

# **INDUSTRIAL RESTRUCTURING IN MALAYSIA: POLICY SHIFTS AND THE PROMOTION OF NEW SOURCES OF GROWTH**

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## **INTRODUCTION**

The Malaysian economy recorded rapid growth from 1970 to 1997, with the exception of the brief recession of the mid-1980s. The economy grew by 8.3 percent between 1970 and 1980, slowed down somewhat to 5.9 percent between 1980 and 1990, but recorded unprecedented sustained high growth of about 9 percent from 1990 until it succumbed to the Asian financial crisis of 1997. The remarkable economic expansion was progressively led by manufacturing (Table 5.1). As a result, the manufacturing sector's share of GDP rose from 13.3 percent in 1970 to about 30 percent by 1997, while the sector's share of employment rose by 17 percent. Most notably, export of manufactured goods increased from a mere 12 percent of total exports in 1970 to 81 percent by 1997 (Table 5.2). The dominant position of manufacturing in the growth and development of the Malaysian economy is particularly evident from the pivotal role it has assumed in the current economic recovery from the nation's worst-ever recession. The economy contracted by 7.5 percent in 1998, but recovered quickly, expanding by 5.4 percent the next year.

The growth and structural transformation of the economy over the last three decades has occurred within the framework of a liberal trade and investment regime as well as the extensive use of so-called functional and selective industrial policies (Lall 1997). The overall approach to industrial development is anticipated to continue, but a shift towards more market-based policies is apparent in the industrial policy adjustments introduced since the late 1980s. A more pragmatic approach to policy interventions was adopted to adapt to Malaysia's rapidly changing comparative advantage and to cope with increasing global competition and revised regional and international rules and regulations governing trade and investment under AFTA and WTO. The recession of the mid-1980s brought to light the urgency to re-evaluate and redefine development strategies and policies. The effect was a broad shift from a relatively diffused policy approach to a more comprehensive and integrated strategy to foster industrial dynamism. The state withdrew from direct participation in production, and the private sector was assigned the lead role in industrial development. The state took on a more indirect and supportive role in spite of the continued targeting of industries. Hence, this phase of industrial restructuring witnessed the introduction of several new policy initiatives to redress fundamental weaknesses within the industrial sector, foster structural dynamism, and promote new sources of growth through a more focused and integrated approach to policy interventions.

The chapter examines these shifts in industrial development strategies and policies and highlights some of the future challenges and issues confronting policy makers in Malaysia. It briefly introduces the evolution of industrial development strategies and policies responsible for Malaysia's industrial

dynamism and highlights some of the key success factors of the past that will continue to provide the underlying framework for future development. It also examines some of the fundamental weaknesses within the industrial sector that led to policy adjustments. Next, it shows how some of the new policy initiatives and new sources of growth complement existing strategies and policies within the context of a “manufacturing ++” development strategy. Essentially, this involves a shift from an industry-based to a cluster-based development strategy to foster greater maturity and diversity of the industrial sector.

### **MAJOR THRUSTS OF INDUSTRIAL POLICIES FROM 1970 TO THE 1990s**

Most analyses of the evolution of industrial policies in Malaysia distinguish three phases of industrialisation since the 1970s. These are:

- Export-oriented industrialisation (EOI) based on export-processing zones (EPZs) in the early 1970s;
- A second-round of import-substituting industrialisation (ISI) based on heavy industries in the early 1980s; and
- Liberalisation and a second round of export push in the late 1980s and a sustained shift towards more market-oriented policies in the 1990s.

The key policy initiatives and their basic thrusts influencing Malaysia’s industrialisation process are summarised in Table 5.3.

#### **Export-oriented Industrialisation in the 1970s**

Prior to the 1970s, Malaysia promoted specific industries primarily through tariffs and quotas and the provision of basic infrastructure, and these industries essentially produced for the domestic market. This initial ISI drive of the 1960s faced such inherent limitations as saturation of domestic market and failure to penetrate export markets. It also failed to absorb the economy’s excess labour, leading to relatively high unemployment levels and subsequent political instability. Because of these circumstances export-oriented industries were promoted in the early 1970s through the Investment Incentives Act of 1968, the establishment of EPZs, and restrictions on labour unionisation to entice trans-national corporations looking for low-cost production sites abroad. Foreign firms in the EPZs employed low-wage labour to assemble imported raw materials and components for export. Electrical and electronics firms were the major producers in these zones, with some textile and garment factories.

The EOI drive through EPZs transformed the industrial sector into a significant economic activity. The contribution of manufacturing to GDP and employment rose by 7 percent within a decade, while exports rose by 8 percent (Table 5.2). By 1980, exports of electrical and electronic products and textiles and garments, located mostly within EPZs and licensed manufacturing warehouses (LMWs), accounted for about 60 percent of manufactured exports (Table 5.4). While the export-oriented development strategy was successful in terms of gross export earnings and overall employment generation, it had serious drawbacks for sustained industrial expansion.

Earnings from rapid export growth were limited because of the high import-intensity of exports.

For instance, between 1972 and 1982 net foreign exchange earnings were as little as 10 percent of gross sales (Edwards 1995, p. 18). Employment expansion was significant and absorbed surplus labour, but it was mostly low-wage employment. Edwards (1995) noted that the average real wage in the manufacturing sector in 1978 was lower than in 1968. Little technology transfer or skill development took place and the EOIs developed in isolation as “export enclaves”. Linkages between EPZ firms and the rest of the economy through the purchase of domestically produced raw materials and capital equipment were insignificant. Primarily to redress these weaknesses industrial policy focused on a second round of ISI based on heavy industries in the early 1980s.

### **ISI Based on Heavy Industries in the Early 1980s**

The heavy industrialisation strategy was aimed at deepening and diversifying the industrial structure through the development of more local linkages, *bumiputera*-owned small and medium-scale industries, and indigenous technological capabilities. The heavy industries targeted under the programme included the national car project, motorcycle engine plants, iron and steel mills, cement factories, a petrol refining and a petrochemical project, and a pulp and paper mill. All of these industries require long gestation periods and heavy capital investment and hence were spearheaded by the public sector. A public sector agency—the Heavy Industries Corporation of Malaysia (HICOM)—was established in 1981 to lead the heavy industrialisation programme. Public development expenditure for heavy industries rose significantly from RM0.33 billion in 1981-85 to RM2.55 billion between 1986 and 1990, mostly financed through external borrowings (Table 5.5). Apart from enormous injections of public funds, the targeted industries were heavily protected through tariff and import restrictions and licensing requirements. For instance, the effective rate of protection for the iron and steel industry rose from 28 percent in 1969 to 188 percent in 1987. The level of protection for motor vehicle assembly and cement industries was so high that these industries operated at negative value added at free trade prices. In other words, they would not have survived without protection (Edwards et al. 1990).

The performance of heavy industries in the early years was rather weak. Despite significant protection, the industries suffered severe financial losses due to lower-than-projected domestic demand and high operating costs. Many of Malaysia’s targeted heavy industries also suffered from severe gluts on the world market. The recession of the mid-1980s and high external debt (Malaysia’s external debt rose from 9.5 percent of GNP in 1980 to about 42.4 percent in 1986) forced the government to restructure and privatise many of the state-owned enterprises, including the heavy industries. The management of some of the heavy industries improved with privatisation and they began to penetrate export markets. The reorientation of strategies and policies with respect to heavy industries was part and parcel of an overall trend towards further liberalisation of the economy and rationalisation of industrial policies.

## **Liberalisation and Export Push from the Late 1980s**

Macroeconomic adjustments and structural reforms to enhance the efficiency and competitiveness of the Malaysian economy followed the mid-1980s economic slowdown. The public sector was downsized through privatisation and mergers and there was general recognition of the private sector as the primary engine of growth. For the first time, industrial development was guided by a ten-year Industrial Master Plan (IMP), which provided the framework for the development of the manufacturing sector.

The First IMP (1986-1995) recommended the continuation of the export-led industrialisation strategy but emphasised the promotion of resource-based industries in which Malaysia had already developed a strong foundation with higher local content and the diversification of the non-resource-based industries. This strategy was pursued through further liberalisation of trade and investment, and substantial incentives were granted to encourage investment and exports. The incentive system under the IMP was tied to industries in which Malaysia had a comparative advantage and those products that were of strategic importance to the country, termed 'priority products'.

The 1986 Promotion of Investments Act replaced the 1968 Investment Incentives Act and provided a wider range of incentives for investments in manufacturing, agriculture and tourism. Special incentives were targeted at export expansion and the development of small and medium-scale industries that were deemed essential to develop inter-industry linkages. Foreign equity guidelines were further relaxed to make it easier for foreign investors to own up to 100-percent equity, depending on export targets and other conditions. The scope of the Industrial Co-ordination Act of 1975 was relaxed so that only companies with more than RM2.5 million shareholder funds or engaging more than 74 full-time workers required operating licences. Previously the ceiling was RM250,000 or 25 workers.

The First IMP also stressed the importance of science and technology and human resource development to support the industrialisation process. It highlighted the critical need to prepare the workforce with industrial and technical skills and to develop indigenous skills in product design and production technology. Incentives were thus provided for training and for research and development.

Substantial labour market reforms were also introduced in the late 1980s and early 1990s to make Malaysia more cost-competitive and to facilitate industrial upgrading. In the second half of the 1980s, significant amendments were made to labour legislation to contain labour costs and to foster greater labour market flexibility. This does not necessarily imply that the labour market had been rigid prior to the wage reform measures. The primary elements of wage rigidity such as statutory minimum wage, high unionisation of the workforce, and strong role of unions in collective bargaining are not characteristic features of the Malaysian labour market.

These policy reforms and incentives made Malaysia more attractive as an investment centre, and the economy benefited tremendously from the outward-bound investment from Asian NIEs that were relocating their production bases. Direct foreign investment in manufacturing and selected sectors of

the economy rose from only RM2.1 billion in 1987 to RM17.6 billion by 1990 (Table 5.6). Investment in Malaysia from Japan, Taiwan, South Korea, Hong Kong expanded significantly during this period. By 1990, these economies together accounted for about 70 percent of total foreign investment. Their share has fallen to around 40 to 50 percent in recent years as these economies completed the bulk of their structural adjustments.

The massive inflow of foreign investment into manufacturing following the liberalisation and deregulation measures resulted in significant structural shifts within the Malaysian economy. Manufacturing surpassed all expectations, becoming the leading sector in output, exports, and employment growth. By 1990, it accounted for about 27 percent of GDP, about 59 percent of total exports, and about 20 percent of total employment (Table 5.2).

The uninterrupted high growth from 1986 transformed the labour market from a situation of high unemployment in the mid-1980s to severe labour and skill shortages by the early 1990s, with significant inflow of foreign workers. It was feared that the relatively easy access to low-skilled labour would retard industrial upgrading and trap the economy in low-skill equilibrium. Accurately estimating the number of foreign workers is difficult because of the high incidence of illegal entry and the many foreign workers overstaying or possessing forged documents. Based on the number of work permits issued, the number of foreign workers and their dependants in the country rose from 290,000 in 1990 to 650,000 in 1995 and to 730,000 by 1997. According to official estimates, there were about 1.7 million foreign workers in the country in 1997, including one million illegal or undocumented workers (Kanapathy 1999). In other words, foreign workers accounted for about 20 percent of the total labour force or 21 percent of all those employed. The significant presence of foreign workers helped to moderate wage growth, but even so, with unabated economic growth and full employment, wages grew in excess of productivity, impinging on profitability. Labour productivity as measured by value added per worker rose by 7.8 percent per annum between 1990 and 1993, whereas wages grew by 8.7 percent (Table 5.7). As a result, unit labour costs rose by about one percent, after declining about two percent between 1985 and 1990.

In addition, skill intensity in manufacturing was almost stagnant during the period of high growth, and the level of technical and tertiary education was insufficient to meet the growing demand for skilled workers. Skill intensity in manufacturing, as measured by the ratio of professionals, managers, technicians, and supervisors to the total workforce, rose by less than one percent, from 0.126 in 1983 to 0.132 in 1992 (Department of Statistics, *Annual Industrial Survey*, various issues). The World Bank attributed the sluggish growth in skill intensity mainly to supply constraints, while acknowledging demand constraints. It argued that the relative shortage of skilled workers resulted in high wage premiums and dampened investment in skill-intensive industries. And the high demand for less skilled workers was met by the relatively easy availability of foreign workers (World Bank 1995 pp.16-18). Both supply and demand factors explain the almost stagnant or slow growth in skill intensity of the manufacturing sector. In other words, the labour market had reached a crossroads

demanding a strategic shift towards higher value-added activities requiring greater capital, skill-, and knowledge-intensity for sustainable growth. Industrial policy was fine-tuned to foster sustainable competitiveness by putting priority on human resource and technology development.

During the early 1990s, labour market policy attention diverted from job creation and fostering labour market flexibility to the expansion of education and training facilities to support industrial growth and restructuring. Although the state has traditionally been the main provider of education and training in Malaysia the widespread labour and skill shortages during the high growth phase made it apparent that the state could not meet the expanding demand for human resource development on its own. Several new policy initiatives were introduced to improve and expand education and training. There was a shift from a largely supply-driven approach to a more demand-driven approach. Elements of this shift include mandatory training by industry, liberalisation of the education market, greater incentives for the private sector to invest in education and training, and the forging of industry-institution links. With these far-reaching reforms, a comprehensive and dynamic education and skills delivery infrastructure has evolved in recent years offering more opportunities for workers and firms to invest in developing their skills. Meanwhile, the process of industrial restructuring itself has enhanced job prospects for skilled workers, encouraging a culture of lifelong learning.

Technology is perhaps the weakest link in Malaysia's industrialisation process. The technology capabilities of the manufacturing sector are not commensurate with its dominant position in terms of output, employment, and exports. This situation is somewhat reflected in poor productivity growth in manufacturing. Some of the more recent studies on productivity performance show negative or very low total factor productivity growth in manufacturing in the 1980s and early 1990s (Table 5.8).

The low level of technology development in Malaysia is largely the legacy of past policies that failed to provide state support for firms with potential for upgrading their technology capabilities. Foreign direct investment (FDI) was the principal mode of technology acquisition, but the investment incentives to promote FDI were tied to export and employment expansion, and not to technology development. Technology development was not given priority until the post-1985 industrial policy rationalisation. State support measures, including reform and expansion of public sector R&D institutions and infrastructure and introduction of a wider range of incentives for private sector R&D, brought about a more comprehensive and dynamic policy and institutional framework for technology development (Table 5.9).

The mounting efforts to promote technology-based industrialisation have produced some positive results, but R&D expenditure is still falls short of the national target of 1.6 percent of GDP. At present, R&D expenditure hovers around 0.3 percent of GDP, down from 0.6 percent in 1992 and 1994 (Table 5.10). The R&D expenditure rate in Malaysia is also way below that in Japan (2.8 percent) and in the first generation NIEs—Singapore (1.4 percent), South Korea (2.8 percent), and Taiwan: (1.9 percent) (Bank Negara Malaysia 2000, p.65).

Other critical problems include the low analytical capability and insufficient number of full-time

staff in state agencies that disburse state support to identify the technology needs of the industry and their growth prospects. Recent changes have strengthened the system somewhat. In addition, the ambitious technology strategies of the state are not based on the realities and constraints faced by industry. State strategies tend to favour the creation of indigenous products and promote cutting-edge technologies, while the needs of industry are most pressing in the areas of quality improvement and technology mastery and adaptation (Felker 1999).

Despite the progress in industrial upgrading under the liberalisation and rationalisation of industrial policies since the late 1980s, critical problems continue to plague the industrialisation process. These include:

- low level of indigenous technology
- general lack of intra-industry linkages
- limited local content
- low level of domestic investment in export industries
- low level of value added activities

These pressing domestic constraints were compounded by rising global competition and resulted in Malaysia's re-evaluating its approach to development in the late 1990s. As a background to examining the revised approach to industrial development, the following section summarises the key elements of Malaysia's past industrial dynamism. These factors will continue to provide the underlying framework as the economy makes the transition to a higher level of industrialisation.

### **KEY ELEMENTS IN MALAYSIA'S INDUSTRIAL DYNAMISM BETWEEN 1970 AND 1990**

Several studies have acknowledged the central role of the state in Malaysia's past rapid industrial growth and development (Ismail and Meyanathan 1993, Edwards 1995, Jomo 1997, and Lall 1997). The state will continue to play a key role in restructuring industry. However, in order to foster competitiveness in the changing domestic and global environment of the twenty-first century, the state will now assume a more indirect and supportive role. Its principal function is to provide the necessary physical infrastructure, a transparent regulatory framework and a stable macro-economic environment to enable private enterprises to operate efficiently.

First, government policies have long supported the outward-orientation of the relatively small economy. Even prior to the 1970s, Malaysia was a leading exporter of resource-based products such as tin and rubber. It later expanded into timber and palm oil. The aggressive EOI drive, which opened EPZs and LMWs, strengthened the outward orientation of the economy. Selected products were produced for the domestic market under high tariffs and import restrictions, but overall the trade and investment regime during this period was fairly liberal. The export-oriented industrialisation drive coincided with the implementation of the New Economic Policy. The affirmative action policies to redress imbalances among ethnic groups involved both indirect interventions such as licensing, subsidies and quotas as well as direct participation of the state in industry. Numerous state enterprises

were set up during the 1970s, mostly directed towards the domestic market. However, such interventions were implemented alongside an open policy towards trade and investment. In fact, MNCs dominated the EPZs and they operated in a virtually border-less economy. These “free zones” fostered the development of a critical mass of high-technology industries that form the basis of Malaysia’s export success today.

Second, with the exception of short-lived inflationary pressure in the early 1970s and the recession in the mid-1980s, the government has maintained a fairly stable macroeconomic situation conducive to the growth of private enterprise and the preservation of socio-political stability. Malaysia also inherited a fairly developed and sophisticated institutional and legal framework, which minimised risks and the costs of doing business for private enterprises.

Third, the state committed to heavy investment in physical infrastructure to transform Malaysia into an attractive haven for foreign investment. Each of the five-year development plans gave priority to building an extensive system of transport and telecommunications facilities and public utilities. Industrial estates were opened beginning in the 1970s and sold or leased to private firms at subsidised rates. More recently, Malaysia has built world-class infrastructure that includes state-of-the-art airport and port facilities, highways, and telecommunications as well as science parks.

Fourth, education and human resource policies supported industrialisation. Malaysia’s educated and disciplined, English-speaking workforce that commanded relatively low wages was an advantage in the initial HOI drive. The government’s strong commitment to free basic education provided a ready supply of relatively skilled labour at competitive wages in the early stages of industrial development. In the late 1980s, when wages started rising and skill and labour shortages emerged, government policies gave priority to human resource development. Education and training opportunities, especially at higher levels, were expanded through increased public investment and liberalisation and deregulation of higher education. These policy and institutional changes have contributed to the development of a comprehensive and market-driven education and training infrastructure that supports lifelong learning.

Fifth, the state kept labour-management relations on an even keel through stringent labour legislation and close co-operation and co-ordination with labour and industry. Despite some stringent labour laws, labour standards have improved significantly in several aspects including wages and other benefits, safety, and security.

Finally, despite the mixed reviews it received, the government’s ‘Malaysia Incorporated’ concept laid the foundation for building networks between business and government. A strong culture of consultation and co-operation between public and private sectors has developed since the early 1980s. Several channels and levels of communication have been forged over the last two decades between the public sector and private business to provide feedback on changing industry requirements and the problems faced by them.

## **NEW STRATEGIES AND APPROACHES TO INDUSTRIAL COMPETITIVENESS**

Malaysia's industrial competitive strength has been built upon relatively low labour cost, sound physical and policy infrastructure, fairly educated workforce, availability of support services, and spearheaded by direct foreign investment. This has contributed to an industrial structure that is low in skill intensity and retained value added. These elements worked extremely well over the last three decades supporting the phenomenal growth of exports and employment.

The global and domestic environment is changing rapidly, however, calling for a different set of strategies to build new sources of competitive advantage. Malaysia's small population base and the rapid growth of relatively low-skilled jobs have contributed to wage escalation. Malaysian industry now has to compete with lower-wage newcomers, many of which have large domestic markets and are aggressively promoting themselves as low-cost export platforms. Not only does Malaysia have to compete with these new players to attract FDI, but also the investment flows are drying up as the Asian NIEs, which were the primary sources of FDI in the mid-1980s, complete the industrial restructuring that had been forced by the realignment of their currencies. This situation is challenging Malaysia's traditional reliance on FDI as the engine of growth.

Export growth in Malaysia, unlike in South Korea or Taiwan, was led by foreign investment. The failure to develop sufficient domestic linkages has resulted in the growth of industries with high import content of capital formation and industrial output. To nurture a more robust industrial sector and retain more value added in the economy Malaysia needs to avoid FDI that has low potential for linkages with the local economy and attract FDI that is conducive to developing indigenous supply capability. This presents a challenge for policymakers, because investing MNCs are not always sympathetic to such domestic development needs (MITI 1996).

The internal and external challenges that now confront the manufacturing sector mean that past industrial development approaches based on large-scale injections of capital to boost labour productivity are no longer viable. In the mid-1990s industrial policies were adjusted to focus on total factor productivity growth, which requires strong synergy among all factors of production. The essence of the new growth strategy was a shift from assembly-intensive manufacturing to an integrated, industry-wide approach encompassing both manufacturing and related services. Dubbed Manufacturing++ ('manufacturing-plus-plus') this revised strategy provides the framework for industrial development under the Second Industrial Master Plan, 1996-2000 (Second IMP).

### **Manufacturing++ Strategy and Cluster-based Approach to Industrial Dynamism**

The Second IMP, formulated at a time of widespread labour and skill shortages and increasing global competition, focused on increasing productivity and competitiveness and built upon the foundations of the First IMP. With the Second IMP, however, industrial development strategy shifted from the traditional industry-based approach to a cluster-based approach. It emphasised development of industrial clusters, their key suppliers, and the requisite economic foundations such as human resources, technology, physical infrastructure, supportive administrative rules and procedures, fiscal

and non-fiscal incentives, and business support services. It aimed to develop dynamic industrial clusters and strengthen industry linkages, while promoting higher value added activities.

Unlike the earlier more diffused approaches, the Manufacturing++ strategy is an integrated and co-ordinated approach to industrial development. It emphasises the full integration of manufacturing operations through the value chain to enhance industrial linkages and increase productivity and competitiveness. It involves changing the industrial structure from the predominance of basic assembly and production operations into more upstream activities such as research and design and product development as well as downstream activities such as distribution and marketing (Figure 5.1). The objective is to move into higher value added activities. Only industries that are able to develop the breadth and depth of their activities within the economy and establish regional or global linkages with related industries will be able to survive the competitive pressures in the global market place. The Manufacturing++ strategy entails not only moving along the value chain but more importantly shifting the value chain upwards through productivity growth.

The Second IMP identified five strategic thrusts to counter the stiffer competition brought on by trade liberalisation and globalisation. These are:

- Global orientation—make firms world class manufacturers with global marketing capabilities.
- Enhance competitiveness of the manufacturing sector—deepen and broaden industrial linkages and enhance productivity through cluster-based development.
- Improve economic foundations—develop and manage human resources, acquire technology acquisition, and enhance the absorptive capacity, physical infrastructure, supportive administrative rules and procedures, fiscal and business support services.
- Develop Malaysian-owned companies—develop large Malaysian enterprises geared towards regional and international markets.
- Increase information-intensive and knowledge-driven processes in higher value added activities—emphasise R&D, product design, marketing, distribution and procurement, and the use of information technology for electronic commerce.

The Second IMP continued the targeting approach of the First IMP by identifying eight industry groups involving 22 industrial clusters classified into three broad categories, e.g., internationally-linked, policy-driven, and resource-based industries (Table 5.11). The targeted clusters will be developed on a rolling plan. Targets for these industries will be set and periodically revised to accommodate changes in the domestic and global economy.

A new institutional framework was set up to implement the Second IMP. It is led by the Industrial Co-ordination Council, which consists of representatives of the public and private sectors. The state thus continues to play a strong supportive role in industrial development. Working groups for each of the clusters at the national, state, regional, and cluster levels also consult regularly with the private sector to obtain the feedback needed for successful implementation.

### **Promotion of New Growth Sectors**

Malaysia expects to graduate into the post-industrial phase of development soon and is currently preparing for the transformation to a service-led economy. Even so, manufacturing is expected to retain a substantial role after the structural transformation, as it did within the economies of the NIEs except Hong Kong. Under the Second IMP, manufacturing's share of GDP is expected peak at 38.4 percent. Based on the experience of many developed economies, the current manufacturing share at about 30 percent is generally regarded as the optimum growth level (Table 5.12). Hence, new policy initiatives to diversify into high value added services industries have been introduced.

Information technology (IT) and multimedia industries are being promoted as the new sources of growth. These two strategic sectors are instrumental in increasing efficiency, productivity, and competitiveness of the manufacturing sector and in realising the transition to a knowledge-based economy. The National Information Technology Agenda (NITA) formulated in 1996 provides the framework for the co-ordinated and integrated development of skills and infrastructure as well as IT-based applications. The Multimedia Super Corridor (MSC) was launched as a catalyst to the expansion of IT and multimedia industries. Similar to the way it promoted industries in the EPZs, to encourage the growth and development of IT and multimedia industries in the MSC, a government Bill of Guarantees grants key MSC infrastructure projects exemption from local ownership requirements, unrestricted employment of foreign knowledge worker and eligibility for tenders. Companies locating in the MSC are given pioneer status for up to 10 years or granted 100-percent investment tax allowance. As of December 1998, 195 firms including 88 local firms, had been approved for MSC status.

### **KEY CONCERNS AND CHALLENGES**

Malaysia has witnessed some degree of natural and policy-induced industrial upgrading over the last decade. For instance, MNCs in the electronics industry have spawned local companies in such areas as metal fabrication, high-precision plastics, high-precision tooling parts, and mould and die production. Some of these local SMIs have graduated into multinational operations and some have formed joint-ventures with foreign technology firms to produce high quality parts and equipment. The development of such industries has not yet reached the critical mass for self-sustained industrial dynamism, however.

Availability of skilled labour presents a key challenge to upgrading Malaysia's manufacturing sector, which is still by and large shallow with considerable labour-intensive operations. There is concern that the shortage of skilled domestic workers coupled with the availability of foreign workers at competitive wages may discourage firms from investing in labour-saving, skill-intensive operations. (Currently, one out of every five workers in Malaysia is a foreigner.) At the same time, policymakers inherently fear that difficulties in recruiting workers could induce foreign firms to relocate to cheaper production sites in other countries.

Local industries will face serious competition when tariff and non-tariff barriers come down with the introduction of the Common Effective Preferential Tariff (CEPT) Scheme by the year 2003. Particularly affected will be heavy industries that currently operate under high tariffs and import restrictions such as the automotive industry. Malaysia's two national cars together account for about 80 percent of the local passenger car market. The local content, in terms of value, has risen to 70 percent for Proton and 50 percent for Perodua. For non-national car assemblers, the local content is between 30 to 40 percent (Ahmad and Singh 1999). Without the heavy protection the automotive industry will not be able to survive, due to the high cost of production. The recent financial crisis has further impacted adversely on the auto industry. Policymakers need to re-evaluate strategies with respect to heavy industries and strive to expand exports in order to meet the increasing competition from regional producers under AFTA (ASEAN Free Trade Area).

The shortage of critical skills, including creative talents and entrepreneurial capabilities, continues to plague the economy's transition to greater skill- and knowledge-intensive activities. Malaysia currently has a liberal policy with respect to the importation of critical skills in short supply. Continued reliance on foreign supply of skilled workers, however, will impinge on retained value added as well as raise concerns about equity. Moreover, the depreciation of the ringgit following the 1997 financial crisis has made it difficult for local firms to attract and retain skilled and talented foreign labour.

Perhaps the greatest challenge for Malaysia's industrialisation process is to raise the level of local technological capabilities to support self-sustaining industrial dynamism. Malaysia has to seriously address the mismatch between the immediate needs of industry and the state's ambitious goals to promote cutting-edge technologies. Moreover, it must recognise, nurture, and reward the creativity of its citizens to ward off the challenge of outward migration of talent in an increasingly globalised environment.

Finally, the accession of China into the WTO (World Trade Organisation) presents a potential challenge to Malaysia's efforts to attract foreign investment. While it will give Malaysian firms greater access to China's vast domestic market, it will also give international investors greater access to China's huge production potential and pool of skilled and unskilled labour.

### **CONCLUDING REMARKS**

By and large, Malaysia's revised strategies and approaches to industrial development retain elements key to past industrial success. These include a fairly liberal trade and investment regime with strong emphasis on export growth and the provision of sound physical, legal, and institutional infrastructure as well as close consultation and co-operation between the public and private sectors. Although the state continues to target industries, these industries are spearheaded by the private sector. The state now assumes a more indirect supporting and facilitating role by providing the essential economic foundations for industrial competitiveness. The economic liberalisation and rationalisation of

industrial policies since the mid-1980s have created a more market-friendly environment for industrial development.

Malaysia's transition to higher value added products and processes has not been easy because MNCs control both export production and technology. Industrial strategies and policies had to be continually revised to encourage the structural transformation of the manufacturing sector. Currently policies to upgrade the industrial structure focus on human resource and technology development. The Manufacturing++ concept and cluster-based approach to industrial development represent a more focused, integrated, and co-ordinated industrial policy. IT and multimedia industries are being promoted as new sources of growth to boost efficiency, productivity, and competitiveness.

Although the industrial sector is currently the leading growth sector, it has yet to reach a level of maturity that ensures self-sustained dynamism. Export growth is still based on assembly-intensive operations and is led by MNCs. Further efforts to upgrade Malaysia's industrial structure will take place in an increasingly competitive environment. The more immediate challenges to Malaysia's industrial expansion are posed by the CEPT, to be introduced by the year 2003, and the inclusion of China into the WTO.

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**TABLE 5.1**  
**Growth in the Economy and the Manufacturing Sector, 1970-99**  
 (Percent)

	Average Annual Growth		
	1970-1980	1980-1990	1986-1997
GDP	9.3	5.9	9.3
Manufacturing	12.0	9.3	12.4
Employment	3.7	3.2	4.2
Manufacturing	9.6	5.6	9.1
Exports	18.8	11.0	15.9
Manufacturing	25.9	22.2	21.1

*Note:* 1970-80 based on 1970 constant prices ; 1980-90 based on 1978 constant prices ; and 1986-97 based on 1987 constant prices .

*Source:* Calculated from Ministry of Finance, *Economic Report*, various issues; Department of Statistics 1999, *Malaysia Economic Statistics, Time Series*, Malaysia, Kuala Lumpur, December; and Bank Negara Malaysia, *Monthly Statistical Bulletin*, January 2000.

**TABLE 5.2**  
**Manufacturing Share in the Economy, 1970-97**  
 (Percent)

	Share of GDP	Share of Total Exports	Share of Total Employment
1970	13.4	12.2	9.0
1975	16.4	21.8	11.1
1980	19.6	21.8	15.7
1985	19.7	32.2	15.2
1990	26.9	58.8	19.9
1997	29.9	81.0	26.4

*Source:* Calculated from Ministry of Finance, *Economic Report*, various issues; and Department of Statistics 1999, *Malaysia Economic Statistics, Time Series*, Malaysia, Kuala Lumpur, December.

**TABLE 5.3**  
**Key Policy Initiatives in Malaysia's Industrialisation**  
**from 1958 to the 1990s**

<b>Major Policy Initiatives</b>	
<b>Phase I (1958-1968)</b>	
Import -substituting industrialisation	Pioneer Industries Ordinance, 1958 <ul style="list-style-type: none"> <li>• Granting of pioneer status</li> </ul> Tariff Advisory Board <ul style="list-style-type: none"> <li>• Infant industry promotion through tariff protection</li> </ul>
<b>Phase II (1968-1980)</b>	
Export -led Industrialisation via EPZs/LMWs	Investment Incentives Act, 1968 <ul style="list-style-type: none"> <li>• Development of EPZs/LMWs</li> <li>• Export incentives</li> </ul>
Promotion of public enterprises and <i>bumiputera</i> SMEs	New Economic Policy <ul style="list-style-type: none"> <li>• State interventions through subsidies, quotas, and licensing</li> <li>• Industrial Co-ordination Act, 1975</li> <li>• Establishment of public enterprises and promotion of <i>bumiputera</i> SMEs</li> </ul>
<b>Phase III (1981-1999)</b>	
Second round of import -substituting Industrialisation through heavy industries – 1981	Formation of HICOM in 1981
Second round of export -push through liberalisation and deregulation – 1987	Promotion of Investments Act, 1986 <ul style="list-style-type: none"> <li>• Foreign investment and export push through liberalisation of foreign equity and incentives tied to exports</li> </ul> Tax reforms Review of heavy industries Privatisation of public enterprises Amendments to labour legislation to improve labour market flexibility
Focus on productivity-driven growth through emphasis on S&T and R&D as well as human resource development (HRD)	Industrial Master Plan, 1986-1995 Action Plan for Industrial Technology Development, 1990 Emphasis on HRD to improve quality of labour <ul style="list-style-type: none"> <li>• Mandatory training through the Human Resource Development Fund established in 1993.</li> <li>• Fiscal and financial incentives for expansion of education and training</li> <li>• Liberalisation of the education and training industry</li> </ul>
Promotion of new sources of growth	Second Industrial Master Plan, 1996-2005 <ul style="list-style-type: none"> <li>• Shift from industry-based to cluster-based industrial development approach</li> </ul> Establishment of Multimedia Super Corridor, 1996

**TABLE 5.4**  
**Gross Manufacturing Exports by Commodity Group, 1970-99**

	1970	1975	1980	1985	1990	1995	1999	
Food, beverages, and tobacco	18.3	13.7	8.2	6.2	4.4	2.5	2.1	
Textiles, garments, and footwear	6.5	11.0	12.8	10.3	8.5	4.6	3.6	
Wood products	14.4	10.4	7.4	2.9	2.9	4.2	3.7	
Rubber products	2.8	2.2	1.3	0.9	3.3	2.2	2.0	
Non-metallic mineral products	32.2	9.4	1.0	1.2	1.6	1.1	0.9	
Chemicals, chemical and plastic products	3.3	1.2	3.0	4.9	4.0	4.5	4.4	
Petroleum products	--	--	3.0	8.3	2.8	2.1	1.6	
Iron, steel and metal manufactures	4.2	2.5	4.0	2.9	3.5	3.3	3.0	
Electrical and electronic machinery	2.8	15.4	47.7	52.1	56.6	65.7	71.4	
Transport equipment	11.1	13.6	3.5	4.5	4.1	3.6	1.9	
Other manufactures	4.4	20.8	8.1	5.7	8.3	6.2	5.4	
Total	% 100.0	100.0	100.0	100.0	100.0	100.0	100.0	
	RM million	612	1,978	6,319	12,471	45,835	147,507	123,602

*Note:* For 1970 and 1975, petroleum products are combined with chemical products and transport equipment includes other machinery.

*Source:* Ministry of Finance, *Economic Report*, various issues

**TABLE 5.5**  
**Government Development Expenditures in Heavy Industries by Plan Period**

Five -Year Plan Period	RM million
1981-1985	330.61
1986-1990	2,553.1
1991-1995	567.7
1995-2000	354

*Note:* Figure for 1995-2000 Plan period refers to revised allocation.

*Source:* Government of Malaysia, *Five-year Development Plans*, Kuala Lumpur.

**TABLE 5.6**  
**Investment in Manufacturing, 1985-98**  
(RM million)

Year	Foreign	Local	Total
1985	959	4,728	5,687
1986	1,688	3,475	5,163
1987	2,060	1,874	3,934
1988	4,878	4,216	9,094
1989	8,653	3,563	12,215
1990	17,629	10,539	28,168
1991	17,055	13,763	30,818
1992	17,772	10,003	27,775
1993	6,287	7,466	13,753
1994	11,339	11,612	22,951
1995	9,144	11,725	20,869
1996	17,057	17,201	34,258
1997	11,473	14,348	25,821
1998	13,063	13,289	26,352
1999	12,268	4,631	16,899

*Notes:* Foreign investment = foreign equity + estimated foreign loan (foreign share of total equity). Coverage includes licensed manufacturing projects (includes new projects and expansion/diversification), small industries/exempted manufacturing projects, hotel agriculture, R&D and technical and vocational training institutes applying for incentives.

*Source:* Bank Negara Malaysia, *Monthly Statistical Bulletin*, August 2000.

**TABLE 5.7**  
**Wages, Labour Productivity, and Unit Labour Costs**  
(Ringgits)

	Labour Productivity	Average Annual Wage	Wages/Value Added
1985	25,438	7,605	0.299
1986	25,380	7,584	0.299
1987	25,720	7,478	0.291
1988	27,163	7,394	0.272
1989	29,497	7,650	0.259
1990	29,039	7,901	0.272
1991	31,875	8,610	0.270
1992	33,942	9,506	0.280
1993	36,426	10,155	0.279
1994	40,421	11,101	0.275
1995	42,913	11,850	0.276
1996	49,377	13,232	0.268
1997	55,769	14,475	0.260
		Average annual growth	
1985-90	2.7	0.8	-1.9
1990-93	7.8	8.7	0.9
1993-97	11.2	9.3	-1.7

*Source:* Computed using data from Department of Statistics, *Malaysia Economic Statistics, Time Series*, December 1999.

**TABLE 5.8**  
**Estimates of Total Factor Productivity Growth in Malaysian Manufacturing**

Source	TFP Growth
Okamoto (1994) For the period 1981-1990	Annual TFP growth of -1.9 percent from 1981-1985 Annual TFP growth of 0.3 percent from 1986 to 1990
Tham (1996) For the period 1986-1993	Sources of growth from TFP was 0.1 percent from 1986-1993, compared to 10.3 percent from intermediate input growth and 0.3 percent from capital growth

**TABLE 5.9**  
**Major Policy Support With Respect to Industrial Technology Development**

Key State Support Measures	Main Objectives
<p><u>Fiscal Incentives</u> Across-the-board tax incentives provided since 1984 for R&amp;D activities that include double deduction for R&amp;D expenses incurred, an industrial building allowance for buildings utilized for R&amp;D activities and capital allowance for plant and machinery used in R&amp;D.</p> <p>Pioneer status for new investment in selected high-technology activities that meet R&amp;D intensity and other criteria were introduced in 1994. Other incentives were also tied to selected high-tech investment.</p>	<p>To encourage R&amp;D activities among private firms.</p> <p>To induce companies to achieve R&amp;D expenditure of one percent of sales revenue within a year. Also 7 percent total workforce must include science and technical graduates within one year</p>
<p><u>Technical Assistance</u> MASTIC (Malaysian Science and Technology Information Centre) formed in 1992</p> <p>MIGHT (Malaysian Industry – Government Group for High Technology established in 1993</p>	<p>A national S&amp; T information center within MOSTE charged with collecting data through biennial national survey.</p> <p>A consultative committee consisting of top government and business leaders to forge consensus on technology development priorities</p>
<p><u>Financial Assistance</u> IRPA (Intensification of Research in Priority Areas) introduced in 1986</p> <p>Industrial Technical Assistance Fund (ITAF) introduced in 1989</p> <p>Vendor Development Programme introduced in 1993 by Ministry of International Trade and Industry (MITI) and Ministry of Finance (MOF)</p> <p>Malaysian Technology Development Corporation (MTDC) established in 1993.</p> <p>Khazanah Holdings established in 1994 as an investment arm of the MOF</p> <p>Industry Grant Scheme introduced in 1996 under MOSTE</p> <p>MESDAQ launched in 1996</p>	<p>To centralise management of public funds for R&amp;D and set technology priorities</p> <p>An R&amp;D subsidy scheme that provides matching grants to SMIs for innovative projects.</p> <p>To raise technology capability of local SMIs to enhance linkage development. MNCs and large local companies sign agreement with MITI and designated banks to provide supplier firms with procurement contracts, technical assistance and subsidized finance.</p> <p>A public-private venture capital to commercialise public research institutes research findings. Two RM100 million matching grant funds allocated under the 7MP.</p> <p>To spearhead direct government investment in key strategic and high-technology areas.</p> <p>Provides matching grant funding for joint public-private R&amp;D projects.</p> <p>An automated stock exchange for high-technology firms.</p>
<p><u>Establishment of Technology Parks</u> Technology Park Malaysia established in 1988</p> <p>Kulim High Technology Park Multimedia Super Corridor established in 1996</p>	<p>To house and support private research facilities and technology intensive companies. Administers a RM10 million venture capital fund allocated under the 7MP.</p> <p>To attract technology-based foreign and local projects. To stimulate emerging IT development and research. A RM200 million multimedia matching grant scheme and a venture capital scheme for investment in MSC-status companies.</p>



**TABLE 5.11**  
**Classification of Industries for Incentive Targeting**

<b>Cluster-type</b>	<b>Industry Group</b>	<b>Industry Cluster</b>
Internationally-linked	Electrical & electronics	• Electrical & electronics
	Textiles & garments	• Textiles & garments
	Chemicals	• Pharmaceuticals • Petrochemicals
Policy-driven	Transportation	• Automobiles • Motorcycles • Marine transportation • Aerospace
	Material & advance materials	• Polymers • Metals • Composites • Ceramics
	Machinery & equipment	• Machinery & equipment
Resource-based	Resource-based	• Wood-based products • Rubber-based products • Palm oil-based products (food sector) • Palm oil-based products (non-food sector) • Cocoa & cocoa products
	Agro-based & food products	• Fish & fish products • Livestock & livestock products • Fruits & vegetables • Floriculture

Source: Second IMP (1996).

**TABLE 5.12**  
**Composition of GDP, 1970, 1980 and 1997**

	<b>1970</b>	<b>1980</b>	<b>1997</b>
Agriculture, livestock, forestry, and fishing	30.8	22.9	9.1
Mining and quarrying	6.3	10.1	7.3
Manufacturing	13.4	19.6	29.9
Construction	3.9	4.6	4.8
Electricity, gas & water	1.9	1.4	3.1
Transport, storage & communications	4.7	5.7	7.5
Wholesale, retail trade, hotels, and restaurants	13.3	12.1	15.0
Finance, insurance, real estate and business services	8.4	8.3	12.2
Government services	11.1	10.3	6.6
Other services	2.5	2.3	7.5
	100	100	100

Source: Ministry of Finance, *Economic Report*, various issues