ Act, the Bayan Lepas FTZ was established in Penang in 1972. In the same year, the Sungai Way FTZ was added in Selangor. Two more FTZs were later developed in each of the three States of Penang, Selangor, and Malacca during 1973 and 1974. By the end of 1983, there existed a total of eight FTZs (excluding designated FTZs)¹¹⁾: three in Penang (Bayan Lepas Prai and Prai Wharf); three in Selangor (Sungai Way, Ampang/Ule Klang, Telok Panglima Garang); and two in Malacca (Batu Berendam and Tanjong Kling) (see Map 3-1). The total developed land in various FTZs reached 384.1 hectares in 1981.

In 1983, 88 firms maintained production facilities in the various FTZs, and employment was estimated to be over 75,000 workers. The exports accruing from various FTZs reached 1,918.3 million ringgit¹²⁾ in 1979, constituting about 35.7% of the manufactured exports and 7.9% of the total exports of Malaysia. The contribution of FTZs to export-oriented industrialization has thus been significant. The heavy dependence of Malaysian manufactured exports on FTZs, however, is exceptional among the countries which have FTZs, (excluding very small



countries such as Mauritius). An increasing number of firms showed successful development of FTZs (see Table 3-1), though the majority of FTZ firms (51 out of 86), had

Table 3-1. The Number of New FTZ Firms

	Penang FTZs	Selangor FTZs	Malacca FTZs	Total New Firms	Grand Total
1972	12	2	0	14	14
1973	8	4	2	14	28
1974	5	5	3	13	41
1975	4	4	2	10	51
1976	0	4	1	5	56
1977	5	0	0	5	61
1978	3	2	0	5	66
1979	3	3	1	7	73
1980	5	0	0	5	78
1981	5	0	1	6	84
1982	2	0	0	2	86
Total	52	24	10		86

(Note) Both in the Selangor FTZs and the Malacca FTZs one firm is missing. FTZ firms which have withdrawn by 1982 were excluded. In the case of the Penang FTZs, the data was based on the time of establishment of firms. In the cases of the Selangor FTZs and the Malacca FTZs, the data was based on the time commercial production started.

Source: Penang FTZs: The Penang Development Corporation (PDC) data.

Selangor FTZs: Author's survey.

Malacca FTZs: The Malacca Development Corporation (MDC) data.

established or started production by 1975, during the early stage of FTZ development. After 1976, the number of FTZ firms increased steadily until 1981, although the advent of new firms was concentrated on the Penang FTZs. Two oil crises did not necessarily affect the number of investments in FTZs, but in 1982, only two firms were established. This suggests that FTZs in Malaysia may have already reached the maturity stage, as will be discussed in Section VI.

Institutions

The Government provided many types of benefits to encourage investment in FTZs. The first was simplified procedures for importation to and exportation from FTZs. As is generally recognized, in LDCs, inefficient administration, —especially time-consuming procedures for importation and exportation— is one of the main factors preventing foreign export-oriented firms from investing, but this is not the case in FTZs. Administrative procedures for duty free importation and exportation may be shortened. Secondly, as in other types of industrial estates, firms can easily gain access to fully developed industrial sites and ready-built factories. In Malaysia, these factories were provided, when required, by the Malaysian Industrial Estates Limited (MIEL), a statutory body of the Malaysian Government. Thirdly, firms can benefit from sufficient infrastructure, such as electric, water and telecommunications systems. They also have ready access to international ports, airports, roads and railways. Fourthly, the sites are conveniently located close to urban areas. The FTZs in Penang are located near the second largest city, George Town and FTZs in Selangor, except Telok Panglima Garang, are located near Kuala Lumpur, the capital of Malaysia. FTZ firms can benefit from easy access to certain services, such as insurance and financing, as well as an ample labour supply. Finally, FTZ firms can enjoy fiscal incentives, including tax exemption for pioneer status firms. Those in labour intensive industries, such as electronics and textiles have the privilege of longer tax holidays (two more years than other pioneer status firms). FTZ firms are eligible for nearly 10-year tax holidays.

What then, was the deciding factor for FTZ firms considering investment in FTZs? Twenty-two firms were polled (17 in Selangor, 5 in Penang), and among the

answers received (multiple answers permitted), "the incentives provided by the Government" ranked at the top (19). Next came "political stability of Malaysia" (17), "wage rates" (10) and "favourable infrastructure" (8). Incentives can be divided into two categories: tax exemptions and duty free importation and exportation. Research conducted by Dr. Teh Kok Peng reveals that for export-oriented firms, the most crucial incentive was exemption from duties. Ten firms out of 17 ranked this factor first and seven firms ranked tax exemption first. However, 10 out of 11 labour intensive export-oriented firms ranked import duty exemption first.¹³⁾ In practice, however, these two incentives are granted together to FTZ firms.

On the other hand, according to the Government's analysis (e.g., the Penang Development Corporation) the popularity of the FTZs in Penang can be attributed to the following factors:¹⁴⁾

- (1) The availability of readily usable industrial land with excellent infrastructure facilities.
- (2) Favourable location, usually within a short distance of an airport, deep water ports, major road and railway.
- (3) A ready pool of adequately trained labour, particularly in the field of electronics.
- (4) An absence of excessive customs procedures and an efficient and honest administration.

Firms in FTZs

The distinct features of current FTZ firms can be summarized as follows:

- (1) Foreign firms are predominant;
- (2) Large labour intensive firms are predominant; and
- (3) Electronics/electrical firms are predominant.

In the census of manufacturing industries, firms are divided into three categories: Malaysian, non-Malaysian

(foreign owned), and 50-50 joint ventures. But in Table 3-2, FTZ firms are classified on the basis of national origin, because even if the minority share is owned by foreigners, firms are in fact ruled by them.¹⁵⁾ Malaysian firms are limited to those 100% owned by Malaysians. In some joint ventures, SEDCs hold minority shares. As seen in Table 3-2, 83 firms are of foreign origin, some 60

Table 3-2. National Origin of FTZ firms in 1982

Country	Penang	Selangor	Malacca	Total
Japan	13	14	1	28
U.S.	15	9	2	26
West Germany	10	-	2	12
Malaysia	4	-	2	6
Switzerland	2	1	1	4
Hong Kong	3	-	1	4
Others	6	1	2	9
Total	53	25	11	89

(Note) "Others" include other nations and joint-ventures with same ownership.

Source: Same as Table 3-1.

firms of which are 100% foreign owned subsidiaries of multinational firms. Within these foreign firms, Japan ranked first with 28 firms, followed by the U.S. (26) and West Germany (12). These three countries are the major investors, accounting for about three quarters of total FTZ firms. However, the allocation of foreign-based firms varies from state to state. Meanwhile, we can find only six Malaysian firms.

The second feature can be gleaned through analysis of the data presented in Tables 3-3 and 3-4. In terms of employment and paid-up capital, FTZ firms are generally larger, compared with those located outside FTZs. Due to differences in the base years and incomplete data, however, it was not possible to conduct a precise comparison. Nonetheless, the trend was clearly indicated from the available data. The average employment per firm was 902.1 persons (894.1 in Penang, 1061.3 in Selangor,

Table 3-3. Employment in FTZs in 1983

FTZs	Workers	Firms
Bayan Lepas FTZ (Penang)	34,087	36
Prai FTZ (Penang)	5,282	10
Prai Wharf FTZ (Penang)	2,654	1
Sungai Way FTZ (Selangor)	13,471	16
Ampang/Ule Klang FTZ (Selangor)	10,465	6
Telok Panglima Garang FTZ (Selangor)	2,597	3
Batu Berendam FTZ (Malacca)	4,904	8
Tanjong Kling FTZ (Malacca)	1,415	3
Total	74,875	83

(Note) In the Bayan Lepas FTZ, five firms are missing.
Source: Same as Table 3-1.

Table 3-4. Paid-up Capital in FTZs in 1983

	Paid-up Capital (thousand ringgit)	Firms	Workers
Penang FTZs	330,400	48	42,503
Selangor FTZs	115,616	21	18,964
Malacca FTZs	21,608	11	6,319
Total	467,624	80	67,786

(Note) The Penang FTZs include a designated FTZ where one firm is found, but five firms are missing as a whole.

In the Selangor FTZs, four firms are missing.

Source: Same as Table 3-1.

Table 3-5. Industries in FTZs in 1983

Industry	Penang	Selangor	Malacca	Total
Electronics/Electrical	26	16	5	47
Textiles/Clothing	8	1	1	10
Precision Instruments	1	4	-	5
Plastics	3	2	-	5
Medical Equipment	3	-	1	4
Rubber	3	-	-	3
Others	8	2	4	14
Total	52	25	11	88

Source: Same as Table 3-1.

and 574.5 in Malacca) in 1983, while the figure for major manufacturing firms¹⁶⁾ was 147.9 in 1980. In the manufacturing sector as a whole, the figure was 27.7 in 1981 in sharp contrast with that of FTZs. In the cases of FTZs in Taiwan and South Korea, the corresponding figures were 277 in 1980 and 362 in 1979 respectively. The average paid-up capital per firm was 5,845.3 thousand ringgit (6,883.3 thousand ringgit in Penang, 5,505.5 thousand ringgit in Selangor, and 1,964.4 thousand ringgit in Malacca). The corresponding figure for major firms was 2,475.1 thousand ringgit. However, the average paid-up capital per capita in FTZ firms was 6,898.5 ringgit (7,773.6 ringgit in Penang, 6,096.6 ringgit in Selangor, and 3,419.5 ringgit in Malacca) while that of major firms was 16,735.8 ringgit in 1980. From these figures, we can conclude that rather large firms locate in FTZs and they are more labour intensive than major firms.

Table 3-5 shows that in FTZs, the electronics/electrical industry (especially integrated circuits and semi-conductors) is predominant. Forty-seven firms out of 88 are classified as belonging to this industry, followed by the textiles/clothing (10), precision instruments (5), and plastics (5). These industries are rather labour intensive, in accordance with the second feature mentioned above. The predominance of electronics/electrical firms is partly attributable to the fact that the Malaysian Government was eager to attract them. The Government's positive attitude is clearly visible in its industrial policies, as discussed in the previous section. In 1971, when the FTZ Act was enacted, it introduced the "Special Incentive for Electronics Industry," which was basically the same as Pioneer Industry Incentive, but included longer tax holidays. Most of FTZ firms were granted this favourable treatment. Out of 67 FTZ firms from which data were available, 62

were pioneer status firms (statistically, the "Special Incentive" is included in Pioneer Industry Incentive), two firms were given other incentives, and the rest of them were not granted any fiscal incentive.

NOTES

- (10) Recently, some SEDCs have handed over the administration of FTZs to Municipal Councils.
- (11) At the end of 1983, there existed six designated FTZs which were separated from the above-mentioned eight gazetted FTZs. Many LMW firms are found in designated FTZs.
- (12) The export volumes here and the export and import volumes in Table 4-1 in the next section are smaller than the actual amounts because of the leakage of the data. It was estimated that recently exports from FTZs comprised at least 50% of manufactured exports.
- (13) Teh Kok Peng, *Protection, Fiscal Incentives and Industrialization in West Malaysia Since 1957*, Faculty of Economics and Administration, University of Malaya, 1977, pp.149-156.
- (14) Penang Development Corporation (PDC), *Annual Report and Financial Statements of The Free Trade Zones in Penang for 1972*, PDC, 1972, p.10.
- (15) See for instance:
Khor Kok Peng, *The Malaysian Economy -- Structures and Dependence*, Institut Masyarakat, 1983, pp.79-80.
- (16) In 1980, MIDA surveyed 2,483 firms admitted under Industrial Coordination Act enacted in 1974. The number of workers and paid-up capital in 1980 were 367,211 persons and 6,145,580,000 ringgit respectively.

IV. AN EVALUATION OF FTZS¹⁷⁾

In a broad sense, the purpose of establishing FTZs is to promote export-oriented industrialization, but more specific objectives sometimes cited by LDCs are as follows:

- (1) Export promotion and generation of foreign exchange earnings;
- (2) Attraction of foreign investment;
- (3) Creation of employment opportunities;
- (4) Encouraging technology transfer; and
- (5) Creation of linkages between FTZs and the domestic

economy.

In this section, the performance of FTZs will be examined according to the above objectives.

(1) Export Promotion and Generation of Foreign Exchange Earnings

The shortage of foreign currency was one of the main reasons for other LDCs to introduce export-oriented industrialization measures. At first they tried to save foreign currency reserves by promoting import-substitution, but after this initial "easy phase", they once again faced a shortage of foreign currency, owing to increasing imports of intermediate goods and capital goods, which were necessary for further import-substitution. In Malaysia, export-oriented industrialization was undertaken for a seemingly different motive. As mentioned in Section II, even though Malaysia seldom faced a shortage of foreign currency in the 1960s and 1970s, it adopted an export-oriented industrialization strategy to diversify its exports, so as to improve its overall economy, then heavily dependent on exports of a few primary products (especially natural rubber and tin), which were vulnerable to price fluctuations. So far, macroeconomic indicators show that Malaysia has succeeded in export-oriented industrialization and diversification of its exports, with manufactured goods claiming an increasing share in total exports: 11.1% in 1970, 21.7% in 1980, and 29.8% in 1983.

The contribution of FTZs to export-oriented industrialization and export promotion has been significant. As seen in Table 4-1, exports from FTZs reached 1,918.3 million ringgit in 1979,¹⁸⁾ which was equivalent to 35.7% of total manufactured exports. The expansion of manufactured exports paralleled the development of FTZs. Since the mid-1970s, the main

Table 4-1. Exports and Imports from and into FTZs
(million ringgit)

Period	Exports	Imports	Balance of Trade
1974	468.3	558.2	-89.9
1975	658.8	620.3	38.5
1976	704.7	750.1	-45.4
1977	802.9	770.4	32.5
1978	1,385.5	1,290.6	94.9
1979	1,918.3	1,817.0	101.3

Source: Chee Peng Lim & Lim Chui Choo, "Zones of Prosperity," *Malaysian Business*, November, 1980, p.17.

manufactured goods exported from Malaysia have been electronics and electrical products. This fact clearly agrees with the predominance of electronics/electrical firms in FTZs. Table 4-1 also shows that FTZs are import intensive. The trade surplus amounted to 101.3 million ringgit in 1979. The somewhat unfavourable balance of payment position that occurred in 1974 and 1976 could possibly be attributed to large imports of machinery and equipment by FTZ firms in the initial period of their operations.

It is true that FTZs have contributed to the expansion of manufactured exports. However, on the other hand, the heavy concentration of manufactured exports in FTZs came at the price of dependence on a limited number of large export-oriented foreign firms. The concentration of exports on electronics, typified by integrated circuits and semi-conductors, was also a result of focusing on FTZs.

The other feature that might pose problems is that most of FTZ firms are subsidiaries of multinational firms. It is possible for them to affect overall prices of goods through intra-firm trade. Studies reveal that some FTZ firms have sold their products at lower prices than market prices.¹⁹⁾

The author's survey of FTZ firms in Selangor revealed that out of 16 subsidiaries of multinational firms from

which data was collected, nine firms imported more than 50% of their raw materials and other inputs from their parent firms and other subsidiaries. Six firms exported more than 50% of their products to their parent firms and other subsidiaries. Interviews with managers of FTZ firms suggested the existence of transfer prices, resulting in a reduction in the volume of exports. Furthermore, although the trade surplus of FTZs amounted to 101.3 million ringgit in 1979, a considerable portion of this figure were transferred to developed countries as dividends, remittances and repayments of loans. This resulted in a net decrease in foreign exchange earnings.

Capital investments by foreign FTZ firms can be considered as additions to Malaysia's foreign exchange resources. The determination of the net foreign exchange income related to FTZs' operations would, however, need to take into account foreign exchange expenditures as well. Overall foreign exchange earnings (aside from trade transactions) could not be analysed due to a lack of data.

(2) Attraction of Foreign Investment

As mentioned in section III, 83 out of 89 FTZ firms were of foreign origin. According to census of manufacturing industries, there existed 513 foreign firms in 1981, including 72 FTZ firms, for a share of 14.0%. The total paid-up capital investment by foreigners had reached 2,365.7 million ringgit by 1980, and it was estimated at least 15.1% (357.3 million ringgit)²⁰⁾ was invested by FTZ firms. It is hard to judge to what extent FTZs played an important role in attracting foreign investment just from examining the above figures.²¹⁾ Nonetheless, the total amount of foreign investment in FTZs (357.3 million ringgit) was not negligible. However, when we observe the generous attitude of the Malaysian Government towards foreign investors since the nation's

independence, it is difficult to conclude that FTZs provided a new impetus for foreign investment in the manufacturing sector. The Government's commitment to attract foreign investment can be seen in the fact the Constitution includes a Guarantee (Article 13) against nationalization without compensation and by 1982 Malaysia has concluded Investment Guarantee Agreements with 10 countries (including the U.S., West Germany and Canada). It also maintains comprehensive bilateral Double Taxation Agreements with 20 countries. Exchange control regulations are liberal. Investors can bring in their required capital from abroad and make overseas payments, including remittance of capital and profits with minimal Government control. Under these policies, foreign firms have played an important role in the manufacturing sector, as seen in Table 4-2. It can be observed that the number of foreign firms decreased from 685 in 1973 to 513 in 1981. This is because, under the NEP, a large number of foreign firms became Malaysian firms (the majority of shareholders were Malaysians). Thus, in Table 4-2 the share of foreign firms shows a decrease, but foreign firms are still of consequence in Malaysia today.

Under the NEP, the guidelines of equity participation

Table 4-2.
Foreign Firms in the Manufacturing Sector in Malaysia

	1968	1973	1981
Number of Firms	545 (6.0)	685 (6.2)	513 (2.5)
Production Volume (million ringgit)	1,449.4 (47.1)	3,803.5 (49.5)	15,305.1 (39.6)
Total Employment	38,300 (29.4)	96,451 (34.6)	143,566 (25.8)
Fixed Assets (million ringgit)		1,086.5 (47.4)	2,995.6 (28.7)
		() share %	

Source: Malaysia Government, *Census of Manufacturing Industries 1968, 1973, 1981*, Department of Statistics.

for foreigners applied to new projects are as follows:

(1) For industrial projects substantially dependent on the domestic market, the Government requires majority Malaysian equity participation.

(2) For projects involving the extraction and primary processing of non-renewable domestic resources, at least 70% Malaysian equity (including 30% Bumiputera) is required.

(3) For projects manufacturing substantially for the export market, foreign majority ownership is permitted. Where justified, even 100% foreign ownership can be considered.

In the line with guideline #3, many FTZ firms were permitted to be 100% foreign owned. Even under the NEP, investment circumstances for foreign export-oriented firms have been fairly favourable. However, when we look back at foreign investment in the past, establishing FTZs appears as a supplementary instrument to attract foreign investment to the manufacturing sector in Malaysia.

(3) Creation of Employment Opportunities

In spite of the growth of the manufacturing sector in the 1960s, employment opportunities created in the sector did not reach a satisfactory level, as the industrialization programme was mainly limited to import-substituting capital intensive firms. Establishing FTZs was one of the measures used to attract labour intensive export-oriented industries to Malaysia. Also, under the NEP beginning in 1971, creation of employment opportunities for Bumiputera in the manufacturing sector was a top priority.

In 1983, it was estimated that over 75,000 people were working in various FTZs, comprising 9.4% of the total labour force in the manufacturing sector. The share of the labour force engaged in FTZs as a percentage of the

total labour force in the manufacturing sector in each state was approximately as follows: in Penang, 33%; in Selangor, 10%; and in Malacca, 21%. The effectiveness of FTZs in job creation is evident from the fact that large labour intensive firms are found in them and each state seems to have been interested in establishing FTZs mainly to absorb the excess labour.

In Penang, the unemployment rate was about 15% in 1970 (much higher than that of Malaysia as a whole in the same year, 7.8%). PDC established FTZs as one measure to solve its unemployment problem. Given favourable circumstances, including proximity to international ports and an airport, FTZs in Penang developed steadily year by year. In 1983, 52 firms were in operation, employing some 42,000 workers. Corresponding to the development of FTZs, jobs created by FTZ firms contributed to lower the unemployment rate in the state to 5.5% in 1980, which was lower than the national level of 5.7% for the same year. Penang's case shows that FTZs can create employment opportunities within a relatively short period.

In Selangor, FTZs contributed to the absorption of a rapidly increasing labour force, which included migrants from other states. In 1983, some 27,000 workers were found in three FTZs in the state. The relative importance of creating employment opportunities was less than in Penang and Malacca, because Selangor (with the Federal Territory of Kuala Lumpur) has huge industrial estates such as Petaling Jaya and Shah Alam, both located in the vicinity of Kuala Lumpur.

In Malacca, the number of unemployed workers increased rapidly when the Commonwealth Forces withdrew in 1970. After the Forces withdrew, the unemployment rate had risen sharply and it was estimated that it reached 25% of the existing labour force.²²⁾ Unemployed workers numbered some 7,000 in the early 1970s. Thus, the main reason for Malacca's establishment of FTZs was also job creation. In

the 1970s, 40,000 workers, chiefly young people between 15 and 20 years old, migrated to other states.²³⁾ Jobs created by FTZs contributed to a decrease in migration to other states, particularly by young females.

The job creation effect of FTZs was generally successful in the 1970s. However, in the early 1980s, the number of workers in some FTZs decreased, primarily as a result of the general world recession. The slow economic growth in developed countries that import FTZ products slowed exports from FTZs and reduced production and employment level. Secondly, the number of FTZ firms has stopped increasing excluding the Penang FTZs and most of them have already reached their maturity stage. As illustrated in Table 3-1, 73 firms were established or started production in the 1970s — in particular, 51 firms from 1972 to 1975 — and investment by the largest firms was concentrated in the first half of the 1970s. Moreover, FTZ firms generally expanded their production and employment in the first several years, but then the rapid development came to an end. This is followed by a fluctuation of production and employment according to demand. We cannot foresee any rapid expansion of the work force through increases in the number of FTZ firms and development of FTZ firms themselves. Thirdly, because of the rapid increase of wage rates,²⁴⁾ (which outstripped the growth rates of labour productivity due to inflation), FTZ firms tended to utilize more machinery to improve labour productivity per capita. Some FTZ firms resorted to lay-offs or stopped recruiting in 1981 and 1982. With the expansion of demand for integrated circuits and semi-conductors in 1983, however, some firms did employ additional workers. But it was reported that with the slowdown in demand in these industries, some U.S. firms in FTZs began to lay off workers again in 1984. In the future, we can no longer expect the same rapid expansion of employment in FTZs as in the 1970s.

At this point, we should draw attention to special features of the labour force in FTZs and to their working conditions. The main feature of the labour force in various FTZs is the predominance of young female workers, as generally seen in FTZs of other LDCs. In Penang, the percentage of female workers in the labour force was over 70% in 1981. In the Sungai Way FTZ in Selangor and the Batu Berendam FTZ in Malacca, the figures were 76.5% and 74.9% respectively in 1983. The time series data reveal that the figures have not exhibited any pronounced change. The corresponding figure in the manufacturing sector as a whole was 39.5% in 1980,²⁵⁾ in great contrast with data for FTZs. The average age of unskilled workers was in the neighborhood of 21 years. The employment composition in FTZs as a whole will remain at the same level because of the nature of FTZ firms. FTZ firms tend to employ many young females because they can be employed at lower wage rates than males of similar skill and experience. Most of the female workers act as the second wage earners for their households²⁶⁾ and turnover rates are rather high.²⁷⁾ This enabled FTZ firms to keep the wage rates lower by continually recruiting new workers. Furthermore, females are assumed to have better manual dexterity, which is essential for the assembly operations prevailing in FTZ firms.

The unemployment of young male workers, (especially unskilled) is a serious problem in Malaysia. Unfortunately, FTZ firms have provided few employment opportunities for them.

In most FTZ firms, working hours per week have ranged from 40 to 48 hours, which are similar to those generally found in the manufacturing sector, but many firms in FTZs employ a three-shift system. Forty-two firms out of 77, from which data could be obtained, either use the three-shift system for all their workers or only use this system for a certain number of them. In the case of the three-

shift system, working hours are divided into three categories: 7A.M.-3P.M., 3P.M.-11P.M., and 11P.M.-7A.M., and the workers rotate to the next shift category every week. This system has raised some social problems related to the night work of young female workers, and is one of the reasons for their high turnover rates.

Bumiputera participation in FTZs seems to be satisfactory, as far as the total rate is concerned. The main objective of the NEP is to increase Bumiputera participation in the productive sectors, especially in the manufacturing sector. Under the NEP, the Government requires firms to employ Bumiputera for more than 50% of their labour, based on the overall racial make-up of the country. Though Bumiputera participation in the secondary sector as a whole in 1980 was 39.7%, MIDA's survey of major 2,483 firms in the same year showed that Bumiputera participation in these firms was 52.3%, which exceeded Government's target of 50%. As shown in Table 4-3, the percentage of Bumiputera workers in the Penang FTZs was only 47.3% in 1983. The predominant Chinese population in Penang explains the rather low participation rate of Bumiputera. In the Sungai Way FTZ, the figure was estimated to be 69.5% in 1983; in the Batu Berendam FTZ, it was 68.2% in the same year. From the time series data published by PDC, we can perceive a steady increase of Bumiputera participation rates, together with the introduction of the NEP.

The total figure of Bumiputera participation was judged to be satisfactory. However, as Table 4-3 shows, the upper level of the job hierarchy remained predominantly Chinese (except foreigners) in spite of the Government's guidelines to employ Bumiputera for more than 50% in each level of the job hierarchy. The firms in the Sungai Way FTZ, which is located near the capital city easily take advantage of Bumiputera human resources. This has enabled them to expand the share of Bumiputera at the

Table 4-3-1.
Employment Structure in the Penang FTZs in 1983

	B	N.B	N.M	Total
Managerial	145	1,001	125	1,271
Supervisory/ Technical	1,358	4,504	22	5,884
Clerical	832	1,990	-	2,822
Production	17,143	14,240	1	31,384
Others	629	513	-	1,142
Total	20,107	22,248	148	42,503

(Note) B-Bumiputera, N.B-Non Bumiputera, N.M-Non Malaysian, Including a designated FTZ.

Source: PDC data.

Table 4-3-2.
Employment Structure in the Sungai Way FTZ in 1983

	B	C	I	O	N.M	Total
Managerial	44	69	19	2	59	193
Supervisory/ Technical	185	148	70	-	-	403
Clerical	149	122	43	-	-	314
Production	4,231	376	1,091	1	-	5,699
Others	53	10	38	-	-	101
Total	4,662	725	1,261	3	59	6,710

(Note) B and N.M same as Table 4-3-1. C-Chinese, I-Indians, O-Others

Source: Author's survey.

Table 4-3-3.
Employment Structure in the Batu Berendam FTZ in 1983

	B	C	I	O	N.M	Total
Managerial	21	192	15	4	9	241
Supervisory/ Technical	334	501	100	23	-	958
Clerical	95	155	28	11	-	289
Production	2,860	202	276	31	-	3,369
Others	16	6	1	-	-	23
Total	3,326	1,056	420	69	9	4,880

(Note) Same as Table 4-3-2.

Source: MDC data.

middle management level. In the top management, however, their share was not satisfactory. In the Batu Berendam FTZ, the entire job hierarchy was dominated by Chinese, except for the production worker level. As most of the firms in various FTZs are foreign owned, top management was mainly occupied by foreigners. On the other hand, among Malaysians, the higher the job rank, the more Chinese were found; the lower, the more Bumiputera. The percentage of production workers among Bumiputera in the Penang FTZs, the Sungai Way FTZ, and the Batu Berendam FTZ were 85.3%, 90.8% and 86.0% respectively.

(4) Technology Transfer

Unlike export volume and employment, which are relatively easier to quantify, the transfer of technology generally poses major problems of measurement. Here, the assessment of technology transfer will be based on the nature of the production process in FTZ firms.

Technology transfer is directly linked to the character of the production process and potential spin-offs are limited to relatively low level technologies incorporated into the assembly type operations and simple processing prevailing in FTZ firms. Generally, multinational firms are replacing production from their home countries, where the wage rates are relatively high, with labour intensive production in LDCs, where wage rates are lower. Multinational firms carry out high technology process and R&D (research and development) in their home countries. This type of shift to foreign production is especially prevalent in the multinational electronics firms, which are predominant in FTZs in Malaysia.

Consequently, technology transfer should be examined in a limited framework. However, since FTZ firms are forced to produce goods competitive in the world market place, they require sufficient quality control, a factor

which was ignored at the import-substitution stage. This too can be considered a sort of technology transfer.

Even though technology transfer is limited, we can still find cases of technology transfer among engineers. The production of FTZ firms depends heavily on machinery imported from developed countries. On the other hand, pioneer status firms have been prohibited by the Government to import used machinery. This does not, however, necessarily mean FTZ firms are utilizing modern machinery. In fact, many new machines which, are not the latest model, are used in FTZs. The author's research revealed that of 23 firms from which data were obtained, 17 firms were utilizing the latest model of machinery, 11 firms were utilizing medium level machinery; 2 firms, obsolete machinery (multiple answers permitted). The repair and maintenance of machinery were performed entirely by foreign engineers in the first stage of production. Some firms still remain at this stage. Some, however, have proceeded to the next stage, in which local engineers have begun to play an important role by replacing foreign engineers. Most of FTZ firms send their engineers to the developed countries for training, where their parent firms are headquartered. This is important for development of the human resources which are necessary for technology transfer along with on-the-job training within FTZ firms. Seventeen firms out of 23 periodically or sporadically send their employees, mainly engineers, to developed countries for training.

From the nature of production, we can hardly expect that high technology has been transferred to FTZ firms in Malaysia, even in so-called high technology industries, such as electronics. Most of the FTZ firms do not have R&D sections or their equivalents. Even if they have R&D sections, they are not what would be considered R&D sections in the developed countries. They contribute only to minor changes in production, and are generally

controlled by foreign engineers.

Technology transfer within management should also be considered.²⁸⁾ Among the subsidiaries of multinational firms which are predominant in FTZs, important decision making, such as production, sales, and purchase of raw materials and intermediate goods is under the control of the head office. Therefore, the top management class is occupied by the foreign managers from parent firms. Localization of the top management level is not proceeding, but progress is being made at the middle management level. Managerial technology and know-how seem to be transferred at this level to a considerable extent.

Under the NEP, the Government has been trying to change the structure of shareholders to attain a target allocation of 30% Bumiputera, 40% non-Bumiputera Malaysian and 30% foreign ownership by 1990. However, this target has been flexibly adopted to the export-oriented firms as mentioned in part (2) of this section. In 1983, the Government strengthened its restrictions on ownership and some 100% foreign owned FTZ firms were required to sell their share capital to Bumiputera. Through this policy, localization of capital will proceed further, and along with it localization of management and the transfer of managerial technology can also go ahead. It might happen that some foreign staff will be prohibited from working in FTZ firms through denial of work visas, but to the extent that the foreign firms are shareholders of FTZ firms, they will not withdraw all the foreign staff. Japanese FTZ firms are decreasing their Japanese staff but they will probably insist on keeping three important posts — general manager, accounting manager, and plant manager — as long as they are shareholders of the FTZ firms.²⁹⁾

(5) Creation of Linkages between FTZs and the Domestic Economy

It seems that two major direct objectives of

establishing FTZs are export expansion and creation of employment opportunities. From the viewpoint of long term industrial development, however, the linkages, mainly the backward linkages between FTZs and the domestic industries can be considered an important objective. The Malaysian Government has been trying to raise the level of local content of raw materials and intermediate goods to over 50%, making no exception for FTZ firms. For pioneer status firms, including those in FTZs, if they attain the required local content level of 50%, their tax holidays will be prolonged for one additional year. Increasing local content to over 50% can help most FTZ firms to save on tax payments, but the share of raw materials and intermediate goods from local suppliers, excluding the intra-FTZ trade, remains extremely low.

Time series data for the Penang FTZs (Table 4-4) shows that purchases from local suppliers have been increasing. However, the relative share of local buying

Table 4-4.
Purchases of Raw Materials and Intermediate Goods
in the Penang FTZs (thousand ringgit)

	Imported	From FTZs	From Local	Total
1976	571,908(92.3)	30,546(4.9)	16,992(2.7)	619,446
1977	471,806(88.8)	32,313(6.1)	27,424(5.2)	531,543
1978	840,730(87.2)	93,398(9.7)	30,340(3.1)	964,468
1979	931,383(84.5)	141,187(12.8)	29,505(2.7)	1,102,075
1980	1,372,283(87.4)	166,693(10.6)	31,685(2.0)	1,570,661
1981	1,092,651(87.8)	112,550(9.0)	39,003(3.1)	1,244,204
1982	1,215,895(83.2)	192,302(13.2)	53,219(3.6)	1,461,416
1983	1,680,018(87.8)	183,298(9.6)	51,092(2.7)	1,914,408

() share %

Source: PDC, *Annual Report and Financial Statements of Free Trade Zones in Penang*, various issues.

has been fluctuating from 2.0% to 5.2% and in 1983, it was 2.7%. Data for the Sungai Way and the Batu Berendam FTZs also reveal a low level of local content (6.8% and 8.1% respectively in 1983).³⁰⁾ Since the figures for both FTZs include purchases from other FTZ firms, the share of raw materials and intermediate goods from local suppliers outside FTZs must be lower.

Needless to say, local content rates are different from industry to industry, based on the nature of their products. Table 4-5 shows the total purchases of raw materials and intermediate goods by industry in the Penang FTZs in 1983. From the table, we find that the share of local suppliers was low in electronics/electrical (2.3%), textiles/clothing (1.4%), plastics (6.8%), scientific equipment (4.1%). On the other hand, the local share in

Table 4-5.
Purchases of Raw Materials and Intermediate Goods
by Industry in the Penang FTZs in 1983

Industry	(thousand ringgit)			
	Imported	From FTZs	From Local	Total
Electronics/ Electrical	1,427,973.5 (93.6)	61,611.8 (4.0)	35,494.3 (2.3)	1,525,079.6
Textiles/ Clothing	209,702.9 (62.4)	121,686.3 (36.2)	4,758.0 (1.4)	336,147.2
Rubber-Based	3,001.6 (28.2)	-	7,623.8 (71.8)	10,625.4
Fabricated Metal	8,896.3 (77.3)	-	2,614.0 (22.7)	11,510.3
Plastics	2,661.6 (93.2)	-	195.4 (6.8)	2,857.0
Scientific Equipment	9,355.1 (95.9)	-	400.5 (4.1)	9,755.6
Others	18,427.0 (100.0)	-	5.6 (0.0)	18,432.6
Total	1,680,018.0 (87.8)	183,298.1 (9.6)	51,091.6 (2.7)	1,914,407.7

() share %

Source: PDC, *Annual Report and Financial Statements of Free Trade Zones in Penang 1983*.

the rubber-based industry was extremely high (71.8%), and there was also a rather high rate of 22.7% in fabricated metal products. The high rate for rubber-based industry is natural, because Malaysia is the world's largest producer of natural rubber. In the case of the textiles/clothing industry, intra-FTZs trade is active, as shown by its share of 36.2%. This can be attributed to the fact that Japanese multinational firms have several subsidiaries within the Penang FTZs and they supply materials to one another.³¹⁾

In other states, some special features were found.

In Selangor, for example, there exists a plastic maker that does not export its products abroad at all, but sells them only to FTZ firms. This firm, whose parent firm is a subcontractor of a multinational firm, was first established to supply materials to a certain FTZ firm, but it recently began to supply its products to other FTZ firms as well. This provides an example of how the backward linkages of FTZ firms promoted the investment of a foreign subcontractor instead of the development of the local subcontractors.

In Malacca, like other states, the share of materials supplied from local firms outside FTZs was quite low, and within the materials supplied from local firms, most of them were supplied by firms in Selangor, where the manufacturing sector is concentrated.³²⁾

As mentioned before, FTZs are enclaves within the national customs territory, but they are also economic enclaves in the sense that they have only limited linkages with the domestic industries; i.e., they have only a very limited spread effect. This is attributable to the fact that import intensive FTZ firms enjoy the advantage of importing raw materials and intermediate goods free from duties. It can be considered natural that the share of local suppliers in raw materials and intermediate goods is low because of the nature of the activities of FTZ firms. But the Government has been suggesting that firms, including those in FTZs, should raise the level of local content to at least 50%. Moreover, backward linkages between FTZs and the outside is a prerequisite for long term industrial development, in which export-oriented industrialization is expected to strengthen the industrial structure, with most of the large export-oriented firms found in FTZs.

The author's research revealed that some FTZ firms are intending to increase local content. FTZ firms are willing to buy more from local suppliers, if possible,

mainly to decrease the transportation costs and to increase flexibility of delivery time, but there remain reasons preventing them from doing so, including the following:

- (1) Local firms do not produce the required raw and intermediate materials;
- (2) High quality materials are produced at prices higher than those of the world market; and
- (3) Where prices are competitive, the quality of the materials is low.

This is the case because in order for FTZ firms to sell their goods in the world market, high quality goods with competitive prices are required. Until the local firms can provide low priced, high quality raw materials and intermediate goods, backward linkages will not succeed. However, it is still doubtful whether subsidiaries of multinational firms really intend to increase local content or not, because increasing local content necessarily decreases intra-firm trade and restricts the parent firm's power over prices in intra-firm trade using transfer prices.

In Taiwan and South Korea, with the development of local supporting industries, the share of local content did in fact increase to a sufficient level. In Taiwan, the figure was 2.1% in 1967, but reached 28.3% in 1979. In South Korea (the Masan FTZ), it was 5.0% in 1972 and 33.8% in 1979.³³⁾

In Malaysia, some FTZ firms provided technical assistance to local subcontractors to improve the quality of their goods, but these cases are still exceptional. To a large extent, it is beyond the ability of private FTZ firms to develop local suppliers. It should be the Government and local suppliers themselves that are responsible for strengthening the supporting industries.

NOTES

- (17) Main references in this section are as follows:
 UNCTAD, *op.cit.*
 UNIDO working papers on structural changes No.19, "Export Processing Zones in Developing Countries," UNIDO/ICIS. 176, August 1980.
 Mrinal Datta-Chaudhuri, "The Role of Free Trade Zones in the Creation of Employment and Industrial Growth in Malaysia," ILO-ARTEP, 1982.
 Basile Antoine and Dimitri Germidis, *Investing in Free Export Processing Zones*, OECD, 1984.
- (18) See note (12)
- (19) For instance, see Lim, Linda Y, *Multinational Firms and Manufacturing for Export in Less-Developed Countries: The Case of the Electronics Industry in Malaysia and Singapore*, Ph.D. dissertation submitted to University of Michigan, 1978, p.288.
- (20) Estimates based on PDC, MDC data and the author's survey.
- (21) In the case of the electronics industry, establishing FTZs contributed to attraction of foreign investment. See Cheong Kee Cheok et al. eds., *Comparative Advantage of Electronics and Woodprocessing Industries in Malaysia*, Institute of Developing Economies, 1980, p.19.
- (22) Naerssen Anton van, "Location Factors and Linkages at the Industrial Estates of Malacca Town", Research Notes and Discussion Paper No.16, Institute of Southeast Asian Studies, 1980. p.1.
- (23) Interview with Malacca Development Corporation.
- (24) In the Sungai Way FTZ, nominal wage rates increased over 10% annually in the early 1980s, in the Penang FTZs the figure was 13.1% (1980-1983). In 1983, monthly wages for unskilled workers ranged from 180 to 300 ringgit in the Penang FTZs; 190 to 340 ringgit in the Selangor FTZs; and 115 to 270 ringgit in the Malacca FTZs. There is not minimum wage regulation in the manufacturing sector.
- (25) Malaysia Government, *Labour Census 1980*, Department of Statistics, 1983.
- (26) Mrinal Datta-Chaudhuri, *op.cit.*, p.24.
- (27) It was estimated that the average Labour turnover rate of production workers in the Sungai Way FTZ was about 5% per month.
- (28) Fujimori Hideo, "Yushutsu Kakoku no Kino to Sonritsu Joken" (The Functions and Conditions for Existence of Export Processing Zones), Fujimori Hideo ed., *Ajia Shokoku no Yushutsu Kakoku (Export Processing Zones in Various Asian Countries)*, Institute of Developing Economies, 1978, pp.46-47.
- (29) Interviews by the author.
- (30) Data for the Sungai Way FTZ came from the author's survey, while information concerning the Batu Brendam FTZ was based on a survey conducted by MDC.
- (31) Chi Seck Choo, "The Impact of Foreign Manufacturing Firms on the Local Region. A Case Study of Prai Free Trade Zone, Penang," *Geographica*, Vol.12, 1977. pp.21-30.
- (32) Naerssen Anton van, *op.cit.*, p.23.
- (33) Kawahara Isao, "Ajia ni okeru Yushutsu Kakoku no Genjo to

Tenbo" (The Present Conditions and Prospects of Export Processing Zones in Asia), *Kaigai Toshi Kenkyusho Ho*, Vol.7, No.3, 1981, p.8.

V. CHARACTERISTICS OF FTZS IN MALAYSIA

From the above analysis, we can point to some specific features of FTZs in Malaysia, which are clearly distinct from those found in Taiwan and South Korea, where the FTZ concept was introduced earlier than in Malaysia. These distinguishing characteristics can be summarized as follows:

- (1) Concentration of manufactured exports within FTZs;
- (2) Low level of local content; and
- (3) Regional dispersion of FTZs.

(1) Concentration of Manufactured Exports within FTZs

In the 1970s, exports of manufactured goods expanded rapidly, increasing their share in total exports from 11.1% in 1970 to 21.7% in 1980. The figures show that the export-oriented industrialization programme of the 1970s was fairly successful. During the same period, the structure of manufactured exports witnessed an important shift. In the early 1970s, exports had been concentrated within resource-based industries such as food and wood products (see Table 2-1). In contrast, by 1982, the share of electronics and electrical products in manufactured exports had grown to over 40%, and the bulk of these electronics goods were exported by FTZ firms. As mentioned in Section IV, exports from FTZs accounted for 35.7% of manufactured exports in 1979. In the case of Taiwan, the comparable figure never rose much above 10%. In this part, we will investigate the reasons for this notable concentration of manufactured exports within FTZs in Malaysia.

The Government established FTZs as a key part of its strategy to attract investment by large multinational

firms--particularly in the area of electronics--in order to encourage export-oriented industrialization. With fiscal incentives, such as the "Special Incentive for the Electronics Industry," which were later expanded to other labour intensive export-oriented industries, and other generally favourable investment conditions, FTZs succeeded in attracting a number of large foreign firms, spurring rapid growth within these zones.

The most important source of information on which foreign companies based their decisions to invest in FTZs is reported to be the informal network of business contacts between individuals and firms.³⁴⁾ The success of the Malaysian Government in luring large U.S. electronics firms into FTZs in turn drew new investors as word spread of opportunities there, thus contributing to the subsequent rapid growth of FTZs.

The narrow base of manufactured exports in Malaysia enabled FTZs to expand their share in manufactured exports rapidly within a relatively short period. The Government also introduced other measures, including LMWs and Export Incentive, in addition to the institution of FTZs, in order to promote export-oriented industrialization. However, LMWs, which have been increasing both in terms of number of firms and export volume, (mainly since existing FTZs in good locations are almost fully occupied and the Government intends to decentralize export-oriented industries), have not yet succeeded in winning a major share of manufactured exports. The effectiveness of Export Incentive is hard to evaluate, as approved firms are limited and sometimes include FTZ firms. Furthermore, though resource-based industries have tended to be export-oriented, the textiles and clothing industries, which often make up the core of export-oriented industrialization in LDCs, had not developed smoothly during in the import-substitution stage in Malaysia. Such industries seldom became export-oriented, except for a few

firms located in FTZs. These factors permitted FTZs to expand their share in manufactured exports.

However, the main reason for the concentration of manufactured exports within FTZs can be traced to the dualistic industrialization strategy and fiscal incentives employed by the Government. It was noted that the 1970s was a period of export-oriented industrialization, but the tariff protection prevalent in the 1960s for import-substitutes remained in place. In fact, as Dr. Eddy Lee has pointed out, in the 1970s "a rapidly growing enclave export sector largely situated in FTZs has been grafted on to usual import substitution sector"³⁵⁾ in Malaysia. Tariff protection for the import-substitution sector, coupled with fiscal incentives, reinforced the bias against exports and hindered the development of potential export-oriented industries.

The two major industrial policies employed in Malaysia have been tariff protection and fiscal incentives.³⁶⁾ Tariff protection, used widely in LDCs to promote import-substitution, has been used actively since the mid-1960s for this purpose in Malaysia.³⁷⁾ We can cite data from several studies on effective protection rates of tariffs in Malaysia in the 1960s and early 1970s.³⁸⁾ Among these, however, the only study that presents time series data is that of Dr. Edward (see Table 5-1). His study reveals that effective protection rates began to increase in the mid-1960s and at the beginning of the 1970s, they were raised further. Though no studies on effective tariff protection have been published recently, nominal tariff rates have been increased over a wide range on manufactured goods. "The pattern of nominal tariff changes suggest that, in general, level of effective protection is likely to have increased further since they were last measured in 1972."³⁹⁾

Protection of the manufacturing sector seems to have brought about a distorted resource allocation and a high-

Table 5-1.
Estimates of Effective Protection in West Malaysia

	Effective Protection ^a (Per cent)			
	1962 (1)	1966 (2)	1969 (3)	1972 (4)
Rubber processing off estates	-25	-15	-20	-10
Coconut processing off estates	200	NVA	NVA	NVA
Food processing	5	55	65	80
Beverages	15	40	40	15
Tobacco products	60	110	125	115
Textiles	55	110	95	95
Clothing	25	40	400	400
Sawn and plywood	10	40	55	70
Furniture	50	50	40	230
Paper products	40	95	140	95
Rubber products ^b	90	170	140	170
Chemical products	20	20	50	50
Petroleum products	0	0	0	0
NMMP(Cement, etc.)	10	25	25	25
Metal products	15	40	30	35
Basic metals	-10	40	130	105
Elect. machinery/goods	35	155	410	440
Transport equipment			135	140
Plastic products	15	65	265	415
Total: including off-estate	15 ^c	45 ^d	45 ^e	55 ^f
Total: excluding off-estate	25 ^c	50 ^d	65 ^e	70 ^f

(Note) NVA: Negative world value added.

a Calculated using the Halanna formulation.

b Excluding retreading.

c Using 1963 value added weights.

d Using 1967 value added weights.

e Using 1969 value added weights.

f Using 1970 value added weights.

Source: The above table was cited from Chee Peng Lim, Donald Lee, and Foo Kok Thye, *op.cit.*, pp.267-268. It originally appeared in Edward C.B. *op.cit.*

cost production structure. This, in turn, resulted in a bias against exports, as generally seen in the import-substitution stages in LDCs. High levels of protection would appear to have discouraged exports of manufactured goods by making the domestic market more attractive. Other problems resulted from protection, including lack of competition, undevelopment of management and labour skills, inefficient production, and a production structure

not necessarily based on a comparative advantage. These economic distortions accounted for the poor showing by manufactured exports, with the exception of the prioritized export-oriented sector.

Fiscal incentives in Malaysia during the 1960s and the 1970s can be traced to the Pioneer Incentive Act of 1958. In 1968, the Investment Incentive Act was passed, introducing Pioneer Industry Incentive, Investment Tax Credit, and Export Incentive. In the early 1970s, Labour Utilisation Relief and Location Incentive were put in place under the Investment Incentive Act. The most important of these has proven to be the Pioneer Industry Incentive, a fiscal incentive that provides tax exemption (Income tax (40%) and development tax (5%) are imposed in Malaysia) to the approved pioneer status firms based on the amount of capital investment. This incentive has made capital relatively cheaper than labour, and as a result, pioneer status firms has become rather capital intensive. Recently, with the diversification of the manufacturing sector and the broadening of the manufacturing base, the number of approved pioneer status firms has been decreasing. On the other hand, the Investment Tax Credit, which is basically a fiscal incentive for capital intensive industries with a long gestation period, has been showing a trend toward growth. Firms approved for this incentive have, on average, been more capital intensive than pioneer status firms. The dominance of pioneer status firms in the manufacturing sector has been notable (see Table 5-2). The existence of fiscal incentives induced investors to employ more capital intensive production systems than would otherwise have been the case. The capital intensive nature of production was strengthened by the influence of foreign firms and public firms, which were generally capital intensive and also played an important role in Malaysia. In 1981, foreign firms accounted for 39.6% of total revenue in the

Table 5-2
Pioneer Status Firms in the Manufacturing Sector in Malaysia

	1963	1968	1973	1981
Number of Firms	85 (1.0)	146 (1.7)	356 (3.2)	484 (2.4)
Production Volume (million ringgit)	195.4 (16.6)	895.1 (35.7)	2,450.9 (31.9)	14,732.9 (38.1)
Total Employment	7,171 (9.2)	23,115 (19.4)	88,980 (31.9)	170,432 (30.6)
Total Wages (million ringgit)	16.6 (12.1)	63.3 (25.6)	183.0 (31.2)	939.9 (33.4)
			() share %	

Source: Malaysia Government, *Monthly Industrial Statistics, Dec. 1983* and *Census of Manufacturing Industries, 1963, 1968, 1973, 1981*, Department of Statistics.

manufacturing sector and public firms for 28.0%.

Pioneer status firms, foreign firms and public firms, though some firms overlap more than one category, together command the lion's share of the manufacturing sector, making it rather capital intensive. Most of these firms produce import-substitutes within the protected domestic market and fail to enjoy economies of scale because of the small size of the domestic market. The capital intensive production structure distorted the resource allocation under the given factor endowment in Malaysia. It also created a bias against exports and hindered the competitiveness of potential exporters in the world market.

As stated above, the dualistic industrialization strategy, that is, coexistence without integration of protected import-substitution sector and grafted export-oriented sector mainly found in FTZs, made the former less competitive in the world market and concentrated the production of manufactured exports on the latter. The less competitive nature of the import-substitution sector was reinforced by fiscal incentives that made the manufacturing sector more capital intensive.

(2) Low Level of Local Content

As pointed out in the last section, over the ten-year history of FTZs in Malaysia, the level of local content in FTZ firms has not shown any upward trend. The backward linkages between FTZs and domestic industries remained weak. This situation differs from those in Taiwan and South Korea, where backward linkages have strengthened steadily and FTZs have been integrated into the domestic industries gradually (see Section IV, part 5). In other words, FTZs in these countries are no longer economic enclaves as they originally were.

The reasons for the low level of local content were mentioned in Section IV, part 5. Space does not permit us to investigate the reasons why local firms do not produce the required raw materials and intermediate goods. However, the problems of high prices and low quality can be explained by industrial policies adopted by the Government, which were analyzed in the first part in this section. Continuous protection for the import-substitution sector, coupled with fiscal incentives, caused certain problems associated with import-substituting industrialization to remain in the domestic industries: high production costs and technological backwardness. These factors prevented domestic firms from supplying raw materials and intermediate goods at internationally competitive prices to FTZ firms. (This viewpoint reveals that export-oriented industrialization means not only the expansion of manufactured exports but also the ability to produce internationally competitive goods, whether or not they are exported directly. In this sense, Malaysia's export-oriented industrialization appears to be incomplete.)

The low level of local content can also be explained by the fact that most of the FTZ firms are subsidiaries of large multinational firms. They utilize transfer prices

strategically in order to maximize the total profit of their firm groups. The survey conducted by Dr. Linda Lim revealed that transfer prices existed.⁴⁰⁾ This fact was reinforced by interviews conducted by the author with managers of FTZ firms. Increasing local content lessens intra-firm trade, and as a result, multinational firms lose the power to control prices, which they could do under the intra-firm trade system by utilizing transfer prices. It is quite possible for them to prefer intra-firm trade to purchasing from local suppliers in their international management strategies, even if the local suppliers can produce high quality, low price products.

The increasing local content in FTZs in Taiwan and South Korea can be explained largely in terms of the development of the manufacturing sectors in both of these countries. It can be also explained by the fact that there exist many small or medium scale foreign firms in FTZs, most of which came from Japan.

(3) Regional Dispersion of FTZs

There now exist eight FTZs in Malaysia, but both Taiwan and the Philippines have three FTZs, and South Korea has two FTZs. Thus Malaysia has more FTZs than its neighboring countries. This is mainly because though the Federal Government has the power to declare any specific industrial estate to be an FTZ, the development of FTZs is under the control of SEDCs. This is also the case for developing industrial estates, which are found in all the case for developing industrial estates, which are found in all the 13 states and in total number over 100 (including FTZs). It is not economically efficient to have many small FTZs, even if the total occupation rate is rather high (81.5% in 1981). There is only one firm in the Prai Wharf FTZ, three in the Telok Panglima Garang and the Tanjung Kling FTZs, six in the Ampang/Ule Kelang FTZ. The

largest FTZ, the Bayan Lepas FTZ, had 41 firms in it but it was divided into three phases.

The infrastructural and administrative costs for establishing these eight FTZs are certainly higher than those for a smaller number of large FTZs. Also, the costs for daily administration and maintenance of FTZs must be higher. It seems that SEDCs chose to distribute FTZs for development purposes, allocating a large number to states in order to absorb excess labour. They paid less attention to saving costs on development, administration and maintenance of FTZs. It seems that SEDCs and the Federal Government abandoned the economies of agglomeration by the regional dispersion of small FTZs.

Firms are often disappointed, since they are unable to build their factories in the most favourable FTZ as they had planned, because the FTZs located in developed areas are almost fully occupied. In these cases, MIDA encouraged them to invest in the other FTZs based on its policy of promoting industrialization in less developed areas.

NOTES

- (34) Van B.G., "A Survey on Occupant Enterprises of Export Processing Zones," Vittal N. ed., *Export Processing Zones in Asia: Some Dimensions*, Asian Productivity Organization, 1977, p.101.
- (35) Lee Eddy, *op.cit.*, p.19.
- (36) For the industrial policies, see for instance:
Shepherd Geoffrey, "Policies to Promote Industrial Development," Young Kevin, Willen C.F. Bussink, and Parvez Hasan eds., *Malaysia: Growth and Equity in a Multiracial Society*, The Johns Hopkins Univ. Press, 1980.
Osman-Rani H., "Manufacturing Industries," Fisk E.K. and H. Osman-Rani eds., *The Political Economy of Malaysia*, Oxford Univ. Press, 1982.
Rabenau K.V., "Trade Policies and Industrialization in a Developing Country: The Case of West Malaysia," Lim David ed., *Further Readings on Malaysian Economic Development*, Oxford

Univ. Press, 1983.

- (37) For tariff policies before the mid-1960s, see:
 Wheelwright E.L., *Industrialization in Malaysia*, Melbourne Univ. Press, 1965, pp.97-99.
 Lee Hock Lock, *Public Policies and Economic Diversification in West Malaysia 1957-1970*, Penerbit Universiti Malaya, 1978, pp.473-475.
- (38) For instance
 Power John H., "The Structure of Protection in West Malaysia," Bela Balassa et al. eds., *The Structure of Protection in Developing Countries*, Johns Hopkins Univ. Press, 1971.
 Edwards C.B., *Protection, Profits and Policy -- An Analysis of Industrialization in Malaysia*, Ph.D. dissertation submitted to University of East Anglia, 1975.
 Ariff K.A.M., "Protection for Manufactures in Peninsular Malaysia," *Hitotsubashi Journal of Economics*, Vol. 15, No.2, 1975.
- (39) Chee Peng Lim, Donald Lee, and Foo Kok Thye, *op.cit.*, p.269.
- (40) Lim Linda Y., *op.cit.*, p.288.

VI. DEVELOPMENT STATUS OF FTZS IN MALAYSIA

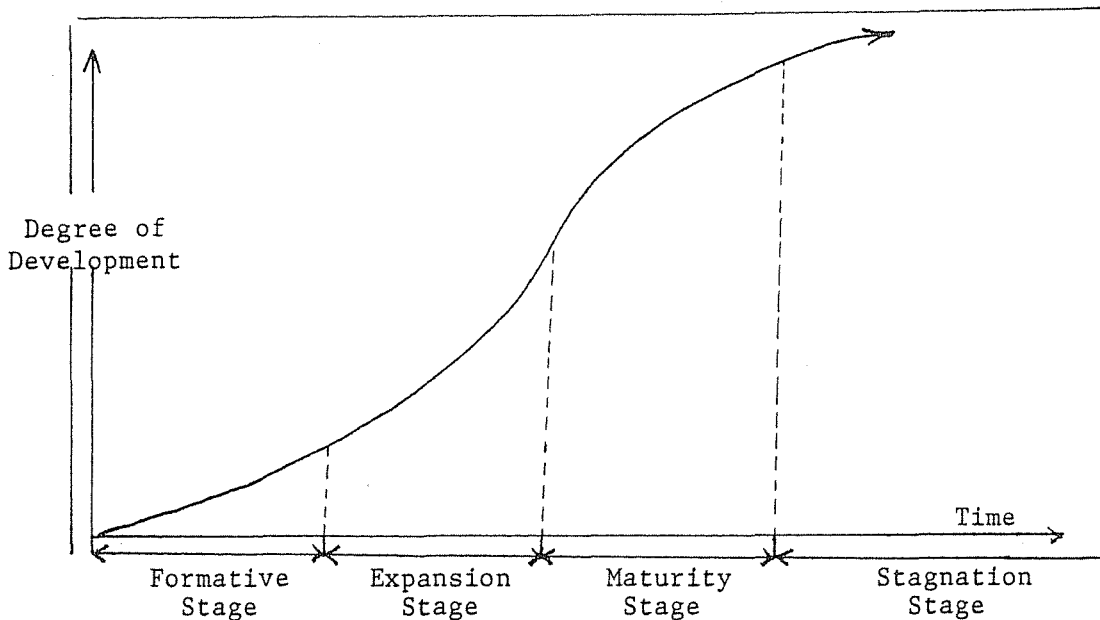
In this section, we shall first consider the concept of the FTZ life cycle and try to identify the current status of FTZs in Malaysia. Finally, the future of FTZs in Malaysia will be examined.

As Dr. Hideo Fujimori and Dr. Akira Hirata pointed out in their articles, it seems possible to posit a general life cycle for FTZs.⁴¹⁾ Basically, FTZs are strategically established enclaves created for the purpose of promoting export-oriented industrialization. They are thought to play important roles in the transition stage from import-substitution toward export-oriented industrialization. As export-oriented industrialization progresses, it is expected that the relative importance of FTZs should be reduced.

Conceptually, we can assume an FTZ life cycle similar to that shown in Figure 6-1. Both quantitative and qualitative changes will affect the life cycle. Of course, there will be feedback between these two types of changes and the influence of the latter on the former will

tend to be dominant.

Figure 6-1. Life Cycle of an FTZ



Source: Hirata Akira, *op.cit.*, p.84

It is thought that many factors that induce qualitative changes affect the life cycle of an FTZ. Below, we shall attempt to enumerate several such factors. In order to promote export-oriented industrialization, tariff rates will tend to be reduced. This serves to clarify a comparative advantage of export-oriented industries. Tariff reduction will lessen the relative benefits of FTZs (where no duties are imposed on imports and exports). As the backward linkages between FTZ and domestic industries grow stronger, the import intensive nature of FTZs has to be modified. As FTZs are integrated into the domestic economy, the benefit to export-oriented firms of locating in FTZs will be reduced. Technological changes in FTZ firms can also be a factor. When FTZs were originally established, firms engaged in labour intensive production processes invested in them in order to enjoy the advantage of low wage rates. Increasing wage rates

would raise the share of labour costs in total production costs and may induce these firms to alter their production technologies. Thus, some firms may move from labour intensive to technology or capital intensive production, while other firms may move to the other countries where cheap labour is still available. These changes will accelerate the transition from one stage to the next in the life cycle. Most of the countries with FTZs provided tax holidays of eight to 10 years for FTZ firms. This fiscal incentive can be one of the deciding reasons for foreign firms considering investing in FTZs, so that when the tax holidays expire, some firms may withdraw. Thus, a temporary fiscal incentive can be an important factor. More efficient administration, simplified procedures for importation and exportation outside FTZs— which remove barriers for foreign export-oriented firms to invest in LDCs— will make locating in FTZs (where those services were available exclusively) less important. Also, the industrial policies in the country concerned will affect the life cycle of an FTZ. Establishing FTZs is one of the means of promoting foreign direct investment, and if the host government begins to restrict foreign investment, or if it plans drastic nationalization of foreign owned firms, some foreign owned FTZ firms would be likely to withdraw.

The above factors will cause qualitative changes in FTZs, particularly in the transition from the expansion stage to the maturity stage. They will play a major role in the process, because as FTZs develop, along with general economic growth and industrialization (especially export-oriented industrialization) in the countries concerned, these factors will become more pronounced, and a qualitative transformation will inevitably accompany the quantitative changes. Generally, various economic indices (such as export volume, workers, investment, number of firms, etc.) will increase rapidly in the formative and

expansion stages. Once an FTZ moves into its maturity stage, however, the growth rates of these indices will show a downward trend and in the stagnation stage, some indices may in fact show a decline.

Once we assume the existence of a life cycle for FTZs, it still may be difficult to tell what stage a certain FTZ has reached, since FTZs do not always develop according to set patterns. The period of the FTZ life cycle will differ from country to country, based on differences in internal and external economic conditions and industrialization strategies of the countries concerned. For instance, in the case of the Masan FTZ (established in 1970 in South Korea), Dr. Byung Gil Van claims that this FTZ reached the maturity stage in 1978, following its formative stage (1970-74) and expansion stage (1975-77), based on the quantitative changes in such indices as foreign investment and exports.⁴²⁾

A similar effort will be made here to identify the present development status of FTZs in Malaysia. The analysis will be based on both quantitative and qualitative changes and industrialization strategies related to these changes. Because of limitations on the availability of time series data, we will focus our investigation mainly on the Penang FTZs. FTZs in the other states, however, can be assumed to be at the same stage of development, due to their similarities with the Penang FTZs (e.g. historical resemblances and allocation of industries, etc.).

Based on past quantitative and qualitative changes, we can say that the Penang FTZs reached the maturity stage in the early 1980s, after the formative stage(1972-75) and expansion stage(1976-79). From the data presented in Tables 6-1 and 6-2, we can observe the following changes. Exports expanded greatly from 12.1 million ringgit in 1972 to 2,128.5 million ringgit in 1983. The average annual growth rates decreased from 34.7% in 1976-

Table 6-1. Development of the Penang FTZs

	Exports (million ringgit)	Imports (million ringgit)	Total Paid-up Capital (million ringgit)	Wages (million ringgit)	Workers	Firms
1972	12.1	4.1	13.5	2.6	4,113	10
1973	127.4	165.7	38.2	15.3	14,028	21
1974	164.0	442.8	107.7	38.6	17,406	31
1975	290.0	355.4	145.0	43.9	21,009	35
1976	639.7	596.6	141.5	52.9	25,979	33
1977	615.4	512.4	176.4	61.5	28,112	35
1978	1,268.0	871.9	223.6	100.2	30,552	35
1979	1,564.0	1,054.4	264.9	115.2	35,748	38
1980	1,793.8	1,452.0	290.0	157.3	38,846	41
1981	1,486.7	1,177.2	311.2	185.4	38,638	49
1982	1,764.6	1,381.7	322.5	221.0	40,156	54
1983	2,128.5	1,808.9	330.4	249.0	42,503	53

(Note) Imports include raw materials, intermediate goods and capital goods except for 1972 where capital goods is not available.

Including a designated FTZ.

Source: Same as Table 4-4.

Table 6-2.
Average Annual Growth Rates of Selected Indices

	1976-79	1980-83
Exports	34.7%	5.9%
Workers	11.2%	3.0%
Paid-up Capital	23.2%	4.4%
Wages per head	16.6%	13.1%
Exports per head	21.1%	2.7%

Source: Calculated from PDC data.

79 to 5.9% in 1980-83. Similarly, growth in the labour force and volume of investment also decreased, from 11.2% to 3.0% and from 23.2% to 4.4% over the same periods respectively. Meanwhile, the average per capita annual growth rate of wages also decreased from 16.6% to 13.1%, but it was still at a high level as of the early 1980s. It was difficult to calculate the growth rates of labour productivity (value added per capita) precisely, due primarily to the existence of transfer prices. This made it impossible to judge whether the growth rate of wages

kept pace with the growth rates of labour productivity. So far as the growth rates of exports per capita are concerned, a sharp fall, from 21.1% to 2.7%, can be observed. Many managers of FTZ firms claimed that entering the 1980s, wage increases were tending to outstrip labour productivity increases under the current labour intensive production process. Wage rates in Malaysia have already reached higher levels than those in other ASEAN countries excluding Singapore⁴³) and Malaysia's comparative advantage in labour intensive industries has thus begun to erode. Some firms have introduced new, labour-saving machinery and automated the production process. The share of exports from the Penang FTZs in total manufactured exports began to show a downward trend since 1978, when the figure stood at 31.2%.

From the viewpoint of industrialization strategy, the Government does not intend to establish any new FTZs in addition to those already in existence. It encourages the utilization of LMWs to promote export-oriented industrialization and to decentralize export-oriented firms. In fact, we can find LMW firms in all 13 states.

The Penang FTZs have been in operation for more than a decade, so that the tax holidays for FTZ firms granted in the first half of the 1970s have already expired.

On the other hand, FTZs remain separated from the highly protected industries outside the zones. The weak backward linkages between FTZs and the outside industries shows that they are still not integrated into the domestic industries and remain economic enclaves. This can be cited as a reason to deny that they have reached the maturity stage.

It might be thought that the low growth rates for exports, workers, and investment in the early 1980s were only a temporary phenomenon caused by the world recession. Also, the increasing number of firms might be thought a sign that the Penang FTZs are still in the expansion

stage.

Nevertheless, the Penang FTZs could also be viewed as having reached the maturity stage since the growth rates of exports and other indices have fluctuated, based on changes in demand from developed countries. The increase in number of firms can be attributed to the rather low land occupancy rate (54.3% in 1982) in the Penang FTZs. In the other states, FTZs are almost fully occupied.

From the above analysis, we can conclude that the Penang FTZs have already reached the maturity stage and we may also assume the other FTZs to be at a similar stage of development.

Finally, we will briefly review the future prospects for FTZs in Malaysia. We cannot foresee any future rapid expansion of exports or employment. In the case of exports, steady growth with temporary fluctuations can be expected, but the share of FTZ firms' exports in manufactured exports will fall in response to the rapid increase of exports from LMW firms. The recent rapid development of LMW firms will make FTZs relatively less important in the export-oriented sector. We can only expect steady growth of exports by assuming that most of the firms will remain in FTZs. If many firms withdraw from FTZs, it stands to reason that exports will decrease. The competition with FTZs in neighboring countries will grow more intense, but it is still very difficult to predict how many existing FTZ firms will withdraw. The experience of Taiwan's FTZs, where 116 firms withdrew during 1969-79, (75 of them during 1976-1979 when wage rates increased rapidly),⁴⁴⁾ might provide a clue. Technological innovation and robotization in developed countries, particularly in the electronics industry, may encourage some FTZ firms to "go home." On the other hand, most of the Japanese managers are opposed to the withdrawal of their firms.⁴⁵⁾ It seems that in the short term, it is not likely that many firms will withdraw from

FTZs, but new investment will be limited. In the case of labour, we can assume that increasing wage rates and the resulting trend toward labour-saving production will force FTZ firms to decrease staff in the medium and long term. In the short term, however, the number of workers will fluctuate.

Whether FTZs will continue to be economic enclaves or be integrated into the domestic industries depends on the industrial policies pursued by Malaysia. If the Government continues to protect the import-substitution sector, FTZs will likely remain economic enclaves; otherwise, FTZs will be merged into domestic industries. However, in this case, it will take a long time before the long-protected domestic manufacturing sector can supply internationally competitive intermediate goods to FTZ firms. The behavior of multinational firms will also remain a key issue.

NOTES

- (41) Fujimori Hideo, *op.cit.*, pp.60-63. and Hirata Akira, "Kako Yushutsuku to Kogyoka Seisaku — Yushutsu Sokushin Kaihatsu Senryaku no Gyakusetsu" (Export Processing Zones and Industrial Policy — A Paradox of Export Promotion Development Strategy), pp.80-84, both in Fujimori Hideo ed., *op.cit.*
- (42) Van B.G., "Economic and Social Impacts of the Masan Free Export Zone in the Republic of Korea," Rabbani F.A. ed., *Economic and Social Impacts of Export Processing Zones in Asia*, Asian Productivity Organization, p.68.
- (43) Basile Antoine and Dimitri Germidis, *op.cit.*, p.29.
- (44) Kawahara Isao, *op.cit.*, p.20.
- (45) Interviews by the author.

VII. CONCLUSION

FTZs have been successful in Malaysia, especially in terms of expansion of manufactured exports and job creation. The growth of exports from FTZs since 1972 made a significant contribution to Malaysian manufactured exports throughout the 1970s. The role of FTZs to job

creation was also substantial; the number of workers in various FTZs over 75,000 in 1983 was equivalent to 9.4% of the total labour force in the manufacturing sector. In the three states having FTZs, the effects of FTZs on job creation were apparent. On the other hand, the labour force in FTZs was largely made up of young females and Bumiputera participation was primarily limited to production workers.

This study, however, reveals that in terms of technology transfer and backward linkages with domestic industries, the overall contribution of FTZs to the economy remained limited. The minor contribution of FTZs to technology transfer can be ascribed to the simple, assembly-line nature of the production process. Among engineers, however, there is a significant exchange of technology, and this has been moving ahead gradually. We can also infer that technology transfer has progressed within the management class. As most of FTZ firms are foreign owned, top management positions are exclusively occupied by foreigners, but an increasing number of Malaysians have risen to the middle management class, and this can be seen as evidence of localization of technology know-how within management. The backward linkages with domestic industries did not show any signs of improvement. The low level of backward linkages was especially notable in the electronics industry.

Foreign capital inflows into FTZs reached at least 357.3 million ringgit by 1980, which was equivalent to about 15% of total foreign capital inflows into the manufacturing sector, but it is hard to judge whether this represents satisfactory performance.

The main factor facilitating the development of FTZs was their success in attracting large multinational firms to invest in them. This was achieved by active Government policies designed to bring in foreign firms through incentives and other means.

Multinational firms have ready markets, and this made it possible for Malaysia to expand exports rapidly without having to cultivate new markets by itself. Labour intensive production by multinational firms employed a large number of workers, though job creation was largely limited to young females.

The effects of multinational firms, however, were not only favourable, but had a down side as well. Such firms have their own international management strategies, and as a matter of course, FTZ firms could not hope to be independent of them. The "footloose" nature of multinational firms, as generally pointed out, can be attributed to their global and regional strategies. So far, in Malaysia, only a few firms have pulled out, but in Taiwan many firms withdrew from FTZs in the latter half of the 1970s. It is difficult to deny that some multinational firms will withdraw from FTZs over the long run. Transfer price manipulation, which to a certain extent prevented the local content rates from increasing and kept backward linkages with domestic industries weak, was also in part a result of the strategies of multinational firms.

The past experience of FTZs in Malaysia provides various lessons. First, in a small country with a rather narrow industrial base like Malaysia, FTZs can be centers for the production of manufactured exports within a relatively short period. Secondly, even when protection of the manufacturing sector remains high, countries can develop export-oriented industries by creating FTZs alongside the protected sector. As a result of FTZs' development the macroeconomic indicies outwardly showed the progress of export-oriented industrialization. Thirdly, the labour intensive production process employed in FTZs succeeded in correcting the distorted resource allocation and in increasing production efficiency to some degree, as expected in export-oriented industrialization,

but this effect was limited to FTZs. Finally, manufactured exports from FTZs diversified Malaysian exports overall, but FTZs did not contribute to diversification of exports within the manufacturing sector, where product was focused on electronics goods.

The limitations of FTZs should also be acknowledged. FTZs in Malaysia contributed little to the development of domestic industries through backward linkages and technology transfer was limited. FTZs' existence is based on a temporary comparative advantage. Recently, with increasing wage rates, Malaysia's comparative advantage in labour intensive industries seems to have been disappearing. It is reasonable to expect that with a decreasing comparative advantage in labour intensive industries, existing FTZs will stagnate in the long run unless the Government introduces new strategies to encourage their activities.

The 1970s is often called the decade of export-oriented industrialization. However, this process depended too much on FTZs. On the other hand, export-oriented industrialization outside FTZs showed only minor progress. Thus, FTZs can serve as a catalyst for export-oriented industrialization, but because of their enclavic nature, their contribution to long term industrialization must be limited.

FREE TRADE ZONES IN MALAYSIA

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Appendix 1. Malaysia-Basic Data in 1984

AREA			
(Square kilometres)			
Malaysia	Peninsular Malaysia	Sarawak	Sabah
329,293	131,598	123,985	73,710
POPULATION:		million	
Malaysia	15.270	
Peninsular Malaysia	12.651	
Malays	7.122	
Chinese	4.168	
Indians	1.280	
Others	0.081	
Sarawak	1.442	
Sabah	1.177	
		\$	%
NATIONAL PRODUCT:		million	growth
Gross National Product at constant 1978 prices		53,515	+ 6.6
Consumption expenditure: Public		9,500	- 4.9
Private		29,142	+ 6.5
Fixed capital formation: Public		9,367	- 4.4
Private		10,394	+10.6
Exports of goods and services		31,824	+14.1
Imports of goods and services		33,311	+ 6.4
Gross National Savings (at current prices)		22,915	+32.2
Per capita GNP (at current prices)		4,867\$	
		\$	%
		million	growth
DOMESTIC PRODUCT:			
Gross Domestic Product at constant 1978 prices		57,706	+ 7.6
Agriculture, livestock, forestry and fishing		11,623	+ 2.8
Manufacturing		11,703	+ 11.6
Mining and quarrying		6,046	+ 13.3
Construction		2,988	+ 4.2
Transport, storage and communication		3,464	+ 10.4
Wholesale and retail trade, hotels and restaurants		7,107	+ 8.0
Finance, insurance, real estate and business services		4,892	+ 7.0
Government services		6,817	+ 7.7

(Note) \$= Malaysian Dollar (ringgit)

Source: Ministry of Finance, *Economic Report 1985/86*.