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Development of Malaysia**

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**Inward Foreign Direct Investment and the Industrial
Development of Malaysia.**

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This paper traces the industrial development of Malaysia, examining the role that inward foreign direct investment has had on this process. Since independence, the Malaysian government has formulated several policies and medium term strategies, aiming to speed up the pace of industrialisation, and subsequently improve the technological base of the country, by attracting inward investment. This paper discusses the success of these policies, and the extent to which the country has benefited from these investments.

1. Introduction and Background

Industrialisation in Malaysia¹ was formally pursued after the country had achieved her Independence from Britain in 1957. Pre-independence Malaysia was a primary-commodity based economy, reliant on rubber and tin. Import-substitution strategies for developing the manufacturing sector were implemented immediately after independence and were aggressively pursued until the late 1960s. However, the limitations of such policies were soon realised, and a new policy based on semiconductors was formulated. This was founded on the expectation that there would be a relocation of the international semiconductor industry in the 1970s from developed countries to developing countries. Thus, policies towards FDI (and indeed towards industrialisation more generally) became more export-oriented. The manufacturing sector, especially the electrical and electronic components sub-sector, became the catalyst for the country's economic growth.

Tables 1 and 2 present a historical summary of Malaysia's industrialisation phases. Table 1 illustrates Malaysia's five policy-led phases of industrial development, highlighting various issues such as factors that determined why a particular strategy was chosen, economic objectives, types of industries and MNEs, impact on the economy and major policies that have characterised each phase. Table 2 provides selected statistics for various years. Up to the financial crisis of the late 1990s, Malaysia has generally achieved a high average growth rate of real GDP. Table 2 also illustrates the growing contribution of the manufacturing sector to the economy.

Tables 1 and 2 here

The following section will outline these policy initiatives and the progress of FDI, with subsequent sections paying particular attention to the electrical and electronics (EE) industry.

This has been, and continues to be, the most important sector of the Malaysian economy, in terms of FDI, but also exports, employment and growth.

2. FDI and Development in Malaysia

Like most colonies of the former British Empire, the Malayan economy was a resource-based economy. Rubber and tin were the main commodities. Mostly British-based, MNEs exerted a dominant presence in the production of both commodities. Output from British rubber plantations and tin mining corporations contributed more than three-quarters of the country's exports. The manufacturing sector was not very significant in the economy during the colonial era. British colonial economic policies dominated the shape and nature of the Malayan economy. Emphasis was on the production of export-oriented raw materials and British manufactured imports. Local industry was confined to processing raw materials for exports and producing certain items for local consumption (World Bank, 1955: 422). Following independence, the path towards development that Malaysia has taken has been heavily dependent on inward FDI, especially in the export-orientated phases of development, while the stages can be traced in terms of a series of policy initiatives aimed at attracting inward investment, and basing the development of the economy on this investment.

In 1971 foreign-owned firms accounted for 63.3 per cent of share capital (at par value) of limited companies in Malaysia. Figure 1 illustrates foreign ownership in the corporate sector. The value increased ten times between the years 1971 to 1995 although the share fell until the mid-1980s and then increased slightly.

Figure 1 here

2.1 The First Phase of Import-Substitution Industrialisation (ISI): 1957-

Inward investment was seen in this period as a means of addressing the trade imbalance. Foreign firms which already had marketed their products locally, were encouraged (largely

through tariffs) to set up production lines, and assembling and packaging plants, to supply finished goods. Between Independence (1957) and (1970) value added in the manufacturing sector more than doubled. To encourage this industrial development, infrastructure was developed, manufacturers were indirectly subsidised and the domestic market was protected. However, most MNEs sourced their inputs abroad, and local activities were restricted to minor assembly operations and packaging and as a result, imports of intermediate goods increased dramatically. MNEs with their technological advantages were able to capture their respective local markets and consequently, as a whole, linkages between foreign and local firms were weak.

In addition, there have been numerous Joint Ventures in Malaysia. The formation of Malayawata Steel Mill, a joint venture between Japan and Malaysia, founded in 1961, was the beginning of the development of heavy industry in Malaysia. However, the inception of the Heavy Industries Corporation of Malaysia (HICOM)² in 1980, with an authorised capital of RM500 million, marked the first major Malaysian thrust into heavy industry. It also marked direct government involvement in the market. The capital requirement of large scale projects, a high level of technological requirement (which local firms lacked), and long gestation periods with low returns, necessitated government involvement in establishing heavy industry in Malaysia. To obtain the requisite technology and expertise in these industries, the state set up joint venture enterprises with foreign firms, mainly from Japan and South Korea. MNEs such as Mitsubishi, Nippon Steel and Hyundai were invited to form joint venture firms with state-owned enterprises. The main heavy industries in Malaysia are petroleum and chemicals, steel, cement, shipbuilding and automotive assembly.

2.2 Export-Oriented Investment: 1968-

From the 1960s onwards Malaysia has sought to take advantage of the international relocation of MNEs' production to developing countries. MNEs from the US and Japan sought locations with an abundant workforce, lower wages and inward investment incentives. Two instruments that played major roles in attracting foreign investors were the Investment Incentive Act (IIA) of 1968 and the Free Trade Zone (FTZ) Act of 1971. The IIA was specially formulated to encourage export-oriented foreign firms. The incentives included investment credits, tax concessions for exports and tax exemptions, preferential treatment for import permits and other infrastructural facilities. The FTZ Act of 1971 also provided a very attractive package for MNEs. FTZs are areas especially designed for manufacturing companies that produce or assemble products mainly for export. The objective of providing FTZ facilities to export-oriented industries is to enable them to enjoy minimum customs formalities and the duty free import of raw materials, component parts, machinery and equipment required in the production process, together with minimal formalities in the export of their finished products. Currently there are 19 FTZs in Malaysia (MIDA, 1998). EOI gave new impetus to Malaysia's industrial growth and the EOI phase of the 1970s marked the second phase of industrialisation.

2.3 The First Phase of Import-Substitution Industrialisation: 1980-

Malaysia's economy suffered a recession of the mid-1980s. The performance of the state-owned enterprises was poor, and productivity growth was slow. However, with export growth still being generated by the foreign-owned sector, the government determined to attract further investment. Table 3 highlights the importance of foreign investment, which comprised 53.0 per cent of total capital investment for the five year period 1991 to 1995.

Table 3 here

Table 3 lists the value of approved projects according to the respective industries. Foreign investment was concentrated in the EE, chemicals, and petroleum industries. These three industries made up more than 55 per cent of foreign investment for the period. Included in the chemical and chemical products were production of chemical inorganic products, plastic resins, cosmetics, soaps and detergents, while investment in the petroleum sector was mostly concentrated in offshore exploration and refineries. Foreign investment in the petroleum sector was nearly four times larger than domestic investment, implying a strong reliance not only on foreign capital but also on foreign technology. The scenario was similar in the EE sector with foreign investment four times greater than domestic investment. The Ministry of International Trade and Industry (MITI) Report of 1994 reported that these industries were heavily dependent on foreign R&D and suffered serious shortages of skilled personnel (Malaysia, 1994: 181-185).

2.4 The Current Situation

In 2001, RM 24,718.8 million worth of projects were approved by Malaysia's Ministry of Industrial Trade. Foreign investment contributed to 74.2 per cent of the total approved investment, although 2001 saw a slight decline of 7.6 per cent in foreign investment on the previous year. There is also a significant downturn in new entry, as most of the foreign investment was allocated for expansion or diversification of their existing projects.

Electrical and electronics (EE) remains the main sector that attracted foreign investment despite the fact that some firms have been affected by the downturn and ongoing restructuring and consolidation in the global industry coupled with growing competition from China. Foreign investors accounted for 90 per cent of the approved investment. This has been acknowledged as the continuing attractiveness of Malaysia as the investment destination for MNEs especially in higher value added products and activities.

The USA with investment mainly in the EE industry remains the largest investor in Malaysia in 2001 (RM 3,305.4 million). This is followed by Japan (RM 3,286.5 million) also mainly in the EE industry. 80 per cent of the total Japanese investments were for diversification or expansion of existing projects. China and Singapore were the third and fourth largest investor, respectively. China's participation is in a single large scale project for pulp, printing and writing paper.

Malaysia with a strong manufacturing base has been successful in attracting investment in high value added products and activities such as optoelectronics and photonics, other high end electronics, R&D and virtual manufacturing.

There will be significant challenges for Malaysia to maintain the momentum given the intense competition from China and other countries in the region. The government has put in place several policies to ensure Malaysia remains competitive. Policies will be fine-tuned to attract quality investments and special incentive packages will be designed for targeted sectors. These are some of the efforts taken to ensure Malaysia remain cost-competitive and a viable location for both foreign and domestic investors. There are however signs that Malaysia is still able to attract new large scale investments. Dyson have announced plans to relocate from the UK to Malaysia, citing a 30 per cent reduction in production cost, and the ease of sourcing components from elsewhere in South East Asia as the motivating factors. Also, Motorola plans to relocate some of its Hong Kong semiconductor operations to Malaysia. This will likely lead to higher quality semiconductor products being produced in Malaysia than has previously been the case. Table 4 provides an indication of the sources of inward investment in recent years.

Table 4 here

The discussion now turns to the electronic and electrical sector in Malaysia, and the level of FDI that it has experienced. Table 5 below illustrates the importance of the EE sector to the Malaysian economy.

Table 5 here

3. Development of the Electrical and Electronics Industry

Early electrical and electronics (EE)³ industries were labour intensive, based on the manual assembly of semiconductors. There has been a massive influx of inward investment in this sector from the USA, Japan and the EU. This phenomenon is relatively easy to explain: low wages, a trainable workforce and incentives, particularly FTZs, were the main attractions for these multinationals. Other factors such as the depreciation of the Malaysian Ringgit, the government becoming more sympathetic towards private enterprise and the introduction of new incentives to promote exports through the Promotion of Investment Act (PIA) of 1986, contributed significantly to renewing the commitment to inward investment. Furthermore, favourable external market conditions such as the appreciation of the Yen and the new Taiwanese dollar, and the removal of the Generalised System of Preference (GSP) status from NIC countries⁴ in February 1988 made Malaysia an excellent choice for investors from these countries (UNIDO, 1991: 114). As expected, the EE industry was the main beneficiary with many EE firms from NICs relocating to Malaysia.

However, over time, especially in the late 1980s and early 1990s, Malaysian electrical and electronics industries became highly capital-intensive processes and highly automated, generating increasingly sophisticated tasks, so that more highly skilled workers were required. Most of the firms, especially foreign firms, provided training to upgrade the skills of their staff. However, as the number of firms grew more rapidly than the supply of skilled

labour, firms began to experience a shortage of labour. This situation became more readily apparent in the fourth phase of Malaysia's industrialisation.

In terms of output, Malaysia has emerged as one of the world's largest exporter of EE products. Evidence presented in Lall (1995) shows it is the world's largest exporter of semiconductors and among the world's largest exporters of disk drives, telecommunications apparatus, audio equipment, air conditioners, calculators, colour televisions and various other household appliances. EE exports account for more than half of Malaysia's total manufactured exports. Electrical and electronics components such as microcircuits, transistors, diodes, other conductor devices and electrical appliances were the dominant growth areas. Textiles followed a distant second, the further growth of the textile sector being hampered by the Multifibre Agreement which imposed quotas on the export of textiles and apparel from developing countries to the USA, EU and Canada (Malaysia, 1994: 48).

Japan was the largest source of investment in Malaysia. Japanese investment was mainly in the manufacturing sector, producing a wide range of products of varying levels of technology, such as electronic components and electrical appliances (including air-conditioners, radio-cassette players, stereos, television sets, etc.), textiles and basic metals. Japanese investment in Malaysia, as noted in one study, occurred in 'waves' (Phongpaichit, 1990: 29). Three waves of Japanese investments in Malaysia have been identified: i) resource-based MNEs in the 1960s; ii) non-resource based MNEs, especially in the electrical and electronics industry in the 1970s and the 1980s and iii) subcontractors from Japan operating in Malaysia to supply large MNEs in the late 1980s and early 1990s (Phongpaichit, 1990).

US-based MNEs were pioneers in the electronics industry, relocating their production facilities to the country as early as 1970 (Narayanan and Rasiah, 1989: 2). Firms from the EU

include Audio Electronics (the Netherlands), Robert Bosch and Grundig (both from Germany), Thompson Audio (France) and Lucas Automotive (from the UK)⁵.

Table 6 here

Evidence is also emerging of this sector becoming more research intensive. Intel, for example, has located a design centre for microprocessors for hand-held equipment in Malaysia, while Motorola has established an R&D centre in Malaysia and designated it as a corporate design centre for cordless telephones for Motorola world-wide (Hobday, 1996). Komag USA, the world's largest producer of thin-film disks, also has its own R&D centre in Malaysia as does Matsushita with an R&D centre for air-conditioners (Mohd Noor, 1999). These developments highlight the fact that foreign firms are willing to locate research activities in host-countries, with the benefits to local countries that this may imply.

The electrical and electronics industry (EE) is the main manufacturing sector in Malaysia, in terms of output, export earnings and employment. In 1995, the industry employed 345,000 people, or 16.8 per cent of total manufacturing employment. In 1998, EE exports contributed 55 per cent of the nation's total exports (Table 2). Output growth in this sector was 32.6 per cent for 1993, and 16.9 per cent for 1992.

The high growth performance of the EOI sector has strengthened the importance of manufactured exports in the economy. However, most of the manufactured exports are contributed by foreign firms. This reinforces the crucial role of MNEs in the industrialisation of Malaysia. For example, the electrical and electronics industry, which contributes more than half the exports of manufactured goods, comprises mostly foreign-owned multinationals.

4. Linkages Between the Foreign and Domestic Sectors.

After employment creation, possibly the major reason for developing (and more developed) countries seeking to attract FDI, is that it is assumed that MNEs will develop links with the

domestic economy. Such links may then support technology transfer, the transfer of skills to the local workforce, and greater investment and employment multipliers from FDI. Successive policies designed to reduce imports and stimulate exports through FDI, however, appear to do little to foster linkages between MNEs and the local economy. Increases in manufacturing exports were offset by similar increases in imports of intermediate goods. Most MNEs, especially in the electrical and electronics (EE) industry, operate from FTZs and exported most of their products. This enclave factor and access to duty free importation of raw materials and intermediate inputs led to weak linkages with local firms. The weak linkages were further worsened, as far as the EE industry was concerned, with the heavy concentration on semiconductor and components manufacturing, which mostly comprised simple assembling and testing activities based on imported materials. This offered limited scope for local linkages (UNIDO, 1990).

O'Brien (1993) and Warr (1989) also noted that there existed a distinct technology gap between foreign and local firms. Foreign firms which utilised a higher level of technology have to source their inputs from elsewhere due to the low and unreliable product quality of local firms. Furthermore, most manufacturing processes of MNEs were based on imported technologies on a turnkey basis which aggravated the dualistic nature of Malaysia's industry - foreign firms with modern technologies existing side-by-side with traditional local firms using low technologies (Onn, 1986). In many cases inputs were supplied by other sister subsidiaries most recently located in Malaysia. In 1988 and 1989, for example, Japanese affiliates reported an increase in local procurement of 77 per cent and 60 per cent respectively. Locally procured goods amounted to 23.7 per cent of total non-labour inputs by value of Japanese MNEs in 1989 respectively, see Aoki (1992). This, however, can be misleading, as Aoki also reports that locally owned firms supplied only half of these inputs by value, the rest being supplied by foreign subcontractors. A survey undertaken by the

Malaysia American Electronics Industry (MAEI) reported a much lower usage of locally sourced inputs. In 1994, the MAEI firms reported that their local sourcing was only 9 per cent of total value of output produced.⁶ Athukorala and Menon, (1996) and Hobday, (1996) attribute the low level of local linkages to the incapacity of local firms to meet appropriate quality standards, and to compete with global components prices. Guyton (1995) reports that the lack of local linkages was due to MNEs' sourcing practices that gave preference to home country firms.

Although these linkages are small when viewed from an MNE perspective, they appear to be more considerable when viewed from a local firm perspective. Driffield & Mohd Noor (2000) report that there are significant linkages between foreign investors and domestic firms in Malaysia viewed from this perspective. However, it is also true to say that these linkages, to borrow from Turok (1993) are of the 'dependent' nature rather than 'developmental'. It is also clear that general subsidies do little to stimulate these linkages, as they simply encourage "branch plant" organisation by the MNE, or plants which merely assemble imported components for export. There is evidence however that such linkages are strengthened and developed over time, and that older technology is transferred more readily to the domestic sector. This is important, as it is indicative of the problem faced by many developing economies. Such countries are able to attract, and assimilate older foreign technology, by virtue of being able to facilitate large scale labour intensive production. However, their ability to gain access to newer foreign technology is distinctly limited, as only MNEs that employ older technology foster local input linkages with domestic suppliers.

The traditional explanations for the lack of local input linkages within MNEs have often focused on the extent to which the MNE is simply unwilling to engage local suppliers, and the degree to which such behaviour is then detrimental to the development of the host country. Driffield and Mohd Noor (2000) have however argued that such an approach is not

valid, and that an understanding of the differing costs of local *vis-à-vis* source country suppliers, including transaction cost differences is the overriding factor. To this end, it is important to note that the extent to which MNEs employ local labour in technical or managerial positions will quickly reduce the transaction costs associated with MNEs buying from local firms, and lead to an increase in local input linkages. From a policy perspective, there should be an emphasis within inward investment incentives to seek to reduce the transaction costs associated with local inputs. For example, while it is generally assumed that MNEs operating in Malaysia will employ high proportions of locally recruited manual workers, the employment of local people in managerial or technical positions is seldom considered as one of the conditions for a firm to receive an investment subsidy. It is suggested that this is a policy initiative that should be considered by development agencies, from the perspective of contributing to developmental rather than dependent linkages, and therefore technology transfer and other spillovers from FDI.

Driffield and Mohd Noor (2000) suggest there are technological linkages between foreign and local firms. Their results concerning the relationship between the various policy initiatives and local input linkages provide some clear policy implications. In the most general terms, firms that simply received a subsidy, either in the form of an investment tax allowance, or training or R&D subsidies, generate very little in terms of local input linkages, and as such technology transfer is limited. Equally, firms that have been attracted to Malaysia simply to avoid import restrictions, are likely to engage in branch plant activity, and again the local development from FDI is limited. However, there is evidence that investment incentives which are targeted at specific outcomes, and require certain commitments of the recipients, are more effective in fostering local input linkages. For example, to an extent the *Pioneer Initiative* takes the form of a tax allowance, but places several conditions on the recipient, one of which is a local content requirement. There is evidence that this policy has been

effective, not only in generating local input linkages, but also in fostering technology transfer. The same can be said, perhaps more surprisingly, of export incentives. One thinks of export incentives, as being designed to attract MNEs who simply want to export assembled components that have previously been imported. The explanation of this, one imagines, is linked to the extent to which the technology employed in the assembly operation is modified for local conditions, which again encourages local input linkages.

There is little evidence that joint ventures encourage local input linkages. This is contrary to the apparent beliefs of policy makers, who tend to suggest that JVs 'internalise' the technology, and encourage the involvement of local firms. This however does not appear to occur, possibly because the imported technology is not disseminated beyond the local partner.

Finally, it is often claimed that Japanese MNEs are the least likely to foster local input linkages, preferring to use Japanese firms with whom they have vertical relations elsewhere. While there is no specific evidence of this, there is evidence that US firms have higher local input linkages than other firms, possibly a function of the distance between Malaysia and the home country compared with firms from other parts of South East Asia.

5. FDI and Technological Development

Foreign firms' R&D is concentrated in the manufacturing sector with 80 per cent of this in the EE industrial sector. Inward foreign direct investment provides Malaysia's domestic firms access to advanced technologies through subcontracting and other supply arrangements and there is evidence that foreign investors train some local employees to high scientific and technical standards. Further, some foreign firms appear willing to spin-off certain activities under local ownership (Mohd Noor, 1999). Malaysia is attracting many high-tech MNEs. Intel, for example, had a cumulative investment of RM4.4 billion in Malaysia by 1996 and

plans to continue investing more than RM 1 billion annually. Intel Malaysia is the firm's largest manufacturing site outside the US. It assembles Intel's flagship products such as the Pentium and Pentium II processors. Additionally, Advanced Micro Devices (AMD) has made its Malaysian plant its global manufacturing centre. The presence of these firms and numerous others such as Motorola, Sony, Phillips and Mitsubishi present many valuable opportunities for technological development of local firms. While evidence available suggests that MNEs in Malaysia are engaging in R&D and other forms of technological effort, some suspicion remains that these are rather isolated events compared with the general pattern. It is important therefore to understand the causes in the variation in levels of technological effort across foreign MNEs in the Malaysian EE sector.

It has been argued that MNEs are likely to undertake technological activities if operating for a large domestic market (Kumar, 1996; Odagiri and Yusada, 1996). The activities undertaken usually take the form of R&D, supporting the manufacturing activities of local affiliates. Other activities will include the necessary adaptation of the product if MNEs are to maintain or increase their local market share. Thus, if MNEs have a stronger presence in the local market, this could indicate a greater likelihood of undertaking technological effort. With the rapid advancement of technologies and increasingly globalised operations, however, export-oriented subsidiaries have undergone a widening of their functions. The complexity of production and the need to lower costs has made it necessary for MNEs to undertake more technological effort on site. Locating R&D units close to the production site enables efficient communication and monitoring of production to be undertaken.

Adaptation may also be required. Here it is envisaged that MNE affiliates undertake some form of technological activity in order to cater for necessary modification to the production operation. Assuming that the technological level of many host countries is low, such technological activity may make an important contribution to domestic productivity as well.

Adaptation by MNEs can also be identified through changes in plant design and production methods. It is argued that increasing adaptation will increase the need for technological activity by MNEs. This, in turn, will generate productivity growth, and allow the firm to be more responsive to market changes (Hobday, 1996).

Additionally, evidence is emerging of significant technological competition between MNEs in Malaysia. In a developing country, subsidiaries of MNEs often compete on a global scale which gives very strong incentives to undertake R&D. Results reported in Clarke et al. (2002) suggest that export-oriented MNEs in Malaysia are engaging in local R&D and other forms of technological effort. In general however this is limited to the larger subsidiaries.

In terms of technology acquisition, there is a strong link between technological modification and the technology transfer process (Clarke et al. 2002). This may be encouraging for the Government since it suggests that technological development and transfer will take place, in addition to other, initial, benefits of FDI. Equally there is evidence that even the smaller foreign owned plants, while not engaging in R&D, do engage in other forms of technological effort. The literature on the benefits of FDI to developing countries makes much of the “technological gap” that exists between foreign and local firms, and the extent to which this “gap” hampers technology transfer. The fact that the smaller foreign subsidiaries are engaging in the more basic forms of technological effort is likely to be an important part of the technology transfer process.

6. Conclusion : Informing Future Policy

Foreign direct investment has been a major feature of the industrial development of Malaysia. Following independence in 1957, the Malaysian government has made major efforts to increase and widen the industrial base in Malaysia. An important part of this process has been the encouragement of FDI. In 1998, 81 per cent of all exports from Malaysia were made from

the industrial sector and 55 per cent from the EE sector. This compares with just 12 per cent of all exports from the industrial sector in 1970, and 6 per cent from the EE industry. Total capital investment in non-resource-based industries was 48.2 RM billion in 1991-95 of which 16.5 RM billion (34.2 per cent) was made in EE industries and 12.7 RM billion (77.0 per cent) by foreign-owned firms. The industrial sector as a whole accounted for 35 per cent of Malaysian GDP in 1998 compared to just 13 per cent in 1970. The EE industries themselves accounted for 13.2 per cent of manufacturing employment and 3.8 per cent of total employment in Malaysia.

Development of FDI in the EE industry took place during two periods associated with the export-orientated industrialisation (EOI) policies adopted by the Malaysian government. Evidence for this is shown in Table 6. The first arrivals took place at the time of the first EOI policy between 1969-80. In this period, most of the arrivals were Japanese or US firms seeking to switch production abroad to take advantage of lower labour and material costs. The Malaysian government also provided strong incentives for foreign firms in the form of licensed manufacturers' warehouses and free-trade zones. In the second phase, in 1988-, further incentives were given to foreign firms. During this period Japanese firms were again prominent in setting up production facilities in Malaysia as were a wider range of other MNEs including those from newly industrialising countries such as Taiwan and Korea.

In realising the acute competition for FDI and the importance of local firms in developing the manufacturing sector, as shown by NICs, particularly Taiwan and South Korea, further impetus has to be given to developing local firms. In fact, the importance of developing local firms, especially SMEs, has been recognised in every major Malaysian economic plan. In the Second IMP 1996-2005, for example, the thrust of the Plan includes the increased participation of local firms in a broad range of activities, especially in areas that have been identified as being strategically important in the future development of the manufacturing

sector (Malaysia, 1996e: 11). If the amount of allocation is any indication, then an increase of 21 per cent (RM546.9 million) allotted for SMEs' development in the Seventh Malaysian Plan, compared to 7 per cent (RM105.2 million) in the previous (Sixth Malaysia Plan) of the total allocation for industrial development, is a strong endorsement of the recognised importance of the sector.

From the outset, MNEs have played a major role in Malaysia's industrialisation process. MNEs not only contribute to providing employment for the growing population, but also provide access to global markets, and encourage local firms to undertake technological activities and development. This scenario will remain for the foreseeable future. However, in light of the competition for FDI and following the Asian financial crisis, Malaysia's industrial development may have to depend more on local firms. To cater for this probable eventuality, it is necessary to increase the manufacturing performance of local firms and at the same time make full use of the presence of MNEs.

This paper has identified two key issues that need to be properly addressed and acted upon if Malaysia is to maximise the benefits of inward FDI. Firstly, the apparent weak linkages in the EE industry. Despite the impressive growth and development of the manufacturing sector, most of it is MNE driven. With the exception of a few, involvement of local firms has been mostly restricted to supplying low value added components and services to MNEs. As yet, there is not a significant pool of local firms that can act as an anchor to a locally owned EE industry.

Secondly, is the low technological capability of local firms which probably offers some explanation for the weaknesses mentioned above. Low technological capability is also evident on a national level as highlighted in various official documents. This, as argued in some studies, is a result of inadequate local technological activity. Most technologies have

been imported thus leading to dependency. Increasing technological capability, in the long term, will require strengthening local absorptive capacity and more effective utilisation of foreign technology.

The latest (eighth) industrial plan seeks to address these problems, and outlines the following objectives.

- Positioning industries to take advantage of the opportunities arising from globalisation
- Strengthening the manufacturing base by developing strong industrial clusters
- Sustaining the momentum of growth by strengthening manufacturing related services
- Providing more focused incentives for high value added industries
- Increasing the use of technology and developing strong domestic capability
- Enhancing the local production of capital and intermediate goods to reduce import intensity and foster industrial development
- Enhancing competitiveness through productivity improvement
- Developing new initiatives in export promotion
- Increasing the use of Information and Communications Technology (ICT)
- Developing resilient SMEs

While much of this statement may be interpreted as the commonly used phrases from development “mission statements” it is clear that the government appreciates the link between inward foreign direct investment and the technological development of domestic industry. Many governments are seeking to target inward investment more carefully than has been the case and it seems that Malaysia is no exception.

Notes:

1 Formerly known as Malaya, Malaysia consists of 13 states: Penang, Kedah, Perlis, Perak, Selangor, Negeri Sembilan, Malacca, Johore, Trengganu, Kelantan, Pahang, Sabah, Sarawak and the Federal Territory of Kuala Lumpur and Labuan. Sabah and Sarawak joined Malaya in 1963 to form Malaysia. Singapore seceded from the union in 1965.

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- ² Initially, HICOM was wholly government-owned. It was later privatised with the government still holding a substantial share of the company. However, in 1996, the Government sold her entire share of (RM1.7 billion) to the private sector. The HICOM group of companies comprise: HICOM, Kedah Cement, Perwaja Trengganu (steel mill), HICOM-Properties, PROTON, HICOM-Yamaha Manufacturing, HICOM-Honda Manufacturing, HICOM-Suzuki Manufacturing, and Petro-Pipes Industries.
- ³ The Malaysian EE industry essentially consists of two related industries. The electronics industry is defined as the production of “*equipment whose functioning is based on the manipulation of electrical signals/impulses and/or components of such equipment*”. The electrical industry produces equipment which “*generates, stores and transmits electrical power or transforms electrical energy into other forms of energy*”. Source: UNDP (1990).
- ⁴ Taiwan, South Korea and Singapore.
- ⁵ Evidence from Mohd Noor (1999).
- ⁶ Malaysian-American Electronics Industry (1995) *Annual Survey 1994/1995*, Hay Management Consultants, Kuala Lumpur, pp. 5-6.

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Table 1. Industrial Phases in Malaysia

	Pre-Independence	ISI (1957 to late 1960s)	EOI (Late 1960s onward)	Second round ISI (1980 onward)	Renewed EOI (Late 1980s onwards)
Factors contributing to the chosen industrial strategy	Extractive economic policies	High dependence on primary commodities and import bills	Relocation of the international semiconductor industry	High import of intermediate goods. Government-led strategies	Revert to a more market-oriented approach.
Main objectives	To increase the production of primary commodities	To diversify the economy, reduce imports and generate employment	To diversify the manufacturing sector, create linkages and employment	To create linkages in the manufacturing industry. To reduce imports of intermediate goods	To increase manufacturing linkages, competitiveness and to achieve other socio-economic objectives
Main industries	Processing of rubber and tin	Perishable consumer goods, light industries	Electronic, electrical and textiles	Heavy industries such as automobiles, steel, cement	Electrical and electronic goods - priority given to higher value added products
MNEs	Mostly British - based	Mostly British-based and the beginning of investments of US-based MNEs.	US-based MNEs were the pioneers in electronics. Japanese-based MNEs followed suit.	State-owned enterprises, mostly joint-ventures with Japanese and Korean MNEs.	Emergence of NIC-based MNEs. Especially from Korea and Taiwan.
Impacts	An economy overly dependent on rubber and tin. Manufacturing industries were not developed	ISI achieved the desired objectives. However, linkages to the economy were weak due to MNEs importing most of their raw materials and intermediate goods	EOI significantly increased employment opportunities. Linkages to the economy were still weak. Imports of intermediate goods were still high.	Suffered heavy losses initially, partly due to the 1985 recession. Linkages to the economy not fully materialised. Supporting industries not yet fully developed.	Rapid growth experienced in the first half of the 1990s. Increased focus on technology and technological capability.
Major policies	None	Pioneer Industries Ordinance Act 1958	Investment Incentive Act Free Trade Zone Act Industrial Coordination Act	IMP1 1986-1995 Promotion of Investment Act 1980	IMP2 1996-2005.

Table 2. Key Economic Indicators for Selected Years

State's emphasised industrialisation strategy	None Pre-Independence	ISI (1957 to late 1960s)		EOI (late 1960s onward)		Second round ISI (1980s onward)		Renewed EOI (late 1980s onward)		
Average annual growth rate of real GDP (%)	n.a.	1957-1967 6.1		1968-1973 8.5	1974-1978 8.4	1979-1985 5.5		1989-1994 8.6	1995 9.4	1998 ⁸ -4.8
Investment as share of GDP (%)	n.a.	1960	1965	1970	1975	1980	1985	1990	1995	1998 ⁸
Private		10.0	9.1	12.5	14.5	20.2	18.0	22.0	31.8	21.4
Public		2.6	7.3	5.9	8.8	12.1	15.9	12.1	16.1	11.3
Share of industrial sectors in GDP (%)	1955	1960	1965	1970	1975	1980	1985	1990	1995	1998 ⁸
Manufacturing	8	9	10	13	14	20	19	27	33	35
Agriculture	40	38	32	31	29	23	20	18	14	12
Services	n.a.	n.a.	n.a.	n.a.	48	n.a.	46	41	44	42
Others ¹	52	53	58	56	5	n.a.	15	14	9	11
Structure of Exports (%)	1955	1960	1965	1970	1975	1980	1985	1990	1995	1998 ⁸
Manufacturing ²	-	8.5	12.2	11.9	21.4	21.8	34.6	58.8	79.6	81.2
<i>EE</i>	-	n.a.	n.a.	6.0	n.a.	9.2	14.2	33.3	52.3	54.9
Agriculture ³	80.3	66.1	54.5	59.2	52.8	48.5	31.9	22.3	13.1	10.7
Minerals ⁴	17.7	22.2	30.0	25.9	22.6	26.4	24.2	18.3	5.8	7.1
Other	1.9	3.2	3.3	3.0	3.2	4.5	4.3	0.6	1.5	0.9
Structure of Imports (%)	1955	1961		1970	1975	1980		1988	1993	1998 ⁸
Consumption goods ⁵	46.9	46.7		28.0	20.0	18.4		23.6	16.0	13.5
Investment goods ⁶	12.4	28.4		26.6	31.9	29.9		29.2	40.9	39.6
Intermediate goods ⁷	19.6	17.1		36.4	43.4	49.9		46.2	42.7	46.1
Others	20.7	7.8		9.0	4.7	1.7		1.0	0.5	0.8

Sources: Economic Report (ER), 1996/97; ER, 1998/99; Third Malaysia Plan (3MP), 1975; 4MP, 1981; 5MP, 1985; 6MP, 1990; 7MP, 1995; Malaysia, 1996e; Corden and Ritcher (1963).

Notes:

1. Includes services for 1955, 1960, 1965 and 1970
2. SITC 1+5+6+7+8.
3. Mainly rubber and palm oil.
4. Mainly petroleum and tin.
5. Mainly food, beverages and tobacco, consumer durables and others.
6. Refers to finished goods used for investment purposes such as plant and machinery.
7. Unfinished and semi-finished goods used for the production of other goods, including products which have to undergo further processing, assembly and transformation.
8. Estimates from January to July by the Ministry of Finance.

Figure 1. Foreign Ownership of the Corporate Sector in Malaysia

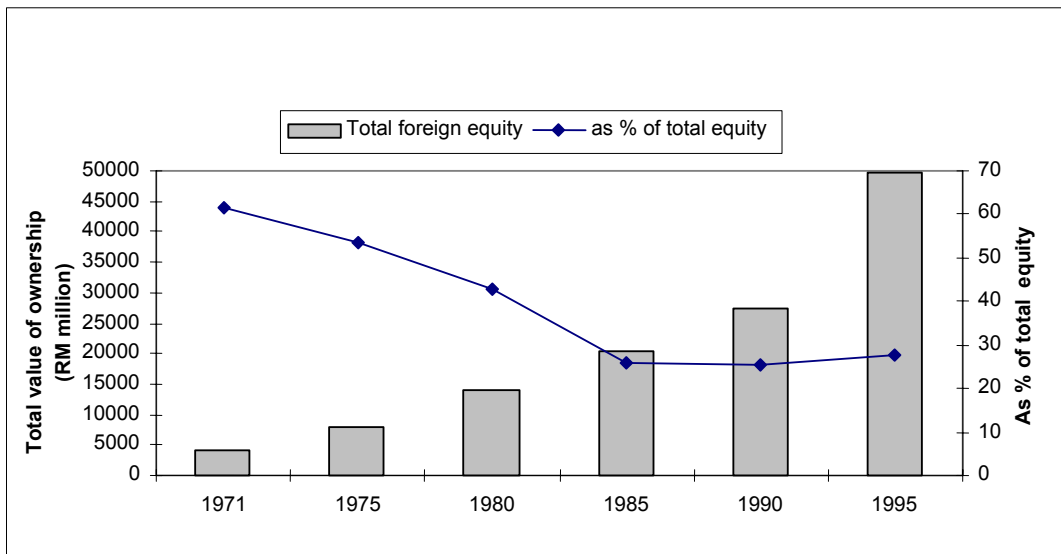


Table 3. Approved Manufacturing Projects, 1991-1995 (RM millions)

Industry	No. of projects	(RM million)		Total capital investment
		Domestic investment	Foreign investment	
Resource-based	1908	33,466.3	34,057.2	67,523.5
Food manufacturing	216	1,467.2	954.8	2,422.0
Beverages & Tobacco	21	169.6	330.6	500.5
Wood & Wood Products	333	3,887.7	2,942.5	6,830.2
Furniture & Fixtures	182	457.2	355.8	813.0
Paper, Printing & Publishing	150	1,710.9	514.0	2,224.9
Chemical & Chemical Products	271	5,571.8	8,007.2	13,579.0
Petroleum Refineries/Products	18	3,248.3	13,198.6	16,446.9
Natural Gas	2	5,909.0	1,722.0	7,631.0
Rubber Products	149	638.6	470.1	1,108.7
Plastic Products	310	1,358.2	1,020.0	2,378.2
Non-Metallic Products	256	9,047.5	4,541.6	13,589.1
Non-Resource Based	2,297	20,863.0	27,318.7	48,181.7
Textiles & Textiles Products	311	959.2	3,728.0	4,687.2
Leather & Leather Products	27	76.7	56.7	133.4
Basic Metal Products	182	11,300.6	5,791.5	17,092.1
Fabricated Metal Products	225	1,173.9	2,403.1	3,577.0
Machinery Manufacturing	193	511.3	1,085.7	1,597.0
Electrical & Electronics Products	1,131	3,805.0	12,703.2	16,508.2
Transport Equipment	198	2,995.2	1,321.6	4,316.8
Scientific & Measuring Equipment	30	41.1	228.9	270.0
Miscellaneous	92	236.2	221.3	457.5
Total	4,297	54,565.5 (46.97%)	61,597.2 (53.03%)	116,162.7 (100%)

Source: Seventh Malaysia Plan, 1996-2000, Table 9.5.

Note: Based on the number of projects approved by the Ministry of International Trade and Industry (MITI). Obviously not all of these projects were realised. It is estimated that about 20 per cent were not realised, mainly due to changes in economic circumstances which made them non-viable.

Table 4. Sources of Foreign Investment in Approved Projects, 1997-2001 (RM millions)

Country	1997		1998		1999		2000		2001	
	No. of projects	Investment (RM)	No. of projects	Investment (RM)	No. of projects	Investment (RM)	No. of projects	Investment (RM)	No. of projects	Investment (RM)
USA	39	2,397	45	6,433	36	5,159	48	7,492	36	3,405
Japan	100	2,164	127	1,867	112	1,006	118	2,881	157	3,359
Singapore	118	1,281	145	968	129	902	145	1,778	153	2,222
UK	19	207	24	479	13	192	17	771	20	122
Germany	25	1,811	10	152	17	187	30	1,665	23	2,593
Taiwan	63	1,345	74	1,001	66	267	92	916	88	1,127
Korea	18	678	15	76	6	35	14	722	21	1,696
Total		11,473		13,065		12,273		19,756		18,820

Source: Malaysia Industrial Development Authority (MIDA).

Note: Currently the Malaysian Ringgit (RM) is pegged to the US dollar at US\$1.00 = RM 3.80.

Table 5. The Contributions to GDP of Malaysia's Industrial Sectors

Industry	Value Added (RM Million in 1987 prices)		Share of Value Added (%)		Average Annual Growth Rate, 1996 – 2000
	1995	2000	1995	2000	(%)
Textiles, Wearing Apparel and Leather	2,311	2,451	5.1	3.5	1.2
Basic Metal	513	1,049	1.1	1.5	15.4
Metal Products	1,551	3,182	3.4	4.6	15.5
Manufacturing of Machinery, except Electrical	2,675	3,434	5.9	4.9	5.1
Electronics	10,288	19,460	22.8	27.9	13.6
Electrical Machinery	832	1,507	1.8	2.2	12.6
Transport Equipment	4,136	7,356	9.2	10.5	12.2

Source: Eighth Malaysia Plan, 2001 - 2005, p. 236.

Table 6. Foreign Firm Arrivals in the EE Industries, 1957-98

	First ISI (1957-68)	First EOI (1969-80)	Second ISI (1981-87)	Second EOI (1988-)	Total
Japan	-	5	2	16	23
US	-	5	-	2	7
Taiwan	-	1	2	3	6
S. Korea	-	-	-	3	3
EU	1	2	-	1	4
Joint ventures	-	-	-	2	2
Total	1	13	4	27	45

Source: Mohd Noor (1999), Table 5.14.