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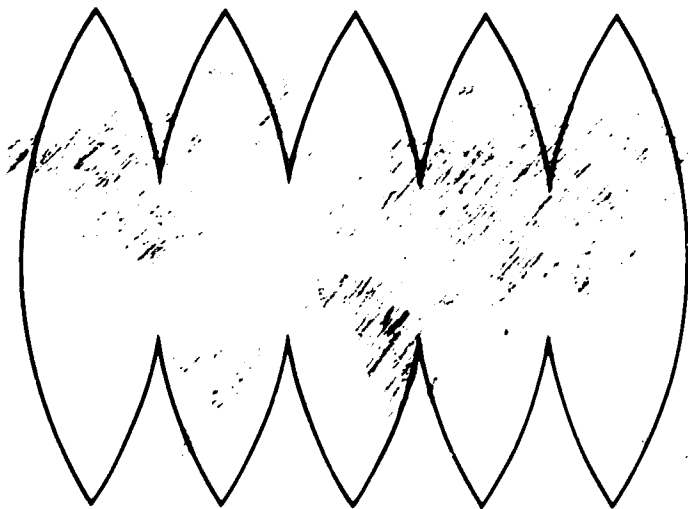
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THE ECONOMIC
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STRUCTURE AND
PERFORMANCE OF
MANUFACTURING

INDUSTRY
BRANCH
PROFILES

INDUSTRIAL
POLICIES, STRATEGIES
AND INSTITUTIONS

RESOURCES FOR
INDUSTRY

INVESTMENT
OPPORTUNITIES

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MALAYSIA

MALAYSIA

Sustaining the Industrial Investment Momentum



INDUSTRIAL DEVELOPMENT REVIEW SERIES

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PREFACE

IX/X

This Industrial Development Review of Malaysia is part of a Sales Series aimed at strengthening the 'country focus' of UNIDO activities. Within the framework of the work programme of the Regional and Country Studies Branch of UNIDO for monitoring the industrialization process of developing countries, the Reviews provide a general survey and brief analysis of each country's industrial development process. The Reviews are intended to provide a service to those within UNIDO and other international agencies concerned with industrial policy, planning, project development and implementation, and to be a ready source of information for governments, investors, industrialists, entrepreneurs, policy-makers, international organizations, aid agencies, academics, and research institutes.

The Reviews have two separate but interrelated objectives: they are designed to facilitate and promote the activities of UNIDO, as well as to serve as an informative and analytical document for the international industrial community. It is known from experience that readily available reference material on the industrial sector in developing countries is eagerly sought. The favourable responses received from regular readers both inside and outside UNIDO have facilitated extension of the scope of the Reviews in successive issues.

As the Reviews are issued as sales publications, the scope and dimension of the sales publication series are designed to accommodate the needs of a wide readership in the international industrial community associated with industry, finance, trade, business, research and government. The Reviews also aim at providing a basis for undertaking in-depth analyses of specific aspects of industrial policies, strategies and programmes in the developing countries and at providing a basis for informed discussion of industrial development trends and policies.

The sales publications are intended to strengthen the Organization's relationship with the private sector. By acquiring a wide readership for this series, UNIDO hopes to provide new and pertinent information on the role of industry in developing countries: information that is essential to understanding and accelerating the process of industrialization in the Third World.

This Review comprises four Chapters. Chapter I reviews recent economic trends, and analyses macroeconomic policy environment and economic prospects. The structure and performance of the manufacturing sector are examined in Chapter II, with a focus on productivity, wages and salaries, investment and financing patterns, manufacturing trade, and regional disparity in industrial development. Policy framework for industrial development contained in Chapter III is followed by analyses of problems and prospects of key manufacturing subsectors in Chapter IV. The Review also furnishes information on the investment environment, the legal framework governing industrial investment, the cost structure, priority product areas, as well as industrial investment procedures, incentives and opportunities. This review is based on information available as at 30 September 1990.

EXPLANATORY NOTES

References to dollars (\$) are to United States dollars, unless otherwise stated.

Dates divided by a slash (1988/89) indicate a fiscal year or a crop year. Dates divided by a hyphen (1988 - 1989) indicate the full period, including the beginning and the end years.

In Tables:

Total may not add precisely because of rounding.

Two dots (...) indicate that data are not available or not separately reported.

Please note that after the unification of the Federal Republic of Germany and the German Democratic Republic on 3.10.1990, they will be referred to in all UNIDO documentation as "Germany". Any reference to these two countries prior to their unification will be either Federal Republic of Germany or German Democratic Republic, as appropriate.

The following *abbreviations* are used in this publication:

AsDB	Asian Development Bank
ASEAN	Association of South-East Asian Nations
ATPC	Association of Tin Producing Countries
BLR	Basic lending rate
CCI	Co-ordination Centre for Investments
CCITT	Co-ordinating Council for Industrial Technology Transfer
CGC	Credit Guarantee Corporation
CICU	Central Information Collection Unit
CPA	Cocoa Producers' Alliance
CPKO	Crude palm kernel oil
DOS	Department of Statistics
EC	European Community
ECIG	Export Credit Investment Guarantee
ECR	Export Credit Refinancing
ERF	Enterprise Rehabilitation Fund
FAO	Food and Agricultural Organization of the United Nations
FDI	Foreign direct investment
FIC	Foreign Investment Committee
FRIM	Forestry Research Institute of Malaysia
FTZs	Free Trade Zones
GDP	Gross domestic product
GNP	Gross national product
GSP	Generalized System of Preferences
HICOM	Heavy Industry Corporation of Malaysia
HLM	High-level manpower
ICA	Industrial Coordination Act
IDB	Islamic Development Bank
IGA	Investment guarantee arrangements
IMP	Industrial Master Plan
ISIC	International Standard Industrial Classification
ITA	Investment tax allowance
ITC	International Tin Council
KLSE	Kuala Lumpur Stock Exchange
LMW	Licensed Manufacturing Warehouse

MARDI	Malaysian Agricultural Research and Development Institute
MDS	Middle distillates synthesis
MFA	Multifibre Arrangement
MIDA	Malaysian Industrial Development Authority
MIMOS	Malaysian Institute of Micro-electronics Systems
MOPI	Malaysian Organization of Pharmaceutical Industries
MOX	Malaysian Oxygen
MRB	Malaysian Rubber Bureau
MRIM	Mines Research Institute of Malaysia
MRPRA	Malaysian Rubber Producers' Research Association
MRRDB	Malaysian Rubber Research and Development Board
MTBE	Methyl tertiary butyl ether
MVA	Manufacturing value added
NCD	Negotiable certificate of deposit
NCHGSE	National Clearing House for Graduates and Skilled Employment
NCRD	National Council for Research and Development
NEB	National Electricity Board
NEP	New economic policy
NEU	Nuclear Energy Unit
NFPEs	Non-financial public enterprises
NIEs	Newly Industrializing Economies
NIF	New Investment Fund
NVTC	National Vocational Training Council
ODA	Official Development Assistance
OECF	Overseas Economic Co-operation Fund
OHQs	Operational Headquarters
PGU	Peninsular Gas Utilization
PNB	Permodalan Nasional Berhad
PORIM	Palm Oil Research Institute of Malaysia
PPF	Provident and pension funds
PPKO	Processed palm kernel oil
RRIM	Rubber Research Institute of Malaysia
RSS	Rubber Smoked Sheet
SES	Stock Exchange of Singapore
SIRIM	Standards and Industrial Research Institute of Malaysia
SMEs	Small- and Medium-scale Industries
SMR	Standard Malaysian Rubber
S & T	Science & Technology
TNCs	Transnational Corporations
UNIDO	United Nations Industrial Development Organization

BASIC INDICATORS

BASIC INDICATORS I: MACROECONOMIC INDICATORS

Population (1989)	:	17.4 million					
Labour force (1989)	:	6.8 million					
Employment (1989)	:	6.3 million					
Gross domestic product (1989) (at 1978 prices)	:	MS 71.9 billion					
GNP per capita (1989)	:	MS 5,552					
Growth of GDP	:	1984	1985	1986	1987	1988	1989
(Percentage)		7.8	-1.0	1.2	5.3	8.7	8.5
		1990 ^a					
		8.3					
Distribution of GDP	:				1970	1989	
(Percentage)		Agriculture			30.7	20.5	
		Mining and quarrying			13.8	10.1	
		Manufacturing			13.9	25.3	
		Other			41.6	44.1	
Exports (1989)	:	MS 67.2 billion					
Imports (1989)	:	MS 57.0 billion					
Trade balance (1989)	:	MS 10.2 billion					
Current account balance (1989)	:	MS 0.4 billion					
External debt (1989)	:	MS 41.8 billion					
Debt service (1989) (as per cent of exports)	:	9.3 per cent					
International reserves (1989)	:	US\$ 7 billion					
Change in consumer price index (1980 = 100) in per cent	:	1987	1988	1989			
		0.8	2.5	2.8			
Exchange rate (MS equivalents to US\$1)	:	1985	1986	1987	1988	1989	
		2.48	2.58	2.52	2.62	2.71	

^a Estimate.

BASIC INDICATORS II: KEY INDUSTRIAL INDICATORS

Manufacturing value added (1989)	:	MS 18.1 billion					
MVA per capita (1989)	:	MS 1,040					
Manufacturing employment	:	1975	1986				
		306,619	473,830				
Growth of MVA (Percentage)	:	1984	1985	1986	1987	1988	1989
		12.3	-3.8	7.5	13.4	17.6	12.0
		1990 ^a					
		11.0					
Composition of MVA by end-use (Percentage)	:					1970	1988
		Mainly consumer goods				37.5	32.2
		Mainly intermediate goods				44.4	33.4
		Mainly capital goods				18.1	34.4
Share of manufactured exports in total exports (1989)	:	50 per cent					
Share of electrical machinery and appliances in manufactured exports (1989)	:	56.3 per cent					
Principal destinations of manufactured exports (1987)	:	ASEAN countries (24.2 per cent), Japan (19.5 per cent), United States (16.6 per cent), EC (14.3 per cent)					
Share of manufactured imports in total imports (1987)	:	76 per cent					
Share of intermediate and capital goods in total manufactured imports (1988)	:	75.2 per cent					
Principal origins of manufactured imports (1987)	:	Japan (21.7 per cent), ASEAN countries (20.8 per cent), United States (18.7 per cent), EC (13.4 per cent)					
Change in producer price index (1978 = 100) in per cent	:	1987	1988	1989			
		3.7	7.4	4.0			

^a Estimate.

BASIC INDICATORS III: COMPARISON OF SELECTED INDICATORS

XV/XVI

Indicator	Unit	Hong Kong	Republic of Korea	Indonesia	Malaysia	Singapore	Thailand
Population (mid-1988)	millions	5.7	42	174.8	16.9	2.6	54.5
Population growth (1980-1988)	per cent	1.5	1.2	2.1	2.6	1.1	1.9
Area	'000 sq km	1	99	1,905	330	1	513
GDP (1988)	\$ million	44,830	171,310	83,220	5,490	23,880	57,950
Average annual growth of GDP (1980-1988)	per cent	7.3	9.9	5.1	4.6	5.7	6.0
GNP per capita (1988)	\$	9,220	3,600	440	1,940	9,070	1,000
Average annual growth rate of GNP per capita (1965-1988)	per cent	6.3	6.8	4.3	4.0	7.2	4.0
Agriculture (1988)	per cent of GDP	0	11	24	21.1	0	17
Industry (1988)	per cent of GDP	29	43	36	34.6	38	35
Manufacturing (1988)	per cent of GDP	22	32	19	24.3	30	24
Services (1988)	per cent of GDP	70	46	40	44.3	61	48
Gross domestic investment (1988)	per cent of GDP	28	30	22	26	37	28
Exports of goods and non-factor services (1988)	per cent of GDP	136	41	25	67	..	34
Current account balance (1988) ^{a/}	\$ million	1,199	14,161	-1,189	1,802	1,660	-1,671
External public debt (1988)	\$ million	..	21,349	41,258	16,161	..	13,375
Debt service (1988)	per cent of goods and services	..	9.1	34.1	10	..	11.3
Official development assistance ^{b/}	\$ million	22	10	1,632	104	22	563
Average annual rate of inflation (1980-1988)	per cent	6.3	6.8	4.3	4.0	7.2	3.1
MVA (1988)	\$ million	9,825	42,286	12,876	7,677	5,741	11,543
MVA per capita (1988)	\$	1,754	1,245	75	465	2,208	215
Manufactured exports (1988)	\$ million	24,360	45,286	6,423	10,543	25,095	8,766
Share of manufactured exports in total exports (1988)	per cent	97	96	38	50	88	38
Growth rate of manufacturing earnings per employee ^{c/} (1980-1987)	per cent	4.9	5.6	6.0	5.2	6.2	7.0

Source: World Bank, *World Development Report 1990* (Washington D.C., 1990); UNIDO data base.

a/ After official transfers.

b/ Net disbursement of ODA from all sources.

c/ Earnings per employee are in constant prices and are derived by deflating nominal earnings by employee, as computed by UNIDO, by the country's consumer price index.

SUMMARY

The economy of Malaysia sustained an accelerated pace of economic recovery in the late 1980s. When the external sector, which fuelled the initial recovery from the recession of 1985 and 1986, was adversely affected by a sharp rise in imports, buoyant domestic demand coupled with a significant increase in investment flows sustained a high pace of economic recovery at 8.5 per cent in 1989, compared with 5.3 per cent and 8.7 per cent in 1987 and 1988 respectively. An 8.3 per cent investment-led growth of real GDP is forecast for 1990.

During the extended period of economic recovery, the structural weaknesses as well as the resilience of the Malaysian economy became apparent. The country's continued dependence on primary commodities, that remain vulnerable to growing competition from low-cost economies in the region, its high rate of unemployment, shortage of skills, and signs of overheating as well as strains on the infrastructural facilities constitute the main weaknesses of the economy. However, the resilience of the economy stems from, *inter alia*, a reduced budgetary deficit, prudent debt management, new investment incentives, a realistic exchange rate, fiscal and monetary reforms, and a renewed thrust on 'growth' rather than 'equity' consideration in privatization.

In the face of rising trends in manufacturing investment, MVA grew by 17.6 per cent in 1988 and 12 per cent in 1989. With an estimated 11 per cent increase in MVA for 1990 the manufacturing sector is expected to contribute the largest commodity sector share of 25.8 per cent to GDP, well ahead of the target of 21.7 per cent set in the Industrial Master Plan.

As the economy edges into a high degree of industrialization, Malaysia's resource-based industries are on a downstream trial. The country is endeavouring to supply rubber products instead of natural rubber, cocoa products instead of cocoa, high value added palm oil products, a variety of chemicals from crude oil and natural gas, tin products from tin-in-concentrates and processed wood products from sawn log.

Malaysia, however, faces a 'rich natural resource dilemma' as the competitiveness of most resource-based industries is at stake in the wake of the relatively high cost of production, labour costs in particular. In contrast, the country's comparative advantage lies in non-resource-based electronics assembly and textile end-products. A combination of rising labour costs and falling labour productivity resulted in a sharp increase in real wages and a relatively high non-wage labour cost in the early 1980s, eroding the natural comparative advantage of major resource-based products.

The electronics and electrical industry has been the main catalyst to Malaysia's export-led growth, representing around 56 per cent of all manufactured exports in 1988. Since the formative years in the early 1970s, the Malaysian electronics industry has remained structurally unchanged, lopsidedly skewed to the components segment, particularly semiconductors. However, a rise in the share of consumer electronics has been evident in recent years. A rapid influx of foreign investment into the electronics industry is due to a confluence of several factors, including substantial appreciation of the yen, a significant fall in the unit labour cost of electronics assembly in Malaysia, and a rise in wage levels in the first generation of newly industrializing countries. The Republic of Korea, area of Hong Kong and Taiwan Province of China were tempted to redeploy their plants to escape high wages and strong currencies at home and to seize the opportunities stemming from Malaysia's low-cost advantage in electronics enclaves. Thus Malaysia emerged as one of the active sites for semiconductor assembly and testing. The country has been particularly active in giving various tax incentives to foreign corporations and allowing manufacturing equipment and many materials to be imported duty free. Consequently, many United States of America corporations have also been expanding their operations in Malaysia.

Despite a rich agricultural resource base the food processing industry depends heavily on imported raw materials, except for the production of oils and fats, cocoa manufacture and canned pineapple processing. Malaysia's palm oil production is forecast to fall marginally from 6.23 million tonnes in 1989 to 6.05 million tonnes in 1990 as a result of falling yields from ageing trees and reduced use of fertilizers by high-cost growers affected by the current depressed world market. Although world-wide demand for palm oil and fats is expected to rise from 70 million tonnes in 1989 to 100 million tonnes in the year 2000, Malaysia will need to sharpen its competitive edge and to look for new export markets as the hitherto major importer India has shifted purchases to Indonesia because of lower prices.

Malaysia exports two-thirds of the country's cocoa beans in an unprocessed form. New projects tend to be of an integrating nature, encompassing a range of activities from cultivation of cocoa to processing cocoa beans to final products. Chocolate manufacturing could benefit from joint venture agreements with well-known international firms for the use of brand names for improved marketing and transfer of technology.

Two other notable segments of food processing are canned pineapple and fish processing. The canned pineapple segment has a good export record with a large proportion of output being destined to Japan. The country's vast potential for deep-sea fishing and offshore fishing has attracted foreign investment flows in recent years, especially from Japan and Taiwan Province. Self-sufficiency in fish products is in the offing.

Demand projections for all food products reveal an increasing trend in the face of a significant rise in real disposable income. There is a strong consumer preference for fast food products. The major demand items are processed cereals and cereal preparations, sugar and sugar confectionery, dairy products and beverages. Animal feeds are also likely to be in great demand.

Malaysia remains the largest producer of natural rubber in the world, but less than 5 per cent of the country's rubber production is used for the manufacture of a wide range of intermediate and finished goods including tyres, inner tubes, footwear, latex goods, industrial rubber goods and a variety of general rubber products. Major inputs such as carbon black, clay, whiting, zinc oxide and stearic acid are produced locally and are generally accepted internationally. While the expansion of latex production, gloves in particular, has been buoyed by the growing external demand, the production of general rubber goods has been largely oriented towards the domestic market. The growth trend in glove making and other dipped goods, condoms in particular, is largely the result of a significant increase in world demand due to rising fear of AIDS infection. Small firms are yet to establish their foothold in the established export market. With substantial assistance to these firms, a much larger local industry could serve the export market. Amidst challenges, Malaysia endeavours to emerge as a major exporter of tyres and tubes by the year 1995. The new quality phase of the world rubber industry has brought in with it competitive elements that demand fine tuning, sophisticated processing and avoidance of contamination. Clear indications are that synthetic rubber makes deep inroads into the manufacture of rubber products. Faced with an uncompetitive cost structure, Malaysia's rubber industry is forced to struggle in an increasingly competitive environment. The industry will need to keep abreast of new trends in rubber technology in order to achieve higher productivity and better quality. The increasing redeployment of vehicle manufacturing units to the ASEAN region as well as a current move towards the creation of a semi-common market for vehicle components in the region seem to be to the advantage of Malaysia which is able to supply elastomers and non-tyre automotive components by virtue of the country's raw material base and production facilities. Rubber products identified for further expansion include tyres and tubes, automotive components, latex dipped goods, engineering and industrial rubber goods, and rubber sports goods.

The thriving import-dependent garment segment of the textile industry is being increasingly exposed to a competitive and complex environment, due partly to the emergence of a new generation of low-cost producers and partly due to productivity gains achieved through

automation which changes the balance of strength in the global textile industry. Domestic consumption of apparel is projected to grow at an average annual rate of 7.8 per cent during 1991–1995. This is based on the assumption that GNP will grow at 6 per cent per annum with an income elasticity of demand for apparel at 1.3 per cent. With a projected population of 20 million for 1995 and current indications of a sustained pace of economic recovery coupled with a rise in disposable income, these projections seem realistic. Around 70 per cent of the apparel output is targeted for the export market by 1995. According to the Industrial Master Plan, the growth of garment exports will moderate at 14 per cent by 1994. This projection takes into account changes in the global textile industry. The key imperatives of consolidating the gains already achieved include efficient quota administration to encourage maximum utilization of quota for all quota-restricted items, retention of 'scarcity rent' through quality upgrading, greater control over material sourcing, and enhancing design and other skills leading to product diversification and productivity gains.

Malaysia's chemical industry is facing mixed prospects. The country's abundant gas resources and growing nutrient needs provide an impetus for the development of fertilizer manufacturing. It is very likely that usage of compound fertilizers will grow significantly in the 1990s in the face of more intensive cultivation of selected crops, mechanical application of fertilizers as well as increasing awareness of compounds. This resource-based industry could be developed to further enhance the production for the subregional market. The prospects for the petrochemical counterpart of the chemical industry hinge heavily on the domestic market. New plants will need to be more competitive internationally if they endeavour to enter the export market. The fast-expanding electronics industry in Malaysia has generated a growing demand for plastic precision products. Strengthening the plastics fabrication segment of the chemical industry is deemed pivotal in view of the growing demand for household wares, industrial products, automotive parts, lining, padding, panelling for construction and household purposes.

Malaysia is endeavouring to emerge as a major base for downstream wood products. This could be achieved by better product design, quality, prices and service. A growing number of furniture manufacturers from Taiwan Province have redeployed their operations to Malaysia because of the rising value of Taiwanese currency and higher labour costs. Investment flows also originate from the Republic of Korea, Australia and Japan. Foreign investments and joint ventures are important means of upgrading downstream industries in the wood-based industry. Rather than the total ban on log exports introduced by other countries in the region, Malaysia has preferred a phased approach to a total ban, with a view to benefiting from the rising demand and price for Malaysian log. However, a host of attractive incentives tends to encourage downstream processing.

Buoyed by a significant upturn in residential construction activity, the cement industry is poised for full capacity utilization. The industry's overcapacity that came on stream by the year 1987 turned out to be an asset, keeping pace with the growing demand for cement. However, an inefficient market distribution network in the domestic market and lack of competitiveness in the international market, due to high cost of production, impede further expansion of the industry.

Following the rejuvenation of marginal mines, output of tin-in-concentrates grew by 11 per cent in 1989. In view of the highly volatile conditions on the world tin market, efforts are under way to explore new avenues of secondary processing and new uses of the metal particularly in tin-plating, soldering, coating and metallurgy.

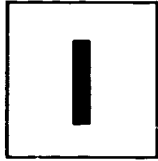
Since the expansion of the country's automobile industry is being limited by the extent of the domestic market, the national car PROTON SAGA is steered into export markets. In order to make the Malaysian national car capable of competing in the domestic and export markets, it may be beneficial to reduce the high tariff rates imposed on components imported by assemblers. A higher local content requirement is likely to be enforced by the year 1995.

One possibility would be to fine tune PROTON's component suppliers to meet the challenge of supplying components to assemblers. Malaysia could also seize opportunities stemming from a new movement towards the creation of a semi-common market for car components within the ASEAN region. This would imply that sourcing components from any of these countries would be tantamount to local content at home.

The country's machinery and machine-tool industry is characterized by a large number of small-scale, locally controlled firms producing simple product types. Due to lack of economies of scale and technological complexity, the industry has been traditionally and is still oriented almost entirely to the needs of the resource-based industries such as tin-mining, timber processing, palm oil processing, rubber processing and construction. However, the machine industry has not been able to exploit fully the opportunities resulting from the expansion of these industries. The existing foundry and castings industries are only capable of servicing the replacement part and simple equipment needs. A breakthrough in product technology calls for upgrading existing basic production capabilities and improvement in process skills.

Currently, Malaysia is on the threshold of maintaining an industrial investment momentum. Foreign and local investments together recorded a 33 per cent increase in 1989. As the investment boom continues in 1990, a double-digit growth in annual real investment is forecast for 1990-1994. Sustaining the momentum of industrial investment calls for an assessment of the magnitude of strains on the infrastructural facilities in order to monitor the signs of overheating. According to Japan's Overseas Economic Co-operation Fund, Malaysia's highway system as well as water and electricity supplies will reach capacity limits by the year 1993. The country's Modernization and Manpower Unit predicts a shortage of more than 15,000 industrial managers, systems analysts and engineers by the mid-1990s. This shortage is likely to become more acute given the current pace of technological upgrading across manufacturing subsectors. Technical co-operation inputs will need to be directed to these crucial means of sustaining an accelerated pace of industrial expansion in the 1990s.

A crucial fact that merits the attention of bilateral and multilateral donors is the missing link in the industrial structure. The absence of a strong ancillary base has slowed down the process of technology transfer and industrial linkages between small and medium firms and large-scale enterprises. The basic facilities and promotional support provided for the creation of inter-industry and intra-industry linkages have been inadequate. Attention will need to be focused on the active promotion of small- and medium-scale industry, in order to create production linkages through the activities of supporting industries or subcontracting between small- and medium-scale and large-scale industries. A comprehensive promotional approach for the ancillary industries is needed to create industrial linkages and to further widen and strengthen the industrial structure.



THE ECONOMIC ENVIRONMENT

A. RECENT ECONOMIC TRENDS

The Malaysian economy staged a strong recovery from the economic recession of 1985 and 1986. The growth of GDP in real terms accelerated from 5.3 per cent in 1987 to 8.7 per cent in 1988 (see Table I.1). When the external sector, which fuelled the initial recovery, was adversely affected by a sharp rise in imports, buoyant domestic demand coupled with a significant increase in investment flows sustained the pace of economic recovery at 8.5 per cent in 1989. However, with a sluggish growth rate of 1.2 per cent in 1986, the growth of GDP averaged 5.9 per cent in 1986–1989, falling short of the 6.4 per cent increase projected in the Industrial Master Plan (IMP) for the 1986–1995 period. An 8.3 per cent increase in real GDP is forecast for the year 1990.*

In the face of a strong revival of domestic demand in 1988 and 1989, private consumption rose vigorously by 15.7 and 15.9 per cent in real terms, respectively. Private investment recorded an increase of an impressive 36.3 per cent in 1989 compared with 21.6 per cent in 1988 and 3.4 per cent in 1987. A significant part of the increase in private investment was channelled into the manufacturing sector, which experienced bullish trends in investment. As a result, manufacturing value added recorded double-digit rates of growth throughout the 1987–1989 period. Manufacturing value added accounted for the largest sectoral share of GDP since 1987, amounting to about 24.3 per cent in 1988 and an estimated 25.8 per cent in 1990, well ahead of the IMP target of a 21.7 per cent share for that year. Thus, the manufacturing sector continues to be the fastest growing sector in the economy. Nevertheless, the high pace of manufacturing expansion is likely to falter further to 11 per cent in 1990 from 12 per cent in 1989 and 17.6 per cent in 1988. This decline was caused largely by slower expansion of the electronics industry and a fall in the production of rubber products.

Contrary to events in the manufacturing sector, agricultural output growth remained subdued in recent years at 5.2 per cent and 5.5 per cent in 1988 and 1989, respectively. A fall in the growth of agricultural output to 4.7 per cent is forecast for 1990. The share of agriculture, forestry and fishing in GDP oscillated around 21 per cent in 1987–1989. Faltering growth of agricultural output was caused mainly by lower production of saw logs and fish. However, favourable prices contributed to improvements in production of palm oil. A 5.5 per cent increase

* The growth of GDP in 1988 was nearly two percentage points higher than an earlier growth projection made by the Ministry of Finance. Similarly the Central Bank projected an 8.7 per cent increase in real GDP for the year 1987, compared with 7.6 per cent by the Ministry of Finance. The latest Central Bank forecast of 8.3 per cent growth for 1990 is higher than the projections made by the Ministry of Finance in October 1989. Bank Negara Malaysia, *Annual Report 1989* (March 1990), p. 1.

Table 1.1. Growth and structure of gross domestic product by sector of origin^a, 1979 - 1990
(In constant 1978 prices)

	Percentage					Percentage change				
	1987	1988	1989 ^c	1990 ^c	1979 - 1986	1987	1988	1989 ^c	1990 ^c	1990 ^c
Agriculture, forestry and fishing	21.8	21.1	20.5	19.8	3.4	7.4	5.2	5.5	5.5	4.7
Mining and quarrying	10.6	10.3	10.3	9.9	6.4	0.1	6.6	8.8	8.8	3.5
Manufacturing	22.5	24.3	25.1	25.8	6.7	13.4	17.6	12.0	12.0	11.0
Construction	3.4	3.2	3.2	3.4	5.2	-11.8	2.7	9.0	9.0	14.5
Electricity, gas and water	1.8	1.8	1.8	1.8	8.6	8.0	9.2	9.8	9.8	10.0
Transport, storage and communication	6.6	6.6	6.8	6.9	9.5	5.3	8.8	10.5	10.5	11.0
Wholesale and retail trade, hotels and restaurants	10.5	10.5	9.8	11.0	5.0	4.5	8.8	9.2	9.2	12.5
Finance, insurance, real estate (including ownership of dwellings) and business services	8.8	8.9	9.0	9.3	6.0	6.8	9.0	10.0	10.0	11.0
Government services ^b	12.3	11.8	11.3	10.8	7.4	4.0	3.7	4.0	4.0	4.0
Other services ^c	2.3	2.2	2.1	2.3	5.2	3.6	3.9	4.0	4.0	5.0
Less: imputed bank service charges	3.6	4.2	4.6	4.9	15.8	18.2	26.1	18.0	18.0	15.0
Plus: import duties	2.7	3.2	3.6	3.8	15.9	-6.2	29.2	20.0	20.0	28.0
GDP in purchasers' values	100.0	100.0	100.0	100.0	5.4	5.3	8.7	8.5	8.5	8.3

Source: Bank Negara Malaysia, *Annual Report 1989* (Kuala Lumpur, 1990).

^a Figures for 1987 and 1988 are preliminary series based on the System of National Accounts, compiled by the Department of Statistics, figures for 1989 and 1990 are preliminary Central Bank of Malaysia estimates.

^b Include general public services (general public administration, external affairs and public order and safety), defence, health, education and others.

^c Include community, social and personal services, product of private non-profit services to households and domestic services of households.

^d Preliminary.

^e Forecast.

in agricultural production in 1989 reflected mainly a strong upsurge in palm oil production and a revival in the production of saw logs, which was adversely affected by bad weather in 1988.

With a 6.6 per cent increase in output in 1988, compared with a sluggish growth rate of 0.1 per cent in 1987, the mining sector rebounded well. This sector grew further by 8.8 per cent in 1989, reflecting increased mining activity. Following the reactivation of marginal mines, output of tin-in-concentrates grew by 11 per cent in 1989. This segment of the mining industry benefited from higher commodity prices in the world market as well as the higher quota allotted to Malaysia by the Association of Tin Producing Countries (ATPC). Crude petroleum production averaged about 600,000 barrels per day in 1989, representing an 8.4 per cent increase over the previous year. In line with the general buoyancy of the mining sector, output of gas expanded by 10.6 per cent in 1989.

The favourable change in Malaysia's terms of trade since 1987 and the continued expansion of world trade are reflected in the balance of payments position of the country. From a deficit of about M\$ 1.5 billion, representing 2.1 per cent of GNP, in 1985, the current account registered a substantial surplus of M\$ 6.5 billion, accounting for 8.6 per cent of GNP, in 1987. In 1988, the surplus continued to remain sizeable at about M\$ 4.9 billion or 5.7 per cent of GNP, despite a strong surge in imports by 35 per cent. Merchandise exports enjoyed two consecutive years of double-digit growth in 1987 and 1988, largely stimulated by buoyant commodity and manufactured exports. The adoption of more export-oriented strategies and the weakening of the Malaysian ringgit* created an upsurge of manufactured exports by 32.5 and 32.2 per cent in 1987 and 1988, respectively. Thus, the manufacturing sector emerged as the leading export earner, accounting for nearly 50 per cent of export earnings in 1988.

Despite the relatively cheap Malaysian currency, imports, most significantly of machinery, equipment and other manufactured goods, grew twice as fast as exports, resulting in a fall in trade surplus from M\$ 14.6 billion in 1988 to M\$ 10.2 billion in 1989. A much smaller trade surplus and higher services, tied mainly to higher repatriation of corporate profits and dividends, led to a reversal in the current account position from a surplus of M\$ 4.9 billion in 1988 to a deficit of M\$ 0.4 billion in 1989.

Despite significantly higher foreign direct investment (FDI) in 1988, the long-term capital account recorded a net outflow amounting to M\$ 3.2 billion in 1988, compared with M\$ 1.6 billion in 1987. This deficit reduced the net international reserves of the Central Bank which stood at M\$ 18.3 billion at the end of 1988, equivalent to five months of imports. At year-end 1989, the Central Bank's foreign exchange reserves totalled M\$ 21.7 billion, sufficient to cover 4 months of imports.

Malaysia's outstanding external debt fell from M\$ 50.1 billion in 1987 to M\$ 46.7 billion in 1988. A further fall to M\$ 41.8 billion in 1989 was accompanied by a fall in the country's debt service ratio (in relation to exports) to 9.3 per cent from 16.2 per cent and 13.0 per cent in 1987 and 1988 respectively.

In the face of prudent monetary and fiscal policies, inflation remained very low at less than 1 per cent in 1987 and 2.5 per cent in 1988. Inflation is estimated to have increased slightly to around 4 per cent in 1989 mainly due to higher import prices. Some inflationary pressure may result from new wage demands and a highly liquid economy facing massive capital inflows.

The current account of the Federal Government registered a significantly larger surplus of M\$ 329 million in 1989, compared with only M\$ 155 million in 1988. Despite rising public

* Since 1986, Malaysia's currency had continuously depreciated against the composite basket of the currencies of the country's major trading partners. The resulting export competitiveness was reinforced by the ringgit depreciating by 8.1 per cent against the United States dollar in 1988. In 1989, the Malaysian ringgit rose by 0.4 per cent against the United States dollar and was 11.6 per cent higher against the yen.

investment, the overall budget deficit of the Federal Government was reduced from 10.2 per cent in 1986 to 4.5 per cent of GNP in 1988. Even with a higher deficit of M\$ 5 billion, representing 5.1 per cent of GNP, the overall financial position remained stable, and there was less need to borrow from abroad.

In an environment of sustained economic expansion the employment situation continued to improve. Total employment was estimated to have increased by 3.1 and 3.5 per cent in 1987 and 1988, respectively. However, with the labour force expanding at a relatively rapid rate of 3.3 per cent per annum, the officially recorded unemployment rate declined only marginally from 8.7 per cent in 1987 to 7.9 per cent in 1989. Roughly 73 per cent of the new jobs created in 1989 were estimated to have been generated in manufacturing and services. Agriculture continued to provide the bulk of employment (roughly 30 per cent in 1989) followed by 'other services' (24.5 per cent) and manufacturing (17.0 per cent). There are signs of a tighter employment situation and reports of labour shortage, initially in plantations, and increasingly in other sectors of the economy.

B. MACROECONOMIC POLICY ENVIRONMENT

Flexible monetary policy

The thrust of monetary policies in recent years was directed at the maintenance of domestic price stability and the external competitiveness of exports while ensuring an adequate bank liquidity to fund productive private sector activity at reasonable costs. Towards this end, expansion of money supply was kept in line with GDP growth; interest rates were reduced; and the exchange rate policy was geared to market forces allowing the ringgit to find its realistic par value with key currencies.

In 1988 and 1989, monetary expansion resulted mainly from the strong demand for credit by the private sector. The expansionary influence of current account surpluses was neutralized by large repayments of external debt. Total lending to the private sector increased sharply by 9.9 per cent in 1988, and for the first time since 1980, manufacturing accounted for the largest share of the increase in bank lending (35.1 per cent).

Private sector demand for credit was strengthened by monetary policy adjustments introduced in 1988. Among these measures were the reduction in the base lending rate (BLR) of financial institutions which had lowered the average lending rate of commercial banks by 0.78 percentage points to 8.95 per cent per annum; changes in the lending guidelines to priority sectors improving access to credit for small-scale enterprises; and the introduction of an Enterprise Rehabilitation Fund with an initial endowment of M\$ 500 million to assist ailing Bumiputera enterprises* affected by the 1985-1986 recession.

To facilitate the channelling of funds into productive activities, a New Investment Fund (NIF) was earlier established in September 1985. This fund has a total of M\$ 1.7 billion with a maximum lending rate of 7.7 per cent. By the end of 1988, a total amount of M\$ 1.1 billion was drawn down by the manufacturing sector, representing 68 per cent of the total. With the current improvement in the liquidity situation and the availability of low cost funds, the NIF will be discontinued after the disbursement of the total allocation. Also relevant is the ASEAN-Japan Development Fund, which was launched in October 1988 under the auspices of the Japanese Government to provide financing (at 6.5 per cent per annum, fixed for up to five years) for small- and medium scale industries for new investment and expansion in the manufacturing, agriculture and tourism sectors.

* The term 'Bumiputera' is used to denote all Malays and native tribes, i.e., Senoi, Negritos, Ibans, etc., as well as immigrants of indigenous native from Indonesia and the Philippines. Majority ownership of Bumiputera characterizes Bumiputera enterprises. Cf. Department of Statistics, *The Ownership of Limited Companies*, 1982.

MACROECONOMIC TRENDS

Fig. 1.A. Growth of gross domestic product (GDP) and manufacturing value added (MVA), 1984-1990 (Percentage at constant 1978 prices)

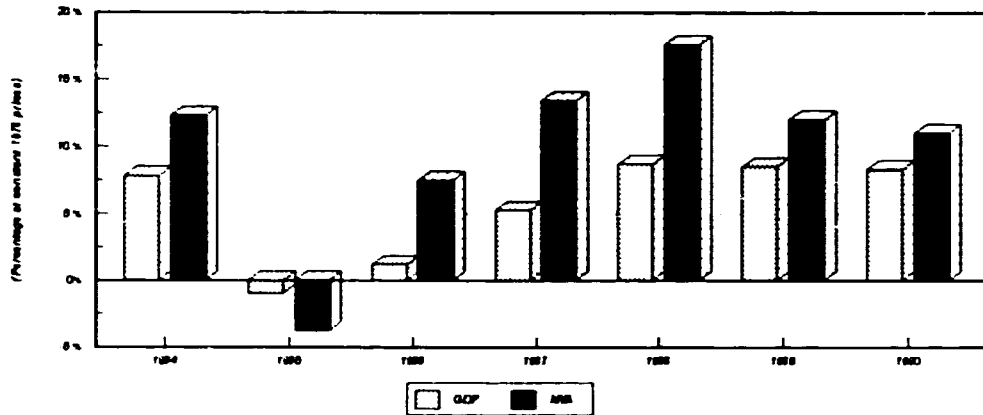


Fig. 1.B. Distribution of GDP by sector of origin, 1970-1989 (Percentage)

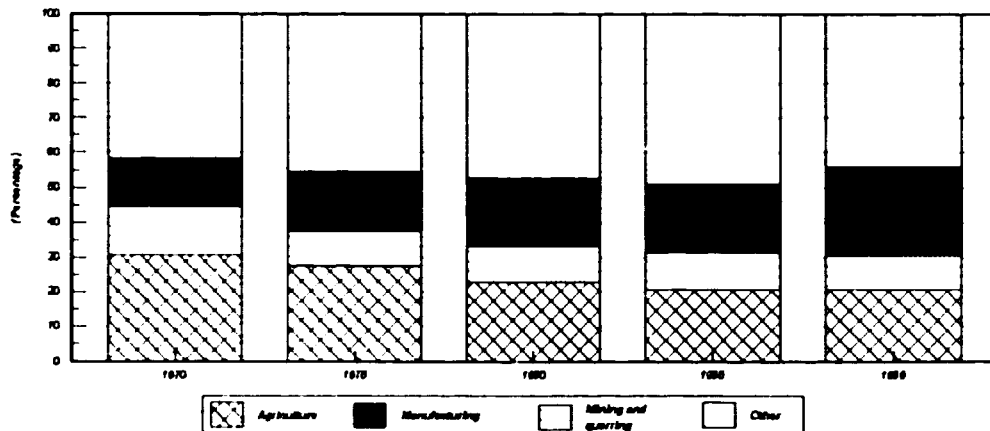
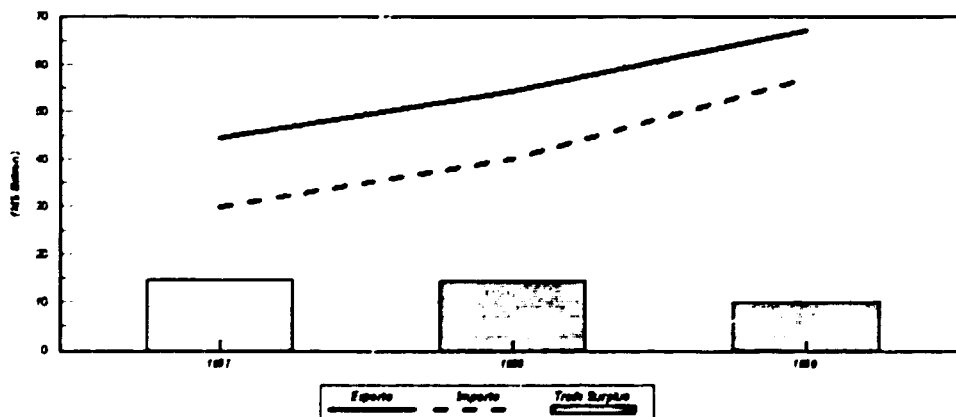


Fig. 1.C. Trade balance, 1987-1989 (M\$ billion)



MACROECONOMIC TRENDS

Fig. I.D. External debt (M\$ billion) and debt service (Percentage), 1987–1989

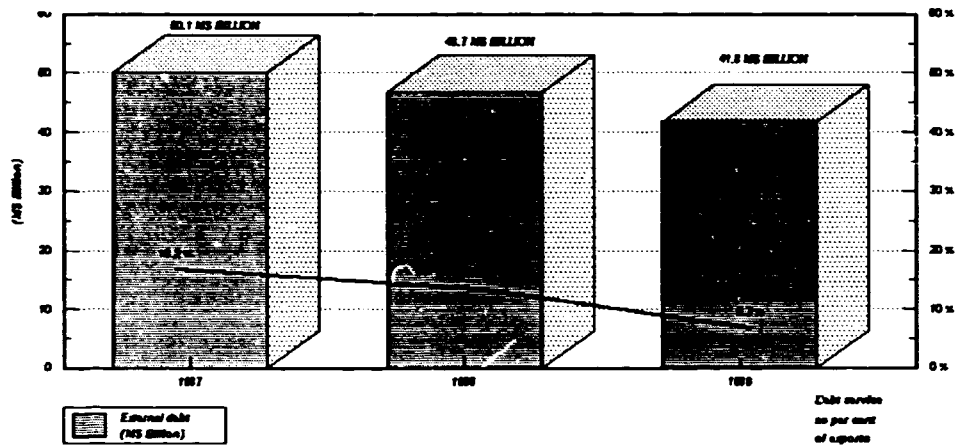


Fig. I.E. Rate of inflation, 1987–1989 (Percentage)

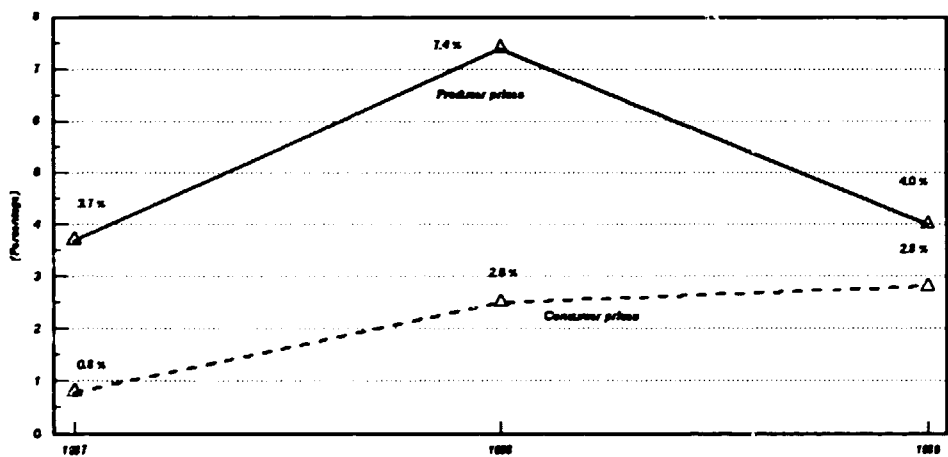
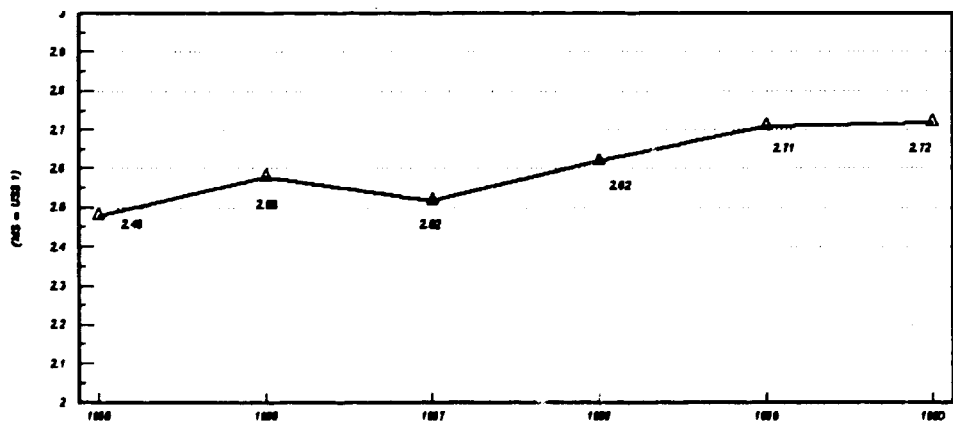


Fig. I.F. Exchange rate, 1985–1990 (M\$ equivalents to US\$1)



Another important aim of monetary policy in 1988 and 1989 was to promote a more efficient and competitive banking system and to deepen money and capital markets. Besides supporting the upgrading of banking skills and techniques, the Central Bank encouraged the financial system to introduce new instruments such as floating rate NCDs (negotiable certificate of deposit), and highly rated corporate borrowers were allowed to issue term notes by way of private placements. Furthermore, the Central Bank had prepared a set of guidelines to standardize the issuance of private debt securities. Tax incentives were introduced in the 1989 Federal Government Budget to help develop a more active market in corporate bonds and unit trust, and promote the emergence of a viable market in property unit trusts.

Concerning the regulatory framework, a major review of the banking legislation was completed in 1988, and insurance companies were brought under the supervision of the Central Bank with effect from 1 April 1988. Since January 1989, the Central Bank has rearranged and improved its open market operations while the statutory reserve requirements of banking institutions as well as the liquidity ratios of commercial banks and finance companies have been reduced to enhance flexibility in asset-liability management. In addition, a reform of the Export Credit Refinancing (ECR) scheme is under way, with a view to promoting backward linkages of the export industry and extending the ECR to a wide range of indirect exporters.

Growth-oriented fiscal policies

Major objectives of the government's fiscal policy were to strengthen its financial position and to reduce the size of the public sector, albeit with an effort to sustain economic recovery through redeployment of development funds to construction and labour-intensive projects. The success achieved so far in improving public sector finances has been considerable. The consolidated public sector deficit (including Federal Government, 13 State Governments, statutory bodies, local governments, and 54 large non-financial public enterprises (NFPEs)) was reduced from 17.9 per cent of GDP in 1982 to 4.8 per cent in 1988. Most of the improvement resulted from higher revenues and expenditure restraint at the Federal level. The financial position of State Governments, the statutory bodies and the local governments remained weak because of their narrow revenue base.

The decline in the budget deficits was mirrored by a fall in external financing both in 1987 and 1988, mainly due to substantial repayments and prepayments of external loans. In contrast, recourse to domestic financing grew substantially in 1987 and 1988 accounting for 67 and 71 per cent of total debt outstanding, respectively. Government securities constituted about 90 per cent of domestic debt outstanding in 1988, with the Employees Provident Fund holding slightly less than 60 per cent of the total.

The achievement of revenue targets was fuelled largely by higher oil prices and oil production as well as the more buoyant incomes in the non-oil economy. Measures introduced in 1988 to widen the tax base included a broadening of the sales tax, through a reduction in exemptions and restrictions on tax-free inputs, and the redefinition of allowable deductions on life insurance companies. However, the 3 per cent excess profits tax on companies was abolished as the first phase in a planned review of the corporate tax structure. The 1988 budget also included a two-year extension of the life of the reinvestment allowance, due to expire in 1988, and an increase in the rate of allowance from 25 to 40 per cent.

Other short-term measures implemented in 1988 included the sale of government holdings in the national airline (MAS) and the national shipping company (MISC) to Bank Negara. Privatization was identified as one of the solutions to resolve the problems of NFPEs. The loss-making NFPEs had been absorbing a large proportion of Federal allocations to fund operating expenses, especially to service their large debt burden.

Expenditures continued to be restrained in 1988, due mainly to slower growth of debt service charges and a moderate increase of development expenditures. In this latter category, however,

the 1989 budget projected an exceptionally large increase of over 70 per cent to strengthen the production base of the economy and to improve essential services. As a result of additional expenditure and changes in the tax system, the overall budget deficit was expected to widen to 7.8 per cent of GDP in 1989.

The 1989 budget focused on a revamping of the tax system, streamlining of tax incentives and developing the capital market. Tax measures included a 5 per cent reduction in the company and non-resident income tax rates from 40 to 35 per cent; a gradual abolition of the development tax starting with a 1 per cent reduction from 1990; imposition of a 5 per cent withholding tax on interest derived from long-term fixed deposits; reimposition of a 5 per cent sales tax on certain foodstuffs and building material; a streamlining of allowances granted under the Promotion of Investment Act of 1986; and some amendments to the Petroleum Income Tax Act.

With a view to accelerating growth in the private sector, the government also introduced a number of additional tax deductions and exemptions related to agricultural and overseas construction projects as well as to private property. Small-scale industries were granted a number of tax incentives including pioneer status to those firms which met specific criteria. And finally, the 1989 budget provided tax incentives to multinational companies to set up operational headquarters in Malaysia.

Strains on labour policy

Malaysia's labour policy is constrained by a rapidly expanding labour force and a mismatch between labour cost and labour productivity, which in turn resulted from a sharp increase in real wages in the early 1980s and relatively high non-wage labour costs, especially contributions to the PPF. Furthermore, the labour market was characterized by severe imbalances. Labour shortages persisted in the plantation sector while there was an oversupply of labour in urban areas, and demand for different skill categories in certain manufacturing industries did not match the supply of highly skilled labour, leading to considerable graduate unemployment.

Structural unemployment reflected in part the concern of the government with regard to manpower development (through public training programmes and financial assistance to higher education) and to social security (by providing insurance services). In recent years the authorities have taken a number of actions to alleviate the labour market situation, including various programmes for the development of skills in demand and improvement in the quality of labour, as well as new employment schemes aimed specifically at graduates, such as the establishment of a National Clearing House for Graduates and Skilled Employment (NCHGSE), the Temporary Employment Scheme (initiated in July 1986) and the Graduate Farmers' Scheme.

To ensure wage increases commensurate with productivity growth, the government labelled several amendments to the labour legislation. The amendments, which were approved by Parliament in November 1988, sought among other things to remove rigidities in the labour market and to provide for greater flexibility in the determination of wages. The effects of such measures, however, will not be immediate. Concerning labour shortages the government continued to grant permission to the plantation sector to employ foreign workers on a contractual basis for limited time periods.

Two tier trade policy

Although the government adopted an 'export-led industrial growth' as a key industrialization strategy, the overall trade policy worked with a strong bias against exports outside of Free Trade Zones (FTZs). A tailor made tariff system afforded high and widely varying effective rates of protection to import substitution activities which was not balanced by appropriate

incentives for exports. Since the mid-1980s, the authorities have undertaken to reduce this bias in trade policy by reviewing their stance towards exchange rate policy and rationalizing domestic fiscal and financial incentives.

Between 1985 and 1988 the value of the ringgit, in terms of a composite basket of currencies of Malaysia's major trading partners, was allowed to depreciate by 32.6 per cent, offsetting some of the disincentives to export. Concerning export finance, the Central Bank revamped the ECR scheme to make it more flexible and increase coverage. To complement the ECR scheme and to facilitate access to export financing, an insurance and guarantee scheme is being finalized by the Industrial Bank of Malaysia.

The impressive growth of manufactured exports in the second half of the 1980s was, however, only partly attributable to these policy changes. The international competitiveness of Malaysian products increased due to relatively higher labour costs in competing, industrially more advanced countries. This also improved Malaysia's locational advantages for export-oriented foreign direct investment. To sustain manufactured export growth in the 1990s, a tariff reform and further review of incentives for domestic sales would be essential.

Constructive industrial policy

The rapid growth of the manufacturing sector has been regarded as a principal means of achieving Malaysia's long-term development objectives formulated in the New Economic Policy. The strategy of rapid industrialization has been further emphasized in the Industrial Master Plan (1986–1995). During the last decade considerable progress has been made in meeting development objectives, in particular the restructuring of employment and of industrial asset ownership. In the early 1980s, increasing concern had been expressed, however, over a number of structural problems including weak intersectoral linkages, a narrow production base, and a decline in private sector investment. The need to strengthen private investment has emerged as a key policy issue in the formulation of the Fifth Malaysia Plan (1986–1990). The Plan emphasized both an improvement in the economic environment and a restructuring of public sector investment as a means of stimulating private investment.

Towards this end, a number of measures have been taken over the last three years. The measures undertaken include liberalization of licensing requirements under the Industrial Coordination Act (ICA); the relaxation of guidelines governing foreign equity participation; and increasing the availability of funds, including the establishment of the New Investment Fund (NIF) and the ASEAN-Japan Development Fund to provide funding for priority projects and small- and medium-scale enterprises. A new Promotion of Investment Act was introduced in 1986 to replace the administratively cumbersome Investment Incentives Act of 1968; the new Act, which has been revised in 1988, provides attractive tax incentives for the manufacturing and agricultural sectors.

Several additional measures were instituted in 1987 and 1988: (i) the Excess Profits Tax of 3 per cent was abolished beginning from the year of assessment 1988, and the maximum corporate tax rate was reduced to 35 per cent; (ii) the reinvestment allowance was raised from 25 per cent to 40 per cent for two years with effect from January 1988; (iii) the Accelerated Depreciation Allowance was extended for a further two years; and (iv) an Enterprise Rehabilitation Fund was established with an initial funding of M\$ 500 million to provide loans at preferential rates of interest to Bumiputera firms undertaking industrial restructuring. In addition, a Cabinet Committee on Investment was formed to further expedite as well as to simplify the procedures for investment applications. A number of additional steps were taken to reduce administrative delays at the federal and state levels in processing applications for licensing and tax exemptions.

The above changes in the regulatory and policy frameworks elicited a favourable response from foreign and domestic investors alike. Following a moderate recovery in 1987, a sharp

increase of over 21.6 per cent in private sector investment was achieved during 1988. There were indications that private fixed investment peaked in 1989.

The government is fully committed to an objective evaluation of the existing industrial policies and recommendations as embodied in the Malaysian Industrial Policy Studies (MIPS) and the Industrial Master Plan (IMP). In view of recent structural changes in the economy and recent industrial strategic thrusts to develop exports of high value-added products, the Government of Malaysia is striving to formulate the Second Outline Perspective Plan (SOPP) for the period 1991–2000 and the Sixth Malaysia Plan (1991–1995). The government also intends to review tariff and tariff-related incentives and their impact on the manufacturing industry.

C. ECONOMIC STRUCTURE

With a *per capita* income of about \$2,050 in 1989 Malaysia is firmly placed in the middle income ranks of developing countries. High income growth over the last two decades reflected the country's rich resource base and prudent macroeconomic management towards achieving economic growth and structural changes. As a major producer of rubber, palm oil and tin, Malaysia started its industrialization process much later than the Asian Newly Industrializing Economies (NIEs). Table 1.2 shows that manufacturing activities accounted only for roughly 14 per cent of GDP in 1970. This share had increased to nearly 20 per cent by 1980, due largely to the spurt in foreign investment in the Free Trade Zones (FTZs), mostly in garments and electronics, and import-substituting investment.

In the 1980s, the Government of Malaysia initially embarked upon an ambitious development strategy with emphasis on public sector construction-related infrastructure and investment in heavy manufacturing industries such as automobiles, cement, and iron and steel. This led to unsustainable fiscal and external current account deficits. Subsequent adjustment measures including industrial deregulation, cuts in public sector involvement in the economy, and the promotion of both local and foreign direct investment provided a strong boost to manufacturing output and export growth. A symbolic milestone in Malaysia's transition towards an industrializing nation was passed in 1987 when the manufacturing sector took a lead over agriculture as the largest in the economy both with respect to production and export.

The performance of the traditional economic activities, agriculture and mining, continued to remain vulnerable to fluctuations in commodity prices, and structural constraints within the sectors. Both sectors together accounted for slightly less than 45 per cent of GDP in 1970.

By 1980 the share of agriculture in GDP fell to 22.9 per cent, down from 30.7 per cent in 1970, and that of mining and quarrying fell to 10.1 per cent, down from 13.8 per cent in 1970 (see Table 1.2). The 1980s experienced a further fall in the GDP share of agriculture for several consecutive years, while the share of mining in GDP oscillated around 10 per cent. According to the Central Bank's forecast for 1990, agriculture accounts for 19.8 per cent of GDP in 1990, while mining contributes 9.9 per cent to GDP.

The most notable feature of the developments within the agricultural sector was the rising prominence of palm oil and cocoa output at the expense of rubber production. These two product categories were – together with tropical timber – also the major agricultural export earners. Within mining activities, the production of tin continued to suffer a downtrend in the face of depleting reserves after 1980, which was reinforced by the collapse of the International Tin Council buffer stock operations in 1984. This trend was reversed in 1989. However, the constant share of the mining sector in GDP was brought about mainly by the increasing contribution of petroleum production.

Table I.2. Long-term trends in origin and demand components of GDP, 1970–1989, selected years
(In constant 1978 prices)

	1970–1975	1975–1980	1980–1985	1985–1989 ^{a/}	1970	1975	1980	1985	1989 ^{a/}
	(Per cent change per annum)				(Share in GDP)				
GDP	7.1	8.5	5.1	5.4	100	100	100	100	100
Agriculture, forestry and fishing	4.8	4.6	3.2	5.0	30.7	27.6	22.9	20.8	20.5
Mining and quarrying	0.4	8.8	5.9	4.5	13.8	9.9	10.1	10.5	10.1
Manufacturing	11.5	11.7	5.2	12.2	13.9	17.0	19.6	19.7	25.3
Other industry	7.4	13.1	5.8	-0.3	5.0	5.1	6.3	6.4	5.2
Services, etc.	9.3	9.0	5.7	3.8	36.5	40.4	41.3	42.5	40.0
Imports of goods and services	5.1	15.7	4.7	9.3	43.1	39.1	53.7	52.5	60.7
Private consumption	5.7	9.9	3.7	1.3	55.3	51.6	54.9	51.3	43.7
Government consumption	10.2	9.9	4.0	1.6	14.2	16.3	17.4	16.5	14.2
Gross fixed investment	12.4	14.1	5.1	0.4	19.2	24.4	31.3	31.3	25.8
Exports of goods and NFS	5.9	9.8	7.1	13.1	50.9	48.0	50.8	55.8	74.0
Gross domestic savings	3.9	16.0	6.1	2.0 ^{b/}	27.5	23.6	33.0	34.5	32.0 ^{b/}

Source: World Bank, *Malaysia: Matching Risks and Rewards in a Mixed Economy*, Vol. III: Statistical Annex, Report No. 7208-MA (Washington, October 1988); Bank Negara Malaysia, *Annual Report 1988*, (Kuala Lumpur, March 1989); Ministry of Finance Malaysia, *Economic Report 1988/89* (Kuala Lumpur, October 1988).

^a 1985–1988.

^b 1988.

^p Preliminary.

The performance of the service sector has traditionally been aligned with growth in the major economic sectors. During the 1970s, services expanded even more rapidly than GDP, and this sector's share in GDP increased significantly until 1980. Since then, growth has somewhat slackened, mainly in response to slower expansion of government, community, social, and personal services, but the share of services did not change much in the 1980s. The overall rapid growth was principally due to substantial expansion and high investments in transport and communications as well as finance, insurance, real estate, wholesale and retail traders, hotels and restaurants.

Savings and investment rates are high in Malaysia compared with countries at similar levels of development. Gross national savings accounted for 33.1 per cent of GNP in 1988, and fell marginally to 29.9 per cent in 1989. The savings-investment gap widened considerably in the early 1980s, reaching a peak of 14 per cent of GDP in 1982, with a sharp increase in public sector investment and a decline in private savings. Since 1987, however, the rate of savings has exceeded the investment rate. The investment rate peaked at above 37 per cent of GDP in 1982. Having declined steadily to about 24 per cent in 1987, it rose to 29 per cent in 1988.

Since 1980, private savings have been increasingly generated by the household sector rather than by corporations, and are being channelled into high return low risk assets which finance government deficits. The redistribution of savings from corporations to households has also constrained private investment by introducing a mismatch between the risk profiles of savers and investors. This has occurred because a sizeable portion of household savings is channelled through non-bank institutions, such as provident and mutual funds, insurance companies and co-operatives. They purchase government securities and other high quality assets and reduce the availability of equity and other risk-finance to the corporate sector.

One consequence of high public investment and large overall deficits has been an exponential rise in total public internal and external debt. While the government has successfully managed external debt by limiting new borrowings, refinancing old, high interest rate debt, and prepaying other loans, thereby maintaining the debt service ratio at very comfortable levels, it has steadily built up internal debt to finance expenditures. The burden of servicing this debt is substantial (interest alone amounted to over 10 per cent of GNP in recent years) and subject to sharp fluctuations in response to global changes in interest and exchange rates.

The bulk of foreign direct investment was directed at resource-based industries and the exploitation of locational advantages in FTZs (electrical and electronics industries, garments). While the government is constantly improving the macroeconomic policy environment to sustain the pace of economic recovery, private investment is considered as the key to growth prospects in the 1990s.

D. ECONOMIC PROSPECTS

Having recovered well in the late 1980s, the economy of Malaysia is, on the threshold of a new decade, facing mixed prospects for sustaining a robust pace of economic expansion. Whether the recovery can be sustained beyond 1990 will depend on policies implemented to deal with the structural weaknesses facing the economy.

The structural weaknesses and resilience of the Malaysian economy became apparent in the second half of the 1980s. The narrow industrial base, the dependence on commodities that continue to be vulnerable to growing competition from low-cost economies in the region, the problem of unemployment, a shortage of skills, an over-sized public sector and an over-regulated economy constitute the main weaknesses of the economy. The resilience of the economy stems from, *inter alia*, reduced budgetary deficit, better management of external

debt, tax reforms, changes in the investment incentives and tariff protection, realistic exchange rate management, other financial reforms and privatization. The long-term growth prospects will depend not only on the global and regional environment, but also the domestic environment.*

The principal sources of growth in the medium term are expected to be the private sector on the demand side and the manufacturing sector on the supply side. The growth in private sector investment is expected to remain strong. The present environment, with low exchange rates, low interest rates, and reduced corporate taxes, is favourable for domestic and foreign investors. Also, measures have been taken over the past two years to streamline administrative procedures and liberalize the business environment. Further relaxation of the Industrial Coordination Act and pragmatic implementation of the New Economic Policy could fuel a healthy pace of economic expansion.

In quantitative terms, both IMP and World Bank projections indicate that Malaysia's GDP could continue to grow at about 6 per cent (in constant prices) well into the 1990s. Concerning manufacturing value added (MVA), IMP projections were surpassed by actual events in 1988 and 1989. It appears more likely that manufacturing will continue to sustain a double-digit growth rate.

To achieve these results, investment growth should continue to outstrip GDP growth, although by smaller amounts. According to the Central Bank, \$8.79 billion worth of private investments will be needed to meet the 1990 GDP growth forecast of 8.3 per cent. Fixed investment growth will need to average about 9 per cent over the next decade. This may be made possible only as a result of private consumption growing faster than GDP, providing the demand stimulus to support investment. Additionally, public investment should start to pick up once the public finance situation stabilizes in 1991. Foreign direct investment should also continue to be a prime mover in investment growth over the medium term. Thus, investment-led growth is in the offing.

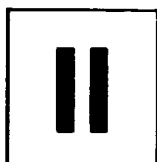
Prospects for export growth are less favourable in the 1990s according to the World Bank projections.** Petroleum exports are likely to stabilize at the 1988 level; rubber, tin and saw log volume growth is also expected to be flat. The sole remaining areas of dynamism will be in palm oil, manufacturing, and other exports. Overall, 1988-1991 nominal export growth would decline to 8.3 per cent, and maintain this level approximately thereafter.

Imports would grow faster than exports as intermediate inputs for manufacturing pick up and as the structure of domestic demand shifts towards private consumption and investment. Nevertheless, because exports start from a base that is greater than the import level, the merchandise goods balance is projected to deteriorate slowly over the next decade.

With continued fiscal restraint and as a result of the government's debt prepayment programme, the projected scenario shows a considerable long-term improvement in Malaysia's external debt position. Total medium- and long-term debt would fall marginally from 74 per cent of GDP in 1987 to 72 per cent by 1997. The overall debt service ratio, temporarily raised by the debt prepayment programme, would fall. These indicators all point to the continued position of strong creditworthiness held by Malaysia, which should enable the country to obtain good terms on bank credits and to move into new, more suitable and diversified financial markets for its development requirements.

* For analytical interpretations of sources of growth in the long term and three alternative growth scenarios for the period 1991-2000, see Malaysian Institute of Economic Research, *Malaysia's Long Range Economic Outlook 1991-2000: Prospects for Doubling the National Per Capita Income* (Kuala Lumpur, November 1989).

** World Bank, *Malaysia: Matching Risks and Rewards in a Mixed Economy* (Washington, October 1988), Report No. 7208 MA.



STRUCTURE AND PERFORMANCE OF THE MANUFACTURING SECTOR

A. GROWTH AND STRUCTURAL CHANGE

At Independence in 1957 the manufacturing sector accounted for less than 8 per cent of GDP and was heavily dominated by primary processing activities with relatively large establishments.* Processing of estate-type agricultural products (mainly palm oil and coconut oil processing) accounted for more than half of the manufacturing output, though enterprises in these manufacturing activities constituted less than 4 per cent of establishments. The two industries which ranked next in output size were also mainly primary processing: food manufacturing (grain and oil milling) and manufacture of wood (saw-milling). The changing composition of MVA over the decades clearly shifted away from the dependence on processing of primary commodities towards the exploitation of the country's relative comparative advantages based on the availability of labour and skills. However, this comparative advantage is now at stake in some segments of manufacturing due to the rising unit cost of labour.

Manufacturing growth and structural change gained momentum only in the 1960s when official policy, disillusioned by a steady worsening of the country's terms of trade, turned its attention to the development of manufacturing. Manufacturing output recorded an 11.5 per cent increase per annum between 1960 and 1970 and the sector's share in GDP had risen to around 14 per cent by 1970, partly as a result of a variety of fiscal incentives and physical facilities provided for investment in manufacturing, such as tax exemptions, tariff protection, financial assistance and industrial sites.

The sources of rapid industrial expansion, especially until 1968, were domestic demand expansion and import substitution; exports played only an insignificant role. Virtually uninterrupted growth of output was accompanied by substantial structural change. Processing of estate-type products lost its dominating position during the 1960s while the food industry rapidly expanded and had overtaken the former industry in terms of gross output by 1968, when the shares of the two industries represented 18.5 and 22.7 per cent, respectively. Other industries which significantly increased their output shares included tobacco, rubber, textiles, wood products, chemicals, petroleum and coal products, non-metallic mineral products, basic metals and metal products, i.e., industries producing non-durable consumer goods or intermediates, as well as industries producing consumer durables and investment goods such

* See Lutz Hottmann and Tan Siew Ee, *Industrial Growth, Employment, and Foreign Investment in Peninsular Malaysia*, Oxford University Press (Kuala Lumpur, 1980).

as electrical and non-electrical machinery and transport equipment. However, Malaysia's industrial sector continued to depend on primary commodity processing activities by the end of the 1960s.

The easy phase of import substitution was nearly completed by 1973 when around 90 per cent of durable and non-durable consumer goods and intermediate goods were produced domestically.* By the late 1960s manufacturing industries tended to become more export-oriented, and external demand emerged as a major source of industrial growth in the 1970s. The increasing orientation towards world markets stimulated continued rapid growth of output and was accompanied by a changing composition of manufacturing production.

Gross manufacturing output increased at 10.8 per cent per annum during 1970–1980, much faster than output of all resource-based industries except processing of estate-type agricultural products (see Table II.1). Leading growth industries were textiles and wearing apparel, electrical and electronic machinery and appliances, transport equipment, and other manufactures, most of which had attracted foreign capital and were located in Free Trade Zones (FTZs). The large increase in the production index of the electrical industry was mainly accounted for by the production of electronic components and sub-assemblies for incorporation in office machinery, radios and television sets. Export-oriented products listed under 'other manufacturing' comprise mainly scientific and optical instruments. This industry had registered phenomenal output growth in the 1970s, based on the production of professional, scientific, medical, optic and photographic apparatus, measuring and controlling instruments, photographic and cinematographic supplies, as well as watches and clocks.

The rapid output growth of transport equipment constitutes a special case. This industry, which produces passenger and commercial vehicles as well as two wheelers (mopeds, motorcycles and scooters), was launched in 1967 when the Malaysian Government approved the establishment of 6 assembly plants. In the 1970s, it became a core activity for the government's drive into second-stage import substitution. The industry was promoted by high tariffs, stringent import licensing and quantitative restrictions. Output largely consisted of assembly of imported parts and components, replacing imports of completely built-up four and two-wheelers. Because of the small size of the domestic market, production could not be expanded significantly in the 1970s to reach the minimum efficient scale, and linkages to other domestic industries remained negligible.

In the first half of the 1980s, manufacturing production grew on average at a slower pace than during the preceding decade, and the growth rate of the production index even turned negative in the wake of economic recession in 1985 (see Table II.1). The pace of manufacturing expansion fell short of the Fourth Malaysia Plan (1981–1985) target of 11 per cent. Manufacturing output registered no more than a 5.3 per cent increase in real terms during the Plan period.

Internal and external factors contributed to the slow pace of industrial growth in the first half of the 1980s. The 1981–1982 recession in industrialized countries combined with a deterioration of Malaysia's terms of trade discouraged private investment which was further dampened by excess capacity, falling profits, rising costs of finance, public influence on private decision-making and loss of competitiveness in trade due to rising unit labour costs in manufacturing. Notable exceptions to this trend were petroleum refineries and output of construction-related materials (cement, etc.), which benefited from the government-induced construction boom in 1981–1984. Furthermore, strongly export-oriented activities such as the electrical machinery industry in particular were able to sustain their rapid expansion at least until 1984 (see Table II.1).

* For details, see Che Peng Lim, 'From import substitution to export promotion: a study of changes in Malaysia's industrial policy', in Kimimasa Yoneda (ed.), *Trade and Industrial Policies of Asian Countries*, Institute of Developing Economies (Tokyo, 1982), pp. 41–98.

Table II.1. Manufacturing production indices^a, 1968-1989, selected years

	1969-100				1981-100			
	1968	1970	1980	1981	1981	1982	1983	1984
Manufacturing	59.4	129.8	362.6	374.6	65.7	105.6	112.6	125.4
Processing of estate type agricultural products ^b	7.3	130.1	439.9	489.9		65.6	66.6	111.4
Food, beverages and tobacco	16.8	119.4	222.2	216.6	15.4	106.8	104.8	115.2
Textiles and wearing apparel	1.3	114.6	375.7	382.1	3.9	95.9	95.2	104.4
Wood and related industries	7.1	125.5	287.3	303.4	5.5	108.4	121.4	99.9
Rubber products	3.8	125.3	203.6	222.4	4.6	105.7	108.4	119.2
Chemicals and chemical products	5.7	118.9	250.7	259.7	2.2	92.1	95.9	102.7
Petroleum refineries	3.0	99.5	193.7	187.7	4.7	109.2	139.8	149.0
Cement and cement products	4.5	118.2	278.5	322.6	3.5	94.8	99.9	111.3
Basic metal and metal products	4.1	134.5	336.9	373.3	3.8	105.1	103.6	135.1
Electrical and electronic machinery and appliances	1.2	171.5	487.4	510.3	9.8	125.6	143.5	197.0
Transport equipment	1.4	272.5	852.6	855.1	2.0	96.0	111.1	119.7
Other manufactured products	3.2	193.9	1,705.8	1,635.6	10.3	93.1	93.4	94.3
						96.6	93.8	96.7

Source: Ministry of Finance Malaysia, *Economic Report 1988-89* (Kuala Lumpur, 1988); Bank Negara, *Annual Report 1989* (March 1990), p. 185.

Note: Figures in parentheses are percentage annual rates of change.

^a Data for 1970 to 1981 refers to 1968 weights and from 1982 onwards are based on 1981 weights.

^b Palm oil and coconut oil processing. From 1982 onwards these are included under food, beverages and tobacco.

^c From 1982 onwards this category also includes non-metallic mineral products.

The recovery after the recession was again led by export-oriented industries, notably electrical machinery and rubber products. In the second half of the 1980s, the electrical machinery industry was firmly established as the largest manufacturing activity in terms of its share in manufacturing value added (MVA) (see Table II.2). Output expanded rapidly in 1987 and 1988, in particular with respect to the production of semi-conductors and other electronics components. This notable performance, which was mainly attributed to the continued high export orders from the United States, Japan, Europe, and Hong Kong, was the result of the upsurge in end-user demand for personal computers, telecommunications equipment, consumer electronics products and motors as well as the relocation of Japanese investments overseas and the introduction of new product lines and capacity expansion by local manufacturers. In line with the strong external and domestic demand, the output of radios and television sets, household refrigerators and air-conditioners too grew rapidly by 33.1 per cent and 49.8 per cent in 1987 and 1988, respectively.

A major factor contributing to the rapid expansion of the production of electrical goods was the redeployment of several transnational firms to Malaysia. Malaysia is emerging as a leading producer of colour television sets, besides being the world's second largest producer of air-conditioners. A slower expansion of the electrical machinery industry in 1989 was largely due to slower growth of electronic components resulting from a slump in demand for final products.

As more new manufacturing establishments came on stream to meet the strong upsurge in external demand for latex products, output of the rubber-based industries, led by a remarkable growth of 159.5 per cent in the production of rubber gloves in 1988, rose significantly and the industry ranked as the third largest in Malaysia with a 7.8 per cent share in MVA in 1988 (see Table II.2). This significant performance follows from the greater world-wide safety consciousness which has resulted in a phenomenal increase in the world-wide demand for examination gloves and prophylactics. Currently, Malaysia is a world leading exporter of examination gloves. There were 42 establishments manufacturing examination gloves with a total installed production capacity of 2.492 million pairs per year in 1987. Another 108 similar establishments were approved by the Malaysian Industrial Development Authority (MIDA) in the first seven months of 1988. Other rubber products whose output also expanded sharply included processed latex as well as tyres and tubes in response to the higher domestic demand for passenger cars and heavy transport equipment. Following a significant rise in 1988, production of rubber products faltered to 15.2 per cent in 1989 as rubber re-milling activity declined sharply in the wake of falling demand for latex products.

The growth performance of the other export-oriented subsectors showed mixed trends. The production of wood-based products (excluding furniture) had rebounded strongly in 1987, but output growth slackened to a more moderate pace in 1988 and faltered further in 1989. The industry suffered a declining trend in its contribution to MVA since the peak of 11.9 per cent in 1976. (Since 1985, the industry's share in MVA has oscillated around 6.5 per cent.) Similar declining trends were observed with respect to other primary processing activities such as leather and fur products, footwear, furniture, non-metallic mineral products and non-ferrous metals. Given the competition from other labour abundant countries, the success of such a specialization in labour- and skill-intensive industries depends on unit labour costs in Malaysia as compared to neighbouring countries such as Thailand and Indonesia. The relatively high labour costs in Malaysia seem to have dampened the recovery of the textiles and wearing apparel industry. Since 1986, value added of textiles increased only moderately while that of wearing apparel exceeded the manufacturing average. The industry share in MVA declined from almost 7 per cent in 1978 to 5.5 per cent in 1988. The textile and wearing apparel industry almost doubled its production in 1989 as a result of a significant increase in the production of synthetic textiles, knitwear and wearing apparel. Rapid expansion of

Fig. II.A. Indices of manufacturing production by branches of industry, 1981 – 1989 (1981 = 100)

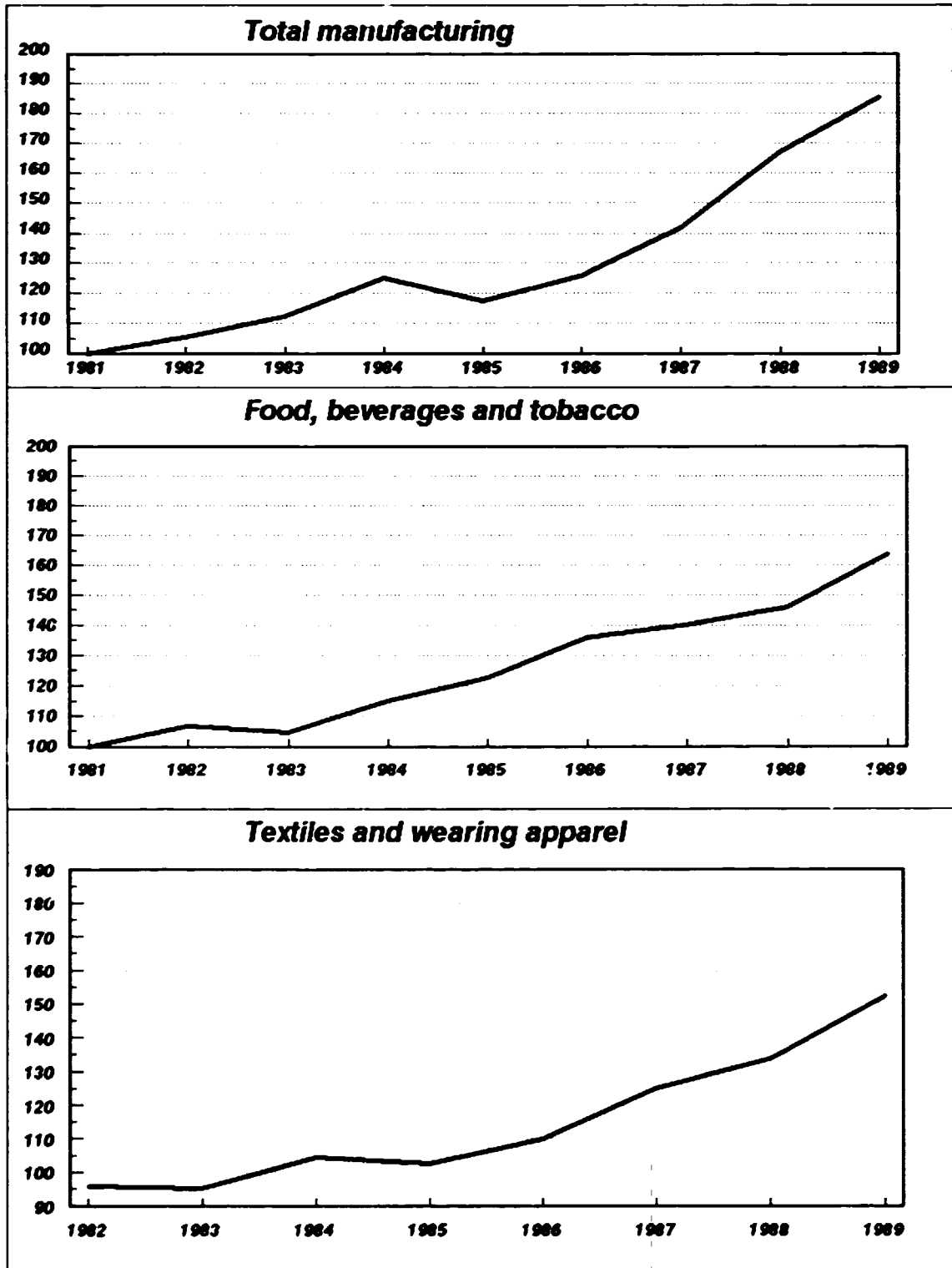


Fig. II.A. (continued)

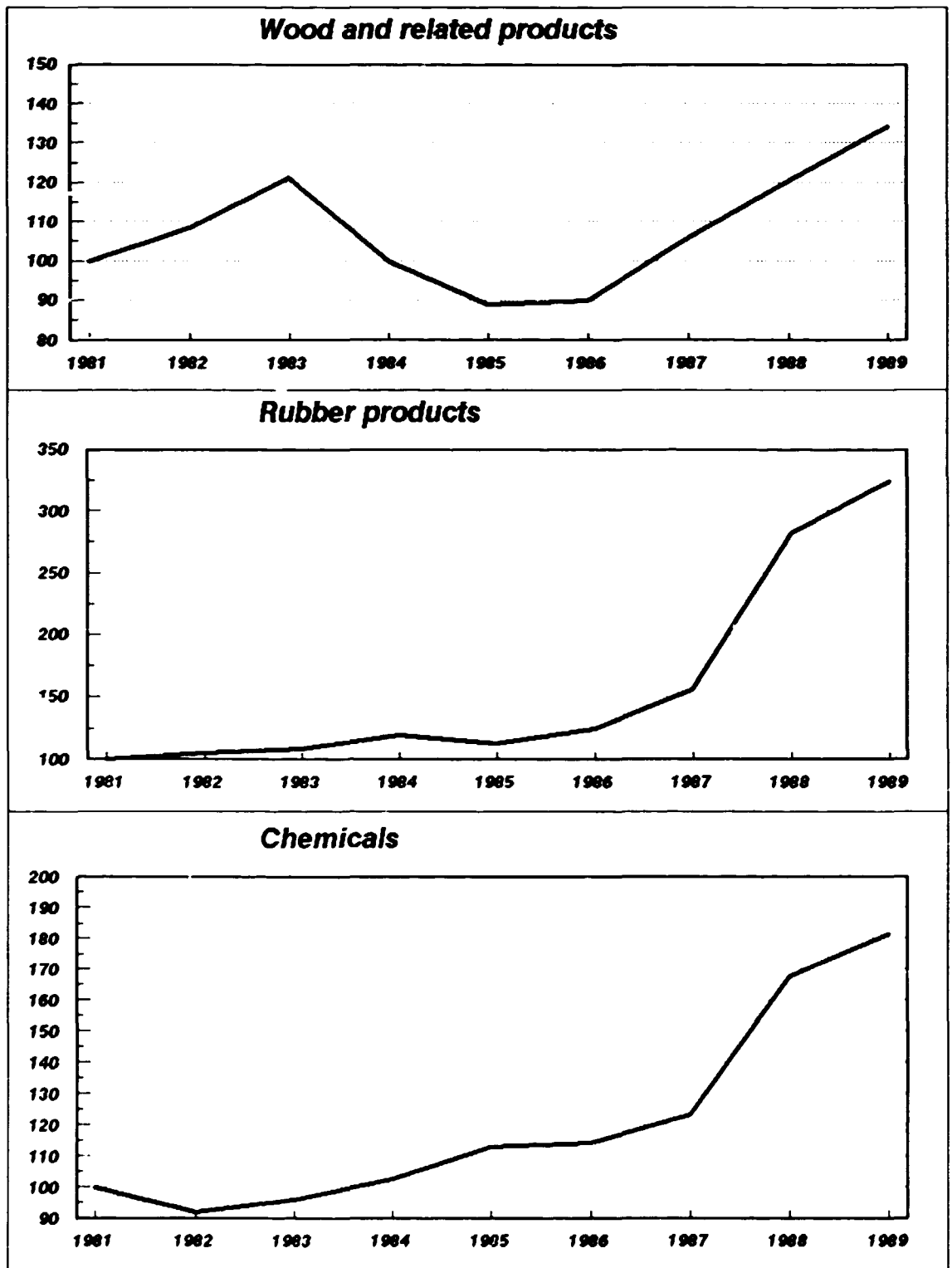


Fig. II.A. (continued)

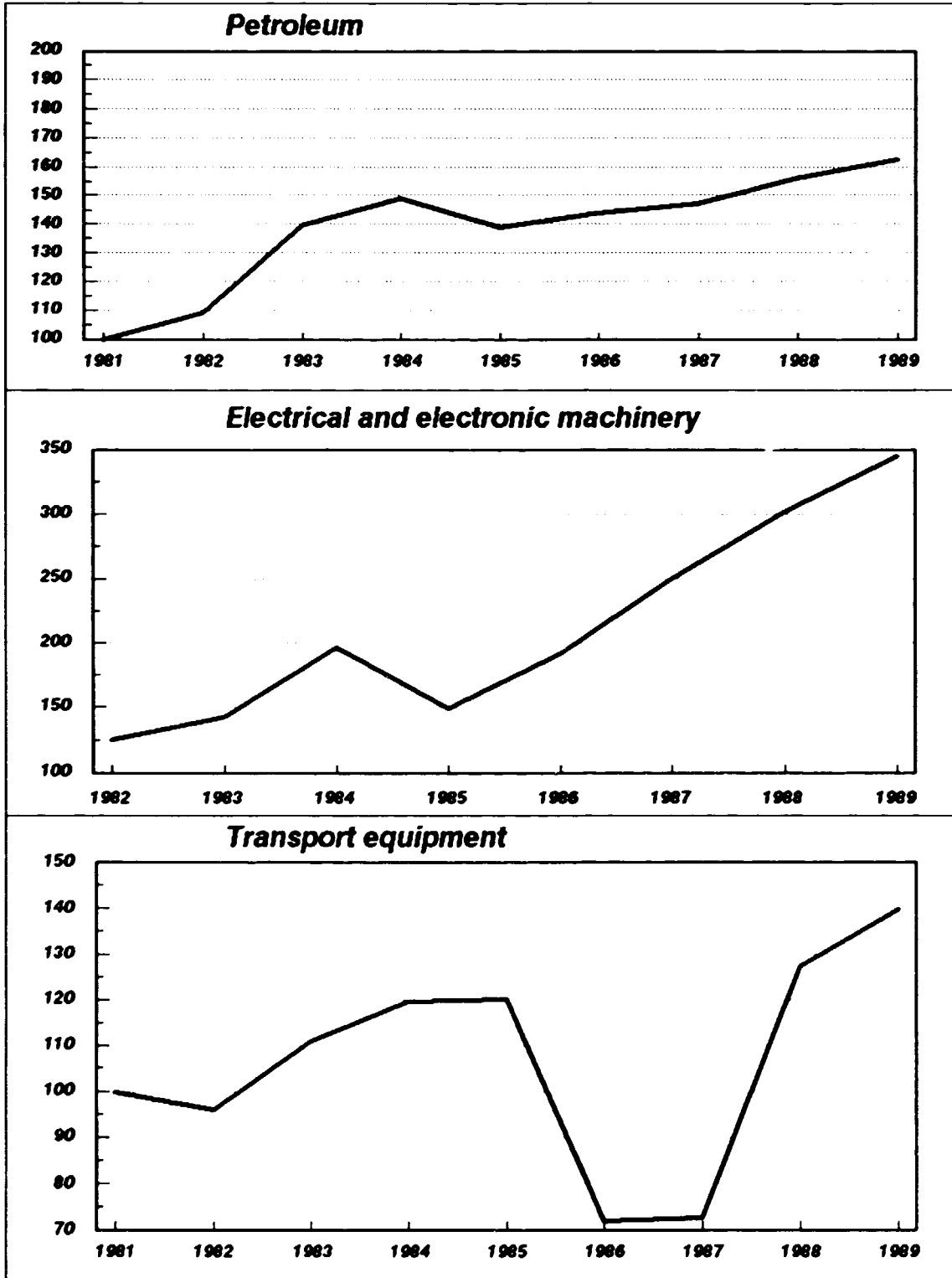


Table II.2. Composition of manufacturing value added, 1970–1988
(Percentage at constant 1980 prices)

	1970	1971	1972	1973	1974	1985	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Total manufacturing	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Food products	20.4	19.0	18.2	17.8	17.0	18.2	17.7	17.0	16.8	16.6	16.4	15.3	15.8	15.2	14.9	17.5	18.9	17.3	17.5
Beverages	2.2	2.1	2.1	2.2	2.5	2.4	2.4	2.5	2.7	3.1	3.2	2.9	2.6	2.2	1.9	2.1	1.9	1.8	1.8
Tobacco	3.3	3.3	3.2	3.2	3.5	3.5	3.1	3.1	2.9	3.0	2.8	2.7	2.9	2.6	2.5	2.5	2.3	2.1	2.1
Textiles	2.5	2.7	3.2	3.5	2.5	3.7	4.4	4.3	4.6	4.4	4.3	4.1	3.6	3.4	3.0	3.2	3.2	3.1	3.1
Wearing apparel, except footwear	1.3	1.3	1.6	1.7	1.2	1.8	2.2	2.1	2.3	2.2	2.1	2.1	2.0	1.9	2.1	2.2	2.2	2.4	2.4
Leather products	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Footwear, except rubber or plastic	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Wood products, except furniture	10.9	10.6	11.8	11.8	10.8	10.2	11.9	11.8	10.1	9.7	9.2	8.8	9.0	9.6	7.0	6.6	6.3	6.6	6.3
Furniture, except metal	1.3	1.2	1.4	1.4	1.1	1.2	1.4	1.4	1.2	1.1	1.1	1.0	1.0	0.8	0.8	0.7	0.7	0.7	0.7
Paper and products	0.6	0.7	0.7	0.8	0.7	0.7	0.8	0.8	0.8	0.9	1.0	1.1	1.0	1.0	0.9	1.0	1.0	1.0	1.0
Printing and publishing	5.5	5.6	6.0	4.7	4.9	4.9	4.5	4.4	4.4	4.4	4.4	5.1	5.2	4.2	3.9	4.0	4.0	3.9	3.8
Industrial chemicals	1.6	1.6	1.8	1.8	1.9	1.6	1.6	1.5	1.6	1.7	1.8	1.7	1.4	1.4	1.4	1.6	1.4	1.4	1.4
Other chemicals	2.6	2.6	2.9	3.0	3.1	2.8	2.8	2.6	2.8	3.0	3.1	3.0	2.7	2.7	2.5	2.9	3.0	2.8	2.8
Petroleum refineries	11.3	10.7	8.9	7.2	6.6	7.1	6.4	5.8	5.5	5.6	5.7	5.4	5.6	6.9	6.4	6.4	6.2	5.7	5.6
Miscellaneous petroleum and coal products	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Rubber products	8.1	8.4	8.2	8.5	8.0	8.2	7.8	7.6	7.0	6.8	6.7	7.0	7.0	6.8	6.6	6.7	6.9	7.8	7.8
Plastic products	1.3	1.6	2.2	2.2	2.1	2.1	2.0	1.9	1.9	1.9	1.9	2.2	2.3	1.9	1.8	2.0	2.0	2.0	2.0

Table II.2. (continued)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Pottery, china, earthenware	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
Glass and products	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.4
(Other non-metallic mineral products	4.4	4.3	4.2	4.2	4.2	4.5	4.5	4.3	5.0	5.1	5.0	5.1	5.7	5.1	5.1	5.0	4.8	4.0	4.3
Iron and steel	1.6	1.8	2.0	2.0	2.1	2.0	1.8	1.9	2.0	1.9	2.1	2.0	2.0	2.2	2.2	2.6	2.2	1.9	2.2
Non-ferrous metals	1.1	1.3	1.2	1.4	1.6	1.2	1.4	1.3	1.1	1.3	1.2	1.2	1.3	1.1	1.1	0.8	0.9	0.8	0.8
Fabricated metal products	3.3	3.5	3.8	4.8	5.1	3.6	3.4	3.5	4.0	4.1	4.6	4.4	4.6	4.4	3.8	5.0	5.1	4.8	4.5
Machinery, except electrical	2.8	3.0	3.3	4.1	4.3	3.0	2.9	3.0	3.4	3.5	3.9	3.7	3.7	3.2	4.2	4.3	4.0	3.8	3.9
Machinery, electrical	9.0	9.8	9.0	8.3	10.0	11.5	11.6	13.6	13.7	13.4	13.0	13.0	15.1	16.9	20.3	16.5	19.9	23.1	23.3
Transport equipment	2.9	3.0	2.5	3.3	4.3	3.4	2.9	3.1	3.4	3.5	4.7	4.4	4.0	4.5	4.2	4.6	2.5	2.3	2.1
Professional and scientific equipment	0.1	0.2	0.2	0.3	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4
Other manufactured products	0.2	0.2	0.2	0.3	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.4

Source: Statistics and Survey Unit, UNIDO. Based on data supplied by the United Nations Statistical Office with estimates by the UNIDO Secretariat.

output was also due to upgrading programmes implemented by several textile and wearing apparel producers. The industry endeavours to make inroads into new market destinations in the Middle East, Japan, Australia and Hong Kong.

Most of the domestic market-oriented industries also participated in the recovery in 1987 and 1988 when domestic demand increased alongside with disposable incomes and export sales improved as manufacturers enjoyed better price competitiveness in overseas markets. During the first seven months of 1988 increased domestic consumption stimulated the food, beverages and tobacco industries to step up production by 14.4 per cent compared with the same period in 1987. In particular, the production of dairy products, flour and palm oil products increased sharply by 20 per cent, 18.8 per cent and 16 per cent, respectively. Increases between 11 and 13 per cent were also recorded in the production of prepared animal feeds, palm kernel oil and biscuits. Within the beverages industries, the production of malt liquors and malt had expanded favourably by 16.8 per cent during the period under review. Similarly tobacco manufacturing had also increased by 20.1 per cent compared with the same period in 1987. The 3 subsectors taken together accounted for 21.4 per cent of MVA in 1988, i.e., together they constituted the second largest industrial subsector. Food products, beverages and tobacco suffered faltering rates of growth in 1989.

Output of iron and steel basic industries rose by 19.7 per cent in 1987 and accelerated by 25.2 per cent in 1988. Underlying the sharp output increase were the more buoyant domestic manufacturing and investment activities as well as the ability of the local manufacturers to diversify into the export market, aided by the more competitive ringgit. This was reflected by the 28.3 per cent increase in the output of iron and steel bars and rods following the increase in export volume as well as improvements in construction activities in the first seven months of 1988. Similarly, the output of galvanized iron sheets as well as welded iron, steel pipes and tubes increased significantly. This basic metal industry registered only a modest growth of 9.1 per cent in 1989 as a result of raw material shortages and rising costs of imported scrap metals. In terms of MVA, the industry has maintained a roughly 2 per cent share throughout the 1970s and 1980s.

Similar rather constant shares of MVA were recorded for industrial and other chemical products. The industry's rapid growth of output in 1988 and 1989 was stimulated by rising domestic demand for paints and cleaning materials in line with buoyant activity in the construction sector and increased assembly of motor vehicles. Growth was also attributable to the increased demand for industrial gases by the electronics, steel and beverages industries. On the other hand, the output of fertilizers and pesticides declined in 1989 due to lower demand by the smallholders' sector.

The contribution of the transport industries to MVA declined considerably in recent years from over 4 per cent in the early 1980s to no more than 2.2 per cent in 1988. The production index showed a sharp reduction of output in 1986 from which the industry did not fully recover until recently. Yet, following a slight turnaround in 1987, output growth in the transport equipment sector accelerated to 75.2 per cent in 1988, largely attributable to the higher domestic demand for passenger cars and commercial vehicles. The higher disposable income arising from improved commodity prices together with the introduction of new models and the successful penetration of the national car, PROTON SAGA, into the overseas market boosted output growth in the sector. The manufacture and assembly of motor vehicles, motor cycles and scooters as well as the production of motor vehicle bodies grew significantly in recent years. However, production of motor vehicle parts and accessories declined sharply in 1989.

Buoyed by strong external demand and recovery in the construction sector, particularly towards the latter part of the year, the construction-related industries recorded high growth rates in 1988. Of significance was the turnaround in the non-metallic mineral products industry, which registered a record growth of 19.9 per cent after three consecutive years of decline. The

Fig. II.B. Composition of manufacturing value added (MVA), 1970, 1980 and 1988 (Percentage)

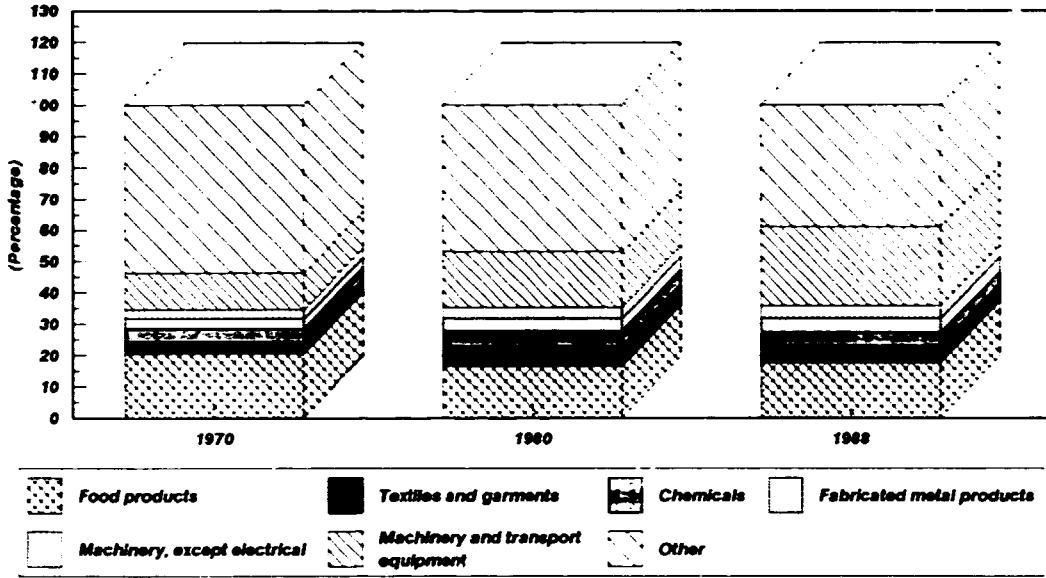
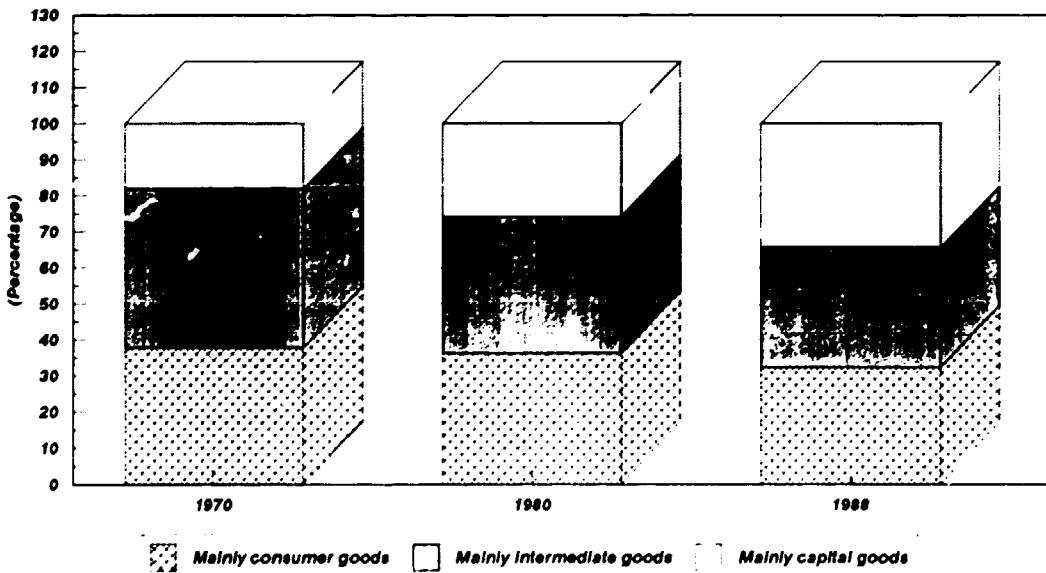


Fig. II.C. Composition of manufacturing value added (MVA) by end-use, 1970, 1980 and 1988 (Percentage)



turnaround in non-metallic production was due to the recovery in local demand as well as the aggressive efforts of several major cement producers to diversify into the export market in view of the excess in production capacity. Although the production of cement increased by 18.5 per cent to 3.5 million tonnes in 1988, there were reported shortages of supply in the domestic market towards the end of the year when domestic demand picked up. In 1989 non-metallic mineral products recorded a 26.0 per cent increase in output.

B. MANUFACTURING EMPLOYMENT

Malaysia's labour force was estimated at 6.6 million in 1988, growing at 3.1 per cent per annum. The growth of total employment averaged only 2.6 per cent in 1986–1989. The discrepancy between labour absorption and labour force growth resulted in increasing unemployment during the 1980s, reaching an unprecedented level of 8.1 per cent in 1988 compared to 5.6 per cent in 1983. The revised estimate of unemployment stood at 7.6 per cent for 1990.

In 1975–1986, employment creation in manufacturing, however, clearly outpaced the growth in labour force (Table II.3). At the three digit ISIC level, six industries accounted for more than 60 per cent of total employment of the manufacturing sector in 1986. These industries

Table II.3. Growth and structure of manufacturing employment, 1975–1986

Manufacturing subsector (ISIC)	Employment	Share in total	
	growth (per cent) 1975–1986	(Percentage) 1975 1986	
Total manufacturing (300)	4.04	100.0	100.0
Food products (311)	3.84	12.9	12.6
Beverages (313)	2.86	1.4	1.2
Tobacco (314)	-2.28	1.9	0.9
Textiles (321)	-0.30	10.0	6.2
Wearing apparel, except footwear (322)	9.02	3.7	6.1
Leather products (323)	2.07	0.2	0.1
Footwear, except rubber or plastic (324)	-3.09	0.5	0.2
Wood products, except furniture (331)	1.75	15.5	12.2
Furniture, except metal (332)	4.20	1.7	1.7
Paper and products (341)	5.91	1.2	1.4
Printing and publishing (342)	2.55	5.0	4.3
Industrial chemicals (351)	4.35	1.1	1.2
Other chemicals (352)	3.24	2.2	2.0
Petroleum refineries (353)	6.04	0.2	0.3
Misc. petroleum and coal products (354)	15.16	0.1	0.2
Rubber products (355)	-0.07	9.4	6.0
Plastic products (356)	6.62	2.4	3.1
Pottery, china, earthenware (361)	11.35	0.2	0.4
Glass and products (362)	3.12	0.5	0.5
Other non-metallic mineral products (369)	5.58	3.9	4.6
Iron and steel (371)	3.80	2.2	2.2
Non-ferrous metals (372)	13.33	0.3	0.7
Fabricated metal products (381)	3.54	4.6	4.4
Machinery, except electrical (382)	2.95	3.2	2.8
Machinery electric (383)	8.94	10.8	17.9
Transport equipment (384)	4.62	3.9	4.1
Professional and scientific equipment (385)	16.88	0.3	1.1
Other manufactured products (390)	8.39	1.0	1.6

Source: Statistics and Survey Unit, UNIDO. Based on data supplied by the United Nations Statistical Office, with estimates by the UNIDO Secretariat.

include food products, textiles, wearing apparel, wood products, rubber products and electrical machinery. The largest employer was the industry producing electrical machinery which accounted for roughly 18 per cent of total employment in the manufacturing sector in 1986. Food and wood products contributed more than 12 per cent each to total manufacturing employment.

The structure of industrial employment has changed considerably over the years. During 1979–1986, employment in the tobacco, textiles, footwear and rubber product industries declined even in absolute terms. In some industries the creation of new jobs lagged behind the manufacturing average, and the share of these industries in total employment declined, especially in wood products. However, high employment growth and rising shares in manufacturing employment were recorded in wearing apparel, paper and paper products, petroleum and petroleum products, plastic products, pottery, china and earthenware, other non-metallic mineral products, non-ferrous metals and electrical machinery, as well as professional and scientific equipment.

The availability of skills and the occupational status of the work force is given in Table II.4. Around 35 per cent of the work force had a skill basis for agricultural production in 1985. By contrast, people with professional and technical skills and administrative and managerial skills constituted only 6.5 per cent and 1.1 per cent in total employment, respectively. During 1985–1986, many middle-level managers were laid off as a result of the contraction of business operations. Many of them left for Australia, New Zealand and Singapore. With the economy rebounding since 1987, the services of these professionals are now needed.

The major role of manpower planning in Malaysia was in the past to provide trained and educated personnel for the public sector, including the parastatal sector. In particular, the Malaysian manpower policy aimed to increase the supply of Malay High-Level Manpower (HLM). Under the New Economic Policy, launched in 1979, 'Bonded Government Scholarships' ensure the services of beneficiaries to sponsoring departments for a minimum of 7–10 years after graduation. As a result, the number of the federal public service employees expanded almost four-fold during the period 1979–1983.

The Bonded Scholarship was used for university education abroad and in local universities. The number of scholars sent abroad was almost twice as large as the number educated at Malaysian universities. Although this large-scale investment in HLM development was justified under the NEP, there were no uniform selection criteria, nor any attempt to match human capital development with manpower requirements, especially in technical, scientific and professional categories.

At the degree level, the majority of enrolled students have specialized, especially in arts and humanities. Accordingly, these faculties accounted for more than half the universities' output in the period 1981–1985. By contrast, roughly 14 per cent of enrolled students preferred technical studies in 1985.

It was found that there was an indication of a serious social over-investment in HLM development, especially through the bonded scholarship policy, and that there was a high rate of unemployment among graduates, even among those with Bonded Scholarships, regardless of their ethnic background.

In contrast to over-investment in HLM development, investment in training facilities and quality instructors has remained far below requirements. The lack of engineers and technicians impedes the efficient transfer of technology to Malaysian industry. Transnational corporations have a major role in transfer of technology, but foreign firms are less interested in creating a pool of engineers and technicians for the country. The technology that has been transferred to Malaysia thus far is predominantly producing (or assembling) technology, and not product technology. In order to receive high level product technology from foreign firms, Malaysia needs to generate an adequate pool of qualified engineers and technicians.

Table II.4. Employment by major occupational groups, 1980, 1985 and 1990

Occupational group	Employment						Average annual growth rate	
	1980 ^a		1985		1990		1981-1985	1986-1990
	'000	Per Cent	'000	Per Cent	'000	Per Cent	'000	Percentage
Professional and technical	288.1	6.0	356.7	6.5	405.6	6.6	4.4	2.6
Administrative and managerial	51.4	1.0	62.0	1.1	73.9	1.2	3.8	3.6
Clerical	350.9	7.3	415.8	7.6	471.6	7.7	3.5	2.6
Sales	471.1	9.8	570.9	10.5	682.4	11.2	3.9	3.6
Service	418.2	8.7	527.0	9.6	624.7	10.2	4.7	3.5
Agricultural	1,864.4	38.7	1,907.4	34.9	1,955.9	32.0	0.5	0.5
Production	1,372.8	28.5	1,628.7	29.8	1,899.6	31.1	3.5	3.1
Total	4,816.9	100.0	5,468.5	100.0	6,113.7	100.0	2.6	2.3

Source: Fifth Malaysia Plan.

^a Estimates are derived on the basis of data from the Population and Housing Census, 1980.

As of early 1988, the industrial training division of the Ministry of Labour operated five industrial training institutes, which are located at Prai near Pinang, Kuala Lumpur, Kuala Terengganu, Johor Bahru and Labuan. The Ministry of Labour is also responsible for managing the Centre for Instructor and Advanced Skill Training located at Shah Alam, Selangor. There are ten Industrial Training Institutes under the Department of Manpower, Ministry of Human Resources. Several other industrial training institutes are planned to be established in the foreseeable future. During 1986–1990, the number of skilled and semi-skilled workers graduating from public training institutions is expected to increase by almost 100 per cent (see Table II.5).

The institutional restructuring of the training system is aimed at enhancing private sector involvement in the planning and implementation of vocational programmes. The government has formed a National Vocational Training Council (NVTC) to supervise all public sector training institutions. The private sector, with representation in the Council, the Trade Advisory Committees and in the Standards and Certification Committee, is involved in the development of training activities, including the determination of training needs, standards, and the structure of the curriculum.

Table II.5. Number of skilled and semi-skilled workers graduating from public training institutions, 1981–1990

Course	1981–1985	1986–1990
Engineering trades	47,091	88,212
Mechanical trades ^a	24,778	47,595
Electrical trades ^b	13,543	31,294
Civil engineering trades ^c	8,621	8,932
Other engineering trades ^d	149	391
Building trades ^e	8,162	18,776
Printing trades ^f	460	675
Commerce	9,230	13,704
Agriculture	4,459	5,738
Home science ^g	5,847	6,446
Others ^h	2,954	6,163
Skill-upgrading	1,437	4,382
Total	79,640	144,096

Source: *Fifth Malaysia Plan, 1986–1990*.

a Includes general mechanics, general machining, tool and die making, motor vehicle mechanics, welding, sheet metal works, fabrication, marine engineering, and manufacturing courses.

b Includes electrical installation and maintenance, radio and TV servicing, refrigeration and air conditioning, electrical fitting and armature winding, and electronic engineering.

c Includes construction.

d Includes material technology and food processing technology.

e Includes carpentry and joinery, woodwork machinery, bricklaying, and plumbing.

f Includes hand composing, machine composing, offset printing, bookbinding, and letterpress.

g Includes sewing, cooking and catering, cosmetology, and hair-dressing.

h Includes surveying, architectural draftsmanship, photography, laboratory science, dispensing optics, computer programming and information processing, confectionery and hotel catering, heavy plant operation, architecture, and quantity surveying.

C. LABOUR PRODUCTIVITY, WAGES AND SALARIES

Although data pertaining to labour productivity are available at current prices covering the period between 1975 and 1986, some trends emerge. The share of value added in gross output has fallen in 14 out of the 28 subsectors of manufacturing (see Table II.6). Declining value added shares reflect several independent influences, in particular higher costs of imported inputs due to the depreciating ringgit and profit erosion during the recession period 1975–1986. Increasing value added shares in gross output were associated with above average growth of labour productivity, i.e., value added per employee, in 14 subsectors of manufacturing. A higher labour productivity was, in most cases, achieved by switching to more capital-intensive lines of production as indicated by declining shares of wages and salaries in value added, most notably in chemicals, petroleum and coal products, glass and other non-metallic mineral products, non-ferrous metals and transport equipment.

On average, manufacturing showed a higher labour share, as reflected by wages and salaries, in value added in 1986 than in 1975. Higher labour shares do not, however, necessarily indicate a more labour-intensive production process. They may rather reflect increases in the remuneration for employees which could not be passed on to the consumers via higher output prices.

An understanding of the relationships between wages, productivity and product prices is necessary in order to determine the extent to which wage claims by workers are in line with product prices which influence a firm's ability to pay. During the first half of the 1980s nominal wages rose by 13 per cent per annum, while labour productivity increased by 4 per cent, leading to an 8 per cent increase in unit-labour cost in the manufacturing sector. The increase in the unit-labour cost coupled with an appreciation of the ringgit exchange rate resulted in the loss of competitiveness of selected manufactures. High wage increases may have impeded the international competitiveness of some manufactures such as textiles, leather products and footwear, as well as rubber products. Employment declined in relative or even in absolute terms in these subsectors. Other export-oriented subsectors such as wearing apparel and electrical machinery, which were faced with similar wage increases were, however, able to expand employment at far above average rates. In both of these industries, creation of new jobs seems to have been achieved by investment in labour-intensive lines of production.

During the recovery phase conditions improved for virtually all manufacturing subsectors. The Central Bank's Annual Survey of Industrial Trends showed that capacity utilization had risen to 71 per cent in 1987 and to 80 per cent in 1989, with almost one-third of surveyed firms operating at close to full capacity. However, indices of unit-labour cost presented in Table II.7 strikingly reveal a significant decline in the unit-labour cost in the manufacture of electrical machinery and appliances. Table II.7 also shows that the unit-labour cost has declined since the 1985–1986 recession in almost all subsectors of manufacturing, with the exception of textiles and wearing apparel which experienced a rise in wages in 1988. This was partly due to the downward adjustment of nominal wages and partly a result of improvements in labour productivity.

D. TRADE IN MANUFACTURES

Manufactured goods accounted for around 50 per cent of Malaysia's exports in 1988, compared with 21 per cent in 1970. In the early 1970s, more than 70 per cent of the country's exports comprised primary commodities, especially petroleum, rubber, timber, palm oil and tin. The relatively high share of manufactures in total exports in the 1980s reflected the emphasis on export-oriented industrialization which Malaysia pursued since 1968 after an initial phase of import substitution. Nonetheless, the country's composition of manufactured exports

Table II.6. Selected indicators of manufacturing performance, 1975 and 1986
(Percentage)

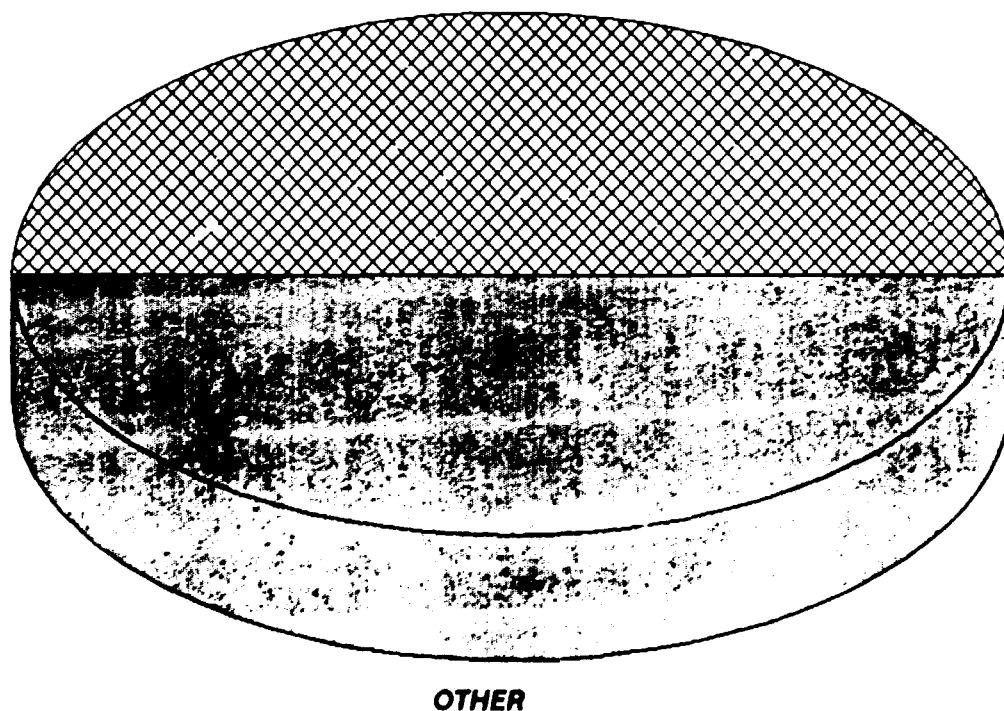
Manufacturing subsector	Share of value added in gross output		Value added per employee		Share of wages and salaries in value added		Wages and salaries per employee	
	1975	1986	Annual average growth 1975-1986		1975	1986	Annual average growth 1975-1986	
Total manufacturing	28.0	26.2	8.3		27.4	30.0	9.2	
Food products	21.7	15.0	5.3		16.0	23.2	8.9	
Beverages	50.2	51.2	7.3		17.0	20.6	9.3	
Tobacco	24.0	40.3	16.8		23.4	11.6	9.5	
Textiles	32.6	29.1	7.2		34.6	46.8	10.1	
Wearing apparel, except footwear	28.3	34.4	7.9		46.0	58.0	10.2	
Leather products	24.7	34.1	10.8		36.0	40.2	11.9	
Footwear, except rubber or plastic	48.7	39.5	3.1		33.5	57.7	8.4	
Wood products, except furniture	33.7	31.2	5.8		41.7	51.6	7.9	
Furniture, except metal	38.2	39.2	6.4		47.2	55.4	7.9	
Paper and products	34.0	34.2	7.0		26.2	34.4	9.6	
Printing and publishing	46.9	51.9	9.6		35.1	41.7	11.3	
Industrial chemicals	30.1	45.2	19.8		16.9	7.6	11.3	
Other chemicals	34.7	41.4	10.5		28.9	26.5	9.7	
Petroleum refineries	10.1	7.2	3.8		9.5	10.6	4.8	
Misc. petroleum and coal products	19.4	34.7	16.5		46.4	21.3	8.5	
Rubber products	27.9	24.1	6.8		22.7	30.1	9.6	
Plastic products	32.0	34.2	8.8		40.6	40.6	8.8	
Pottery, china, earthenware	63.5	54.4	1.5		26.8	39.0	5.1	
Glass and products	33.8	37.9	10.7		45.7	39.7	9.3	
Other non-metallic mineral products	39.5	46.4	11.9		33.8	25.5	9.0	
Iron and steel	30.9	24.4	8.8		28.6	29.2	9.0	
Non-ferrous metals	27.7	7.0	12.1		57.6	32.8	6.5	
Fabricated metal products	32.3	30.8	7.7		34.3	40.7	9.4	
Machinery, except electrical	40.5	36.4	7.7		33.2	40.2	9.6	
Machinery, electrical	33.8	29.4	7.2		28.1	34.5	9.2	
Transport equipment	28.3	37.9	11.6		39.9	35.7	10.4	
Professional and scientific equipment	35.1	39.7	5.4		52.8	41.7	3.2	
Other manufactured products	40.1	39.7	6.7		38.9	44.2	8.0	

Source: Statistics and Survey Unit, UNIDO. Based on data supplied by the United Nations Statistical Office with estimates by the UNIDO Secretariat.

Table II.7. Indices of unit-labour cost of selected manufactures, 1975–1988

Year	Textiles and wearing apparel	Rubber products	Food products	Iron steel	Electrical machinery appliances	Transport equipment
	(1975 = 100)			(1981 = 100)		
1975	100.0	100.0	100.0	100.0	34.4	64.5
1976	91.4	103.6	104.4	94.3	46.4	82.8
1977	101.4	105.6	111.7	101.1	47.4	88.2
1978	104.6	123.5	119.9	133.6	55.4	87.6
1979	118.8	139.9	130.4	162.4	67.5	90.5
1980	132.9	157.6	133.4	166.7	86.3	85.2
1981	157.1	171.6	166.1	193.3	100.0	100.0
1982	186.3	212.1	187.4	205.1	85.2	124.9
1983	203.3	241.4	185.8	202.9	67.9	113.9
1984	175.2	182.4	152.8	279.9	93.0	128.9
1985	182.2	183.2	148.9	377.4	93.0	128.9
1986	178.9	171.7	130.5	431.2	75.0	176.0
1987	139.4	157.6	133.5	374.1	66.6	132.9
1988	206.2	134.5	134.7	362.4	65.9	113.4

Source: Gan Wee Beng and Soon Lee Ying, *Productivity, Prices and Wage Gap in Malaysian Manufacturing Sector* (Kuala Lumpur, 1989). Reproduced from Malaysian Institute of Economic Research, *National Economic Outlook, 1990–1991* (Kuala Lumpur, 1989).

Fig. II.D. Share of manufactured exports in total exports, 1988 (Percentage)**MANUFACTURED EXPORTS**

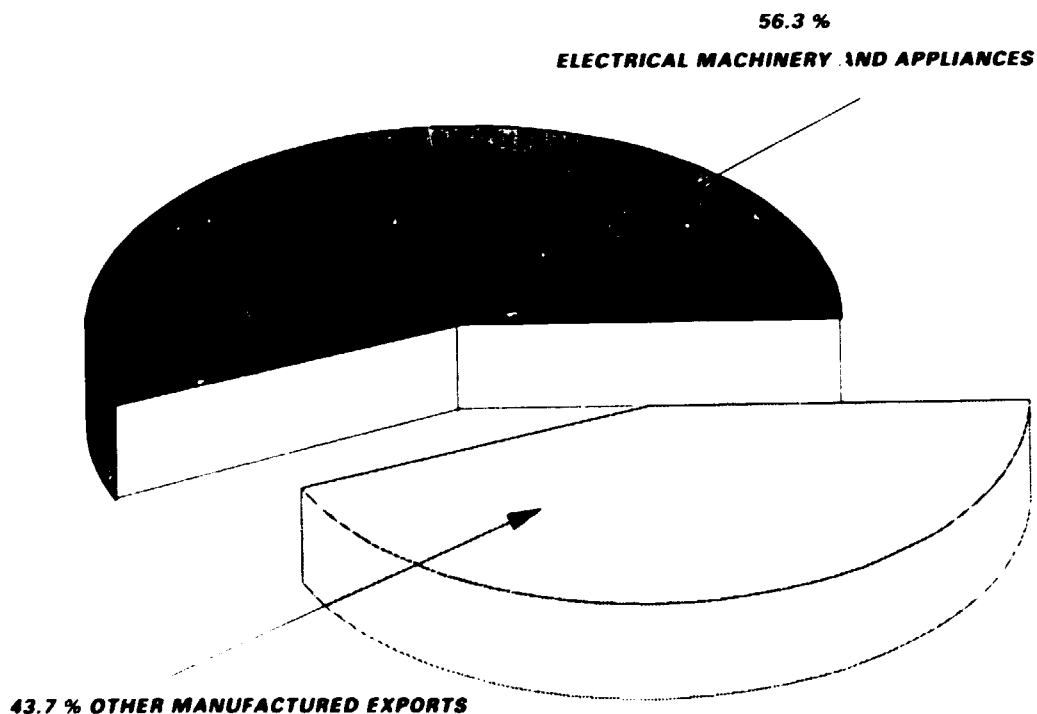
remained rather lopsided, with just 3 subsectors, namely textiles and textile products, electrical and electronic machinery as well as miscellaneous manufactures, contributing between two-thirds to three-fourths of total manufactured exports in the 1980s. In contrast, exports of resource-based products such as food, wood products and petroleum products suffered a drastic fall in their shares of total manufactured exports.

Malaysia's electrical and electronics industry has emerged as the single most important foreign exchange earner within the manufacturing sector (see Table II.8). In particular, the electronics industry developed very rapidly from virtually nothing in the early 1970s. In the 1980s it accounted for over half of manufactured exports. The output structure was dominated by components (80–85 per cent of output) and within that subsector, semiconductors represented 80–90 per cent. However, Malaysia had not developed a sizeable electronic equipment industry, either for consumer or industrial electronics products. The industry's growth has been inextricably linked to investments by transnational semiconductor firms which came to Malaysia in search of cheap labour for the assembly of semiconductors.

In the recent export-led economic recovery, exports of electrical machinery and electrical appliances grew significantly due largely to higher exports of television sets, radios and air-conditioners, particularly to the United States, Japan, Singapore, Australia and the European Community (EC). The broad group of electronic components, electrical appliances and other electrical machinery rose sharply by 37.9 per cent to fetch an export earning of MS 15,164 million in 1988, compared with a 29.5 per cent increase in 1987. By 1989 electrical machinery and appliances accounted for almost 57 per cent of manufactured exports (see Table II.8).

The textiles and garments industries were the second most important foreign exchange earner in Malaysia, accounting for 8.4 per cent of manufactured exports in 1989. Malaysia is a relatively small textile producer by world standards, but has been highly successful in the garment sector, essentially commissioning work for foreign clients. The country has a competitive supply of polyester fibre, but all its cotton requirements are met by imports.

Fig. II.E. Share of electrical machinery and appliances in manufactured exports, 1988



Whereas the textile industry has been attuned to the domestic market under relatively high effective protection, the garment industry has developed predominantly as an enclave industry for exports, with local labour as the only major domestic input. The garments sector has continuously modernized and expanded its share in the lucrative markets of the United States and the EC. However, the industry is now increasingly exposed to external and internal vulnerabilities. Overall world consumption of fibres is projected to grow considerably slower in the future (1.6 per cent) than it has in the past (4.6 per cent per annum since 1950). Furthermore, quotas under the Multifibre Arrangements (MFA) have been steadily tightened. For those products included under the MFA, Malaysia falls within the category of countries for which growth is limited to 6 per cent. In addition, recent and ongoing investments into highly efficient and largely automated equipment, particularly in developed countries and newly industrializing economies, are likely to cause an even stronger shift to supply high quality, high fashion textiles and garments to those countries. Textile labour costs have also risen quickly in Malaysia and are now well above those in some of its principal competitors – China, Indonesia, Pakistan and Thailand.

Fig. II.F. Composition of manufactured exports, 1988 (Percentage)

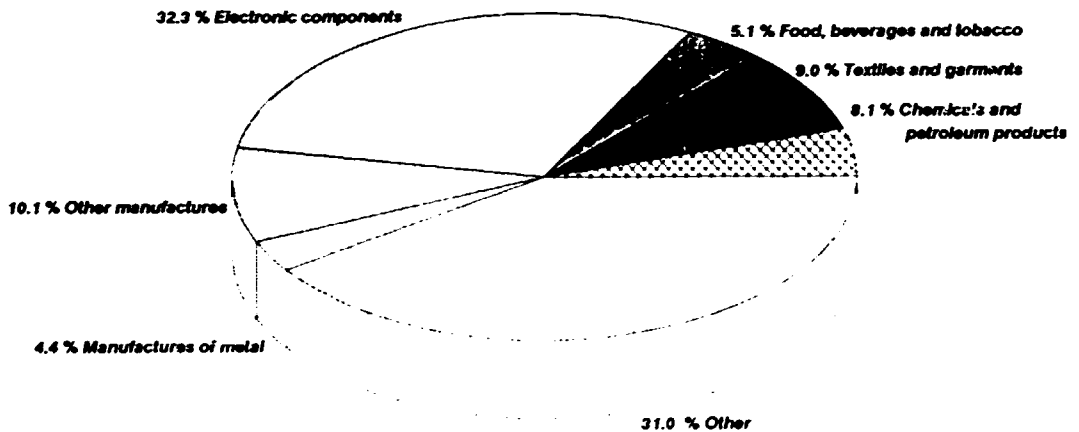


Table II.8. Composition of manufactured exports, 1983–1989 (Percentage)

	1983	1984	1985	1986	1987	1988	1989
Food, beverages and tobacco	7.1	6.7	6.3	6.3	6.0	5.1	4.9
Textiles, clothing and footwear	9.7	9.2	10.4	10.8	11.3	9.0	8.4
Wood products	5.0	3.4	2.9	3.5	4.2	3.4	3.0
Chemicals and petroleum products	10.8	12.7	12.8	9.1	8.3	8.1	6.5
of which:							
Petroleum products	6.1	7.4	7.9	4.2	3.7	2.9	2.7
Non-metallic mineral products	1.1	1.1	1.2	1.3	1.5	1.7	1.8
Manufactures of metal	2.5	2.4	2.9	3.4	3.8	4.4	3.9
Electrical machinery and appliances	54.5	54.0	52.3	55.6	54.2	56.3	56.7
of which:							
Electronic components	39.8	39.2	35.8	38.0	34.1	32.3	27.8
Transport equipment	3.5	4.7	4.6	3.4	3.6	1.9	3.4
Other manufactures	5.8	5.7	6.6	6.6	7.2	10.1	11.4
Total	100	100	100	100	100	100	100

Source: Government of Malaysia.

Despite stiff competition from other textile-producing countries and increasing neo-protectionism in developed countries, exports of textiles, clothing and footwear expanded further by 18.5 per cent in 1988. The strong growth of the sector reflected largely the increased export competitiveness of all textile items, clothing and footwear. Other contributory factors to the substantial gains in export earnings were the ability of local manufacturers to increase exports of non-quota items particularly to the EC countries, better utilization of quota allocations, and increased exports of higher value apparel to the United States. Nevertheless, having utilized more than 80 per cent of the allocated quota of exports to the United States, as stipulated under the MFA, Malaysian textile and apparel exports are seeking diversification into new destinations, especially to non-quota countries and areas such as Japan, Australia, Hong Kong and the Middle East.

Almost all other manufacturing subsectors have also contributed to manufactured export expansion in recent years, but their shares in total exports have remained small or even declined (see Table II.8). A sharp fall in the share of transport equipment in manufactured exports in 1988 was caused largely by lower orders for ships, boats and floating structures, which had been the largest contributor to growth in the sector since 1984, as well as reduced exports of commercial vehicles. Nevertheless, exports of the national car, PROTON SAGA, increased to 864 units in 1988 from 512 units in 1987 to meet orders from several countries, including Ireland, New Zealand, Jamaica, Sri Lanka, Brunei Darussalam, Bangladesh, Malta, India and more recently, the United Kingdom of Great Britain and Northern Ireland. In the case of petroleum products, depressed prices of crude oil had resulted in lower export earnings.

Malaysia's manufactured export performance is heavily influenced by its competitiveness relative to neighbouring East Asian countries. A major impetus is likely to come from additional pressures on the unit labour costs of the successful NIEs. Large current account surpluses in those countries are being transformed into foreign exchange reserve accumulation and pressures to appreciate the currency. In addition, wage increases in local currency terms in those countries tend to outstrip productivity gains. The NIEs are also likely to come under increasing pressure to adjust because of their large trade surpluses with the United States. They face increasing threats of neo-protectionism in the form of non-tariff barriers including voluntary export restraints, anti-dumping charges, restrictive quotas and abolition of the generalized system of preferences (GSP). Malaysia stands to gain from these external developments both in terms of its ability to compete directly with the Asian NIEs and through the foreign investment inflows it could attract in the future. The NIEs themselves have become major exporters of capital and promoters of industrial redeployment to favourable locations that provide relative safety against protectionism and few distortions affecting export-oriented industries. If Malaysia continues to succeed in this regard, the recent tempo of foreign direct investment flows could be sustained.

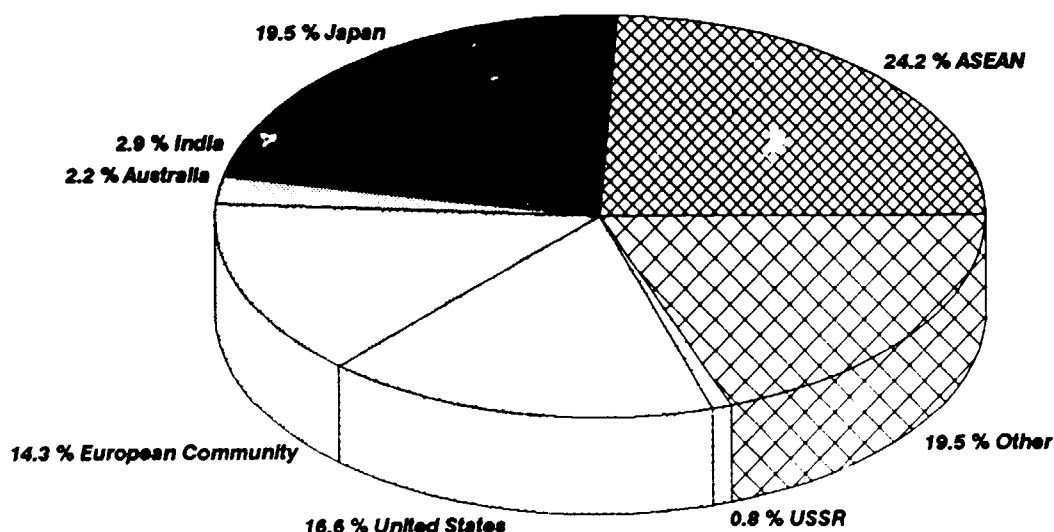
Three-fourths of Malaysia's exports are destined for four markets: the other member countries of the Association of South-East Asian Nations (ASEAN), Japan, the United States, and the European Community (see Table II.9). Within the ASEAN group, Singapore is by far the most important market. While the relative amount exported to these markets has remained constant over the past five years, there has been some change in the direction of exports. Singapore's share of Malaysia's exports has decreased slightly – by 4 percentage points – as Malaysia began to export more directly to other countries and less through Singapore. The relative share of exports to the United States has increased by about the same amount. The United States is Malaysia's largest market for manufactured goods. During 1986 – 1989, exports to the United States exceeded those to the EC, making the United States the third largest market for Malaysian goods (overall exports) after Singapore and Japan. Japan and the EC are large importers of raw materials from Malaysia. The principal export destinations also constitute the main origins of imports.

Table II.9. Destination of exports, 1983–1989
(Percentage)

Destination	1983	1984	1985	1986	1987	1988	1989
ASEAN countries of which: Singapore	28.5 (22.5)	26.7 (20.4)	25.8 (19.4)	22.1 (17.1)	24.2 (18.2)	24.4 (19.3)	25.5 (19.7)
Japan	19.6	22.3	24.4	22.5	19.5	16.9	16.1
India	2.4	3.6	2.8	2.6	2.9	2.5	1.3
Australia	1.4	1.6	1.7	2.1	2.2	2.4	2.2
European Community	14.6	12.6	14.5	14.6	14.3	14.4	15.4
United States	13.2	13.6	12.9	16.6	16.6	17.4	18.7
USSR	2.1	1.3	1.2	0.9	0.8	0.6	0.9
Other	18.2	18.3	16.7	18.5	19.5	21.4	19.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Bank Negara Malaysia, *Quarterly Bulletin*, various issues.

Fig. II.G. Destination of manufactured exports, 1987
(Percentage)



Malaysia's heavy dependence on manufactured imports is revealed by the fact that in 1981 manufactured imports accounted for 81.5 per cent of total imports, and this share had declined only to 76 per cent by 1987. The performance of imports during the 1970s and 1980s was largely influenced by domestic demand for intermediate and investment goods including basic metal, machinery, electrical/electronics and transport equipment. Imports of intermediate and investment goods accounted for 75–80 per cent of total imports in the 1980s (see Table II.10).

While manufactured imports continued to increase over the years, there was also a significant increase in the level of import substitution for some industries. By the early 1970s, Malaysia had already completed the import-substitution phase for several light manufactures such as beverages and tobacco, wood products and rubber products. During 1973–1981, the 'easy' or 'first stage' of import substitution was further intensified for the remaining light manufacturing subsectors, namely food products and textile products, as reflected by the fall in their import ratios from 29.2 per cent and 85.9 per cent in 1973 to 17.1 per cent and 38.5 per cent in 1981, respectively. There was also a substantial improvement in the level of import substitution for some heavy industry products, particularly paper and pulp, petroleum products and transport equipment. However, the level of import substitution for most intermediate and investment goods was inadequate to meet the demand for these goods as indicated by their persistent dominance in the import basket of the 1980s.

Table II.10. Composition of imports, 1983–1989
(Percentage)

	1983	1984	1985	1986	1987	1988	1989
Consumption goods	19.0	19.7	21.5	22.9	22.5	23.6	21.8
Food	5.6	5.8	6.0	6.0	5.7	5.4	4.7
Beverages and tobacco	1.0	0.7	0.7	0.7	0.6	0.5	0.1
Consumer durables	4.0	4.9	4.8	5.2	5.4	7.8	7.5
Other	8.4	8.4	10.0	10.9	10.8	9.9	9.5
Investment goods	31.9	32.8	31.1	28.8	28.4	29.2	34.3
Machinery	10.7	11.0	10.8	8.7	8.2	8.9	10.6
Transport equipment	5.4	4.1	4.3	5.1	3.7	3.3	6.0
Metal products	6.8	6.4	5.7	5.1	5.6	6.6	6.5
Other	9.0	11.4	10.4	9.9	10.9	10.4	11.2
Intermediate goods	47.6	46.3	46.5	47.5	48.0	46.2	42.7
Manufacturing inputs	28.4	30.1	29.4	34.8	36.2	34.9	32.9
Construction inputs	3.9	3.7	3.0	2.3	2.3	2.6	2.5
Agriculture inputs	1.9	2.3	2.5	2.4	2.3	2.4	1.7
Crude petroleum	5.3	3.8	3.7	2.0	1.5	1.9	0.5
Other	8.1	6.5	7.8	6.1	5.7	5.4	5.1
Import for re-export	1.5	1.1	0.9	0.9	1.1	1.0	1.1
Tin ore	1.4	0.8	0.7	0.7	0.8	0.8	...
Crude natural rubber	0.2	0.4	0.2	0.2	0.3	0.2	...
Total	100	100	100	100	100	100	100

Source: Bank Negara Malaysia, *Quarterly Bulletin* (Kuala Lumpur May/June 1990).

Japan, the ASEAN member countries, the United States, and the EC were the principal origins of imports to Malaysia (see Table II.11), accounting for some three-fourths of the total over the past five years. In 1987, Japan became the largest single source of imports for the country, replacing the ASEAN region. However, Japanese exports to Malaysia, comprising mostly capital goods, have declined in the 1980s, in relative terms, with the fall-off in capital formation and the strengthening of the yen in recent years. The Japanese share now stands at 24 per cent, up 3.7 per cent over 1986, as a result of increased imports of electrical and electronic intermediate imports, compared with a 26 per cent share recorded in 1984. The share of imports from the United States has increased over the years. Imports from the United States include electrical components for export-oriented manufacturing activities.

Fig. II.H. Composition of manufactured imports, 1988 (Percentage)

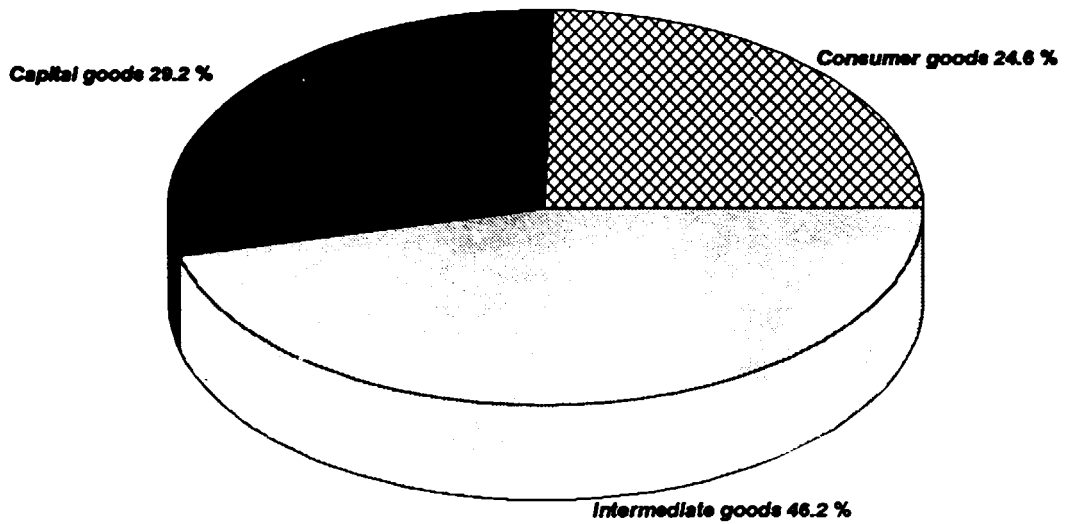


Fig. II.I. Origin of imports, 1987 (Percentage)

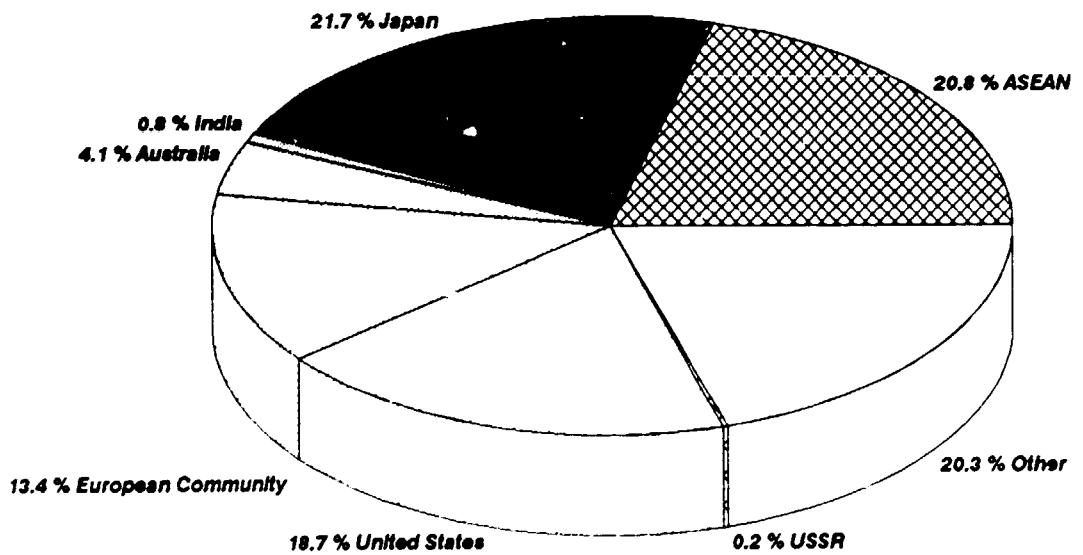


Table II.11. Origin of imports, 1983–1989
(Percentage)

Origin	1983	1984	1985	1986	1987	1988	1989
ASEAN countries	18.8	19.4	22.4	21.5	20.8	18.7	18.8
of which:							
Singapore	(13.9)	(13.0)	(15.9)	(15.0)	(14.7)	(13.2)	(13.6)
Japan	25.2	26.3	23.0	20.5	21.7	23.5	24.2
India	0.7	0.8	0.8	0.8	0.8	0.7	0.7
Australia	4.2	4.0	4.1	4.2	4.1	4.1	3.8
European Community	14.0	13.4	14.4	14.6	13.4	13.4	13.9
United States	16.2	16.3	15.2	18.8	18.7	17.7	16.9
USSR	0.1	0.1	0.1	0.1	0.2	0.2	0.3
Other	20.8	19.7	20.0	19.5	20.3	21.7	21.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Bank Negara Malaysia, *Quarterly Bulletin*, various issues.

E. INVESTMENT AND FINANCING PATTERNS

Predominance of public investment

The government's participation in economic activities through direct public investment was hitherto the favoured option in order to achieve the intertwined objectives of increasing the participation of Malays in manufacturing and commercial activities and enhancing economic growth. The heavy expenditure of the public sector has been pivotal in sustaining the rapid growth rate of the economy since 1975. Public investment constituted about 40 per cent of total investment in the early 1970s, increasing to 50 per cent in 1982. By 1985 it had surpassed private investment with its share accounting for 55 per cent of total investment. Since 1986, however, public investment has been curtailed in the wake of plummeting oil prices leading to a fall in government revenue. In 1989, private investment totalled M\$ 13.6 billion, compared to public investment at M\$ 7.5 billion.

During the 1980s, an important contributor to the growth of the non-financial public enterprises (NFPEs) sector has been the government's endeavour to establish a heavy industrial base. The creation of the Heavy Industry Corporation of Malaysia (HICOM) in 1980 set the stage for the government's involvement in large industrial projects. Since its creation, HICOM has invested in 15 companies, including PROTON SAGA and Perwaja, with a capital investment of over M\$ 2 billion. All in all, the share of NFPEs in manufacturing value added was estimated at around 24 per cent in 1986, one of the highest ratios in the non-socialist world.

Often the expansion of autonomous corporations and holding companies has been in areas not envisioned at the time of their establishment and with little comparative advantage for public ownership. As a consequence, they have probably displaced private investment and have certainly added to the external debt and to the fiscal burdens of the government.

According to the Central Information Collection Unit (CICU) as of September 1988, of the 1,171 NFPEs (for which information was collected by the CICU), 38 companies have been sold or privatized. The remaining 1,133 companies included companies in the fields of agriculture, construction, extractive processes, finance, services, manufacturing and transportation. The major concentration is in the areas of manufacturing, services, agriculture and finance. Out of these 1,133 companies, 286 companies have been identified as non-operational companies (see Table II.12).

Table II.12. Government companies by industry and status, 1988

Industry ^a	Operational	Non-operational	Total
Agriculture	108	35	143
Building and construction	89	40	129
Extractive industries	19	16	35
Financial institutions	102	12	114
Manufacturing	250	82	332
Services	226	71	297
Transportation	53	16	69
Others	..	14	14
Total	847	286	1,133

Source: Ministry of Finance, *Malaysia, Economic Report 1988/89* (Kuala Lumpur, 1988).

^a This categorization does not necessarily correspond to that of the System of National Accounts.

The latest financial data covering 770 NFPEs indicate that 387 companies recorded accumulated profits amounting to M\$ 4.6 billion, while 383 companies suffered accumulated losses of M\$ 5.6 billion in 1988. The classification of these companies by the size of government equity holding is shown in Table II.13.

Table II.13. Performance of government companies, 1988
(Millions M\$)

Government equity (Percentage)	Number of companies	Accumulated profits (M\$)	Number of companies	Accumulated losses (M\$)
20 - 30	55	283	33	107
30 - 50	70	377	47	392
More than 50	262	4,208	303	5,111
Total	387	4,868	383	5,610

Source: Ministry of Finance, *Malaysia, Economic Report 1988/89* (Kuala Lumpur, 1988).

Crucial role of the private sector

Following an investment boom in the early 1980s, there was a marked decline in new capital formation in Malaysia, particularly in the private sector. Gross capital formation in the private sector did not increase significantly until 1988. The share of private investment in GNP was below 15 per cent in 1987. Excluding oil and gas investments, it was around 10 per cent, which was well below the average share during the 1970s.

Private investment in manufacturing rose by 26.4 per cent in 1988, compared with a decline of 1.7 per cent in 1987. Paucity of data does not permit an analysis of the private investment pattern across the subsectors of manufacturing. However, some idea about subsectoral investment pattern could be gauged from a survey of 220 large companies by the Department of Statistics (DOS). The survey furnishes information on capital expenditure in manufacturing subsectors during 1985–1988. The pattern of investment in manufacturing reveals a significant increase in the share of electrical products over the years (see Table II.14). Capital expenditure in electrical products was estimated to have increased by 42.8 per cent in 1988. This was in anticipation of higher sales in 1988 and 1989. Buoyed by the rising demand for passenger cars and commercial vehicles a MS 29.6 million capital expenditure was planned in transport equipment for the year 1988. However, this was 24.9 per cent lower than the level of investment in 1987. On the other hand, in food manufacturing, total investment planned for 1988 represented a 16.9 per cent increase over 1987. Most of the investments were for the manufacture of new products and expansion of capacity to cope with the rising demand. Similarly investment in textiles also rose significantly in 1988. Other manufactures, such as rubber products, industrial chemicals, plastic products and fabricated metal products were expected to incur higher capital expenditure in 1988. Enterprises in this segment of manufacturing were operating at almost full capacity to make a positive supply response to rising demand.

Table II.14. Sectoral investment pattern^a, 1985–1988
(Millions MS)

Sector Industry	1985	1986	1987	1988 ^d
Rubber	36.4	20.5	18.0	27.7
Palm oil	121.2	116.4	87.7	137.2
Logging	23.2	6.7	39.9	131.3
Mining ^b	8.8	5.2	14.4	11.6
Manufacturing	631.5	613.2	655.4	769.0
	(100)	(100)	(100)	(100)
Food	92.1	112.5	56.9	66.5
	(14.5)	(18.3)	(8.6)	(8.6)
Textiles	3.7	2.7	5.2	15.4
	(0.5)	(0.4)	(0.7)	(2.0)
Petroleum refining	76.5	72.0	123.4	96.7
	(12.1)	(11.7)	(18.9)	(12.5)
Non-metallic mineral products	22.7	30.3	3.5	9.9
	(3.5)	(4.9)	(0.5)	(1.3)
Electrical products	152.8	155.4	219.2	313.1
	(24.2)	(25.3)	(33.4)	(40.7)
Transport equipment	27.4	63.4	39.4	29.6
	(4.3)	(10.3)	(6.0)	(2.5)
Other manufactured products	256.3	177.1	207.8	237.8
	(40.9)	(28.9)	(31.7)	(30.9)
Construction	6.2	7.5	3.4	1.2
Wholesale and retail trade	128.3	185.8	106.6	120.4
Hotels	-	1.4	6.3	8.6
Banks and other financial institutions	251.6	235.9	176.5	163.2
Insurance, real estate and business services	18.0	7.3	8.3	8.4
Transport	266.3	116.4	248.1	315.1
Total	1,491.5	1,316.1	1,364.5	1,693.7

Source: Ministry of Finance, *Malaysia, Economic Report 1988/89* (Kuala Lumpur, 1988)

a. Based on the Survey of 220 large companies by the Department of Statistics

b. Excluding petroleum and gas.

c. Second half of 1986 only

d. Capital expenditure planned for 1988.

Note: Figures in parentheses denote percentage shares of investment in manufacturing

Although foreign investment accounted only for a small share in GNP (roughly 2.5 per cent) it was heavily concentrated on manufacturing activities, and within manufacturing on subsectors such as electrical and electronic products, rubber and food products as well as chemicals and chemical products. The response to the government's policy of investment liberalization, which started with a relaxation of foreign equity guidelines, is clearly reflected in the upsurge of proposed called-up foreign capital from MS 750 million in 1987 to slightly over MS 2 billion in 1988. More than one quarter of this total amount was approved for investments in the manufacture of electrical and electronic products where domestic investment plays only a minor role. According to the Malaysian Industrial Development Authority (MIDA) approvals, foreign investment has outpaced private domestic investment in manufacturing in recent years.

Table II.15 provides an indication of the geographical pattern of capital inflows. Projects approved with foreign participation in 1987 and 1988 show that Japan was the most important source of foreign investment, contributing roughly one-third and one-quarter of total approved investment in 1987 and 1988, respectively. The newly industrializing economies of Taiwan Province, Singapore and Hong Kong have increasingly emerged as important foreign investors in Malaysia, reflecting rising labour costs in these countries which encourage a redeployment of labour-intensive manufacturing subsectors. Among the non-Asian nations, the United States and the United Kingdom were major sources of foreign investment, with the United States taking a lead over the United Kingdom in recent years.

Table II.15. Origin of foreign equity in approved projects, 1981-1988
(Millions M\$)

	1981-1985	1987	1988
Australia	138,749	29,650	9,890
Austria	17,689	...	3,430
Bahamas	4,867	3,570	...
Belgium	6,530	4,090	5,087
Canada	14,840	11,205	3,157
Denmark	5,199	3,625	5,419
Federal Republic of Germany	67,291	10,056	25,574
France	9,806	15,050	131,750
Holland	6,724	...	2,515
Hong Kong	117,517	27,827	129,515
India	20,765	28,250	32,150
Indonesia	34,456	800	11,300
Italy	14,529	5,600	16,000
Japan	392,829	230,847	561,104
New Zealand	5,164	...	350
Norway	9,665	...	...
Pakistan	1,419	...	...
Philippines	32,716	99	...
Republic of Korea	22,816	1,995	23,309
Saudi Arabia	29,322	...	...
Singapore	165,381	135,404	172,137
Sweden	14,338	624	11,204
Switzerland	20,980	...	4,457
Taiwan Province	43,544	118,459	384,332
Thailand	36,880	655	15,421
United Kingdom	201,730	24,621	94,806
United States	149,980	61,272	252,581
Others	305,815	36,301	114,987
Total	1,891,541	750,003	2,010,475

Sources: MIDA, *Report on the Performance of the Industrial Sector* (Kuala Lumpur, 1989); *Fifth Malaysia Plan 1986-1990* (Kuala Lumpur, 1986)

An underdeveloped small-scale sector

Declining contributions of the small-scale enterprises to fixed assets, value added and employment characterize the pattern of industrial investment in Malaysia. Table II.16 shows the size structure of manufacturing firms for 1978 and 1986. Firms with less than 100 employees represent about 81 per cent of establishments, but only 30 per cent of employment, 21 per cent of value added and 18 per cent of fixed assets in 1986. In all categories, these firms' importance in manufacturing has declined since 1978. Growth has instead been more rapid in medium-sized firms, employing 100–200 workers. Large firms have also increased their share in value added and fixed assets. The decline of firms with less than 100 workers is also thought to be both cause and symptom of an industrial structure that is characterized by limited backward integration from the large exporting and final goods producer to smaller producers of intermediates.

Small-scale industries are currently engaged in producing mostly finished goods such as foodstuffs, furniture, handicrafts, fabricated metal products, wood-based products, textiles and clothing. The medium-scale industries are more active in the processing of beverages and tobacco, electrical and electronics products, chemical products and non-metallic mineral products and the production of automotive components and parts.

Financing, marketing and technology upgrading are the major problems affecting the growth of small-scale firms. Downstream financing, quality control and technical assistance from medium- and large-scale firms are largely absent in Malaysia. In fact, the industrial structure in Malaysia does not seem to be conducive to backward integration for two reasons. First, the preponderance of transnational and foreign companies in Free Trade Zones implies that a major segment of manufacturing probably already has a well-developed upstream linkage with subsidiaries or affiliates abroad, and there is little incentive to develop domestically-located upstream firms. Second, the comparative advantage of Malaysia still lies in assembly activities, especially in the electronics and apparel subsectors, where the scope for upstream linkage is small because of limited comparative advantage in intermediate production. As the manufacturing structure evolves towards other final goods, however, including wood, rubber, other resource-based products and automobiles, the scope for integration may increase.

Table II.16. Size structure of manufacturing firms, 1978 and 1986
(Percentage)

Size group by number employees	Total employment		Number of establishments		Value of of output		Value added		Fixed assets	
	1978	1986	1978	1986	1978	1986	1978	1986	1978	1986
Below 50	...	16.1	66.3	64.4	12.6	9.6	11.7	9.4	10.3	8.4
50–99	...	14.3	16.3	16.7	13.6	13.9	14.2	11.3	12.5	9.4
Below 100	...	30.4	82.6	81.1	26.2	23.4	25.9	20.7	22.8	17.7
100–199	...	18.5	8.7	11.3	18.5	21.8	17.8	17.5	16.3	16.4
200 and above	...	51.1	8.7	7.7	55.3	54.7	56.2	61.8	60.9	65.9

Source: Department of Statistics, *Survey of Manufacturing Industries*, various issues.

A recent study* revealed that 68 per cent of domestic-oriented firms marketed their products through direct sales while 29 per cent marketed their products through agencies. The small size of the domestic market has been one of the factors contributing to the low rate of capacity utilization of less than 45 per cent among the firms surveyed.

Currently many small- and medium-scale industries (SMIs) are occupying land with temporary occupation licences while others are tenants. Most of these SMIs are located in areas that are not designated as industrial sites. The insecurity of tenure generated by this situation tends to force the SMIs to relocate, resulting in unnecessary expenditure for these firms which have limited access to capital. Even SMIs which own their factories or land are faced with problems of not having enough land or building space to expand.

The Malaysian Industrial Master Plan has formulated various new development strategies for the modernization of the small-scale industries in order to enhance their participation in the industrialization process. Towards this end an extensive network of modern ancillary firms will need to be developed, with a focus on creating maximum linkages among industries. The government is aware of the fact that inadequate finance is inhibiting the expansion of small-scale manufacturing activities, and new initiatives are under way to direct more institutional finance to small firms.

Sources of industrial finance

With a high gross domestic savings rate of around 37 per cent Malaysia has been able to mobilize sizeable financial resources for industrial development. In 1988 the flow of capital funds was as large as M\$ 24.9 billion, representing an increase by M\$ 0.6 billion over the 1987 level. The higher flow of funds arose because of a strong surplus in the current account and corporate investment, which was, however, more than offset by a net capital outflow in terms of net repayments and prepayments of external debt by the government.

The sourcing and funding of capital for industrial development in Malaysia is supported by a well-developed capital market with a broad range of private and public sector financial institutions, i.e., Central Bank (Bank Negara Malaysia), commercial banks, finance companies, insurance funds, merchant banks, development finance institutions and savings institutions. More than 70 per cent of total assets are held by the banking system which comprises the Central Bank, commercial banks, merchant banks, finance companies and discount houses.

Given a significant increase in the total assets, the loans and advances extended by the financial institutions to the private sector and non-financial public enterprises increased significantly by M\$ 8.3 billion, representing an 11 per cent increase in 1988 compared with only a marginal increase of less than 1 per cent in the previous year. About M\$ 2.5 billion of the increase in 1988 was channelled into the manufacturing sector (see Table II.17). The manufacturing sector thus became the largest recipient of loans in 1988, though the housing and real estate sector kept its position as the largest debtor due to earlier commitments.

These guidelines of the Central Bank have been introduced in the past in order to ensure that priority sectors (namely the Bumiputera community, enterprises engaged in agricultural food production, house buyers and small-scale enterprises) have ready access to bank credit at reasonable costs. In the past, these regulations have proven to be severe restrictions for the lending activities of the private banking institutions in Malaysia. When the old lending guidelines had expired at the end of 1987, the government imposed less restrictive lending guidelines in March 1988 in order to ensure an orderly supply of loans and equity to the manufacturing sector.

* Institute of Developing Economies, *Changes in the Industrial Structure and the Role of Small- and Medium-Scale Industries in Asian Economies: the Case of Malaysia* (Tokyo, February 1987).

Table II.17. Credit flows^a to main sectors, 1987 and 1988
(Billion M\$)

Sector	Annual change		As at end of 1988	
	1987	1988	(Percentage)	
Loans	0.4	8.3	83.0	89.9
Agriculture	-0.1	0.3	5.4	5.9
Mining	0.1	0.4	1.1	1.2
Manufacturing	0.1	2.5	13.6	14.8
Construction	0.1	0.4	5.9	6.4
Real estate	0.6	0.4	12.3	13.3
Housing	0.6	1.5	14.2	15.4
General commerce	-0.3	0.7	11.3	12.2
Business services	-0.2	0.1	1.9	2.1
Transport	-0.1	0.2	1.4	1.5
Consumption credit	..	1.0	3.8	4.1
Other	0.4	0.8	12.1	13.0
Investment in corporate securities	1.3	0.7	9.3	10.1
Credit to private sector	1.7	9.0	92.3	100.0

Source: Ministry of Finance, *Malaysia 1988/89*, p. 82.

a. Includes credits to non-financial public enterprises.

Under the new guidelines of March 1988 commercial banks are required to extend new loans amounting to at least M\$ 300 million to small-scale industries. At least half of this amount is to be credited to Bumiputera companies. These guidelines pertaining to M\$ 300 million loans are also applicable to loans given under a special loan scheme of the Credit Guarantee Corporation (CGC) and loans due to the Enterprise Rehabilitation Fund (ERF). The CGC is a special finance institution providing guarantees for loans to small-scale enterprises. The members of the CGC are the Bank Negara Malaysia and the commercial banks. The ERF of M\$ 500 million has been set up by the government to encourage the banks to extend assistance to ailing Bumiputera enterprises. The commercial banks were required to lend at least 20 per cent of the total loans outstanding, as at 31 December 1987, to the Bumiputera community and for agricultural food production. Similar regulations have been implemented for finance companies.

Within the banking system, the commercial banks maintain their leading position accounting for more than 60 per cent in the banking system and more than 40 per cent of the total assets outstanding (see Table II.18). There are currently 39 commercial banks operating in Malaysia, of which 16 are foreign incorporated. All major banks have computerized their operations to expedite the process of transactions. Further improvements in the banking system are expected from a new code of conduct dictated by the Central Bank.

The focus of the commercial banks' lending activities has dramatically turned towards the manufacturing sector in 1988, even though the real estate and construction sector still recorded the highest level of debt outstanding (see Table II.19). This change in the lending activities of commercial banks was due to the strong economic expansion and the change of lending guidelines in 1988. In 1988, M\$ 1,974 million were allocated to the manufacturing sector, compared with M\$ 159 million in 1987. This represented nearly half of the total loans extended by the commercial banks in 1988. Within the manufacturing industry the bulk of credits went into the processing of raw materials and the production of electrical machinery and appliances.

Table 11.18. Distribution of assets and capital flows by financial institutions, 1987 and 1988

	Annual change		Total
	1987	1988	
	Percentage	Percentage	
	Per	Per	1000.0
	At end 1988		
	M\$	billion	
	percentage		
Banking system	11.0	13.8	68.1
Monetary institutions	9.6	10.9	53.3
Central Bank	3.8	2.3	11.7
Commercial banks ^a	5.8	8.6	41.6
Non-monetary institutions	1.4	2.9	14.8
Finance companies	1.6	3.0	10.7
Merchant banks	0	0.7	3.1
Discount houses	0.2	0.8	1.0
Non-bank financial intermediaries	6.3	9.1	31.9
Provident, pension and insurance funds	4.9	5.0	21.0
Employees Provident Fund	3.8	4.3	16.1
Other provident funds	0.3	0.7	1.8
Life insurance funds	0.7	0.6	2.4
General insurance funds	0.1	0.1	0.7
Development finance institutions ^b	0.3	0.8	2.4
Savings institutions	0.4	1.1	3.9
Other financial intermediaries ^c	0.7	2.2	10.4
Total	17.3	22.9	226.7

Source: Ministry of Finance, *Malaysia: Economic Report 1988*, p. 80.

a Including Bank Islam Malaysia Berhad.

b Including Malaysian Industrial Development Finance Berhad (MIDF), Agricultural Bank of Malaysia, Borneo Development Corporation, Sabah Development Bank Berhad, Sabah Credit Corporation, Development Bank of

Malaysia and Industrial Bank Berhad.

c Including National Savings Bank, Bank Kerjasama Rakyat and the co-operative societies.

d Including unit trusts, building societies, Pilgrims Management and Fund Board, Credit Guarantee Corporation and Cagamas Berhad.

As a result of the stiff competition in the banking sector, especially in wholesale and corporate financing, the finance companies have shifted their resources back to their traditional consumer and retail business. At present, there are 45 major finance companies operating in Malaysia. There are 12 merchant banks operating in Malaysia. These banks are supposed to supplement the activities and services provided by the commercial banks and the finance companies by providing specialized services, i.e., corporate finance and financial investment advice. According to the banking regulations at least 30 per cent of their income should be derived from fee-based activities. Given these restrictions the merchant banks have had to focus on special segments of the financial market, so that the share of these companies in the total assets of the financial system was below 4 per cent in 1988.

Among the non-bank financial intermediaries the provident and pension funds (PPF) are of major importance for the financial system in Malaysia. The PPFs controlled 21 per cent of the total assets in the financial system in 1988 and comprise the Employees Provident Fund, the Social Security Organization, the Armed Forces Fund, the Teachers Provident Fund and seven other private provident and pension funds. The PPFs are the largest source of long-term financing for the public sector. Hence, the bulk of the PPFs resources, namely 84 per

Table II.19. Commercial banks lending to major economic sectors, 1987 and 1988

Sector	Annual change	
	1987	Percentage
At end	M\$ million	
1988		
Agriculture	-75	-47
of which:		
Rubber	34	-98
Forestry and logging	27	-3
Palm oil	-50	45
Cocoa	-49	-4
Livestock	-12	26
Mining and quarrying	13	345
of which:		
Trade petroleum and natural gas	70	4
Quarrying	-	16
Manufacturing	159	1,974
of which:		
Processing	4	316
Wood and wood products	33	164
Food, beverages and tobacco	-20	146
Paper and paper products	43	-4
Printing and publishing	-44	63
Industrial chemicals	-1	72
Petroleum products	37	-3
Building materials	-41	33
Transport equipment	80	172
Electrical machinery, apparatus and appliances	156	310
Metal products	1	136
Electricity	16	72
Real estate and construction	351	277
General commerce	(97)	489
Transport and storage	37	141
Financing, insurance and business services	394	90
Individual housing loans ^a	220	435
Other	272	475
Total	-148	4,251
		56,432

Source: Ministry of Finance, *Malaysia, Economic Report 1988/89*, p. 106.

^a For 1987 and 1988, excluding housing loans amounting to \$304 million and \$376 million, respectively, sold to Capamas.

cent in 1988, are invested in Federal Government Securities and only a minor share of 5 per cent in corporate securities. For this reason, the PPFs are of minor importance as financing institutions for private industrial firms.

There are some special government-controlled financial intermediaries such as the development finance institutions, the savings institutions and the Permodalan Nasional Berhad (PNB). The objectives of the PNB and its related companies are to mobilize Bumiputera savings and to increase the level of Malay ownership in the equity of the corporate sector by extending loans and equity to Bumiputeras and distributing shares to the Bumiputera community. These financial intermediaries are of less importance for corporate financing.

Another source of financing for larger manufacturing enterprises is the Kuala Lumpur Stock Exchange (KLSE). The KLSE is a voluntary association of stock and sharebrokers. At the end of 1988, the shares of 164 industrial companies were listed at the KLSE. However, the crash of the New York Stock Market on 19 October 1987 led to an immediate decline in trading. Hence, in the early part of 1988 cautiousness among investors dampened market activities. However, due to the optimism stimulated by the recovery of the economy in 1988 the monthly turnover in the second half of 1988 gained momentum and reached around MS 1 billion.* However, the KLSE is still highly vulnerable to developments on the Stock Exchange of Singapore (SES) because of its historical link. In order to reduce this vulnerability and to stabilize its activities the Government of Malaysia decided that in 1990 the KLSE is to be separated from the SES by delisting all Malaysian-incorporated companies from the SES.

F. INDUSTRIAL LOCATION

The focus on regional balance in industrial development was apparently lacking in the promotion of industrial development by the Malaysian Government in the 1950s and 1960s. Tax holidays granted under the Pioneer Industries Ordinance of 1958 and, in particular, the establishment of industrial estates and Free Trade Zones, had a discriminating impact on the regional dispersion of manufacturing activities.** All industrial estates that were set up in the 1960s were concentrated around urban areas in regions with higher than average income levels.*** Furthermore, investment in infrastructure such as roads and highways as well as the communications network tended to be directed towards the same areas. Thus, there were significant incentives for industrial enterprises to settle down in more developed regions which were reinforced by agglomeration advantages from the proximity to urban areas.

This resulted in a rather skewed pattern of regional dispersion of manufacturing activities in Malaysia. By the early 1970s, three-quarters of manufacturing output originated from the richer Western states of the country, especially from Selangor, neighbouring Kuala Lumpur, and Pinang which benefited from its harbour and the early establishment of a FTZ.

The only other major concentration of industrial activities emerged in Johor, across the causeway from Singapore. All other regions especially those with low income levels such as the Northern States could not attract more industrial investment and tended to lose importance in relative terms.

Beginning in the early 1970s, increasing stress was placed on a more even regional dispersion of industries in economic policy-making. In contrast to marginal policy measures in the Second Malaysia Plan (1971–1975) towards regional balance in industrial development, the Third Malaysia Plan (1976–1980) spelled out measures to improve the relative degree of industrialization in the lowest income states. These included the establishment of new growth centres and the location of a number of government establishments in these areas. In order to encourage investment in the less developed states a broad range of measures was adopted, including fiscal incentives, the development of industrial estates and ready-built factories as well as the improvement of electricity, interregional highways, marketing centres and ports.

* Bank Negara Malaysia, *Annual Report 1988* (March 1989).

** See Dean Spingler, *Industrialization Policies and Regional Economic Development in Malaysia* (Singapore, 1986).

*** In 1985, states with higher than average *per capita* income included Kuala Lumpur, Selangor and Negeri Sembilan in the Central Region, Pulau Pinang in the Northern Region and Terengganee in the Eastern Region. All other states had *per capita* incomes below the national average. According to the Fifth Malaysia Plan, the regional distribution of income was not expected to have changed significantly by 1990.

Table II.20. Regional dispersion of manufacturing industry in Malaysia, 1988

State	Number of establishments		Gross value of output		Value added		Total number of persons engaged during December 1988 or the last paid period		Value of fixed assets owned as at 31 December 1988		
	Percentage	(M\$'000)	Percentage	(M\$'000)	Percentage	(M\$'000)	Percentage	(M\$'000)	Percentage	(M\$'000)	
Total	5,782	65,196,767	100.0	65,196,767	100.0	16,258,594	100.0	598,578	100.0	24,751,992	100.0
Johor Darul Takzim	748	12,230,868	18.7	2,259,731	13.8	103,949	17.3	2,499,109	10.1	1,117,258	4.5
Kedah Darul Aman	228	2,436,934	3.7	662,862	4.0	37,071	6.1	111,675	0.5	400,770	1.6
Kelantan Darul Naim	107	482,133	1.0	116,307	1.0	11,684	1.9	22,783	3.8	909,487	3.6
Melaka	147	2,172,602	3.3	408,386	2.5	17,273	2.8	464,142	1.8	2,372,186	9.5
Negeri Sembilan Darul Khusus	135	3,903,384	5.9	605,201	3.7	49,908	8.3	1,881,479	7.6	303,919	1.2
Pahang Darul Makmur	164	2,340,902	3.5	354,864	2.1	96,423	16.1	3,581	1.0	6,674,658	26.9
Pulau Pinang	551	9,743,707	14.9	2,223,970	13.6	49,908	8.3	137,699	23.0	1,047,527	4.2
Perak Darul Ridzuan	552	3,677,751	5.6	958,916	5.8	3,581	1.0	7,688	1.2	1,011,232	4.1
Selangor Darul Ehsan	14	236,598	0.3	126,743	1.0	34,626	5.7	1,011,232	4.1	884,400	3.5
Terengganu Darul Iman	1,022	18,313,502	28.0	4,998,479	30.7	27,090	4.5	1,773,111	7.1	3,301,039	13.3
Wilayah Persekutuan	83	839,787	1.2	225,434	1.5	23,895	3.9	3,301,039	13.3		
Federal Territory	530	2,970,560	4.5	1,095,127	6.7	1,710	0.5	864,400	3.5		
Kuala Lumpur	27	543,066	1.0	211,295	1.2	27,090	4.5	1,773,111	7.1		
Wilayah Persekutuan	788	1,587,531	2.4	444,235	2.7	23,895	3.9	3,301,039	13.3		
Federal Territory	686	3,717,441	5.7	1,537,044	9.4						
(Labuan)											
Sabah											
Sarawak											

Source: Department of Statistics

Attention was focused on creating external economies in less developed areas and on preventing excessive growth of the already existing urban centres. The policy was also intended to place particular stress on the integration of the growth centres with their hinterlands.

These policies were however partly offset by the government's continued effort to attract foreign direct investment to newly established FTZs, all of which were located in more developed areas, leading to a rather limited degree of regional spread of manufacturing activities (see Table II.20). The Northern States continued to remain the industrial hinterland while the main thrust of industrial investment still focused on Penang, Selangor and Johor as it did in the past. These three Western States attracted three-fourths of all proposed projects in 1988 (see Table II.20). Among the Southern States, Malacca, with its FTZ, and Pahang, the State bordering Kuala Lumpur to the East, recorded an upsurge of proposed capital investment in 1988.

Sabah and Sarawak, the two outlying states, have remained industrially less developed than the Northern States. Manufacturing activities in these two states encompass a few large-scale operations with heavy government and/or foreign participation. These include the Sabah Gas Industries, which produces methanol and hot briquetted iron, and the ASEAN Bintulu Fertilizer which produces ammonia and urea. In 1988, a proposed major investment project with financing from France was meant for the production of unwrought aluminum in the Aluminium Industry of Sarawak.

In August 1990 Malaysia, Indonesia and Singapore approved the formation of a 'growth triangle' designed to attract foreign capital. The triangle encompasses Malaysia's Johor State, Indonesia's Batam Island and Singapore. This triangle would help to combine the land, labour, water and gas of Malaysia's Johor State with the managerial talent available in Singapore, and would foster industrialization in Johor State within the framework of the 'growth triangle'.

Table II.21. Location of approved projects by State, 1987 and 1988
(Percentage)

Location	Number of approvals		Potential employment		Total proposed capital investment	
	1987	1988	1987	1988	1987	1988
Northern States	5.0	9.7	5.6	12.6	2.8	6.4
Trengganu	0.7	1.5	0.2	2.0	0.2	2.1
Kelantan	1.0	1.1	1.2	1.1	0.1	0.6
Perlis	..	0.2	..	0.1	..	0.1
Kedah	3.4	6.8	4.1	9.5	2.5	3.6
Southern States	32.9	34.6	36.1	31.7	26.4	50.2
Pahang	2.3	3.2	6.4	3.4	3.3	9.0
Malacca	3.0	3.8	6.1	5.4	3.3	16.7
Johor	27.5	27.6	23.6	22.9	19.8	24.4
Western States	62.1	55.9	58.3	55.7	70.8	43.5
Perak	4.0	6.5	2.6	7.7	0.9	2.9
Selangor	35.2	36.0	23.7	31.3	48.1	30.0
Negri Sembilan	3.0	2.4	1.3	2.0	3.8	0.8
Penang	19.8	11.0	30.7	14.7	17.9	9.7
Total*	298	662	54,310	121,339	3,548.2	7,484.7

Source: MIDA, *Report on the Performance of the Manufacturing Sector 1988* (Kuala Lumpur, January 1989)
* Either actual figures or in MS million



POLICY FRAMEWORK FOR INDUSTRIAL DEVELOPMENT

A. NEW ECONOMIC POLICY

The year 1990 marks the end of a twenty-year perspective Plan which spelled out the new economic policy (NEP) for the period 1970–1990. The NEP embodied the twin objectives of eradicating poverty and restructuring Malaysian society. The objective of a more even distribution of income and wealth was therefore accorded top priority in the Second Five-Year Plan (1971–1975), the first in the series of four Five-Year Plans destined for the implementation of the NEP. In tune with the prime objective of increasing the participation of Bumiputeras (indigenous Malays) in industrial development, industrial policy has been in favour of the Bumiputeras. Accordingly, it aimed to increase Bumiputera participation in corporate equity from around 2.4 per cent in 1970 to 30 per cent by the year 1990.

In pursuit of the above objective special credit facilities for Bumiputera industrial firms, restructuring of corporate equity, and special regulations governing the composition of equity in foreign-owned companies were initiated. The government set up numerous trust agencies to own and hold shares on behalf of the indigenous community. A number of public enterprises have also been set up in commerce and industry. The theoretical underpinnings of the NEP, however, encompassed a growth rather than a redistributive strategy in order to eradicate poverty by the year 1990.

Policies and programmes for industrial development as embodied in the Fifth Malaysian Plan (1986–1990) and in the IMP are focused on accelerating growth and on enhancing development of selected industries more attuned to the country's resource availability and comparative cost advantage, moving from an essentially inward looking, domestic-oriented sector to one which is more outward-oriented. Basic strategies and direction for industrial development include:

- (i) accelerating outward-oriented industrialization, with a focus on large-scale expansion of manufactured exports;
- (ii) developing resource-based industries for export;
- (iii) diversifying and upgrading non-resource-based industries for export;
- (iv) selectively promoting strategic heavy industries to support export industries;
- (v) making positive adjustments in the industrial structure, modernization and rationalization;
- (vi) developing technology and manpower; and
- (vii) taking into consideration existing infrastructure when planning the physical location for new industries.

In line with these strategies, policies for industrial development in 1990 focus on the following:

- (i) widening the range of manufactured products for exports;
- (ii) strengthening the industrial base, moving away from mere assembly type processes to more indepth manufacturing processing, producing components and parts locally;
- (iii) encouraging more vertical and horizontal integration both within and inter firms in order to increase more value added to Malaysia's manufactured export;
- (iv) enhancing the participation of small- and medium-scale subsectors in the mainstream of industrial activities by developing an extensive network of modern ancillary firms which are able to supply high quality components and parts to large firms;
- (v) creating a conducive environment for private sector involvement and R & D activities;
- (vi) development of technically competent and creative human resources to cater for Malaysia's industrial requirements in post 1990.

The private sector is expected to play the key role in achieving the targets set out for industrial development. Foreign direct investment will continue to be promoted, both as a source of technology and to complement domestic investment. The private sector is expected to contribute more towards R & D activities, training of industrial manpower, improvement of quality of products, search for new markets, and improving the competitiveness of Malaysia's exports.

The incentive system will focus on expansion of private investment, capital formation, export growth, value added production and on increasing linkages. The incentives are continuously reviewed to make them simpler and more effective.

The Fifth Malaysia Plan (1986–1990) completes the final phase of the Perspective Plan. Although the poverty eradication objective of the NEP is almost achieved by 1990, efforts will need to be focused on reducing the incidence and occurrence of poverty among the hardcore poverty groups.* The performance of the Fifth Plan in restructuring the Malaysian society fell short of the envisaged targets. It is estimated that in 1990 the share of Bumiputeras in corporate ownership is around 20 per cent, compared with 56 per cent for other Malaysians and 24 per cent for foreigners. A number of issues became apparent in the course of the Fifth Plan, and it became clear that a longer time span would be required to implement the restructuring process. Although the mid-term appraisal** of the Fifth Plan argued that the ownership strategy under the NEP was not the primary factor affecting private investment, experience during the review period brought into focus suggestions for pragmatic approaches to foster the pace of industrialization in Malaysia. The government decided to introduce flexibility in its policy approach in order to foster private investment and growth. Equity conditions imposed on foreign investors were relaxed. A number of other measures included the relaxation of licensing requirements under the Industrial Co-ordination Act (ICA) as well as the relaxation of the guidelines governing Foreign Investment Committee (FIC) rules. The implementation of industrial policy is thus being increasingly attuned to flexibility and pragmatism to ensure that both domestic private investment and foreign investment are not stifled.

The Fifth Plan actively pursued the process of privatization, with a view to reducing the size and presence of the public sector in the economy. The public sector programme and its financing were revised downward during the Plan period in line with the changes in the macroeconomic situation, particularly in the beginning of the Plan period. However, the

* Poverty in Malaysia is measured on the basis of a minimum expenditure level on poverty line income (PLI), which is the minimum needed for subsistence. For the year 1987, the PLI was about MS 350 per month for a household of 5.14 persons in Peninsular Malaysia, MS 429 per month for a household of 5.22 persons in Sarawak, and MS 533 per month for household of 5.36 persons in Sabah. See *Mid Term Review of the Fifth Malaysia Plan 1986–1990* (Kuala Lumpur, 23 June 1989), p. 45.

government continued to accord priority to projects which were important for the eradication of poverty and deemed essential for greater private sector expansion. A tentative plan for the privatization of 246 Non-Financial Public Enterprises (NFPEs) outlines a range of possible methods of privatization, i.e., direct sale, management contract, leasing, management buyouts, licensing and restructuring methods.

It was during the preparation of the Fifth Plan, when the Malaysian economy faced a sombre economic climate, that a team of experts from the United Nations Industrial Development Organization (UNIDO) and the Malaysian Industrial Development Authority (MIDA) presented the Industrial Master Plan (IMP) for the period 1986–1995. The Sectoral Task Forces for the implementation of the IMP have been actively involved in addressing the key issues highlighted in the Plan. The IMP is an indicative Plan outlining policy direction and priorities towards utilizing the country's natural resources and accelerating growth in the manufacturing sector in order to facilitate growth as well as the redistributive aims of the NEP.

B. INDUSTRIAL MASTER PLAN (1986 – 1995)

The Industrial Master Plan represents a comprehensive study of 12 industries, 7 of them resource-based and 5 non-resource-based, with a view to providing the basis for subsector-specific industrial policies up to the year 1995. The IMP identifies rubber products, palm oil products, food processing, wood-based industries, chemical and petrochemical industries, non-ferrous metal products and non-metallic mineral products as resource-based industries, and electronics and electrical machinery, transport equipment, machinery and engineering products, iron and steel, and textiles and apparel as non-resource-based industries. These industries were studied to identify factors inhibiting their growth and to suggest a new framework for development, indicating new directions for policies and their implementation.

The conceptual framework of the new development strategies was thus designed by identifying priority industries in terms of priority product groups in each manufacturing subsector. The major thrust of the strategy is characterized by an outward-oriented industrialization approach. The IMP advocated, *inter alia*, incentives for import-substitution and elimination of discrimination against exports. The IMP also argues the case for a free trade regime, keeping the infant industry considerations to the minimum. In view of the development rationale and constraints the IMP entails 'selectivity' in promoting heavy industries, which need to be strategically selected to lay the solid foundation for a more balanced growth, enabling Malaysia to leapfrog to an advanced industrial society by the turn of the century.

The indicative strategic direction in the selected subsectors of manufacturing merits attention.

Rubber products: export thrust

The main objective of the IMP is to develop this subsector into an export-oriented industry with particular emphasis on the export of tyres up to M\$ 1 billion by the year 1995, and to raise Malaysia's share in world production from 0.4 per cent in 1985 to 1.5 per cent in 1995.

The key development strategy designates the tyre industry as the priority product area. The strategy explains the initiatives needed to overcome the barriers to world market entry and access to technology. The strategy also aims at strengthening the Rubber Research Institute of Malaysia, with a view to carrying out applied research for the development of the country's rubber industry in general and the tyre industry in particular. The IMP advocates the development of ancillary industries including synthetic rubber by declaring them priority products in due course.

Palm oil products: developing downstream products

The strategy for the future development of the industry suggests further downstream development of palm oil based on products beyond processed palm oil and the establishment of palm kernel oil-based industries beyond the present crude palm kernel stage. The IMP also recommends rationalization of the refining and fractionation subsector with a view to enhancing the production efficiency and competitiveness of processed palm oil.

The IMP identifies oleochemicals and processed palm kernel oil as priority and promising product areas for export. Foreign investment is encouraged in oleochemicals production. The establishment of a market promotion fund was also recommended by the IMP.

Food products: accent on modern technology

The objectives of the IMP in food processing relate to the development of a modern food processing sector, the creation of comparative advantages in export-oriented and import-substituting industries and the establishment of industries utilizing more local raw materials and substituting them for imports.

Among the food processing industries, cocoa products, fruits and vegetables and animal feeds are listed as priority products. The IMP suggests policy measures to gain comparative advantages in food processing by reducing the cost of production. The government could intensify R and D efforts, including the application of genetic engineering, in order to improve the quality of cocoa and pineapples. According to the IMP, efforts will need to be initiated in order to enhance the supply of local raw materials and to substitute them for imports, particularly supplies of inputs for the production of animal feed. The Plan also recommended the establishment of a biotechnology Research Division.

Wood products: restructuring and rationalization

The main objective of restructuring and rationalization is to transform the wood-based industry into a major resource-based industry and to make its downstream products significant contributors to exports. As part of realigning the fragmented production structure a furniture complex for Peninsular Malaysia and timber processing zones for Sabah and Sarawak were recommended.

Within the subsector the joinery, mouldings and furniture industries were listed as priority industries, while the sawmill and plywood veneer industries were destined for restructuring and rationalization. The IMP also encourages greater utilization of existing resources, including rubberwood.

Chemicals: looking inwards

The strategy for Malaysia's chemical industry as presented in the IMP favours the development of the industry as a domestic market-oriented industry, ideally a sound petrochemical industry based on natural gas feedstock.

In the petrochemical subsector, the IMP prefers a backward integration approach to forward integration. For example, the start of the ethylene plant will need to be delayed until demand for ethylene derivatives justifies a viable scale of production. The IMP designates polyethylene, polypropylene, vinylchloride, vinylacetate and methanol derivatives as priority products. In the inorganic chemical industry, chlor-alkali and sulphuric acid plants are earmarked for modernization. In the fertilizer subsector, the IMP lists urea, nitrogen and compound fertilizers as priority products. The IMP also favours the development of a special pesticides segment for rubber and oil palm trees.

Non-ferrous metals: a phased approach

The IMP strategy for aluminium and copper aims at developing this segment in an orderly manner as an import-substitution industry. The Plan recommends the postponement of production until cheap electric energy is developed. Plant expansion in the semi-fabrication of aluminium and copper from imported metals should proceed only on the basis of economically viable local demand.

The IMP recommends the development of the tin segment as an export-oriented industry. The strategies proposed include lowering the floor price of the commodity to encourage market growth as well as measures to gain comparative advantage in tin production.

Non-metallic mineral products: fuller utilization of domestic resources

The key development strategy encourages fuller utilization of the non-metallic mineral resources of Malaysia, and the development of this manufacturing subsector as a domestic market-oriented industry. The IMP identifies ceramics, tiles, cement composite products and float glass products as priority products. The IMP also argues the case for a special energy tariff, particularly for the priority products.

Electronics and electrical industries: wanting a local entrepreneurial initiative

The long-term and broad development objectives aim at establishing an indigenous electronics industry through local entrepreneurial leadership as well as accelerating the development of the industry, with particular emphasis on consumer and industrial electronics for export.

The IMP aims at: establishing base for the development of the electrical industry; developing indigenous capability in the road transport equipment industry; establishing a local shipbuilding and ship repairing base to support the maritime industry; and ensuring an organized iron and steel industry.

Machinery and engineering industry: creating a strong base

The IMP strategy aims at laying a strong foundation for the development of machinery and engineering industries in support of heavy industries in the 1990s. The strategy places emphasis on the development of product technology against the country's continued dependence on producing technology, i.e., mainly assembly know-how.

The Plan identifies the basic component modules as priority products. The IMP recommends the establishment of a special development fund for the machinery industry to supplement financing services through subsidies, grants and credits for locally produced products.

Iron and steel: towards prudent planning

The IMP strategy ensures that Malaysia will develop a planned and organized iron and steel industry which is viable and competitive in the domestic market. The Plan recommends two phases covering the period 1986–1990 and 1991–1995. The first phase pertains to existing facilities of the industry and tries to lay down a foundation for a sound growth in future, while the second phase indicates the long-term options: (1) meeting the demand by importing from competitive international suppliers; and (2) establishing integrated steel mills producing crude steel slabs and flat products. For option 2 a course of action for investment is recommended by the IMP.

Textiles and apparel: modernization and rationalization

The textile industry is expected to grow through modernization and rationalization, while the apparel segment is expected to take maximum advantage of its export potential by expanding production facilities if necessary.

Specific recommendations of the IIMP include active promotion of the export of apparel focusing on a product range of medium and high value added items, indigenization of technology for long-term sustained growth, securing higher quotas for apparel products and enhancing complementation between Free Trade Zones and units located in other areas.

Thus, the Industrial Master Plan attempts to present a sound blueprint for a more systematic approach towards accelerating the pace of industrialization, indicating specific policy measures in each priority product area. As far as the growth projections of the IIMP are concerned, the priority industries are expected to expand at an average annual rate ranging between 6 and 10 per cent during the Plan period (1986-1995). Despite the Plan's emphasis on the resource-based industries, the non-resource-based industries are expected to grow at a faster rate in the Plan period, since electronics, transport equipment and machinery are regarded as more income-elastic. It is envisaged that by 1995 the electronics industry will be the leading industry both in terms of output and exports.

Despite the long-term nature of the Five-Year Plans and the IIMP, there is a high degree of flexibility in development planning. The recent economic policy of the government reveals a clear preference for a pragmatic approach, aiming to leap with a new phase of industrial development by sustaining the present momentum of private investment, both domestic and foreign. There has been a gradual redesign involving measures such as revising foreign investment incentives and cutting back government spending. These measures are part of a new emphasis on the private sector as the engine of growth.

C. RECENT CHANGES IN INDUSTRIAL POLICY

With the introduction of the Promotion of Investment Act of 1986, the Investment Incentives Act was repealed. An array of incentives are granted under the Promotion of Investment Act, 1986.¹⁰ Basically, all these incentives accrue both to foreign and domestic firms located in Malaysia. Accordingly, both foreign and domestic investors are given a tax holiday of five to ten years, if they fall under the so-called Pioneer Status. This status is given to investors whose production is economically reasonable according to the development plan or whose products are not already manufactured locally on a sufficient scale. Basically, the list of promoted products, which is regularly published in the official Gazette, largely reflects the contours of the IIMP. In addition, promoted products and promoted activities are eligible for investment tax allowance (ITA), which can reach 100 per cent of the investment tax. In another programme under the Promotion of Investment Act yearly tax exemptions are given to small-scale industries, exporters and firms investing in less developed regions or promoted areas of the country. The tax exemption is granted by abatement of adjusted income. The government supports export activities by granting export allowances and permitting double deduction of particular expenses related to export promotion.

There are a number of other incentives encouraging industrial investment, export activities, research and development as well as industrial manpower training. There is a programme which allows some companies to claim a tax credit for 25 to 100 per cent of their total capital outlay. The government also provides an Export Credit Refinance Scheme, which has been gradually revised to cover more exporters, and provide working capital for manufacturers, offering refinancing facilities for exporters at preferential interest rates. Like the incentives granted under the Promotion of Investment Act, these programmes are open both to domestic and foreign companies operating in Malaysia.

¹⁰ A detailed description of all incentives granted under the Promotion of Investment Act, 1986, is presented in Annex E.

Apart from these specific programmes, the government's tax policy has improved the investment climate in Malaysia. This can be attributed to a tax reform implemented in the fiscal year 1989. As a part of this reform corporate tax was lowered from 40 to 35 per cent except for the oil sector. In addition, the development tax is envisaged to be phased out gradually. In 1990 the development tax which affects both individuals and companies will be reduced from 5 per cent to 4 per cent. The eventual abolition of this tax coupled with the reduction of the corporate tax is expected to enhance the competitiveness of Malaysia as a host country for investment.

Industries located in Free Trade Zones enjoy minimum tax formalities both in exports of processed goods and in imports of raw materials, components and machinery. FTZ type of facilities are also available in the form of Licensed Manufacturing Warehouses (LMW), when the establishment of an FTZ is impractical. Some new instruments for Bumiputeras came into effect as a result of the reformulation of the NEP. The government has been finalizing its plans for a so-called New Entrepreneur Fund, which was due to be launched in January 1990. This new fund is supposed to support indigenous (Bumiputera) involvement in small and medium-scale projects. Apart from these incentive schemes provided by the Federal Government, there are some additional incentive schemes of the particular State Governments. Under these programmes the state provide industrial sites for industrial plants and have established special industrial parks or areas in which the basic infrastructure, i.e., power, water and communications, is available. Most of these sites are now partly or fully developed and cover an area of more than 12 million square metres. Industrial estate prices range from M\$ 7 to 13 in less developed areas to M\$ 17 to 44 per square metre in prime areas. More of these industrial sites are being developed and planned.

Private investment was estimated to have risen by 36.3 per cent in 1989. An added boost to the momentum of private investment was the continued support given by the government to promote local and foreign investments. Several revisions were made to the 1986 Act, with a view to rationalizing the incentive structure. With effect from the assessment year 1990, a one percentage point reduction in the development tax from 5 per cent to 4 per cent was introduced. A 'second round' of pioneer status was introduced for new companies set up by existing or ex-pioneer companies producing the same promoted product or activity. With a view to promoting small- and medium-scale industries the 1990 budget announced the setting up of an Industrial Technical Assistance Fund with an initial contribution of M\$ 50 million by the government. The Fund is intended to provide matching grants and loans to assist SMIs in conducting feasibility studies and research and development. In order to promote linkages between small- and medium-size industries, all new electronic projects are now required to achieve at least 50 per cent of local content by the third year of operations to be eligible for pioneer status or investment tax allowance. This conditionality is applicable to ex-pioneer status or existing electronic companies which re-invest in similar lines of products. To ensure greater access to the Export Credit Refinancing (ECR) scheme by the small exporters and new manufacturers, a new Export Credit Investment Guarantee (ECIG) scheme was launched in March 1990.

D. FOREIGN INVESTMENT INCENTIVES AND ADMINISTRATION

Incentives

Malaysia has a good record as a host country for foreign direct investment. The attractiveness of Malaysia as a host country has been increasingly enhanced due to an array of incentives, deregulation and conducive administrative procedures. Basically all incentives of the 1986 Promotion of Investment Act accrue to both domestic and foreign investors. In the same vein, subsequent amendments are also applicable to foreign investors.

The favourable attitude towards foreign investment has been further enhanced by bilateral agreements with major investor countries on double taxation and investment guarantees. Double taxation agreements avoid the incidence of double taxation on international income such as business profits, dividends, interests and royalties that are derived in one country and remitted to another country. This, therefore, removes the 'tax barrier' to international trade and investment.*

The purpose of investment guarantee agreements (IGA) is to ensure against non-commercial risk such as expropriation and nationalization and to allow for the remittance and repatriation of capital. It is hoped that IGA will inculcate confidence in foreign investors and prevent arbitrary action on the part of a recipient country. Most of these agreements include a guarantee that there shall be no expropriation or nationalization except for a public purpose. In this case prompt and adequate compensation has to be given by the host country. Furthermore, these agreements include permission to remit or repatriate profits or equity capital on investment in any convertible currency.

The favourable environment for foreign direct investment has been recently complemented by additional measures to attract foreign companies. Preferential treatment will be given to transnational companies which establish their regional headquarters in Malaysia. The Ministry of Trade and Industry provides both fiscal and other incentives for the establishment of so-called operational headquarters (OHQs) starting from the fiscal year 1990.

OHQ status will be given only to manufacturing sector firms, thus excluding all transnationals in the finance sector and other service industries. The OHQ treatment provides for tax deductions for management income, dividends, licence fees, and interests. For these income sources, a reduced income tax rate of 10 per cent will be applied for a period of 5 years. In addition, tax exemptions are given, when a transnational company undertakes foreign direct investment under OHQ status. The dividends from this investment will be exempt from taxation for a period of ten years.**

Firms obtaining OHQ status are given five work permits for expatriate staff and even more if the case is judged reasonable. Moreover, these companies are allowed to hold foreign currency deposits, to take credits from Malaysian banks and finance institutions and to retransfer profits and equity. In addition, OHQ firms are assured preferential treatment when they apply for telecommunication extensions.

Foreign investment administration

The legal framework codified in the Industrial Co-ordination Act of 1975 (ICA) requires all persons engaging in any manufacturing activity to obtain a licence. All manufacturing companies with shareholders' funds of M\$ 2.5 million and above or engaging 75 or more full-time employees need to apply for a licence that allows for investment or the expansion of the production capacity and the diversification of products.

The bureaucratic procedure governing the approval of all investment projects has been improved substantially, as the entire decision-making process was concentrated in one government institution, namely the Malaysian Industrial Development Authority (MIDA) which has functioned as the so-called Co-ordination Centre for Investment (CCI) since October 1988.

* According to the provisions of double taxation agreements, business profits are taxed only in the country in which the transnational company is located. Tax is levied in the contracting country on so much of the profit as is attributable to the permanent establishment in the country in which the permanent establishment is located. In addition, most of the countries of residence which have entered into double taxation agreements with Malaysia accord tax sparing credits. These credits are given, if no tax rate or a lower tax rate is paid in the host country, as it is the case with the tax exemptions granted under the Promotion of Investment Act, 1986.

** Firms which are already represented in Malaysia and subsequently apply for the OHQ status, do not fall under this special tax regulations.

The main function of the CCI is to process decisions on applications for manufacturing licenses. In addition, the CCI is in charge of all applications for tax incentives under the Promotion of Investment Act 1986, expatriate posts and customs duty exemption. This is a substantial improvement in investment administration, since domestic and foreign investors need only approach MIDA to obtain most of the approvals required at the federal level with respect to manufacturing.

While the MIDA has become the sole institution in charge of the approval of foreign direct investment projects, the Ministry of Trade and Industry continues to consider applications in the light of the NEP in general. In the case of a controversial decision on the part of the MIDA a special office in the Ministry of Trade and Industry, which is directly supervised by the Minister, will serve as an arbitration court.

The past performance of the MIDA with respect to project approval reveals further insights into the government's emphasis on streamlining investment administration. In 1988, the number of applications and approvals for manufacturing licences increased substantially.

Out of 619 applications from foreign investors 470 were approved in 1988, compared with 228 out of 253 in 1987. Given the increase in applications the government is tending to become more selective with respect to foreign direct investment.

The largest number of approvals have been given to firms producing rubber products, textiles and electronics. This holds true both for domestic and foreign investors. In terms of total proposed capital investment, there is a bias towards basic metal products, electronics, rubber products and chemical products both for foreign and domestic firms.

Equity guidelines

Foreign investors are allowed to hold the majority equity participation in export-oriented firms. Foreign investors can obtain a majority of 51 per cent of equity if the export share of production ranges between 20 and 50 per cent. If the export share exceeds this range, even 100 per cent of the stock capital can be obtained by foreign investors. Firms with an export share below 20 per cent are classified as domestically oriented, so that foreign partners are allowed to hold a maximum share of 30 per cent. For firms engaging in the extraction and processing of mineral ores foreign majority in equity participation may be allowed.

There is a transitory regulation allowing foreign investors to hold a 100 per cent share, if they are not in a position to find a local partner or if the firm exports 50 per cent or more of its production. This exceptional rule also applies to companies employing more than 350 full-time Malaysian workers. Initially, this was a transitory regulation applicable for 5 years from 1 October 1986 until 1 December 1990, but the government has made it clear that it will not be prolonged beyond 1990. However, once a company is approved under these equity guidelines, it will not be required to restructure its equity at any time, even after the year 1990, provided that the company complies with the conditions of approval. Due to these exceptions, the percentage of wholly foreign owned companies and joint ventures with foreign majority was well above 40 per cent of all projects approved, while joint ventures with a Malaysian majority ranked well below 20 per cent in 1988.

E. SCIENCE AND TECHNOLOGY POLICIES

A substantial institutional base for the support of science and technology (S & T) has been established since 1975. The major part of S & T activities is undertaken by government institutions as well as various university research laboratories. The former comprise six statutory and eight departmental research institutions in the various ministries. In the agricultural, forestry and fisheries processing sectors there are four institutions which are in charge of S & T as

well as R & D. There are the Rubber Research Institute of Malaysia (RRIM), the Palm Oil Research Institute of Malaysia (PORIM), the Malaysia Agricultural Research and Development Institute (MARDI), the Fisheries Research Institute in Pulau Pinang and finally the Forestry Research Institute of Malaysia (FRIM).

The major part of industrial and mining research is carried out by 4 research institutions. The Standards and Industrial Research Institute of Malaysia (SIRIM) focuses on the development of indigenous technologies. This institution is in charge of the adaptation and transfer of imported industrial technologies to small- and medium-scale industries. The other three institutions have a clear sectoral orientation. The Malaysian Institute of Micro-electronic Systems (MIMOS) undertakes both basic and applied research in microelectronics, while the Nuclear Energy Unit (NEU) provides training and research in the application of nuclear science and technology. Research activities related to the mining sector are carried out by the Mines Research Institute of Malaysia (MRIM).

Many areas of applied research conducted by these government institutions have been complemented by the universities. These areas include agriculture, forestry, animal husbandry, fisheries and food processing, the use of solar energy and medical research. There has been increasing R & D collaboration between universities and industry. In order to facilitate technology interchange between the academic and the industrial sector, so-called industrial liaison units within each of the local universities have been established to enhance the diffusion of technologies and innovations to the industrial sector.

Despite this well developed infrastructure for R & D and S & T, there was an absence of overall direction and comprehensive strategies on S & T until 1985. Under the past decentralized system in S & T planning and organization most of the research institutions were guided by sectoral goals, while research institutions and universities established their own objectives and priorities. During the Fifth Plan period the government has attempted to centralize planning and implementation of R & D and S & T in order to achieve a higher productivity in R & D.

In this respect, the National Council for Research and Development (NCRD), which was founded in 1975 as the major science policy organization, has been strengthened to provide more effective intersectoral jurisdiction in planning and management, while independent institutions are in charge of the evaluation and assessment. The NCRD is expected to undertake a comprehensive review to examine the overall direction of research objectives and priorities, in line with national science and technology policy as envisaged in the Fifth Plan.

The strengthening of the NCRD will be accompanied by an increased allocation of funds that will be centralized under the central Research and Development Fund. In this respect, several areas have been identified as high priority for government support. These activities are classified as 'high-technology R & D areas' and 'strategic activities'.

The 'high-technology R & D areas' include mainly the fields of microelectronics, laser technology and electro optics, biotechnology, materials technology, manufacturing technology as well as software technology. The government regards these research efforts as a contribution to productivity gains and innovations, which are to support the development of the country's export-oriented industrial sector. Especially, microelectronics have been identified as an important element in achieving industrial competence. In this respect research as it is undertaken by MIMOS will be further supported. Founded in 1985, MIMOS has put an emphasis on technologies having potential applications in innovative high technology products for local distribution and export. It has been active in demonstrating the potential of microelectronics to the local industry and providing training in integrated circuits.

By contrast, the activities classified as strategic may not directly lead to productivity gains in the manufacturing sector, but they may contribute to the monitoring of natural resources and the enhancing of R & D productivity. Hence, strategic research programmes focus on oceanography, urban climatology and the establishment of research and training centres.

However, the government's research policy does not only aim at S & T activities in the public sector but also attempts to foster related activities in the private sector. During the Sixth Plan period, the private sector is expected to increase its role in R & D especially in resource-based and high-technology programmes. Towards this end, the government plans to provide both tax and other incentives to encourage private sector participation.

This S & T policy is to be complemented by increased transfer of technology from abroad. In the past most agreements on technology transfer have been concluded under the so-called 'Technical Assistance and Know-how Programme', which is administered by the Ministry of Trade and Industry. In the 1981 - 1985 period, the largest number of agreements registered with the Ministry of Trade and Industry have been in the food, electronic, electrical and motor-vehicle industries.

The government is attempting to improve the administration of technology transfer by concentrating it in one government institution. Formerly, the formulation of strategies for technology transfer was due to the Co-ordinating Council for Industrial Technology Transfer (CCITT), which was founded in 1982. The responsibility of the council was transferred to the NCSRD in 1985, which is to consider the establishment of regulatory, administrative, and technical instruments for effective technology transfer and absorption. In addition, special emphasis will be placed on the commercial exploitation of locally-generated technologies.

F. KEY ISSUES AND OPTIONS

The reformulation of the New Economic Policy in the 1990s is likely to focus on the achievement of Malaysia's ambitious economic vision of joining the ranks of the newly industrializing economies.* The government endeavours to reach this goal by the turn of the century by building up an advanced export-oriented manufacturing structure along with a cohesive strategy to utilize the country's resource potential for industrial deepening. However, to achieve the full potential of the manufacturing sector in order to rapidly transform the Malaysian economy, attention will need to be focused on increased productivity, efficiency and competitiveness.

In the current wave of investment-led growth, privatization is a central feature of the industrial strategy. But the spread of privatization and its growing acceptance does not necessarily mean that the high pace of industrial expansion will be automatically sustained. Privatization has become a more complex phenomenon in Malaysia as it has become entangled with the redistribution objective of the NEP. Malaysia's privatization programme encompasses an unfamiliar objective. A complex system of government-owned assets was created in order to enable the indigenous Malays to achieve increasing participation in corporate equity. The so-called 'equitable' participation of indigenous Malays in the process of industrialization could be redefined as 'active' participation. The existence of a large pool of Bumiputera entrepreneurs by the late 1980s meant that many of the public sector activities could be privatized to further increase individual Bumiputera participation in the industrial sector. A New Entrepreneurs Fund totalling M\$ 250 million was launched by the Central Bank in December 1989 in order to encourage new Bumiputera entrepreneurs to venture into new projects. The inclusion of other Malays in Bumiputera enterprises would enable the former to contribute capital, entrepreneurial skills and ensure higher levels of efficiency. All privatized industrial units will thus need to be assessed in terms of efficiency, particularly in view of the fact that productive efficiency is increasingly being eroded in several segments of manufacturing due to cost escalation.

* Such a vision was expressed in the Industrial Master Plan presented in 1985. See Government of Malaysia, *Medium- and Long Term Industrial Master Plan Malaysia 1986 - 1995* (Kuala Lumpur, 1985), p. 73.

Malaysia faces a 'rich natural resource dilemma'. Although the country is endowed with abundant supplies of natural rubber, oil palm, petroleum, natural gas and timber, Malaysia's competitiveness lies in electronic assembly, textile end-products and fabric manufacturing. The relatively high wage rates in resource-based occupations have meant that Malaysia could not compete effectively against other low-wage countries. For example, the minimum wage paid to plantation workers in the mid 1980s was about 82 per cent higher than in Indonesia. It is not surprising to note that a major buyer of Malaysian palm oil, India, shifted its purchases to Indonesia in early 1990 because of lower prices. A tax on the export of crude palm oil in Malaysia is primarily intended to encourage domestic use for further processing. Crude palm oil accounts for 75 per cent of the country's 1 million tonnes of existing stock. A release of this stock to the world market could make Malaysian palm oil more vulnerable to a possible downward slide in prices. Thus, a higher degree of industrial processing is warranted in order to strengthen Malaysia's natural comparative advantage.

Priority accorded to the inflow of foreign investment is based on the assumption that it will provide the greatest impetus for technology upgrading. This may spearhead the process of the country's resource-based industrialization, enhancing the natural comparative advantages of the existing resource base and producing medium to high value added manufactured products which could compete successfully on the world market.

A host of attractive incentives has been announced to attract investors, both domestic and foreign. However, industrial restructuring cannot be achieved by incentives alone. To encourage private investment and to promote efficient industrialization, the structural issues relating to wage structure, tariff protection as well as mobilization of resources will need to be resolved. Given the resource endowment of the Malaysian economy, a revitalization of the agricultural sector and the strengthening of linkages with the industrial sector would enhance the strategic factors of rapid industrial transformation of the Malaysian economy.

In managing the transition of the economy to NIE status, Malaysian policy-makers will need to monitor the symptoms of overheating. In 1990 the Malaysian economy is expected to grow faster than earlier projections. Although the economy is well on course in terms of growth rate, inflation and debt-service payments, imports continue to grow faster than exports despite a cheap Malaysian ringgit. The intervention of the Central Bank to support the currency and higher interest rates have already created strains on the economy. Massive capital inflows call for a prudent monetary policy in order to manage excess liquidity. New wage demands could surface and build up inflationary pressure. Thus, the major issue is to achieve a successful transition of the economy without building up macroeconomic imbalances in the 1990s.

G. CONTOURS OF THE SECOND PERSPECTIVE PLAN AND SIXTH FIVE-YEAR PLAN

With a 9.4 per cent growth of real GDP in 1990, compared with an earlier forecast of 8.3 per cent, the economy of Malaysia is poised to set a comfortable stage for launching the Sixth Malaysia Plan (1991 - 1995) and the Second Perspective Plan for the 1990s. The earlier forecast was altered largely by a sudden upswing in the world oil prices. At the time of writing, detailed information on these Plans was not available. (The Plan documents are likely to be made available to the public in mid-1991.) The prevailing ethos of post 1990 policy pronouncements suggest that the twin objectives of poverty eradication and restructuring are to be retained and various mechanisms will be fine-tuned in order to accelerate agricultural modernization, rural development and the pace of industrialization.

The budget for 1991 is designed to spur both demand- and investment-led growth through an array of individual tax-cuts, lower duties and tax reductions for growing companies. A series of tax reductions includes a reduction in development tax on individuals and companies from 4 per cent to 3 per cent as well as a 50 per cent tax abatement on income earned from all overseas investment projects. Dividends paid from such income are also exempt. The excess profit tax of 5 per cent on income exceeding M\$ 300,000 has also been reduced. The 1991 budget also calls for cuts in import levies. The generous budgetary proposals stem largely from an estimated 11.1 per cent rise in federal revenue in the face of a sharp surge in world oil prices. Although the government estimates remain tentative given the volatility of world oil prices, the budget seems to ensure an overall economic growth rate of over 8 per cent in 1991.

The bright picture is, however, not without its blemishes. A 15 per cent increase in government expenditure, a series of tax cuts and a strong increase in consumer lending coupled with the resultant stimulation of domestic demand could aggravate the inflationary pressure. High inflows of imported machinery to support foreign investment could widen the current account deficit. According to the Economic Report 1990/91 of the Ministry of Finance, the current account deficit will widen from M\$ 3,300 million in 1990 to M\$ 4,022 million in 1991. It is claimed that these will be offset by a proportionate increase in the economy's productive capacity in 1991.

The main item on the agenda for the rapid expansion of productive capacity is privatization. The sale of State assets is likely to be more ambitious in the 1990s. Around 250 public sector assets valued at about \$5.9 billion are destined for transfer to the private sector in the near future. The Proton National Car, Malaysian Railways, postal and water supply services, the government oil company Petronas and the National Electricity Board have already prepared plans for selling part of their shares to the public. Investors seem to have responded favourably to the public floatation of State enterprises on the Kuala Lumpur Stock Exchange. Thus private investment, both domestic and foreign, is likely to be the main propellant. In continuing to encourage foreign direct investment emphasis is being given to effective transfer of technology, managerial skills, training of local manpower and greater R & D activities.

The government sees a close link between the speed of privatization and the spirit of New Economic Policy. During the down-turn of the economy in the mid-1980s certain key provisions of the NEP were relaxed. These included waiving of employment requirements for export-oriented industries as well as relaxation of rules pertaining to Malay participation in corporate equity in selected segments of manufacturing. In the face of the robust expansion of the economy, it is natural that the relaxed NEP guidelines may be re-imposed. However, the accent is on 'efficiency'. It is being increasingly realized that training of Bumiputera managers and entrepreneurs as well as skill development of the Malay work force would significantly enhance the active participation of the Malays in the country's industrialization process. Thus, developing a technically competent and creative pool of skilled labour force and resilient entrepreneurs is an important objective of development strategy in the 1990s. Efforts are under way to augment resources for the newly created Skill Development Fund, which is expected to be financed by special levies on companies' payroll.

The strategies and directions for industrial development in the 1990s are likely to focus on the following:

- (i) strengthening the industrial base by moving away from more assembly type processing to industrial deepening based on locally produced parts and components;
- (ii) creating a strong infrastructural base for sustaining a high pace of industrial expansion;
- (iii) widening the range of manufactured exports;
- (iv) encouraging more vertical and horizontal integration, both intra-firms and inter-firms, in order to increase high value added manufactured exports;

- (v) enhancing the participation of small- and medium-scale subsectors in the mainstream of industrial activities by developing an extensive network of modern ancillary firms, capable of supplying high quality components and parts to large firms;
- (vi) creating a conducive environment for private sector involvement in R & D activities;
- (vii) enhancing the contribution of the private sector, foreign direct investment in particular, in training industrial manpower with more transparent transfer of knowledge and know-how; and
- (viii) substantial focus on technology development as a follow-up of the launching of the Industrial Technology Action Plan in early 1990 and the proposed National Human Resource Development Programmes. Measures will be undertaken to strengthen the S & T base of the manufacturing sector, including the strengthening of the institutional and support infrastructures, ensure widespread diffusion and application of technology, build-up competence for specialization in the key emerging technologies as critical generic technologies for the future, strengthen institutions and the mechanisms for the development of technological proficiency (adequate quantity and quality) of the human resource base, and to create S & T awareness and appreciation in society in order to provide a conducive climate for invention, innovation and technological advancement.

IV

INDUSTRY BRANCH PROFILES: RETROSPECTS AND PROSPECTS

A. FOOD PROCESSING: OVERDEPENDENCE ON RAW MATERIAL IMPORTS

The resource base

Although Malaysia has a rich agricultural resource base, the food processing industry depends heavily on imported raw materials, with the exception of the production of oils and fats, cocoa manufacture and canned pineapple processing. Data pertaining to the agricultural resource base for food processing in Malaysia are presented in Table IV.1.

Oil palm

Oil palm is the prime catalyst of agricultural growth, which enables Malaysia to retaining its position as the world's largest producer with around 60 per cent of total world production. The land area under oil palm reached 1.95 million hectares in 1989, about one-third of Malaysia's cultivated land, replacing rubber as the most important agricultural crop in the country. A significant increase in the production of crude palm oil in 1989 was due to a further expansion in the matured area under oil palm, a significant increase in peak production areas, favourable weather conditions and increased use of fertilizer.

Crop losses due to labour shortage were estimated at around M\$ 49.7 million in 1988 compared with M\$ 24 million in 1987. A pragmatic approach was adopted by the government in order to resolve this problem by approving a temporary reprieve for illegal immigrants to register with the Immigration Department. About 27,000 foreign workers responded to this call in 1989, which provided some relief. Labour shortage is confined mainly to harvesters and weeders. The Palm Oil Research Institute of Malaysia (PORIM) has undertaken research into labour-saving technology.

Cocoa

Malaysia is the world's fourth largest cocoa producer accounting for around 8 per cent of world cocoa production. The rapid development of this relatively new crop was due to a massive programme beginning in the early 1980s and initially involving the planting of cocoa as a single crop and as an intercrop with coconut. In 1988 cocoa was predominantly grown as a monocrop in Sarawak, which accounted for 73.2 per cent of national output and 77.0 per cent of total area under cultivation. In Peninsular Malaysia cocoa is planted as an intercrop

or as a smallholder's crop. As shown in Table IV.1 there has been a steady increase in cocoa production. The government is endeavouring to sustain the upward trend in production despite shortages of labour and plantation management expertise. Eight new high yielding clones have been developed by the Malaysian Agricultural Research and Development Institute (MARDI). Given the optimistic projection of cocoa output for the year 2000, Malaysia might emerge as the third largest producer of cocoa by the turn of the century.

Coconut

The total area under coconut cultivation both as a monocrop and an intercrop fell for several consecutive years. The downward slide in the area under cultivation was mainly due to the ongoing conversion of coconut plantations into other crops, especially cocoa and oil palms. Concomitant with the decline in the area under cultivation, Malaysia's production of coconut oil also fell markedly.

Paddy

The production of paddy in Malaysia meets only 59 per cent of domestic consumption needs. The phasing out of paddy cultivation outside the eight main growing areas resulted in a significant decline in paddy production during 1985-1987 (see Table IV.1).

Despite further shrinking of crop areas, yield increased moderately in 1988 through improvements in water supply and farm management. This increase was mainly due to a 6 per cent rise in production in Peninsular Malaysia which harvested 83 per cent of total output in 1988. In order to boost output the government plans to encourage the use of idle paddy land for cultivation.

Pepper

The increase in pepper production stemmed from the favourable prices since mid-1984. However, production responded very slowly because of the decline in the planted area. The Pepper Subsidy Scheme also facilitated pepper production. In addition, newly planted areas in Sarawak and Johor came into production, leading to a 10 per cent increase in the area under cultivation. As a result, output increased to 19,000 tonnes in 1988 and 27,000 tonnes in 1989. A significant share of 97.4 per cent of output was from Sarawak.

Despite this recovery, the pepper industry continues to face problems of labour shortage and rising production costs limiting the scope for further expansion. In the area of research and development the Malaysian Agricultural Research and Development Institute (MARDI) focuses on yield and quality improvement. Apart from the development of high yield strains, efforts are also being undertaken to improve agronomic practices and post-harvesting technology.

Fruits

Except for pineapples, production of fruits is being carried out on a small scale. As shown in Table IV.1 the production of pineapple recorded an upward trend during 1985-1989. The planted area declined by 7.1 per cent in 1988, but output rose significantly due to productivity gains achieved by the estate sector, which accounted for 87 per cent of the total output in the same year. For instance, the estates of the Pineapple Cannery of Malaysia were able to increase their yields by more than 70 per cent following the adoption of a new planting system which enabled increased planting density.*

Fish

Malaysia is endowed with a coastline of around 2,250 kilometres with potential for deep-sea fishing and a vast potential for offshore fishing on the East Coast and in Sabah and Sarawak. As a result of over-fishing, however, the depletion of coastal waters reduced fish

* *Business Conditions Malaysia*, (July 27, 1989).

landing each year during 1983–1986. The upward trend in fisheries, apparent since 1987, is reflected both in marine fishing and aquaculture. The rise in yield from marine fishing is due to more intensive inshore fishing, and to deep-sea fishing. Particular attention is being paid to deep-sea fishing and attempts have been made to enter into joint ventures in deep-sea fishing with Thai companies. Fresh water fishing and aquaculture are also fostered with keen participation by the private sector.

There is considerable scope for expanding aquaculture in Malaysia in view of its underdeveloped potential, i.e., ample suitable areas, both coastal and mangrove, a variety of species and favourable climatic conditions. Total aquaculture production, which consists mainly of cockles, increased sharply from 8,100 tonnes in 1980 to 69,300 in 1988. As envisaged in the Fifth Malaysia Plan 10,400 hectares will be developed for aquaculture by 1990, providing a capacity of more than 200,000 tonnes by the year 2000. With more intensive efforts to enhance deep-sea fishing as well as fresh water fishing and aquaculture, raw material supplies may meet the processing requirements.

Livestock

The livestock sector in general continues to be of relatively minor importance for the agricultural sector. Only the poultry sector experienced increased investments in 1988 reflecting its increasing significance in the country. Table IV.1 shows that production of poultry increased sharply in the 1985–1989 period after the government had launched restructuring programmes for the sector. Meanwhile, poultry production has exceeded the self-sufficiency level with a surplus for exports. Apart from that, the other subsectors of livestock production, i.e., beef, eggs, milk, pork, have been experiencing a relatively slow pace of expansion. Malaysia is practising a new dairy breeding system in order to increase meat output. The meat processing and dairy products industries face supply constraints.

Table IV.1. Agricultural resource base for food manufacturing, 1985–1989
(Thousand tonnes unless otherwise specified)

Items	1985	1986	1987	1988	1989 ^a
Crude palm oil	4,133.0	4,544.0	4,533.0	5,030.0	6,095.0
Palm kernel oil	512.3	580.0	563.9	624.0	736.0
Cocoa	108.0	132.0	191.0	228.0	250.0
Paddy	1,826.0	1,745.4	1,622.9	1,785.5	1,679.5
Copra ^b	19.6	19.5	19.4	19.3	19.2
Pepper	19.1	15.4	14.2	19.0	27.0
Pineapple	152.5	148.5	150.2	174.0	182.0
Fisheries:					
Marine	580.8	565.1	855.3	867.0	881.0
Aquaculture	51.7	51.6	47.9	63.5	69.3
Livestock:					
Beef	16.9	17.1	18.1	19.1	20.2
Mutton	0.6	0.6	0.8	0.8	0.9
Poultry	242.5	268.0	284.1	289.5	317.8
Eggs ^c	3,438.9	3,741.1	3,840.3	4,039.6	4,239.4
Pork	165.3	159.9	166.3	176.4	189.3
Milk ^d	23,725.0	26,240.0	27,730.0	29,235.0	32,015.0

Source: *Mid Term Review of the Fifth Malaysia Plan, 1986–1990*, Bank Negara, *Annual Report 1989* (March 1990).

a. Estimate.

b. Peninsular Malaysia.

c. Measured in millions.

d. Measured in thousands of litres.

Production of food products

Between 1982 and 1986, the output value of the food processing industry grew from M\$ 4.4 billion to M\$ 4.6 billion, registering an average annual production growth rate of 1.1 per cent. With a 19.7 per cent share in the output of the food processing industry in 1986, the sugar industry stood as the largest segment of the food industry, excluding oils and fats and rice milling. This was followed by the cereal-based products subsector (18.6 per cent), the prepared animal feed subsector (15.9 per cent), the dairy products subsector (15.4 per cent) and the beverages subsector (12.5 per cent) (see Table IV.2).

Domestic demand for all food products is projected to increase from M\$ 5.6 billion in 1985 to M\$ 9.8 billion in 1995 due to higher levels of disposable incomes and natural population growth. However, Malaysia still does not produce enough to cater for its domestic market, resulting in the country's heavy dependence on imports. In 1987, Malaysia spent more than M\$ 1.8 billion on food imports, accounting for over 6 per cent of total imports. The imports included rice (29 per cent of the amount consumed), fish (16 per cent), beef (50 per cent), vegetables (51 per cent), and milk and milk products (58 per cent). Food imports are projected to rise further to M\$ 5.2 billion by the year 2000.

Table IV.2. Total output of the food processing industry^a by subsector, 1982–1986

Subsector	Industry code	(M\$'000)		Percentage		Percentage growth
		1982	1986	1982	1986	per annum
Meat processing	31110	34,420	68,142	0.8	1.5	18.6
Dairy products	31121 31129	654,711	703,407	15.0	15.4	1.8
Fish products	31140	260,553	273,831	6.0	6.0	1.3
Cereal-based products	31163 31169 31171 31172 31214 31216	780,409	850,948	17.8	18.6	2.2
Fruits and vegetables processing	31131 31139 31164	195,557	228,822	4.5	5.0	4.0
Sugar and sugar confectionery	31180 31190	878,806	901,434	20.1	19.7	0.6
Coffee, cocoa, tea and spice manufacture group	31212 31215	79,554	89,059	1.8	1.9	2.9
Prepared animal feed	31220	619,132	724,241	14.1	15.9	4.0
Miscellaneous products n.e.c.	31219	124,389	159,896	2.8	3.5	6.5
Beverages	31330 31310 31340	748,036	569,509	17.1	12.5	6.6
Total		4,375,567	4,569,289	100.0	100.0	

Source: Department of Statistics, Industrial Surveys 1982 and 1986

a Excluding edible oils and fats and rice milling

Exhibit IV.1. List of priority product areas in food processing

1) Cocoa and cocoa products	23) Cocoa butter replacers (such as cocoa butter substitutes, cocoa butter alternatives, cocoa butter modifiers, cocoa butter equivalents): palm oil mid fraction, special olein II and special olein III
2) Coffee	
3) Tea	
4) High fructose syrup	
5) Coconut products except copra and crude coconut oil	
6) Fruit processing	
7) Vegetable processing	
8) Cereal processing	24) Margarine, vanaspati, shortening and other manufactured fat products
9) Starch and proteins	
10) Herbs or spices	25) Crude palm kernel olein and stearin, neutralized or refined and bleached palm kernel olein and stearin and neutralized refined, bleached deodorized palm kernel olein and stearin
11) Essential oils	
12) Fodder or other animal feed ingredients	
13) Tobacco	
14) Flowers or ornamental foliage	
15) Honey	
16) Meat	
17) Livestock products	26) Hydrogenated and or interesterified oils and oil blends, all types
18) Aquatic products, including seaweed	
19) Agricultural waste and by-products	27) Crude palm kernel oil
20) Sugar	28) Refined palm oil
21) Aquaculture feed	29) Neutralized palm kernel oil
22) Fatty acids and their derivatives, fatty esters and their derivatives inclusive of metallic esters, fatty alcohols and their derivatives, fatty amines and their derivatives and glycerine (crude or refined)	30) Refined, bleached and deodorized palm kernel oil
	31) Palm kernel meal

Selected food products

Palm oil products: need to expand downstream processing

Major processing activities relate to the crushing of palm kernels into crude palm kernel oil (CPKO) and palm kernel meal, as well as the further processing of CPKO into higher value added products. These higher value added products can be classified into two broad groups, namely, processed palm kernel oil (PPKO) products and oleochemicals. Most of the PPKO products are used for the manufacture of edible products. Oleochemicals are used in the production of fatty acids and glycerine.

Crude palm oil production stood at 5.6 million tonnes in 1989, representing a 19.1 per cent increase over the previous year. In line with the significant increase in crude palm oil production, output of palm kernel rose dramatically by 22.5 per cent to reach 1.8 million tonnes in 1989. At the end of 1989 there were 53 refineries, with a total approved capacity of 11.7 million tonnes of crude palm oil, well above the national output level of crude palm oil. Of the total number of refineries, 48 were located in Peninsular Malaysia, four in Sabah and one in Sarawak.

In the case of oleochemicals, the government granted approval for the setting up of 29 factories with a total processing capacity of 963,440 tonnes. In 1989 five of the factories were in operation. Thus, there has been a proliferation of refineries, with overcapacity, in recent years. The objective of encouraging the export of higher value added products was achieved through the imposition of export duty on crude palm oil, and the extension of the graduated exemption of processed palm oil duties. However, negative margins were experienced by refineries due mainly to cost escalation and buyers seeking the most competitive prices.

In the highly competitive world palm oil market, relatively high cost Malaysian palm oil has to compete against the often subsidized substitutes. Although world-wide demand for palm oil and other fats is expected to rise from 70 million tonnes in 1989 to 100 million tonnes in 2000, Malaysia will need to sharpen its competitive edge and look for new export markets. India is a principal importer of Malaysian palm oil. This hitherto major export market is currently experiencing a significant rise in the domestic production of vegetable oil, suggesting that India may soon cease to exist as a major export market for Malaysian palm oil. India has already reduced its palm oil purchases from 1 million tonnes in 1987 to 260,000 tonnes in 1989. India has also shifted its purchases to Indonesia because of lower prices. Malaysia is currently looking for new markets. Several trade missions were sent to China, the Islamic Republic of Iran and Egypt in order to promote the sale of palm oil in these countries. With a view to gaining a stronger foothold in the highly competitive world palm oil market, local utilization of palm oil for a higher degree of processing is also encouraged.

Malaysia's palm oil production is forecast to register a marginal increase from 6.05 million tonnes in 1989 to 6.23 million tonnes in 1990. This is attributed partly to falling yields from ageing trees and to cuts in the use of fertilizer by high cost growers who are most affected by the current low prices.

With a view to arresting the price declines on the world market, Malaysia is endeavouring to create a conglomerate of palm oil exporters. As the world demand for palm oil and fats is expected to rise, the planned international palm oil conglomerate may create an oligopolistic price structure to command better prices.

Cocoa products: vast potential for processing industries

The production of cocoa butter is mainly export-oriented while other products, such as cocoa powder and chocolates, are produced mostly for the domestic market. Cocoa liquor and cocoa paste are produced in small quantities.

The cocoa products subsector provides linkages to the sugar and dairy products subsectors. With the introduction of modern technology, particularly in large-scale processing, the industry is becoming increasingly capital-intensive.

In 1990 Malaysia agreed to join the Cocoa Producers' Alliance (CPA). The two-year extension of the international cocoa agreement may provide a temporary reprieve in a depressed world market for cocoa. Malaysia still exports around two-thirds of the country's cocoa beans in unprocessed form. However, new projects tend to be of an integrated nature, i.e., from cultivation of cocoa to the processing of the cocoa beans to final products. The world's major importers of cocoa butter, cocoa powder and chocolates are the United States, EC, Federal Republic of Germany, United Kingdom, Netherlands, France, Belgium and Switzerland. In Asia, Japan and Australia constitute potential markets for cocoa products. Chocolate manufacturers could benefit from joint venture agreements with well-known chocolate firms in the world. Marketing arrangements for the use of brand names and transfer of technology could pave the way for successfully penetrating world markets.

Cereal preparations: revealing import dependence on raw materials

Wheat flour constitutes the main output of this segment of manufacturing. Wheat flour is further processed into noodles and bakery products. The mills depend heavily on imports of raw materials. At present there are six flour mills in Malaysia. The performance of three listed companies is reported in Table IV.3. In terms of turnover Federal Flour Mills recovered from the recession of 1985 and 1986, while Malayan Flour Mills and United Malayan Flour Mills suffered a decline. Despite an increase in post-tax profit in 1987, the dividend per share declined in Federal Flour Mills and stagnated in the other two mills. Wheat processing mills use advanced technology.

Table IV.3. Performance of the three listed flour milling companies, 1985–1987
(Thousand MS)

	Federal Flour Mills			Malayan Flour Mills			United Malayan Flour Mills		
	1985	1986	1987	1985	1986	1987	1985	1986	1987
Share capital	85,000	85,000	85,000	35,000	35,000	35,000	6,000	6,000	6,000
Turnover	597,761	513,017	628,122	175,522	179,352	173,181	56,235	52,317	48,626
Pretax profit	32,620	42,677	47,341	10,650	10,587	14,516	3,694	3,291	3,886
Post-tax profit	26,843	27,256	34,002	6,249	7,792	8,84	1,978	1,520	1,740
Dividend per share (percentage)	17.5	17.5	7.2	10	10	10	12	12	12

Source: Business Times, (July 27, 1988).

Canned fruits: R & D for enhanced potential

This subsector plays an important role in enhancing the export performance of the manufacturing sector. For instance, in 1984, Malaysia exported MS 68 million of canned fruits, mainly pineapple, of which MS 6.5 million went to Japan, while in 1985, total exports fell to MS 56 million though Japan increased its imports to MS 9.8 million. There is still potential in the Japanese market for canned tropical fruits as only 30 per cent of the canned pineapple consumed in Japan is imported from Malaysia. As it is important, the government emphasizes the role of R & D for this subsector; and this role has been complemented by the Malaysian Agricultural Research and Development Institute (MARDI). The latter has so far identified several local fruits such as guava, soursop, starfruit, passion fruit, mango, tamarind, jackfruit, mangosteen and rambutan that can be processed into juices, jams, jellies, slices in syrup and sugar confectionery.

Beverages: exploring new avenues

The major items are soft drinks, fruit-flavoured and fruit drinks and soya bean milk. Production is principally meant for the domestic market, although some is destined for the export market, mainly Thailand and Singapore. In 1989, the soft drink sub-group constituted approximately 68 per cent of the estimated MS 400 million non-alcoholic beverage market.

The malt and malt liquor industry produces mainly beer and stout. The total beer and stout market is about one million hectolitres annually, shared almost equally by three brewers: Guinness, Carlsberg and Malayan Breweries Ltd. (MBL). The scope for the production of protein-based or other nutrient-based fortified soft drinks, e.g., milk-flavoured drinks, will need to be investigated.

Meat processing: scope for import substitution

The major outputs are canned chicken, canned pork and meat sausages whose production is mainly targeted at the domestic market. During 1982 – 1986, the meat processing subsector grew at an average annual rate of 18.6 per cent.

Malaysia's total production of meat products, excepting canned meat, has been estimated at 1,500 tonnes a year. Local production is around 20 per cent of the import value. The scope for import substitution will need to be examined, with a view to reducing the country's import bill for meat imports.

Fish products: towards self-sufficiency

Most of the processing firms are small-scale operators, processing fish crackers and other fish products through drying, salting and fermentation. A large share of the subsector's output was represented by frozen seafood and canned seafood, mainly for export. For example, in the early 1980s, frozen prawns and preserved crustaceans respectively constituted about 39.2 per cent and 32.8 per cent of the total exports of the subsector.

A new development in this subsector has been in aquaculture. There have been substantial investments from Japan and Taiwan Province in addition to new ventures by the Unilever company and major Malaysian companies, including the Lion Group and Guthrie. For Malaysia to achieve self-sufficiency in processed fish products, it could intensify efforts to develop chilled, extended shelf-life products, as well as the capability for producing high value live fish.

Domestic demand projections for processed food products are presented in Table IV.4. Projected domestic demand for all food products shows increasing trends in the future owing to factors such as increase in population as well as increase in real disposable income.³ Other

³ Based on 1981 census data on population growth rate, elasticity of demand and real disposal income. See *Medium and Long Term Industrial Master Plan, 1986 – 1995: Food Processing Industry* (August 1985).

factors include the development of supermarket chains with modern storage facilities and the strong consumer preference for convenience fast food products. The major demand items are processed cereals and cereal preparations, sugar and sugar confectionery, dairy products and beverages which form the common diet of the consumers. Animal feeds are likely to be in great demand in the face of fast expanding poultry and pig farms. Various constraints will need to be addressed if supply is to keep pace with the growing demand for food products.

Table IV.4. Projected domestic demand for food products, 1990 and 1995
(Million M\$ at 1981 prices)

Subsector	Projections			Average growth rate 1990-1995
	1981 ^a	1990	1995	
Meat processing	70.3	137.5	198.8	7.6
Dairy products	687.1	1,251.4	1,738.9	6.8
Fish products	151.5	166.7	290.4	4.7
Processed cereals and cereal preparations	899.6	1,318.4	1,623.5	4.2
Fruit and vegetable processing	255.5	280.6	389.7	4.8
Cooking products	4.7	5.2	7.2	9.1
Sugar and sugar confectionery	707.6	778.0	1,073.4	4.6
Coffee, cocoa, tea and spice manufacture	231.0	258.9	382.7	5.8
Prepared animal feeds	634.0	709.7	1,053.1	5.8
Miscellaneous food products	179.8	197.5	274.2	4.8
Beverages	682.4	788.6	1,296.2	7.3
Total	4,503.5	5,035.1	7,414.6	5.7

Source: *Industrial Master Plan, 1986-1995: Food Processing Industry*, Volume II, Part 3, p. 47.

^a Based on actual data.

^b Estimates.

Constraints

Malaysia faces difficulties in expanding its share of the highly competitive international market for food products due to health regulations in major markets, lack of price competitiveness and low grade of products. Usage of simple technology, lack of quality control facilities, poor packaging and poor handling techniques lead to products of a low standard in several product areas. This is particularly evident in the small- and medium-scale establishments. With the exception of a few large companies, manufacturers seldom undertake R & D activities. Most of them still use traditional and outdated methods of processing in pickling, preserving and canning. The growth of food manufacturing is also impeded by lack of management know-how of large-scale production techniques.

Prospects

Generally the prospects for the food processing industry seem promising due to the growing external and internal demand. Moreover, there is much scope for increasing its contribution to the economy in terms of output, employment and savings in foreign exchange. As the country is endowed with a good agricultural potential, it is possible to expand agricultural production in order to ease the raw material supply constraints. Identification of idle and marginal land suitable for growing durian, rambutan, banana, jackfruit and starfruit could significantly enhance the scope for developing a sound raw material base for developing new product lines in the food industry.

B. RUBBER PRODUCTS: IMPROVING EXPORT PERFORMANCE*The resource base*

Malaysia remains the largest producer of natural rubber in the world, but only less than 5 per cent of the country's rubber production is used for the manufacture of rubber products. Smallholdings constitute the leading segment in the production of natural rubber in terms of output and cultivated area. With smallholdings being more vulnerable to price fluctuations, the weak price for rubber in 1989 led to a 10.5 per cent fall in smallholding output, which accounted for 69.2 per cent of total rubber output in the same year. Production in the estate sector fell less sharply by 8.9 per cent in 1989. Since 1989 the planted area under cultivation continued to decline as a result of large-scale conversion of rubber holdings into oil palm and cocoa-growing areas. Rising production levels in recent years have thus been due to a significant increase in the yield per hectare. Table IV.5 shows that despite lower production in smallholding estate sectors in 1989, yield per hectare rose significantly in Peninsular Malaysia which harvests over 95 per cent of total rubber output in Malaysia. The productivity gains were due mainly to the use of more high-yielding clones, better agronomic practices, proper application of fertilizer and a widespread adoption of controlled upward tapping, particularly by smallholders.

Table IV.5. Rubber: area, production and yield, 1988 and 1989

	Estates		Smallholdings	
	1988	1989 ^b	1988	1989 ^b
	Thousand hectares			
Planted area	372	362	1,493	1,486
High yielding area	368	358	1,328	1,326
Mature area	339	331	971	983
Replanting	6	5	15	21
New planting	..	..	8	7
Production (Thousand tonnes)	481	438	1,180	984
Yield (Kg mature hectare) ^c	1,486	1,512	1,192	1,222

Source: Malaysian Rubber Research and Development Board; Department of Agriculture, Sabah and Sarawak, and Department of Statistics.

a Peninsular Malaysia only.

b Preliminary.

Malaysia's current emphasis is on research and development in order to achieve further increases in productivity and to reduce costs, especially labour costs. New devices such as low intensive tapping, controlled upward tapping and rain gutters have been introduced recently.

In terms of rubber grades, there was a shift away from Ribbed Smoked Sheet (RSS), bringing its share of total output down to 20.6 per cent in 1988 from 25 per cent in 1987. At the same time, latex output increased markedly as a result of favourable demand conditions. Latex production accounted for 18.6 per cent in 1988 compared with 15.1 per cent of total output in 1987. Standard Malaysian Rubber (SMR) kept its share almost constant at 57 per cent of total output in 1988.

Emerging trends in rubber products

Rubber products account for around 8 per cent of MVA, 1.8 per cent of GDP, 2.7 per cent of manufactured exports and around 3 per cent of manufacturing employment. The country produces a wide range of intermediate and finished goods, including tyres, inner tubes, footwear, latex goods, industrial rubber goods and a variety of general rubber products.

Malaysia manufactures and utilizes major inputs such as carbon black, clay, whiting, zinc oxide and stearic acid that are produced locally and the materials are generally accepted internationally. On the other hand, the sector has also developed forward linkages with the automotive and transport equipment industry, the footwear industry, the construction industry and the machinery and equipment industry.

A major feature of the rubber products industry is the existence of a large number of small- and medium-sized firms which are mainly producing for the domestic market. They are generally weak in export trade and are unable to compete in terms of price, quality, specifications and services with the few large companies established wholly or jointly by foreign transnationals.

Latex products and general goods* accounted for over 40 per cent of total output of rubber products in 1987 (see Table IV.6), followed by tyres (31.9 per cent) and footwear (15.1 per cent). The output growth of the rubber industry was significant in the 1970s. After sluggish growth trends in the first half of the 1980s, production picked up in 1986 and was sustained at a high pace of 20.8 per cent in 1987. A striking 51.7 per cent increase in output was recorded by inner tubes in 1987.

Latex products and general rubber goods maintained a high pace of expansion throughout. While the expansion of latex production has been buoyed mainly by the growing external demand, particularly for gloves, the production of general rubber goods has been largely oriented towards the domestic market. Among the latex products, the production of rubber gloves grew at a high rate, increasing from 198 million pairs in 1983 to 397 million pairs in 1987. During the first nine months of 1988, output reached 862 million pairs. At present, there are 79 rubber glove manufacturing plants, the bulk of which are small- to medium-scale in size. Most of the larger rubber glove manufacturing companies are foreign-owned. The largest importer of 'Made-in-Malaysia' rubber gloves is the United States which accounted for 42 per cent of Malaysia's total export value of rubber gloves during January-August 1988. The other major export destinations are EC, Japan, Saudi Arabia and Canada (see Table IV.7).

* Latex products include dipped goods (gloves, balloons, catheters and prophylactic goods), foam products (mattresses and cushion upholstery, clothing accessories and carpet underlay) as well as latex thread and adhesives, while general rubber goods comprise products ranging from sports goods to sheeting and matting, rollers, hot water bottles, floor covering, rubber bands, toys and general mouldings of non industrial use.

Table IV.6. Peninsular Malaysia: production of rubber products by product group, 1970-1987
(Ex-factory sales value)

	(MS '000)					Per- centage share 1987	Average annual growth rate (Percentage)		Annual growth rate (Percentage) 1986-1987		
	1970	1975	1980	1985	1986		1987	1971-1980		1981-1985	
Tyres	48,636	103,162	268,654	324,567	310,757	343,634	31.9	18.6	3.9	-2.4	8.5
Inner tubes	6,007	13,247	30,742	28,099	26,365	39,991	3.7	17.7	-1.8	-6.2	51.7
Footwear	26,674	62,643	165,804	148,034	164,271	162,241	15.1	20.0	-2.2	11.0	-1.2
Sheeting and matting	9,286	13,818	20,758	18,709	24,111	32,473	3.0	8.4	-2.1	28.9	34.7
Hoses and tubing	1,583	2,047	4,197	2,513	4,677	6,191	0.6	10.2	-9.7	86.1	32.4
Foam product	12,989	21,991	44,639	2,383	2,583	8,973	0.8	13.1	-44.3	8.4	247.4
Latex products and general rubber goods	7,143	19,354	78,303	262,110	322,348	444,306	41.2	27.1	27.3	23.0	37.8
Rubber compound	7,605	14,630	37,849	28,622	31,197	39,720	3.7	17.4	-5.4	9.0	27.3
Total	119,923	250,892	650,946	815,037	892,309	1,077,529	100.0	18.5	4.6	9.5	20.8

Source: Industrialization: Role and Prospects of the Malaysian Rubber-Based Industry, Lim Sow Ching, Statistics Department (Kuala Lumpur, 1988).

Table IV.7. Export destinations of rubber gloves from Malaysia^a, 1983–1988
(Thousand of M\$)

Export destination	1983	1984	1985	1986	1987	1988 ^b
United States	34,417	30,468	41,788	15,302	52,045	156,137
United Kingdom	16,166	16,349	21,229	13,030	38,570	23,841
Japan	9,047	10,760	17,728	9,400	30,101	18,522
France	2,740	1,562	5,030	5,540	23,461	15,150
Federal Republic of Germany	11,118	10,925	12,740	9,492	24,799	20,810
Italy	7,427	8,653	10,428	7,754	17,640	15,534
Netherlands	3,534	4,537	3,830	3,372	7,337	5,992
Saudi Arabia	1,746	2,174	553	2,995	5,043	7,282
Sweden	2,625	1,852	2,593	1,909	4,606	4,245
Canada	3,538	3,936	4,651	2,462	4,488	5,714
Others	14,207	19,369	20,529	13,379	34,244	30,321
Total	106,565	110,585	141,099	84,635	242,334	303,548

Source: Department of Statistics, *External Trade Statistics* (various issues).

a. The export figures prior to 1986 include 'articles of apparel and clothing accessories of unhardened vulcanized rubber' under the CCCN Code 4013.000. Since 1986, exports of gloves have been reclassified as 'surgical gloves' and 'gloves of unhardened vulcanized rubber n.e.s.' under CCCN Codes 40.13.110 and 40.13.190 respectively.

b. January–August 1988.

The production of tyres in Malaysia rose from 4.26 million pieces in 1983 to 5.17 million pieces in 1987. A major initiative is focused on the development of the tyre industry as a priority segment of the rubber industry. Production of inner tubes grew from 4.9 million pieces in 1983 to 10.4 million in 1987, representing an average annual rate of 16.1 per cent per annum. There is an increasing trend towards production of butyl inner tubes in view of the current emphasis on the production of radial and commercial vehicle tyres using butyl inner tubes.

The rubber footwear industry accounted for about 1.1 per cent of the total value of manufacturing output and 0.2 per cent of the country's gross domestic product (GDP) in the mid-1980s. Nevertheless, the rubber footwear industry employs the largest number of workers among the rubber products subsectors because of its labour intensiveness. There are more than 30 companies engaged in the manufacture of footwear, and they manufacture mainly footwear with rubber soles and uppers of textile and rubber. In this sector, utilization of natural rubber is low and the industry is dependent on a large assortment of imported materials.

Industrial rubber goods produced in Malaysia include belts, hoses and tubes, mountings, fenders, automotive components and all types of mouldings for industrial uses. During 1981–1983 the fastest export growth was recorded by hoses and tubes, followed by belts. Among the exports of other rubber products toys and sports products grew significantly in the 1970s. Exports of toys and sports goods maintained double-digit growth rates in 1981–1985.

Progress in import substitution

The degree of achievement of import substitution by the production of rubber products was partly evidenced by the fall in the annual average rate of growth of imports of rubber products from 19 per cent during 1971–1980 to 6 per cent during 1981–1985, and a negative growth rate of 11.8 per cent in 1986. However, when the economy recovered from the recession of 1985 and 1986, there was a sharp rise in the imports of rubber products. This was due largely to a significant increase in the demand for general rubber goods, inner tubes, hoses and tubes, tyres and footwear.

Exhibit IV.2. List of priority rubber products

- 1) Tyres, all types
 - 2) Retreading of aircraft tyres
 - 3) Tubes
 - 4) Pre-cured retreads
 - 5) Moulded rubber products
 - 6) Latex dipped products
 - 7) Extruded rubber products
 - 8) General rubber products
 - 9) Foam rubber products
 - 10) Rubberized fabrics
 - 11) Inflatable rubber products
 - 12) Conveyor belts, transmission belts, V-type belts and other rubber belting
 - 13) Engineering components of rubber (e.g. building mounts, antivibrations mounts)
 - 14) Reclaimed rubber
 - 15) Rubber compound
 - 16) Rubber-based (elastomeric) speciality coating
-

Although the above trends lend credence to the fact that during the phase of rapid economic expansion rising domestic demand for several rubber products continued to be met by imports, Malaysia's achievement in the import substitution of certain rubber products is revealed by the change in the composition of rubber imports. The share of tyres in Malaysia's rubber import profile fell significantly from 25.9 per cent in 1970 to about 15.2 per cent in 1987, while that of latex goods imports dropped markedly from 12.8 per cent to 3.8 per cent during the same period, indicating the substitution of domestic output for imports. However, Malaysia continues to depend on imports for several categories of rubber products.

Major constraints

The growth of Malaysia's rubber manufacturing subsector is constrained by the relatively small population and the absence of a strong domestic demand for rubber products either as final or intermediate goods. For example, the country's need for motor vehicle tyres is still small.

The fairly small size of the rubber product manufacturing units in Malaysia renders them unable to benefit from economies of scale, and the units are unable to spend on costly equipment or to promote development in research and technology. This in turn makes them relatively less efficient in comparison to their counterparts in the industrialized countries and the industrially more advanced developing countries. The average sales of two major tyre plants in Malaysia in the early 1980s were equivalent to only one-seventh of the average sales of two tyre plants in the United States.

The manufacture of most of the rubber products for export is based on relatively simple technology and emphasis is on products of low value added; for example gloves. The bulk of the rubber products companies, especially those which are locally owned, are generally lacking in quality control. These small-sized companies cannot afford to install quality control equipment.

The cost of imported raw materials and inputs such as synthetic rubber, compound chemicals, cords and textiles are high, partly due to expensive freight and import duty charges. It is notable that the cost of freight is a key determinant in the export competitiveness of rubber products. For example, Malaysian tyres are not price competitive on the international market. A Malaysian made tyre costs 15 per cent to 20 per cent more than a tyre exported by the Republic of Korea or Taiwan Province.

The transnational companies and joint-venture companies do not carry out research and development locally as they depend on their parent companies or foreign partners for technical know-how. The small-scale locally owned companies do not have their own R & D activities due to financial constraints and lack of expertise.

Tariff and other protectionist barriers imposed by the industrialized countries have also contributed to the poor export performance of the rubber products industry. For example, the export of canvas footwear and rubber boots is subject to quota limitation in the EC market, and to import duties of 37.5 per cent in the United States, 21 per cent in the Republic of Korea and 10 per cent in Japan.

Prospects

World natural rubber production stood at 5.10 million tonnes in 1989. In the wake of a downward slide in prices, production of natural rubber in Malaysia fell by 200,000 tonnes in 1989, a change not experienced for decades. However, much of this decline was offset by rising Thai rubber production which recorded around 16.7 per cent increase. With the only exception of Sri Lanka, other major producers of natural rubber experienced significant increases in output in 1989. There was a sharp uplift of 18.5 per cent in Africa, with rapid increases in production in Nigeria (44 per cent), Cameroon (17.3 per cent) and Côte d'Ivoire (9.8 per cent). In 1989 the production of natural rubber grew by 11.8 per cent in India, 6.0 per cent in China and 2.3 per cent in Indonesia. The year 1989 represented the seventh consecutive year in the upward swing of world rubber consumption (natural and synthetic rubber). Economic growth in the EC and North America rather than in Asia influenced a significant increase in world rubber consumption.

The outlook for natural rubber prices in 1990 does not seem bright in the face of an excess of latex concentrate as well as excess production in the tyre and vehicle industries. However, the present depressed prices may generate a negative supply response from producers. As Malaysian smallholders did in 1989, Thai smallholders have also started reacting to depressed prices. If other producers also follow this, there may be a slowing down of growth in rubber production, which may lead to a possible rise in the prices of natural rubber on the world market.

World consumption of natural and synthetic rubber reveals that the barriers between the two categories of rubber are being increasingly dismantled. As shown in Table IV.8 the year 1989 demonstrated the complementary as opposed to the substitutional aspect of natural rubber and synthetic rubber. Eastern Europe, a major producer of synthetic rubber, experienced the highest growth in the consumption of natural rubber, while major natural rubber producers in Asia registered the fastest growth in the consumption of synthetic rubber. A 3.7 per cent increase in the world consumption of synthetic rubber in 1989 was marginally higher than that in natural rubber consumption. World consumption of synthetic rubber in total rubber consumption remained unchanged at 66.2 per cent in 1989. Clear indications are that synthetic rubber makes deep in-roads into the production of rubber products. Even natural rubber producers such as Thailand, Indonesia and Malaysia are contemplating the establishment of production facilities for selected synthetic rubber products. Influenced by the success stories of the Republic of Korea and Taiwan Province, transnational corporations and big firms from Europe, United States and Japan may find these facilities in other Asian countries attractive for joint endeavours.

Thus, a key resource-based industry in Malaysia is increasingly exposed to rapid structural change in the global rubber industry. Amidst emerging challenges, Malaysia is striving to emerge as a major exporter of tyres and tubes by the year 1995. Other rubber products identified for further expansion include automotive components, latex dipped goods, engineering and industrial rubber goods and rubber sports goods. Faced with an uncompetitive cost structure,

Table IV.8. World consumption of natural and synthetic rubber, 1988 and 1989
(In thousand tonnes)

	1988			1989 ^a			Percentage change in 1989 over 1988		
	Natural rubber	Synthetic rubber	Total	Natural rubber	Synthetic rubber	Total	Natural rubber	Synthetic rubber	Total
United States	858	2,017	2,875	897	2,100	2,997	5	4	4
Canada	83	202	285	80	197	277	-4	-3	-3
EC:									
France	181	315	496	190	341	531	5	8	7
Federal Republic of Germany	204	471	675	219	480	699	8	2	4
Italy	140	312	452	138	318	456	-2	2	1
Netherlands	14	65	78	14	66	80	1	3	2
United Kingdom	140	227	367	137	251	388	-3	11	6
Other	197	305	502	205	317	522	4	4	4
Total EC	876	1,694	2,569	902	1,774	2,675	3	5	4
Other Western Europe	145	315	460	145	312	456	0	-1	-1
Eastern Europe	290	3,050	3,340	320	3,120	3,440	10	2	3
Africa	114	120	234	116	125	241	2	4	3
Australia	41	57	98	43	61	104	6	8	7
People's Republic of China	640	290	890	622	308	930	4	6	5
India	311	83	394	327	88	415	5	6	5
Japan	623	1,042	1,665	651	1,104	1,755	5	6	5
Other Asia	870	585	1,455	894	629	1,523	3	8	5
Brazil	125	283	408	123	287	410	2	1	0
Other Latin America	180	282	462	182	284	467	1	1	1
Total	5,115	10,026	15,135	5,300	10,390	15,690	3.6	3.7	3.7

Source: International Rubber Study Group, *Rubber Statistical Bulletin*, Vol. 44, No. 4 (Wembley, January 1990), p. iii.
a. Estimate.

the Malaysian rubber manufacturers are forced to strive hard to thrive in the world rubber industry which is entering a quality phase. Quality control has now assumed great importance in all aspects of manufacture and use. The users of rubber products are imposing performance standards. These trends have brought with them competitive elements that demand fine tuning, sophisticated processing and avoidance of contamination. Prospects for selected rubber products will need to be analysed in the context of these developments in the global rubber industry, particularly a very high degree of sophistication that has already gone into the production process.

Around 70 per cent of natural rubber is consumed by the transportation sector, largely in tyres. Buyers in this sector now look for high quality rubber. Although Malaysia natural rubber is of relatively high grade, the intrinsic quality of the rubber as it leaves the tree does not alone determine quality. Types and grades of rubber stem essentially from methods of collection, treatment and processing. This calls for the use of sophisticated methods and technology. Despite a significant increase in the use of synthetic rubber in tyres, it is the case that truck tyres, aviation tyres, large off-the-road tyres and solid fork lift tyres have high natural rubber contents. However, prospects depend on cost competitiveness and the capacity of the manufacturers to cope with demanding specifications.

The consumption of natural rubber in the non-tyre sector of the automotive industry ranges from hose and belting through seals, mounts, suspension and moulded products to safety-related devices, wires, cables and seating. In these product areas performance requirements are changing in response to changes in vehicle weight, the fuel used and environmental pollution legislation. A recent in-depth study* of the non-tyre automotive market for speciality elastomers points out that elastomer suppliers and components manufacturers are now faced with two major challenges: location of vehicle production is changing; and more ecologically sound specifications are coming into force due to environmental protection requirements. Malaysia may stand as an exception to the first challenge in view of the increasing redeployment of vehicle manufacturing units to the ASEAN region. The present move towards the creation of a semi-common market for vehicle components in the ASEAN region seems to be to the advantage of Malaysia which could supply these elastomers by virtue of its raw material base and production facilities.

The most striking recent development in the Malaysian rubber industry has been the vigorous expansion in the production and export of examination gloves. The growth trend in glove making, and other dipped goods, condoms in particular, is largely the result of a significant increase in world demand due to the rising fear of AIDS infection. The global demand for 1988 was estimated at 6 billion pairs. By the end of the year the revised estimate rose to around 20 billion. Concomitant with the rising demand, glove manufacturing capacity world-wide is also expanding rapidly. China has stepped up its glove manufacturing activity to manufacture around 2.5 billion pairs annually. Taiwan Province also emerged as a market leader with massive production capacity for all types of disposable gloves. Glove manufacturing capacity has been expanding though on a smaller scale in Thailand, Indonesia and Republic of Korea. In 1988, of the 80 glove making companies, around 15 were established as part of large international companies with good market access. These companies have manufacturing and marketing expertise to produce high quality, easily marketable gloves. But small manufacturers are faced with the problem of little experience of the fine process control and complex technology of dipping. They also suffer from lack of access to markets. These firms are yet to establish their foothold in the established export market. With substantial assistance to these industries, a much larger local industry could serve the export market.

Malaysia has to keep abreast of new trends in rubber technology. Indigenous research and development has hitherto focused largely on the primary sector rather than rubber product

* For a brief summary of the study, see *Rubber Developments* (1989), Vol. 42, No 3, p. 85

manufacturing. There is a need to capitalize the current capability of the Malaysian Rubber Research and Development Board (MRRDB), Rubber Research Institute of Malaysia (RRIM), Malaysian Rubber Producers' Research Association (MRPRA) and Malaysian Rubber Bureau (MRB) into a force in order to take advantage of the latest technological devices. Technical co-operation by bilateral donors, multilateral organizations and parent companies of transnational corporations will need to be directed to the development of new products, efficient production methods leading to higher productivity, cost competitiveness and better quality.

C. TEXTILES AND CLOTHING: THRIVING GARMENT EXPORTS

The resource base

The textile industry relies on imports for most of its raw materials. These include cotton, acrylic fibre, woollen yarn and fabric of fine count (of either 100 per cent cotton or polyester), rayon wool and even rubberized waterproof fabric for apparel making. Complementary imports include embroidery thread, certain types of buttons, buckles, studs, etc.

Industry structure

The textile industry in Malaysia accounts for around 6 per cent of MVA, employs about 100,000 workers, and ranks second in the country's export profile after electronic and electrical goods. The Malaysian textile industry can be broadly divided into two subsectors, namely, textiles and wearing apparel. In the textile subsector, activities are confined mainly to polymerization (production of man-made fibre), spinning (natural and man-made fibre yarn), texturizing of man-made fibre yarn, weaving and knitting a wide range of fabrics. In the knitting subsector activities are concentrated on various types of garments and include a wide range of textile products such as carpets, rugs, ropes, twine, towels, narrow fabrics, socks, laces and also textile goods such as bedlinen, table linen and headwear.

The textile industry comprises a relatively small number of companies engaged in spinning, weaving and fabric processing; a significant number of firms are engaged in knitting and a large number of companies are involved in apparel manufacturing (see Table IV.9). There are about 160 textile and apparel manufacturers who are members of the Malaysian Textile Manufacturers Association. More than half of them produce woven apparel, knitted fabrics and knitwear, as well as undergarments, of which the majority is for the export market. In 1988 there were only 30 companies with paid-up capital of MS 5 million and above, and only 35 companies employed more than 500 workers each.

Table IV.9. Structure of the textile industry, 1988

Number of firms	Manufacturing activity/product	Installed capacity
1	Synthetic fibre	
7	Fabric processing	200 million square metres
17	Spinning	402,000 spindles
18	Weaving	7,227 looms
30	Knitted goods	
155	Knitting	3,000 knitting machines
1,000	Garments	30,000 sewing machines

Source: Malaysian Textile Manufacturers Association

Textile and garment production

In the textile subsector there has been a gradual and steady increase in output over the years. Whereas the cotton fabric segment grew modestly at 6 per cent during 1983–1988, the apparel segment of the textile industry recorded spectacular production increases in volume terms during 1983–1988 (see Table IV.10). The relatively high pace of expansion in the apparel subsector has been attributed partly to new technologies used in the garment industries, particularly in the larger plants. A few of the medium-size plants have begun to use smaller computer-aided marker drawing machines.

Exhibit IV.3. List of priority textiles and textile products

- 1) Man-made fibre, all types excluding polyester staple fibre
- 2) Silk, silk yarn and fabrics of silk
- 3) Continuous yarn or filament yarn of man-made fibres
- 4) Woven fabrics of higher counts
- 5) Special fabrics for upholstery and furnishing fabrics
- 6) Commission dyeing, bleaching, printing and finishing facilities of high standard for yarn and fibre
- 7) Cord fabrics including tyre-cord fabrics
- 8) High quality made-up garments and made-up textile articles
- 9) Made-up garments
- 10) Natural fibre
- 11) Batik printing
- 12) Knitted fabrics
- 13) Accessories for the textile industry
- 14) Knitted articles

Among the two segments of the textile industry, the apparel subsector is more export-oriented. The ratio of exports to output was around 65 per cent in the early 1980s. The corresponding ratio for textiles was only around 25 per cent. Countries which are signatories to the Multifibre Arrangement (MFA) represent the main outlet for Malaysian apparel exports, with the United States and the EC constituting the largest markets. On the other hand, yarn and fabrics exports are destined mainly for non-MFA countries. Since Malaysia does not produce natural fibres such as cotton, wool, silk, jute, etc. its entire raw material requirements are imported.

Domestic demand projections

Domestic consumption of apparel is projected to grow at an average annual rate of 7.8 per cent during 1991–1995. This forecast is based on the assumption that GNP in real terms will grow at 6 per cent per annum, and that the income elasticity of demand for apparel will be 1.3. Domestic consumption of textiles is mainly a derived demand originating primarily in the apparel subsector. While around 70 per cent of the output of apparel will be targeted for the export markets by 1995, domestic demand is expected to constitute a major source of growth in the clothing industry. With a projected population of 20 million for 1995 and current indications of a sustained pace of economic recovery coupled with a rise in disposable income, these projections seem realistic.

Export performance

With the setting up of a number of export-oriented factories in the 1970s, exports of both textiles and apparel grew significantly during the decade, growing at 26.6 per cent per annum in 1981 prices. Apparel exports grew faster than textile exports. In the early 1980s apparel exports suffered a decline in the wake of the recession in the major export markets. As the

Table IV.10. Textile and garment production in Peninsular Malaysia, 1983-1988

Product category	Units	1983	1984	1985	1986	1987	1988	Percentage change 1983-1988
<i>A Yarn and textile</i>								
1 Synthetic fibre and blended yarn	'000 tonnes	48.49	50.11	46.71	48.36	53.48	53.71	11
2 Cotton and blended yarn	'000 tonnes	23.55	24.93	25.17	28.54	32.47	34.44	46
3 Cotton fabric	Million metres	193.95	178.08	180.75	189.59	201.15	206.79	6
4 Knitted fabric	Million metres	11.34	14.26	15.81	..	..	..	..
<i>B Apparel</i>								
1 Trousers - men's and boys'	Million pieces	8.29	10.41	9.17	9.11	12.50	11.47	38
2 Shirts - men's and boys'	Million pieces	19.02	24.24	21.38	22.74	25.61	29.58	56
3 Blouses - women's and girls'	Million pieces	7.88	11.04	13.98	15.50	15.76	16.37	122
4 Dresses - women's and girls'	Million pieces	2.97	2.55	2.58	3.13	3.65	3.82	29

Source: Department of Statistics, *Monthly Statistical Bulletin, Peninsular Malaysia*, various issues.

global economic recovery since 1983 offered new opportunities, clothing export earnings rose from MS 0.96 billion in 1983 to MS 3.04 billion in 1988, representing an average annual rate of 24 per cent over the period. The United States, the EC and Japan continue to be the major markets for textile made-ups (see Table IV.11).

Table IV.11. Exports of textiles and apparel by destination, 1986-1988
(In million MS)

Country	Export value			Percentage growth 1986-1988
	1986	1987	1988 (Jan to Nov)	
United States	709.63	917.71	1,124.7	16.6
EC	345.24	579.79	631.2	22.3
Japan	62.02	112.50	154.8	35.6

Source: *New Straits Times* (10 May 1989).

The growth of clothing exports is estimated to reach a slower rate in the 1990s, moderating at 14 per cent by 1994. This reduced growth takes into account changes that take place in the global textile industry. Exports of textiles are also targeted to grow modestly as more of the domestic production is being absorbed by the growing apparel segment. There has already been a gradual decline in the ratio of exports to textile production.

Export prospects

The export target for 1995 is set at MS 3.5 billion, with 77 per cent or MS 2.7 billion stemming from apparel products. With an estimated export value of MS 3.6 billion in 1989, the export target set in the IMP has already been achieved. However, future prospects for exports will need to be analysed within the perspective of an increasingly complex and competitive environment influencing the globalization of the textile industry.

In the 1950s and 1960s, Hong Kong, the Republic of Korea and Taiwan Province emerged as dynamic exporters of textiles and made-ups. Recently textile producers of these countries were undercut by a new generation of low-cost producers. The basic factors that have enabled these NIEs, Hong Kong in particular, to maintain the momentum of export growth include efficient quota administration to encourage maximum utilization of quota for all quota-restricted items, retention of 'scarcity rent' through upgrading in quality terms, greater control over material sourcing to product development, internationalization of garment operations through subcontracting and increasing use of sophisticated equipment. According to recent estimates,* textile productivity in Hong Kong has risen faster than that in the United States, more than offsetting the relatively rapid growth of wages.

Thus, productivity gains among established producers tend to erode the low-cost advantage of emerging competitors. Access to low-cost labour was hitherto considered as a 'short-cut route' to undercut prices in competitive markets. But the relocation of textile industries is being increasingly determined by their potential to thrive in an ever-increasingly competitive environment. Productivity gains achieved through automation especially in spinning and weaving have led to changes in the balance of competitive strength in the global textile industry.

* See *Textile Asia* (December 1988), p. 155.

Malaysia's share in world exports of textiles and clothing is less than 1 per cent. Hong Kong and Italy remain the leading exporters, each retaining a 10.1 per cent share of world exports of textile and clothing, followed by the Federal Republic of Germany (9.1 per cent), Republic of Korea (7 per cent), China (5.9 per cent) and Taiwan Province (5.6 per cent). The United States is the world's leading importer of textiles and clothing (17.7 per cent), followed by the Federal Republic of Germany (13.6 per cent) and France (6.6 per cent).

Malaysia's comparative advantage lies in the wearing apparel segment of the textile industry. The quality of apparel is largely dependent on design and other skills rather than technology embedded in machines. Continuous effort on the part of local firms to improve their skills and designs is absolutely necessary to remain competitive and to expand market share.

Although Malaysian companies have achieved high rates of quota utilization in the United States market, there remain unused quota volumes in the EC market. A selective approach will need to be adopted with a view to seizing opportunities within the range of these products. Producers could also exploit the scope for enhancing exports of non-quota items to the MFA market. In addition to product diversification there is also a need to diversify into new market areas such as West Asia, Australia and selected developing countries. A conscious effort is needed to increase productivity substantially which could permit expansion of the industry in the competitive world market.

The key elements of investment strategy could focus on consolidating the gains already achieved and on selective rationalization and modernization initiatives for productivity and quality improvements. Greater emphasis will need to be placed on apparel than on primary textiles. There is also a need to adopt a cautious attitude towards new investments in primary textiles. Imports of high quality fabrics and materials are inevitable in order to further accelerate the export drive of quality made-ups.

D. CHEMICAL INDUSTRY: MIXED PROSPECTS

Industry structure

Malaysia's chemical industry has a narrow base, with industrial chemicals accounting for around three-fourths of output. Industrial chemicals include industrial gases, fertilizers, pesticides, synthetic resins, plastic materials and man-made fibres. Other chemical products are paints, varnishes, lacquers, drugs and medicines, soap and cleaning preparations, etc. Table IV.12 presents a disaggregate picture of the country's chemical industry, revealing the structure of 5-digit Malaysian Industrial Classification. This disaggregate structure shows the rapid increase in the share of industrial gases in chemical industry's output, rising from 7.8 per cent in 1982 to 44.8 per cent in 1986. Proven reserves of natural gas are estimated at 53 trillion cubic feet. Malaysia currently ranks 13th in terms of world gas reserves. Output of liquefied natural gas rose from 6,398 million tonnes in 1988 to 6,700 million tonnes in 1989. There are about 12 companies producing gases. Annual sales of industrial gases totalled between M\$ 480 million to M\$ 90 million in the late 1980s.

Malaysian Oxygen (MOX) is a leading company producing gases, with a market share of between 60 per cent and 70 per cent. MOX has been in the business for the last 40 years and supplies nearly 100 per cent of nitrogen needs to the domestic electronics industry and has a major portion of the oxygen market. MOX is affiliated to the world's two largest gas companies, the British Oxygen Company group and L'Air Liquide from which MOX tap their R & D achievements and expertise.

Progress has been made in the development of the petrochemicals sector. In February 1989, PETRONAS, representing government interests and in charge of gas exploration and exploitation, signed two joint-venture agreements -- one with a Japanese company for the

production of methyl tertiary butyl ether (MTBE) propylene and another with a Finnish company for a polypropylene project. The MTBE propylene plant will have an annual production capacity of 300,000 tonnes per year. The plant will utilize raw materials, such as butane and propane from the PETRONAS Gas Processing Plant in Kertih, and methanol from the Sabah Gas Industries' plant based in Labuan. The polypropylene project involves the manufacture of raw materials input for the plastics industry.

In August 1989, PETRONAS entered into a joint-venture agreement with Sarawak State Government and two private companies for the establishment of a plant to produce middle distillates from natural gas. The middle distillates synthesis (MDS) project will be the world's first commercial plant to produce middle distillates from natural gas. The plant, located in Bintulu, Sarawak, is scheduled for completion by end-1992.

The share of fertilizers and pesticides in the chemical industry suffered a marked decline during 1982-1986. In the fertilizer subsector, Malaysia has at present one urea production plant, one ammonium nitrate plant, about 10 compound granulated fertilizer plants and about 80 fertilizer mixing plants. Although Malaysia is self-sufficient in nitrogenous fertilizer, it is still completely dependent on imported phosphate and potash. Domestic supply of inorganic chemicals amounts to 25 per cent to 35 per cent of demand. Malaysia's self-sufficiency in nitrogenous fertilizer stems from the ASEAN Bintulu Plant that came on stream in the mid-1980s, with a production and marketing strategy aimed at the ASEAN region. The plant has an installed capacity of 495,000 tonnes per annum of granular urea. Urea from this plant was expected to replace ammonium nitrate as the major nitrogen source in Malaysia because of urea's low cost advantage. Estimates of the future nitrogen nutrient needs of Malaysia suggest that the output of the Bintulu Plant will be fully absorbed by the domestic market in 1990. Export demand within the ASEAN region justifies substantial investment in additional nitrogen capacity.

Domestic refineries processed 169,717 barrels per day (bpd) of crude oil to manufacture gasoline and fuel oil in 1989. As the volume of crude oil sourced from domestic production rose by 8 per cent in 1989, the intake of imported oil by the refineries fell significantly. In 1989 crude oil processed at the three refineries at Port Dickson and Luton stood at 142,125 bpd, representing an 8.9 per cent increase over the previous year.

The relatively young plastics industry in Malaysia accounted for 3.2 per cent of the output of Malaysia's chemical industry in 1986. There are about 600 local plastic manufacturers with a total annual turnover of about MS 800 million. About 300 of them are members of the Malaysian Plastic Manufacturers' Association and account for about 80 per cent of the turnover. Most of the manufacturers are located in the more developed states of Selangor, Pinang (Butterworth) and Johore. The plastics industry is characterized by small to medium sized establishments that are mainly family owned.

Imports of plastics and resins accounted for 23.4 per cent of total chemical imports in 1986. This was due to increased demand by plastic fabricators in the manufacture of components and parts for the electrical, electronic and automotive industries. Malaysia's major source of resins are two Singapore-based producers, Phillips Petroleum Singapore and The Polyolefin Company (TPC), which supply half of the 150,000 tonnes consumed locally. Malaysia also imports resins from Japan, Taiwan Province, Saudi Arabia, Poland, Canada and the United States.

The share of drugs and medicines in the output of the chemical industry stood at 3.6 per cent in 1986, compared with 5.3 per cent in 1982. There are about 20 local pharmaceutical manufacturers in the industry. Most of them are members of the Malaysian Organization of Pharmaceutical Industries (MOPI) which only approves membership for those companies which have a factory and have at least one pharmacist on the payroll.

Table IV.12. Output of the chemical industry by subsectors, 1982-1986
(In thousand M\$)

ISIC MIC	Description	1982	1986	Percentage 1982	Percentage 1986
351	Manufacture of industrial chemicals	848,886	3,006,497	49.1	74.9
35111	Manufacture of industrial gases, compressed, liquefied or in the solid state	134,649	1,798,936	7.8	44.8
35119	Manufacture of other basic industrial chemicals, except fertilizers	135,854	398,972	7.9	9.9
35120	Manufacture of fertilizers and pesticides	489,432	680,584	28.3	17.0
35130	Manufacture of synthetic resins, plastic materials and man-made fibres except glass	88,951	128,005	5.1	3.2
352	Manufacture of other chemical products	881,397	1,006,951	50.9	25.1
35210	Manufacture of paints, varnishes and lacquers	209,431	218,062	12.1	5.4
35220	Manufacture of drugs and medicines	90,978	145,611	5.3	3.6
35231	Manufacture of soap and cleaning preparations	190,469	279,230	11.0	7.0
35239	Manufacture of perfumes, cosmetics and other toilet preparations	89,077	66,083	5.1	1.6
35290	Manufacture of chemical products, n.e.c.	301,442	297,966	17.4	7.4
	Total	1,730,283	4,013,448	100	100

Source: Industrial Surveys, 1982 and 1986.

The manufacture of paints, varnishes and lacquers accounted for 5.4 per cent of the chemical industry's output in 1986. ICI Paints Malaysia is the leading paint company in the country. The company is a subsidiary of the Chemical Company of Malaysia. ICI Paints Malaysia recorded a pre-tax profit of MS 5.2 million for the year ending 31 December 1988, compared with a profit of MS 1.7 million in 1987. Turnover was also higher at MS 78.3 million in 1988 compared with MS 72.1 million in 1987. The demand for paint is projected to increase from 36.6 million litres in 1988 to 41.4 million litres in 1990.

Exhibit IV.4 List of priority chemical and pharmaceutical products

- 1) Chemical derivatives obtained from methyl and ethyl alcohol
 - 2) Plant and vegetable extracts for the pharmaceutical, perfumery, cosmetics and food flavouring industries
 - 3) Antibiotics
 - 4) Basic manufacture of pharmaceuticals
 - 5) Basic manufacture of fertilizers
 - 6) Basic manufacture of pesticides
 - 7) Chemical derivatives of petroleum, natural gas or coal
 - 8) Fine chemicals
 - 9) Animal vaccine and clinical diagnostic reagents
 - 10) 2,4-Dichloro phenyl acetic acids, methyl chloro phenyl acetic acids
 - 11) Synthesized raw materials for advanced ceramics
 - 12) Specialized paints and coatings
 - 13) Common salt
 - 14) Soap, cleaning preparations, cosmetics and other toilet preparations
 - 15) Chemical derivatives from inorganic sources
 - 16) Recycling of chemicals and plastic wastes
 - 17) Injections, sterile solutions and gelatine capsules
 - 18) Carbon black master batch
 - 19) Industrial gases, whether compressed, liquefied or in solid state
 - 20) Chemical for fire extinguishers
 - 21) Fertilizers
 - 22) Sodium carboxyl methyl cellulose
-

In terms of labour absorption, the chemical industry's contribution to total employment is small given the capital-intensive nature of the industry. Table IV.13 shows the structure of employment across small, medium and large enterprises in the chemical industry in Peninsular Malaysia during 1981-1986. While employment per establishment fluctuated markedly over the period, total employment in the chemical industry stood at 14,506 in 1986. According to MIDA, the chemical industry, excluding the oleochemical subsector, employed 15,757 persons by December 1987.

Prospects

IMP projections indicate that the chemical industry is expected to grow at an annual rate of 8.4 per cent during 1990-1995. As can be seen from Table IV.14 plastics and resins, organics and inorganics are likely to be growth leaders with around 10 per cent annual average increase in domestic demand during 1991-1995.

Domestic demand for fertilizers is expected to grow at a modest annual rate of 4.8 per cent during 1991-1995, compared with an estimate of 7.2 per cent in 1986-1990. These projections are based on usage rates by crop and expected land development by major crops. It is generally assumed that land development for cocoa and oil palm will continue to expand.

The country's abundant gas reserves and growing nutrient needs provide the impetus for the development of fertilizer manufacturing. It is very likely that usage of compound fertilizers will grow substantially in the 1990s in view of more intensive cultivation of selected crops and mechanical application of fertilizers, as well as increasing awareness of compounds. This resource-based industry could be developed to further enhance surplus fertilizer production for the subregional market.

Table IV.13. Employment by enterprise size, chemical industries, Peninsular Malaysia, 1981 - 1986

	1981	1982	1983	1984	1985	1986
<i>a) Industrial chemicals</i>						
i) Employment						
Small	2,845	2,686	..	..	441	438
Medium	2,142	2,274	4,532	4,612	4,528	4,625
Total	4,987	4,960	4,532	4,612	4,969	5,063
ii) Employment establishment						
Small	36	44	..	..	37	40
Medium	54	60	69	68	75	71
Total	42	50	..	..	69	67
<i>b) Other chemicals</i>						
i) Employment						
Small	1,054	1,390	..	..	..	..
Medium	1,526	8,608	8,270	8,109	8,261	7,904
Medium-large	..	1,565	1,404	1,392	1,426	1,539
Total	12,071	11,563	9,674	9,501	9,687	9,443
ii) Employment establishment						
Small	33	40	..	..	..	..
Medium	59	66	69	63	64	64
Medium-large	..	104	128	127	130	118
Total	..	64	..	..	..	..

Source: Government of Malaysia.

Note: Small enterprise - between 5 - 49 employees.

Medium enterprise - between 50 - 100 employees.

Medium-large enterprise - between 101 - 199 employees.

Table IV.14. Domestic demand projection for major chemicals, 1991 - 1995
(In million M\$ at 1981 constant prices)

	1991	1992	1993	1994	1995	Average annual growth rate (Percentage) 1991 - 1995
Inorganics	745.2	817.8	897.6	985.9	1,082.9	9.8
Fertilizers	1,389.0	1,457.4	1,582.0	1,600.7	1,675.6	4.8
Organics	693.0	764.9	844.1	931.3	1,027.3	10.3
Plastics and resins	1,429.1	1,583.9	1,754.4	1,942.1	2,148.8	10.7
Paints and inks	390.3	422.6	457.5	495.2	535.9	8.2
Pharmaceuticals	415.7	447.6	482.2	515.3	554.1	7.4
Pesticides	494.1	526.6	561.0	594.8	632.6	6.4
Cosmetics, soaps and detergents	682.4	732.1	785.4	836.1	896.4	7.1
Miscellaneous	786.9	866.4	953.9	1,050.2	1,156.3	10.1
Total	7,025.7	7,619.5	8,264.3	8,951.6	9,709.3	8.4

Source: *Industrial Master Plan, 1986-1995*.

The prospects for the petrochemical industry hinge heavily on the domestic market. Malaysia cannot be highly optimistic about export possibilities due to the regional plants in Singapore and Thailand and also due to severe competition from Saudi Arabian plants which are based on free associated gas. New plants will need to be more competitive internationally if they endeavour to enter the export market.

An increase in the domestic usage of petrochemical finished products could provide opportunities for a wide range of fabricated and processed petrochemical products. There is a wide variety of applications for which petrochemical products can be used in Malaysia. A few examples are bottle crates for beverages, pipes, toys, and other agricultural and construction applications. Thus, strengthening the fabrication segment could constitute a major development force for the industry. There is a need to review the capabilities of the plastics fabrication sector with a view to enhancing its potential to seize new opportunities. The fast expanding electronics industry in Malaysia has generated a growing demand for plastic precision products and this requires the establishment of high precision plastics operations. Opportunities also stem from the growing demand for household wares, industrial products, automotive parts such as linings and padded panelling for construction and household purposes.

The global chemical industry is being increasingly characterized by the emergence of new materials such as high-strength components and engineering plastics. However, some of these products are yet to demonstrate their long-term prospects for developing countries.

E. WOOD-BASED INDUSTRY: INTENSIFYING DOWNSTREAM PROCESSING

The resource base

The forest area in Malaysia is estimated at 20.4 million hectares, encompassing 61.8 per cent of the total land area of Peninsular Malaysia, Sabah and Sarawak. Details pertaining to areas of natural wood vegetation estimated by the Food and Agriculture Organization of the United Nations (FAO) at end-1985 are presented in Table IV.15. Malaysia's forest resources are vast and, with sustained reforestation, this resource base could be enhanced further.

The fluctuations in the output of saw logs and sawn timber as shown in Table IV.16 largely reflect changes in export demand. Despite these fluctuations, Malaysia still stands as the world's largest producer of tropical hardwood.

After a year of commendable growth in 1987, output of saw logs faltered marginally in 1988, but rebounded well in 1989. The main source of the increase in output was a higher level of logging in Sarawak, which more than offset the combined decline of output in Sabah and Peninsular Malaysia. The output of saw logs in Peninsular Malaysia declined by 10.6 per cent in 1989. The State Government of Sabah introduced measures to control logging activities in order to conserve forest resources. Logging activities in Sarawak were intensified in 1989 to keep pace with the rising demand from traditional buyers, Japan and the Republic of Korea, and to cater for larger demand in new markets, Thailand in particular.

In the face of rising international demand and prices, production of sawn timber rose from 6.3 million cubic metres in 1988 to 6.9 million cubic metres in 1989. The restrictions imposed on exports of sawn timber by both the Philippines and Indonesia had resulted in a rise in demand as well as prices for Malaysian timber. Malaysia faces a dilemma as world demand and timber prices continue to rise in the wake of the imposition of tighter conditions for the export of timber by neighbouring countries. The sawmillers want to take advantage of high prices on the world market, while the downstream manufacturers suffer from a shortage of raw materials. In 1988 Malaysia's log export earnings reached a record of M\$ 7.2 billion,

Table IV.15. Areas of natural wood vegetation, 1985
(In million hectare)

Forest type	Peninsular	Sabah	Sarawak	Total
Virgin productive forest	0.94	1.47	3.07	5.48
Logged productive forest	3.56	1.43	0.68	5.67
Managed productive forest	0.86	..	2.37	3.23
Total productive forest	5.36	2.90	6.12	14.38
Unproductive by legislation	0.69	0.18	0.10	0.97
Unproductive by terrain	1.08	1.54	1.76	4.38
Total unproductive forest	1.77	1.72	1.86	5.35
Total forest area	7.13	4.62	7.98	19.73
Total land area	13.17	7.39	12.44	33.00
Forest as a percentage of land area	54.14	62.52	64.14	59.79

Source: FAO, Tropical Forest Resource Assessment (Rome, 1986).

Table IV.16. Production of saw logs and sawn timber, 1975-1989, selected years
(In million cubic metre)

Type of wood	1975	1980	1985	1986	1987	1988	1989
Saw logs	19.2	27.9	30.9	29.9	35.6	33.6	37.8
Sawn timber	3.9	6.3	5.4	5.1	6.1	6.3	6.9

Source: Bank of Negara; and Economic Report, various issues.

which surpassed the earnings from crude petroleum. The year 1989 was also another good year for timber exports. The export boom has intensified the competition for raw materials among the downstream manufacturing industries, such as wood moulding, pencils, doors, wooden frames as well as furniture.

Efforts to enhance the forest resources continue. The reforestation programme initiated by Sarawak in 1990 is aimed at establishing 1,500 hectares of new forest plantations. The programme also aims at 10,000 hectares of new forest plantations annually in the 1990s. In Peninsular Malaysia, another 42,000 hectares of forest plantations are planned for the period 1989-1993. Sabah was the pioneer in establishing commercial timber plantations. Around 20,000 hectares of fast growing *Acacia mangium* trees were planted in the last 16 years. The State Government of Sabah has increased the royalty rates imposed on log exports, and lowered the royalty rates on logs for local processing in an effort to encourage downstream processing. Of the total volume of logs produced in Sabah, 30 per cent was allocated for domestic processing in 1989.

Downstream processing

Malaysia's wood resources are now on a downstream trail in order to maximize returns from timber exports through value-added products. The export of furniture and moulding products is projected at M\$ 400 million and M\$ 1.2 billion respectively in 1995. In pursuit of this,

the government is encouraging processing of timber into downstream products. However, unlike the drastic banning of raw and semi-processed material exports in neighbouring countries, Malaysia is aiming at a phased approach in gradually imposing a ban on log exports, with a host of attractive incentives for greater use for downstream processing. Sawn logs, plywood, veneer, wood mouldings and furniture dominated more than half of all timber export earnings in 1989. However, furniture made up only a small part of total earnings of more than MS 65 billion in 1989.

A growing number of furniture manufacturers in the Taiwan Province have redeployed their operations to Malaysia because of the rising value of the New Taiwan dollar and higher labour costs. According to the Malaysian Industrial Development Authority, entrepreneurs from the Taiwan Province invested MS 250 million in the furniture industry in 1989. Efforts are under way to ensure regular supply of sawn logs from Sabah and Sarawak to Peninsular Malaysia in order to ease the raw material shortage. Sabah and Sarawak consume only 20 per cent of locally produced logs.

The Government of Sarawak received 82 project proposals in the first half of 1989 for downstream processing, entailing a total capital investment of \$449 million. Of the 82 project proposals, 43 are sawmills, 21 furniture making enterprises, 10 plywood and veneer mills, 5 chopsticks makers and 3 other processing units. Around \$46 million of the total proposed equity of \$127 million comes from foreign sources.

Foreign investments and joint ventures are important means of upgrading downstream activities in the wood-based industry. There are already such investments from the Republic of Korea, Australia and Taiwan Province. The Japanese firm Tokyo Menka Kaisha Ltd., one of the biggest trading houses in Japan, has expressed interest in investing between \$25 million and \$100 million on an integrated timber complex in Sarawak.* Feasibility studies are under way for the production of plywood, particle-board and other wood products in a 20.23 hectare site in the industrial area in Bintulu.

Exhibit IV.5. List of priority wood-based products

- 1) Integrated timber complex
 - 2) Plywood, fancy plywood, pre-finished and printed plywood
 - 3) Building and insulating boards, such as block boards, laminated board, batten board, medium density board, soft board, hard board, weger board, lamina board, particle board and chipboard
 - 4) Timber mouldings, all types
 - 5) Pre-fabricated housing units and components
 - 6) Wooden cabinets for electrical or electronic products
 - 7) Builders carpentry and joinery, assembled parquet flooring panels
 - 8) Wooden staircases
 - 9) Wooden doors and windows
 - 10) Products derives from utilization of wood waste (e.g., activated charcoal, wood briquettes, wood wool)
 - 11) Wood pellets
 - 12) Articles of turned wood
 - 13) Rubber wood veneer
 - 14) Wooden pencil slats
 - 15) Wooden household articles
-

Constraints

The intensification of downstream activities has its own inherent problems in Malaysia. Exports of unprocessed or semi-processed products still persist in Malaysia. The quest for achieving a higher degree of processing is hampered by buoyant international demand and prices for

* See *Asia Timber* (June 1989), p 26

raw wood. Local demand is yet to create quality consciousness. Products are often targeted for the lower end of the market. A major obstacle is lack of expertise. The growth of the woodworking and furniture industry is particularly impeded by the lack of technical know-how. Out of 45 mills, only five or six operate with proper production and management control systems.

Prospects

Malaysia is striving to emerge as a major base for downstream wood products. This could be achieved by good product design, quality, prices and service. This would facilitate the further establishment of many companies in the furniture complexes and timber processing zones.

Integrated timber complexes are encouraged, with a view to facilitating the manufacture of sawn timber and plywood for pre-fabricated houses, doors, window frames, wall panels, etc. Establishment of these complexes is encouraged especially in the States of Sarawak and Sabah. Wood waste utilization is an area which could be developed for the manufacture of fibre-board, particle board, mouldings, wood briquettes, wood wool, activated carbon and laminated wood products. There is scope for the manufacture of rubber-wood, especially laminated beams which enjoy a big world market. The manufacture of knock-down furniture, wooden toys, sporting equipment, souvenirs and handicrafts items are accorded top priority in encouraging private investment.

F.CEMENT INDUSTRY: POISED FOR FULL-CAPACITY UTILIZATION

The resource base

Abundant reserves of limestone rocks in Malaysia have meant that this important segment of the non-metallic mineral industry has a natural advantage for commercial exploitation. In mid-1980s hydraulic cement represented about 36.8 per cent of total non-metallic mineral products, while cement and concrete products accounted for 32.2 per cent. The third major subsector of the non-metallic ceramic industry produces pottery, china, earthenware and structural clay products.

Recent trends in cement production

Buoyed by a peak demand for 4 million tonnes of cement in 1984, outstripping the supply of 3.8 million tonnes, huge investment was made in cement production. As a result, an additional 3.4 million tonnes of capacity came on stream by the year 1987. But a devastating imbalance between supply and demand occurred when domestic demand plunged to 2.7 million tonnes in 1987.*

The installed capacity of leading integrated and grinding plants stood at around 7.8 million tonnes in 1988. Annual rated capacities of leading cement plants are reported in Table IV.17. In the face of rising international demand and a pick-up in domestic consumption the industry's overcapacity became an asset. The capacity utilization rate rose significantly in 1988 and 1989. Local sales in Peninsular Malaysia totalled 3 million tonnes in 1988 and a 15 per cent increase was projected for 1989.

Cement sold in the central area of Peninsular Malaysia, which accounts for 50 per cent of the total market, has a price fixed by the government at around M\$ 190 per tonne, compared with an export price of around M\$ 102. Imports are subject to a tariff of around M\$ 80 a

* See 'Malaysia's cement overcapacity becomes an asset - too much too soon', *Far Eastern Economic Review* (22 June 1989), p. 52

tonne. Based on the rated capacity of manufacturing units, the Malaysian market for cement is divided into percentage shares for each producer. This prevents the more efficient producers from expanding their market share. The three government-owned plants, Cement Industry of Malaysia (CIMA), Kedah Cement and Perak Hanjoong Simen have over 50 per cent of the country's total installed capacity but enjoy access to only 46 per cent of the domestic market.

Table IV.17. Annual rated capacity of leading cement plants, 1989
(Thousand tonnes)

<i>Integrated plants</i>	
Associated Pan Malaysia Cement	2,100
Cement Industries of Malaysia ^{a, b}	1,000
Kedah Cement ^a	1,200
Malaya Industrial and Mining Corporation	60
Perak-Hanjoong Simen ^a	1,200
Tasek Cement ^b 1,200	
Total	6,760
<i>Grinding plants</i>	
Malaya Industrial and Mining Corporation	120
Cement Manufacturers Sarawak ^b	450
Cement Industries Sabah	500
Total	1,070

Source: The Cement and Concrete Association of Malaysia, Kuala Lumpur Stock Exchange.

a Government or State-owned.

b Publicly listed.

With the price of cement in the domestic market being fixed at a price higher than world market price, plants generally tend to sell more of their output dearly domestically. But the quota agreement on local market shares necessitates the quest for accelerating the export drive.*

Constraints

Two major constraints facing the cement industry are an inefficient market distribution network in the domestic market and lack of competitiveness in the international market. Inept market distribution results in scarcity in some areas and excess supply in other parts of the country. The cement industry is also faced with the problem of price competitiveness because of high cost of production. Japan, Taiwan Province and the Republic of Korea are able to sell their cement at much lower prices.

Prospects

As the upturn in residential construction activity evident since the second half of 1988 continues on the heels of a sustained pace of economic expansion, the cement industry is poised to utilize its full capacity. The buoyant activity in the construction sector is expected to continue in view of the continuing low interest rate for housing loans and a significant increase in new sales permits issued for private developers. The construction sector is expected to benefit from overall industrial expansion characterized by the continued expansion of industrial estates, factories, warehouses and infrastructural projects.

* During the first half of 1988, Malaysia exported to Bangladesh (130,000 tonnes), Bruner Darusalam (5,000 tonnes), Maldives (2,000 tonnes), Nepal (24,000 tonnes), New Zealand (4,000 tonnes), Singapore (6,000 tonnes), Sri Lanka (22,000 tonnes), Tahiti (24,000 tonnes), Taiwan Province (14,000 tonnes), Viet Nam (18,000 tonnes) and Hong Kong (1,000 tonnes). Clinker exports to Bangladesh totalled 77,000 tonnes, Singapore 381,000 tonnes and Sri Lanka 90,000 tonnes.

G. TIN-IN-CONCENTRATES: EXPLORING AVENUES OF SECONDARY PROCESSING

The resource base

With proven tin reserves of 1.1 million tonnes Malaysia encompasses the largest reserves in the world. The bulk of tin production is located in the alluvial deposits in the States of Perak and Selangor. Dredging and gravel pumping are the two major mining methods accounting for about 85 per cent of total output.

As shown in Table IV.18 there were 330 mines in operation in 1989, with 41 gravel pump mines and 2 other modes of mining re-opened in response to improved tin prices on the world market. Malaysia stands as the fourth largest producer of tin-in-concentrate in the world although the contribution of tin mining to the country's GDP is meagre.

Table IV.18. Number and type of tin mines, 1988 and 1989^a

	1988	1989 ^a	1988	1989 ^a
			Change	
Number of mines (as at end of year)				
Gravel pumps	144	185	-8	41
Dredges	32	33	1	1
Other	111	112		1
Total	287	330	-7	43

Source: Department of Mines.

^a Preliminary.

Recent production trends

Following a 5 per cent fall in 1988, the output of tin-in-concentrate recorded an 11 per cent increase in 1989, rising from 28,866 tonnes to 32,034 tonnes (see Table IV.19). In 1989 Malaysia's tin-in-concentrate output accounted for 17 per cent of aggregate world output.

Table IV.19. Production of tin-in-concentrate, 1988 and 1989

Type of mining	1988	1989 ^a	1988	1989 ^a
			Percentage change	
Production (tonnes)				
Gravel pumps	9,799	13,263	15.4	35.4
Dredges	13,140	11,963	3.4	9.0
Other	5,927	6,808	5.0	14.9
Total	28,866	32,030	-5.0	11.0

Source: Department of Mines.

^a Preliminary.

In the face of a world-wide increase in tin production, total commercial stock at the end of 1989 stood at 30,700 tonnes. In its effort to reduce the glut in the world stocks the Association of Tin Producing Countries (ATPC) decided to extend its supply rationalization scheme for another ten months covering the period March 1990 – December 1990. Under the scheme Malaysia's share of the export quota was reduced to 25,096 tonnes and, consequently, its export quota for 1990 stands at 30,379 tonnes.

Amidst rising domestic production Malaysian smelters imported 23,857 tonnes of tin-in-concentrates from Australia (33.8 per cent), China (10.7 per cent), Bolivia (10.7 per cent), Zaire, Indonesia and Myanmar (30.3 per cent). The higher level of imports and rising domestic production have meant a significant rise in the level of tin metal output to 50,630 tonnes in 1989, maintaining Malaysia as the world's largest producer of tin metal with 28.3 per cent of total world tin metal output.

In view of the highly volatile conditions on the world tin market, efforts are under way to promote the local tin-based industry. In recent years, domestic tin consumption increased from 400 tonnes in 1980 to 1,944 tonnes in 1986 because of the growth in the tin plating industry, solder manufacturing and the solder industry in the country. The development of additional tin-consuming industries such as the tin chemical industry, especially organotin compounds, is expected to lead to a further increase of domestic tin utilization in the future.

Avenues of secondary processing

The International Tin Research Institute furnishes information* on a wide diversity of traditional and new uses of tin-in-concentrates particularly in tin plating, soldering, coating and metallurgy. Intensive applied research and information dissemination for downstream tin-utilizing manufacturing activities, where a market potential for tin has been established, could contribute to the continued growth of this industry. Tin-based manufacturing activities are expected to be further developed in areas such as the metal packaging and canning industries as well as industries utilizing various application of tin compounds as in plastics, ceramics, electronics, glass and wood. Thus, due to the versatile nature of tin, research efforts will need to be intensified to explore the full potential of tin for industrial application.

Constraints

In terms of the quality content of Malaysian tin, Thailand and Brazil are potential competitors. Malaysia's competitive edge is eroded by the lower production costs in other tin-producing countries. The sharp increase in production costs in Malaysia relative to other tin-exporting countries can be attributed to the high cost of energy, which accounts for 20–50 per cent of total production costs in Malaysia.

Malaysia's competitive edge in the world tin market has also been severely affected by the increasing production from countries which did not adhere to the quotas stipulated by the International Tin Council (ITC), especially Brazil and China.

The relatively high price of tin in comparison with other base metals such as copper, lead and aluminium has encouraged substitution, leading to falling demand for tin. Consumption particularly of tin plate, which is a very important market for tin, has fallen dramatically.

* The work of the Institute is directed towards the development of new uses for tin, based on the scientific and technical study of the metal, its alloys and compounds, and towards industrial processes which use tin or which may provide future markets. Its quarterly journal entitled 'Tin and its uses' carries a reservoir of innovative ideas on a higher degree of processing of this metal.

Thus, the tin industry in Malaysia is faced with a number of market and structural problems. Higher labour costs and operating expenditure make investment less attractive. In mid-1990, the Malaysia Mining Corporation, the largest mining company which operates 21 mines, said it might have to close some of its mines if prices fell below MS 15 per kilogram. The company's production cost was between MS 16.50 and MS 17.00 per kilogram in June 1990. A higher degree of secondary processing could pave the way for rejuvenating the ailing industry.

Prospects

Although the closing down of high cost mines has reduced the costs of production significantly,* there is a need to rationalize mining operations in order to enhance the international competitiveness of Malaysia's tin producers. With a view to assisting the ailing tin industry, the government has released soft loans to the tune of MS 70 million and reduced electricity tariffs for tin producers by 25 per cent. However, prospects for the industry do not depend on concessions alone. The tin industry in Malaysia will need to thrive on the development of secondary processing. The task facing the industry is to review and strengthen the country's legal, regulatory and fiscal arrangements to facilitate investment inflows into innovative industrial applications of tin.

H. AUTOMOBILES: ACCELERATING THE EXPORT DRIVE

Recent trends

The major thrust is to encourage the development of the component manufacturing subsector in order to develop indigenous capabilities of manufacturing passenger cars and other vehicles. The entry of the domestic-built car Perustutaan Otomobil Nasional (PROTON SAGA) into the automobile industry occurred when the economy plunged into deep economic recession in 1985. Thus, Malaysia's first national car rolled off the line with starting trouble on the demand side. As shown in Table IV.20 the production of passenger cars suffered marked declines during 1985-1987. Although the production of commercial vehicles rose temporarily in 1985, economic recession took its toll in 1986 and 1987 (see Table IV.20). These recessionary production trends which persisted until 1987 were also paralleled by trends in the sales of passenger cars and commercial vehicles as reported in Table IV.21.

Buoyant domestic demand for passenger cars and commercial vehicles in line with the expansion in business activity and higher disposable incomes led to a year of significant growth of the automobile industry in 1988. However, the year 1989 experienced a substantial decline in the production of vehicle parts and accessories. This was offset by significant output gains achieved in the assembly of motor vehicles, motor cycles and scooters. The introduction of several new car models in 1989, together with the better export performance of the national car sustained a high pace of expansion. However, due to a sharp fall in the production of vehicle parts and accessories, the transport equipment industry as a whole recorded a relatively moderate growth rate of 9.7 per cent in 1989, compared with an impressive increase of 75.2 per cent in 1988, albeit from a low base.

Export-drive of the national car

The production of Malaysia's national car PROTON SAGA is part of an ambitious MS 230 million project which is in the hands of PROTON SAGA, a joint venture formed in May 1983 between the Heavy Industry Corporation of Malaysia (HICOM) and two companies

* In the first half of 1985 production costs averaged MS 19.4 kg in dredges, MS 23.7 kg for gravel pumps and MS 21.6 kg for open cast mines, while by the second half of 1987 this had been reduced to MS 14.2, MS 15.9 and MS 13.9 kg.

Table IV.20. Manufacture and assembly of motor vehicles, 1972-1989
(Units)

Year	Passenger cars	Percentage change	Commercial vehicles	Percentage change	Total	Percentage change
1972	24,703	..	6,121	..	30,824	..
1973	41,345	67.4	7,430	21.4	48,775	58.2
1974	52,891	27.9	11,323	52.4	64,214	31.7
1975	39,179	-25.9	9,317	-17.7	48,496	-24.5
1976	44,231	12.9	8,117	-12.9	52,348	7.9
1977	55,477	25.4	9,308	14.7	64,785	23.8
1978	62,298	12.3	11,604	24.7	73,902	14.1
1979	59,570	-4.4	14,027	20.9	73,597	-0.4
1980	79,249	33.0	21,814	55.5	101,063	37.3
1981	86,418	9.0	19,882	-8.9	106,300	5.2
1982	83,617	-3.2	16,044	-19.3	99,661	-6.2
1983	97,768	16.9	20,789	29.6	118,557	19.0
1984	94,273	-3.6	26,740	28.6	121,013	2.1
1985	70,147	-25.6	35,772	33.8	105,919	-12.5
1986	44,100	-37.1	17,318	-51.6	61,418	-42.0
1987	34,138	-22.6	12,594	-27.3	46,732	-23.9
1988	60,665	77.7	18,999	50.9	79,664	70.5
1989 ^a	40,370	-46.3	15,482	118.3	55,852	61.0

Source: Department of Statistics, *Monthly Manufacturing Statistics*, (various issues).

^a January - June.

Table IV.21. Sales volume of motor vehicles, 1973-1989
(Units)

Year	Passenger cars	Percentage change	Commercial vehicles	Percentage change	Total	Percentage change
1973	41,345	..	9,478	..	50,823	..
1974	52,891	27.9	13,303	40.4	66,194	30.2
1975	35,541	-32.8	13,085	1.6	48,626	26.5
1976	41,638	17.2	13,495	3.1	55,133	13.4
1977	52,871	27.0	15,898	17.8	68,769	24.7
1978	60,004	13.5	17,089	7.5	77,093	12.1
1979	61,677	2.8	16,702	2.3	78,379	1.7
1980	81,479	32.1	28,582	71.1	110,061	40.4
1981	87,384	7.2	22,822	20.2	110,206	0.1
1982	84,770	3.0	21,811	4.4	106,581	3.3
1983	90,319	6.5	17,130	21.5	107,449	0.8
1984	86,810	3.9	23,107	34.9	109,917	2.3
1985	63,857	26.4	31,143	34.8	95,000	13.6
1986	47,028	26.4	20,819	33.2	67,847	28.6
1987	35,265	25.0	13,731	34.0	48,996	27.8
1988	53,532	51.8	18,060	31.5	71,592	46.1
1989 ^a	30,993	37.3	14,317	106.3	45,310	53.5

Source: Malaysian Automotive Component Parts Manufacturers' Association.

^a January - June.

of the Mitsubishi Motor Company and the Mitsubishi Corporation. As per the deal, the Japanese group is required to transfer a complete set of car-building technologies as well as technologies for running a car construction plant in order to develop new cars in the future. The plant is designed to produce 80,000 cars a year in a double shift operation. Its capacity on a single shift operation was 54,720 units in mid-1988. By mid-1990, the 200,000th car rolled off the production line. Local content accounts for around 60 per cent of the car and local vendors supply 45 per cent. PROTON registered a MS 32 million net profit on a turnover of MS 820 million in 1988-89. Linkages with ancillary local industries are seen as a key benefit of the project.

As the domestic market is too small to sustain the industry, the national car is being steered into export markets. PROTON SAGA's success in penetrating the export market is evident from the fact that by May 1989 a total number of 2,965 cars were exported to the United Kingdom. Another 1,720 cars were exported to the same market destination by June 1989. Table IV.22 shows that PROTON SAGA is penetrating other markets in Asia and Africa. As the export market and domestic demand augured well for PROTON SAGA, the plant capacity at PROTON SAGA was recently increased. However, its capacity currently stands at 80,000 units, compared with the planned capacity of 120,000 for its fifth year.

Table IV.22. Export destinations of Malaysia's national car, February 1990

Export destination	Number of cars
United Kingdom	12,074
Ireland	1,160
Singapore	1,014
New Zealand	468
Jamaica	185
Bangladesh	175
Brunei	140
Malta	110
Sri Lanka	90
Nauru	12

Source: Malaysian Motor Traders Association

Now that the Malaysian national car is capable of competing both in the domestic and export markets, it may be beneficial to reduce the high tariff rates imposed on the components imported by assemblers. The reduction of import and excise duties for its competitors may mean exposure of the national car to a more competitive environment. While phasing out protection for PROTON SAGA, attention will need to be focused on improving quality control and the marketing system as well as research and development.

Problems facing car assemblers

Currently there are 10 car assemblers.⁷ These assemblers survived in recent years with a 30 per cent share of the domestic market only because PROTON SAGA's production level did not keep pace with demand.

⁷ These assemblers are Swedish Motor Assemblies (Volvo), Assembly Services (Toyota, Daihatsu), Tan Chong Motor Assemblies (Nissan, Subaru, Audo), Associated Motor Industries (BMW, Ford Land Rover, Suzuki), Mazda passenger vehicles, Oriental Assemblers (Honda), Kah Motor (Honda), Lion Suzuki (Suzuki), Cycle and Carriage Bintang (Mercedes, Mitsubishi, Mazda commercial vehicles), Latab Concessionaires and Automotive Manufacturers (Citroen, Isuzu, Lata).

A higher local content requirement is likely to be enforced by the year 1995. Higher minimum local content requirements pose a series of problems for car assemblers. At present, the local component industry is characterized by small-scale production and low-technology products, such as seats, batteries and tyres. The enforcement of higher local content requirements would mean a new layer of investment and technology in the components industry.

The component suppliers are faced with the problem of proliferation of models. More than 200 models (including vans) are produced. This constitutes a serious constraint to building up a strong base for the components industry in Malaysia. An attempt was made by the government either to close all assembly plants except three or to restrict model variations to three a year. The idea was abandoned due to resistance by assemblers. As things stand, a few of the assembly plants will need to be closed down in view of the fact that many new models may not meet the new local content target. One possibility would be to fine tune PROTON SAGA's component suppliers which produce around 60 per cent of components.

Yet another problem facing car assemblers is soaring price. During 1985-1988, the price level of passenger cars in the domestic market has increased significantly. For instance, the prices of cars in the 1300 cc and higher capacity categories increased by an average annual rate of 9 per cent and 12 per cent, respectively. However, over the same period, the average inflation rate grew by only 1 per cent per annum, and the average *per capita* income declined by 2 per cent per annum. The main reasons for the rising prices are a high import duty on components and a weaker ringgit in comparison to the yen in the past three to four years.

Exhibit IV.6 List of priority motor vehicle components and accessories

- 1) Manufacture of motorized vehicles
 - 2) Engines of all types and their parts
 - 3) Transmissions, final drives and wheels of all types, including their parts
 - 4) Chassis bodies including fuel tanks and their parts
 - 5) Suspension systems, stabilizing systems and their parts
 - 6) Electrical or electronics systems, instrumentation and their parts
 - 7) Fuel systems, braking systems, ignition systems, steering systems, cooling systems, air-inlet systems, exhaust systems and engine-starting systems and their parts
 - 8) Any other automotive component and accessories
-

Prospects

Prospects for the transport equipment industry depend on a high degree of technological development, skills and precision at all levels of the production process. If properly developed the industry could create extensive linkages with other industries. For instance, the industry has a potential linkage to the steel, non-ferrous metals, chemicals, electronics, glass and textiles industries.

It is hoped that with the increase in the demand for motor vehicles, existing assembly and production capacity can achieve the economies of scale needed to boost the efficiency of the industry. Equally important is the need to emphasize the importance of the export market. Without the expansion of the export market, it would be very difficult for Malaysia to further develop its own indigenous motor vehicle industry.

The rationalization and restructuring of the motor vehicle industry would provide the scope for a healthier domestic industry as well as boosting its supporting industries, namely the component parts manufacturing industries. The development of an automotive industry in Malaysia is hampered by the proliferation of different makes and models and an excess number of assembly plants competing for the small domestic market. Restructuring initiatives are under way towards achieving economies of scale and integration within the industry. The

strategy could be focused on reducing the number of vehicle assemblers to co-exist within PROTON, reducing the number of makes and models to a level where economies of scale could be achieved, strengthening the operation of the National Car project and on phasing out existing assemblers into other activities such as the manufacture of parts and components. The strategy for restructuring could also include upgrading of plants and scale, as well as reorganization of management structure of these plants. Assembly plants could also be encouraged to diversify into other specific activities. The development of a local components industry as a base for upgrading local engineering and technical skills is essential. Some of the component parts identified include electrical parts, upholstery, suspension, brake system, engine and transmission, electronic fuel injection, computerized monitoring systems, power steering, anti-lock braking systems and four-valve per cylinder engines.

Malaysia could seize opportunities stemming from a movement towards a quasi-common market for car components within the Association of South-East Asian Nations (ASEAN). The aim is to create a free-trade area for car components produced in its six member-States. An agreement between Malaysia, the Philippines and Thailand towards this end is in the offing. This 'strategic alliance' would cut down the costs of ASEAN cars. Within the framework of such a quasi-common market, components from any of the countries could be treated as local content at home. Malaysia could count on such agreements to help investors in their search for local sourcing of components.

I. MACHINERY AND MACHINE-TOOL INDUSTRY: NEW OPPORTUNITIES FOR DIVERSIFICATION

Industry structure

The machinery and machine-tool industry accounted for 7 per cent of MVA in 1988. The industry's share of total employment is less than 1 per cent, but its contribution to manufacturing employment stands at 7.2 per cent. The industry is dominated by a large number of small-scale, locally controlled firms producing simple product types.

The manufacture of fabricated metal products represents the largest segment of the industry, while the foundry subsector constitutes one of the smallest activities within the industry (see Table IV.23). The value of output generated by fabricated metal products stood at MS 1,087 million in 1986, compared with MS 73.9 million worth of products produced by foundries. The production of castings and simple fabricated metal components and structures is quite widespread, catering to a substantial proportion of the country's needs. However, in many cases, local producers are merely copying original foreign designs. For more sophisticated equipment, the production of which requires advanced technology, local capabilities are limited. The industry had been traditionally and is still oriented almost entirely to the needs of the resource-based industries such as tin mining, timber processing, palm oil processing, rubber processing and the construction industries.

During 1982-1986, the production of machinery and machine tools goods fell from MS 2,217 million to MS 1,931 million, representing a 3.4 per cent annual decline. With the single exception of the manufacture of cutlery, hand tools and general hardware, all subsectors of the industry suffered sluggish or negative growth rates during 1982-1986 (see Table IV.23). This was principally due to the economic recession in 1985 and 1986 when overall demand fell sharply. The number of companies in the industry fell from 1,153 in 1984 to 1,092 in 1987, as the recession in 1985 and 1986 led to the closure of 61 units.

The decline of tin mining has adversely affected the expansion of the machinery industry in recent years. However, the industry has not been able fully to exploit the opportunities resulting from the expansion of other industrial activities, partly due to lack of economies

Table IV.23. Growth and structure of output in the machinery and machine-tool industry, 1982 and 1986
(In thousand M\$ and percentage)

ISIC MIC	Description	1982	1986	Percentage share 1982	Percentage share 1986	Percentage growth 1982-1986
37102	Foundries	117,239	73,871	5.3	3.8	-10.9
381	Manufacture of fabricated metal products	1,223,794	1,087,407	55.2	56.3	-2.9
38111	Manufacture of cutlery, hand tools and general hardware	12,241	18,016	0.6	0.9	10.1
38112	Tinsmithing and blacksmithing	2,068	0	0.1	0.0	-
38120	Manufacture of furniture and fixtures primarily of metal	65,008	49,708	2.9	2.6	-6.5
38130	Manufacture of structural metal products	327,584	203,404	14.8	10.5	-11.2
38191	Manufacture of tin cans and metal boxes	198,305	241,312	8.9	12.5	5.0
38192	Manufacture of wire and wire products	250,529	210,487	11.3	10.9	-4.3
38193	Manufacture of brass, copper, pewter and aluminum products	172,554	167,444	7.8	8.7	-0.7
38199	Manufacture of fabricated metal products not elsewhere classified	195,505	197,036	8.8	10.2	0.2

Table IV.23. (continued)

ISIC MIC	Description	1982	1986	Percentage share 1982	Percentage share 1986	Percentage growth 1982 - 1986
382	Manufacture of machinery except electrical	876,007	770,005	39.5	39.9	-3.2
38210	Manufacture of engines and turbines	2,316	2,596	0.1	0.1	2.9
38220	Manufacture of agricultural machinery and equipment	97,088	34,588	4.4	1.8	-22.7
38230	Manufacture of metal and woodworking machinery	24,845	11,820	1.1	0.6	-16.9
38240	Manufacture of special industrial machinery and equipment except metal/woodworking machinery	90,955	98,859	4.1	5.1	2.1
38299	Machinery and equipment n.e.c.	660,803	622,142	29.8	32.2	-1.5
Total		2,217,040	1,931,283	100	100	-3.4
<i>Source:</i>	Industrial Surveys, 1982 and 1986.					

of scale and partly due to technological complexity. Developments in the rubber and timber industries and more recently the palm oil sector tend to increase the scope for the expansion of the machinery industry.

The machinery industry is highly dependent on imported items. The import to consumption ratio of machinery, equipment and the mould and die subsectors is over 90 per cent. Overall imports of machinery are around six times in excess of the value of local production. The major import items are heavy machinery and equipment, such as machine-tools, machinery for specialized uses and civil and construction machinery. In 1988, imports of machinery related products totalled MS 6.7 billion, accounting for 15.5 per cent of the country's total imports. Imports of machinery alone accounted for 8.9 per cent of total imports.

Pattern of investment

Between 1973 and 1981, the investment in the industry increased from MS 318.6 million in 1973 to MS 653.1 million in 1981 (in constant 1981 prices). However, its relative share of total industrial investments declined from 7.7 per cent to 6.2 per cent during the same period. In 1987, the total paid-up capital of the industry was MS 1,196 million with total fixed assets of MS 1,125 million.

The distribution of firms across the main subsectors of machinery industry in Peninsular Malaysia as presented in Table IV.24 gives some idea about the pattern of investment. There has been an overall decline in the number of firms in foundry, metal fabrication and machine shops. However, the number of precision engineering firms rose from 42 in 1984 to 53 in 1987, largely due to the emergence of a significant number of firms in Pinang. Details presented in Table IV.24 should be interpreted with caution as it reports only the members of the Federation of Malaysia Foundry and Engineering Industry Association. These firms represent only a fraction of the total number of firms in foundry and precision engineering, although the Federation members constitute a sizeable number in metal fabrication and machine shops. There are exceptions to the general pattern of producing simple fabrications in a few large-scale establishments, which produce more sophisticated components mainly for their own use based on technology provided by their foreign joint-venture partners or licensors.

Constraints

Although the total consumption of machinery and equipment in Malaysia is quite large, as reflected in the substantial annual imports of investment goods into the country, the domestic market for the various types of equipment is nonetheless highly fragmented. A very wide range of machinery and equipment is used in the country, but the demand for each individual type of equipment is generally not significant enough to form a viable market base for local production.

There are several unfavourable factors which reduce the competitiveness of local products against imports. These include the lack of economies of scale in production in view of the limited local market; relatively high costs of raw materials; and predominantly small manufacturing units which employ outdated and inefficient production equipment and techniques. These and other problems have resulted in a high cost of production which places local industries at a disadvantage in terms of competitiveness not only against imports but also on the export markets. The lack of quality control facilities, particularly in smaller firms where quality control is mostly performed by visual inspection, has resulted in inconsistent product quality.

Most local engineering firms lack the resources to invest in testing facilities which could help to improve the quality of their products. They therefore have to rely on outside sources for technical assistance.

Table IV.24. Distribution of machinery and machine-tool firms^a in Peninsular Malaysia, 1984 and 1987

States	Foundry		Metal fabricators		Machine shop		Precision engineering	
	1984	1987	1984	1987	1984	1987	1984	1987
Selangor	47	38	77	63	114	105	36	26
N. Sembilan	4	1	21	22	24	26	1	2
Perak	36	22	20	38	32	52	..	3
Malacca	3	3	24	24	22	34	..	..
Kedah	..	1	46	39	48	49	..	..
Padang	..	..	91	68	63	50	..	..
Pinang	22	12	62	39	61	62	1	15
Terengganu	..	..	16	6	13	8	..	..
Johore	2	2	160	168	119	107	4	7
Total	114	79	517	467	496	493	42	53
Percentage share in total number of enterprises	8.2	7.2	44.8	42.8	43.0	45.1	4.0	4.9

Source: Federation of Malaysia Foundry and Engineering Industry Association.

a Members of the Federation of Malaysia Foundry and Engineering Industry Association (FOMFEIA).

The Standards and Industrial Research Institute of Malaysia (SIRIM) has only limited resources and capacities to provide the quality control support and the wide variety of other technical services needed by the smaller scale industries. The Institute is developing its programme of support to the automotive components, plastics, metalworking and electronics industries. This programme includes among others product design and product development for consumer and engineering products, and machine design for the plastics industry.

The existing foundry and supporting engineering services industries which provide castings, other essential components and supporting engineering services for the machinery production sector are in the initial stages of development. They are only capable of servicing the replacement part and simple equipment needs of the tin mining and other resource extraction and processing industries. Despite their long history most of the foundry and supporting engineering services industries have remained small in operations and poorly equipped. They generally do not have the resources to modernize and diversify in order to cater for the increasingly sophisticated needs of the other industrial sectors.

Hence, in order to strengthen the basic production capabilities of the machinery and machine-tool industry, priority must be given to upgrading the supply and technological capabilities. The Industrial Master Plan research studies draw attention to a lack of organized efforts in the industry. At present there is the Federation of Malaysian Foundry and Engineering Industries Associations whose members comprise mainly small-scale enterprises and workshops. The Association's present activities are mainly directed towards making representations on behalf of individual members on matters relating to government regulations. Some attempts are also made to assist members in bulk purchases of raw materials. There are no other organized efforts such as to promote the products of the industry, or to ensure better quality standards.

To further strengthen the primary production sector, it has been suggested that one or more foundry complexes should be established to increase the supply of good quality castings, forgings and other basic components. Facilities for the supply of small and medium castings and forgings must be established. The production of large castings and forgings may be considered at a later stage as the industry moves on to produce heavy equipment such as heavy construction equipment, large material handling equipment and heavy industrial process equipment. The basic objective is to bring together the foundries and related industries at one location to take advantage of common testing equipment, research and development and common facilities.

The Industrial Master Plan addresses specifically the problems and the issue of promoting local sourcing of components, with a view to ensuring that the products produced in the country are accepted and incorporated into downstream uses. It is aimed primarily at creating a demand for local products.

There are two basic considerations for encouraging greater use of local products. The first concerns the quality and price of local products while the second deals with the preference of the users for their traditional sources of supply which, in this case, are mainly imports. The quality and price of local products relates essentially to the strength of the industry in terms of technical competence and production efficiency.

With its existing capabilities and the industry's continued dependence on imports, the machinery and machine tool industry will need to be geared to enhance its contribution towards the process of industrialization. The level of development in the machinery industry is in principle measured by the level of technology development within the industry. This in turn is represented by a combination of the levels of accomplishment in 'producing technology' and 'product technology'. Producing technology is defined as the ability to produce the products, while product technology is measured in terms of ability to design or redesign products.

Exhibit IV.7 List of priority machinery and machinery components

- 1) Industrial processing machinery
 - 2) Agricultural machinery and equipment
 - 3) Mining and mineral processing machinery including equipment for oil and gas exploration and extraction
 - 4) Power generation machinery
 - 5) Material handling machinery
 - 6) Industrial machinery and equipment including engines, motors, generators, compressors, welding equipment, fans and blowers
 - 7) Machine tools
 - 8) Machinery components including ball bearings, valves, pumps, gears and gear boxes, couplings and mechanical seals
 - 9) Duplicating machines
 - 10) Typewriters, all types
 - 11) Construction machinery and parts thereof
 - 12) Automatic gate systems, burglar alarm systems and parts thereof
 - 13) Printing rolls and embossing rolls
-

Viewed from the present state of Malaysia's machinery industry, the requirements for a breakthrough in producing and product technologies are the upgrading of existing basic production capabilities and improvements in process skills. There is a need to establish and strengthen engineering centres in order to supply good quality castings, forgings and other basic components including large castings and forgings. While producing technologies can be more easily acquired through licensing, joint ventures or other arrangements, design skills are more difficult to develop. A very important long-term need for the development of the machinery industry in Malaysia is therefore the creation of a significant pool of personnel with the required technical skills and design capabilities. It is of paramount importance to enhance technical skills. The private sector is being encouraged to play a more effective role in training in order to ensure a regular supply of trained technical personnel.

Prospects

Mechanization of agricultural operations, booming construction activity and higher local content requirements of the motor vehicle industry seem to augur well for Malaysia's machinery industry, provided technological constraints can be overcome. Progressive mechanization of the agricultural sector is in the offing due to a shortage of labour, particularly in the estate sector. The machinery-based companies could seize this opportunity to design the required machinery and equipment. This is likely to become an increasingly important activity given the manpower shift from the agricultural to the urban-based industrial sector.

The ASEAN countries (particularly Malaysia, Indonesia, Thailand and the Philippines) are at comparable levels of industrialization and they still have a sizeable agricultural sector. These countries constitute an attractive subregional market base for many of the industry's products.

The current construction boom is creating a demand for construction machinery and equipment. The technological base for producing large construction machinery will, however, need to be created.

Higher local content requirements imposed on vehicle manufacturers provide yet another opportunity for the expansion of the machinery industry. As mentioned earlier, new avenues could be explored within the subregional perspective.

Market information concerning the domestic demand as well as the establishment of a technology transfer mechanism to provide advice on the sourcing, purchase and maintenance of all types of machinery and equipment would facilitate the expansion of the machinery and machine-tool industry.

J. ELECTRONICS AND ELECTRICAL INDUSTRY: MAIN CATALYST OF EXPORT-LED GROWTH

Changing structure of the industry

Malaysia is now the world's biggest exporter of semiconductors and the third-largest producer after Japan and the United States. As a driving force behind the country's dynamic manufacturing sector, the electronics industry has contributed to the rapid industrial transition of the economy, which has emerged as an industrially more advanced developing country on the global map of industrialization.

The export earnings of the electronics and electrical industry stood at \$5.5 billion in 1988, representing around 56 per cent of all manufactured exports of Malaysia, compared with 48 per cent in 1980. The share of manufactured exports in total exports rose from 22 per cent in 1980 to about 50 per cent in 1988. This lends credence to the fact that the electronics industry has developed an edge over other rapidly growing manufactured exports and even expanded its dominant role in the country's manufactured export profile.

The structure of the industry is now characterized by a rise in the share of consumer electronics in an industry long dominated by components manufacture, semiconductors in particular. Since the industry's formative years in the early 1970s, the Malaysian electronics industry has remained structurally unchanged, lopsidedly skewed to the components subsector.

Activities in the manufacture of electronic components mainly involve the assembly and test activities of semiconductors (more than 80 per cent) and other electronic devices from imported basic units such as wafers or chips. For the consumer electronics subsector, the contribution to total output was about 10–13 per cent in the first half of the 1980s. The activities are mainly concentrated in the assembly of home entertainment products and electronic household goods. The industrial and commercial electronic subsector, which accounted for only a small share of the electronics output, 7 per cent in 1986, mainly manufactures equipment such as telecommunication equipment, telephone switching, radio phones, multiplex equipments, telephone exchanges, junction boxes and mobile radios.

At present, with the advancement of technology, semiconductor assembly operations, which were labour-intensive and largely manual-oriented in the early 1970s, have been replaced by automated micro-processor controlled equipment. This has been made possible because of the dominance of the transnational corporations (TNCs) in this subsector, whose activities are being greatly influenced by rapid technological changes originating in their parent companies.

In 1970, there were only four electronics companies producing consumer electronic products. However, by 1988, the number of electronic companies had increased to 187, comprising 118 components companies, 45 consumer electronics companies and 24 industrial electronics related companies (see Table IV.25). In the case of the electrical industry, at the end of 1986 there were more than 110 electrical firms operating in the country with minimum paid up capital of M\$ 250,000 or 25 workers.

Table IV.25. Number of electronics companies in production, 1970–1988, selected years

Subsector	Number				Percentage			
	1970	1986	1987	1988	1970	1986	1987	1988
Components	..	69	89	118	..	59.5	63.6	63.1
Consumer electronics	4	28	33	45	100.0	24.1	23.6	24.1
Industrial electronics	..	19	18	24	..	16.4	12.9	12.8
Total	4	116	140	187	100	100	100	100

Source: MIDA.

The production level of selected electronics and electrical goods between 1980 and 1988 is shown in Table IV.26. Among these manufactured items, radio and television sets, sound reproducing and recording equipment show the highest growth rate. Malaysia is expected to become the world's top producer of colour television by 1990 or 1991. At present, there are already many television manufacturing companies, mostly originating from Japan and the Republic of Korea, which have established locally based operations. The latest success story for colour TV sets is that of the Sharp-Roxy Electronics Corporation, which is now manufacturing and exporting colour TV sets designed and made by Malaysians. For air-conditioners, the growth rate was 18.7 per cent over the period 1980–1988, and Malaysia is now the largest producer of room air-conditioners in the world. Production of semiconductors and other electronic components and communication equipment and apparatus also showed an upward trend between 1980 and 1988.

In 1989, the electronic components part subsector grew at a moderate pace of 11.3 per cent in 1989 compared with 20.8 per cent in 1988. The slack was compensated by the continued buoyancy in performance of electrical goods. The overall growth rate of 27.9 per cent achieved by consumer electronics in 1989 largely reflected higher production of radios and television sets as well as room air-conditioners. In the face of rapid expansion of domestic business activities, industrial electronics also recorded significant increases.

Exhibit IV.8 List of priority electrical and electronics products and components

- 1) Colour television receivers and parts thereof
- 2) Audio or video cassette recorders or players and parts thereof
- 3) Tuners
- 4) Computers, computer peripherals and parts thereof
- 5) CAD, CAM or CAE equipment and parts thereof
- 6) Controllers, all types
- 7) Modems
- 8) Telephones including cellular radios, walkie-talkies and accessories, components and parts thereof
- 9) Telecommunications equipment and parts thereof
- 10) Intercoms
- 11) Optical fibre products and parts thereof
- 12) Counters
- 13) Piezoelectric frequency units
- 14) Voice and data synthesis equipment
- 15) Earphones
- 16) Hearing aids
- 17) Microphones
- 18) Smoke detectors, fire alarms, electronic counters
- 19) Automatic fare collection machines
- 20) Automatic traffic control equipment
- 21) Automatic vending machines
- 22) Automatic parking meters
- 23) Automatic teller machines
- 24) Computing scales
- 25) Cash registers
- 26) Telemetering equipment
- 27) Telex machines
- 28) Photocopying machines and parts thereof
- 29) Robots and robotics
- 30) Electrical lawn mowers
- 31) Ovens
- 32) Washing machines and parts thereof
- 33) Vacuum cleaners and parts thereof
- 34) Floor polishers
- 35) Shavers
- 36) Hair dryers
- 37) Decorative lights
- 38) Industrial furnaces and parts thereof
- 39) Button cells
- 40) Rechargeable cells or batteries
- 41) Dischargeable tubes

Exhibit IV.8 (continued)

- 42) Antennae
 - 43) Speakers
 - 44) Microswitches
 - 45) Power supplies
 - 46) Quartz crystals
 - 47) Sensors and transducers
 - 48) Solar cells
 - 49) Motors, all types
 - 50) Relays
 - 51) Resistors
 - 52) Capacitors
 - 53) Printed circuit boards
 - 54) Printed circuit board connectors and parts thereof
 - 55) Charge-couple devices
 - 56) Displays - electroluminescent plasma, liquid crystal
 - 57) Ceramic substrates or packages
 - 58) High-density memory storage media
 - 59) Gold and aluminium bonding wires
 - 60) Headers and cans
 - 61) Lead-frames
 - 62) Magnets or ferrite cores
 - 63) Semiconductor wafer fabrication integrated circuit design
 - 64) Semiconductors, all types
 - 65) Semiconductor testings, all types
 - 66) Electronic modules
 - 67) Magnetic heads
 - 68) Magnetic webs and pancakes
 - 69) Static convertors
 - 70) Compressors for refrigerators
 - 71) Wire harness
 - 72) Timer switches
 - 73) Thermostats
 - 74) Power tools
 - 75) Electric door bells
 - 76) Protective switchgear and parts thereof
 - 77) Electric cookers
 - 78) Electric rice cookers
-

The overall export performance of the electronics industry exceeded the targets set by the Industrial Master Plan for 1980. The total exports of the electronics industry exceeded the IMP target by 44.6 per cent (see Table IV.27). Among the three subsectors, the largest difference between the actual performance and the IMP target was that of consumer electronics. The exports of this sector which was valued at M\$ 904 exceeded the IMP target of M\$ 371 million by 143.7 per cent. This remarkable growth of the consumer electronics subsector was attributed to increased exports of television and radio broadcast receivers. However, for the industrial electronics subsector, exports reached M\$ 143 million which fell short of the IMP target of M\$ 207 million by 30.9 per cent.

In terms of import requirements, the total value of imports exceeded the IMP target by 61.4 per cent. This indicated that Malaysia continued to import a substantial proportion of its material inputs. The import values for both the electronic components subsector and industrial electronics subsector far exceeded the IMP targets by over 70 per cent. On the other hand, the consumer electronics subsector, which imported M\$ 315 million, fell short of the IMP estimate of M\$ 470 by 33.0 per cent.

Of the three major categories, electronic component exports continue to account for the largest share. However, the electronics export profile of Malaysia is changing. The share of components in exports fell from 94.2 per cent in 1980 to about 82.5 per cent in 1987, and that of consumer electronics rose to 15.6 per cent in 1987 after having suffered a marked decline from 60 per cent in 1975 to 5 per cent in 1980. Exports of industrial electronics accounted for 1.9 per cent of electronics exports in 1987, compared with 34.0 per cent in 1975.

Table IV.26. Production of selected electronics items, 1980 - 1988

Industry code	Item	1980	1981	1982	1983	1984	1985	1986	1987	1988	Growth per cent per annum		
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1980	1988	
Manufacture of refrigerating exhaust, ventilating and air-conditioning machinery	Household refrigerators (numbers)	126,685	148,197	192,615	223,572	156,823	148,424	154,321	144,997	197,134	197,134	5.7	
	Room air-conditioners (numbers)	183,422	214,223	184,013	207,737	177,578	148,253	336,503	508,042	723,098	723,098	18.7	
Semiconductors and other electronic components and communication equipment and apparatus	Semiconductors (million)	1,446	1,775	1,663	1,654	2,074	1,528	1,626	1,953	2,183	2,183	5.3	
	Electronic transistors (million)	1,644	2,198	2,212	2,597	3,831	3,450	3,719	4,714	5,547	5,547	16.4	
	Integrated circuits	1,736	1,816	2,193	2,764	3,984	2,614	3,326	3,911	4,697	4,697	13.2	
Radio and television sets	Television sets (numbers)	157,352	158,613	249,000	382,766	443,025	568,387	862,573	1,240,125	1,130,453	1,130,453	28.0	
	Radios ('000)	4,738	4,635	3,538	5,501	7,821	8,829	10,521	15,879	20,962	20,962	20.4	
Cables and Wires	Telephone and telegraph cables (tonnes)	10,640	12,467	25,360	21,125	9,677	22,370	6,046	1,774	4,665	4,665	9.8	
	Insulated wires and cables (tonnes)	15,823	18,382	21,098	22,863	18,209	13,765	11,983	16,339	16,054	16,054	0.2	

Source: Department of Statistics, *Monthly Industrial Statistics, Peninsular Malaysia, 1983, 1986 and 1988.*

Table IV.27. Trade performance of the electronics industry against the IMP targets, 1986
(Million ringgit)

Subsector	Export		Import		Percentage difference	
	Target	Actual	Target	Actual	Exports	Imports
Electronics components	4,250	5,931	3,219	5,563	39.6	72.8
Consumer electronics	371	904	470	315	143.7	-33.0
Industrial electronics	207	143	429	767	-30.9	78.8
Total	4,828	6,979	4,118	6,645	44.6	61.4

Source: MIER, *Seminar on Changing Dimensions in the Electronics Industry in Malaysia, 14-15 March 1988*. 'Trends and prospects in the electronics industry'.

The United States is the major export market, accounting for about 26 per cent of the total exports of electronic components in 1980. This share has increased significantly since then and by 1986, half of the component exports were sold to the United States. Other major markets are Singapore, Japan, the United Kingdom, Hong Kong and the Federal Republic of Germany.

The principal export market for consumer electronics was the Federal Republic of Germany which imported a total of M\$ 21.8 million worth of consumer electronics (or 19.9 per cent) in 1980. However, with a significant increase in exports to the United States since 1980, by 1986 the latter had overtaken the Federal Republic of Germany as a major buyer of consumer electronics from Malaysia, with 33.4 per cent destined to the United States.

Rapid influx of foreign investment

There are several factors contributing to a rapid influx of foreign firms into Malaysia's electronics industry.

- The substantial appreciation of foreign currency such as the yen and the New Taiwan dollar has motivated companies from Japan and Taiwan Province in similar industries to relocate their plants and start new ventures in Malaysia, especially since 1985.
- The four NIEs (Taiwan Province, Hong Kong, Singapore and Republic of Korea) were not granted preferential duty treatment for their goods by the United States under the Generalized System of Preferences (GSP) scheme. This has encouraged them to relocate some of their projects to Malaysia.
- Government promotional incentives and investment policies are favourable to the investors. Moreover, the concept of free trade zones (FTZs) which was pioneered in 1972 encouraged the flow of direct foreign investment particularly into the electronics subsector.
- Good infrastructure, relatively cheaper and younger trainable labour and relatively inexpensive land are other contributing factors which have allowed foreign investment in electronics to gather momentum.

In the early 1970s, major United States semiconductor makers began redeploying the more labour-intensive assembly to Pinang and later to other places. They were followed by Japanese competitors. In the past four years the Japanese electronics giants such as Matsushita, Sony and Sharp have rapidly expanded their operations in Malaysia. In recent years there has also been a big influx of small- and medium-sized firms from Taiwan Province and more recently

from Hong Kong. The newcomers are redeploying units to Malaysia with a view to escaping high wages at home and the effects of strong currency on export competitiveness.

In 1989 the Osaka-based Matsushita, which is already the biggest electronics manufacturer in Malaysia, announced plans for a new MS 100 million air-conditioner plant to be built near Kuala Lumpur. The new venture brings Matsushita's total investment in Malaysia to MS 900 million. Malaysia is getting the biggest portion of the Sony redeployment scheme destined for Southeast Asia. Sony is also planning to double its output of high-fidelity audio equipment in its existing plant in Pinang. This brings Sony's total investment in Malaysia to more than MS 300 million. One of the new plants is the first to manufacture micro-sized floppy disks produced outside Japan. Thus, Malaysia has become Sony's biggest manufacturing base in Southeast Asia. Similarly, Sharp has made Malaysia one of four world-wide production centres for the manufacture of colour televisions. Sharp is also stepping up new investments. Along with the big transnational corporations, small electronics firms in Taiwan Province seem to have been determined to make a new home in Malaysia. In 1988, Taiwan Province investors ranked second only to the Japanese, with around MS 830 million of approved investment. There are indications of a flood of inquiries from Hong Kong manufacturers about investment possibilities in Malaysia.

Key issues

There is heavy dependence of the domestic industry on transnational companies, which mainly carry out assembly operations based on imported basic materials or components. The low level of usage of local materials within the industry not only hinders technology transfer but also obstructs the growth of local ancillary and supporting industries. In addition, there is still a lack of linkages among the companies located in the Free Trade Zones and those located outside the FTZs.

A major constraint has been the absence of a big end-user's market in Malaysia, unlike in Taiwan Province and the Republic of Korea. The domestic market for electronic and electrical products is relatively small and thus is unfavourable to small-sized and Malaysian-owned companies. These locally-owned companies generally cannot compete with transnational companies in the international market.

The level of technology utilized by local firms is relatively low compared to other advanced developing countries. Most of the local electronic companies are assemblers of consumer products and industrial equipment while the foreign companies in Malaysia obtain high technology equipment and techniques from their parent companies located abroad. The electronic companies especially those in the consumer and industrial electronics sectors, are relatively labour-intensive and do not involve as much sophisticated machinery and automated precision equipment handling. Moreover, there is very little product design and R & D work being carried out by the transnational corporation-operated plants in Malaysia, such work being concentrated in their parent countries or in other Asian NIEs.

There have been inadequate provisions foreseen for the disposal of neutralized waste generated by the electronics firms operating in the country.

A shortage of experienced engineers exists particularly in the areas of process engineering, production control, electro-mechanical engineering and production and control management. These shortages may be due to emigration of some of the experienced technical personnel from the electronics industry, particularly over the last 2-3 years.

Signs of strains on the infrastructural facilities are emerging in the wake of a rapid increase in the number of foreign firms. The country's infrastructural problems will need to be anticipated in order to keep pace with demand for new facilities.

The industry is likely to undergo structural change from labour-intensive assemblies to high technology, more automated and capital-intensive operations. In order to meet this challenge, technology at both the product development and process level will need to be upgraded.

The objective of the industry's future development strategy could be in tune with creating favourable conditions for the pursuit of a 'niche' approach and the enhancement of inter-industry and inter-firm linkages within the economy. Over-dependence on the transnational companies could be reduced by promoting joint ventures between foreign and locally owned electronics firms to facilitate the transfer of technology. Moreover, the government could also help create a domestic market for certain electronics products through its procurement policy.

Significant scope exists for producing appliances for the domestic market. In the case of electrical products, existing products which have potential for further expansion in output include motors, power factor correcting capacitors, liquid dielectric transformers and generating sets, while new product areas include:

- fractional horsepower motors;
- low-voltage switchgear (excluding household electrical accessories) up to 450 volt;
- electric welders;
- industrial furnaces;
- static converters; and
- electric insulation equipment.

Prospects: the international perspective

In view of Malaysia's status in world's electronics as one of the most active sites for semiconductor assembly and testing, it is essential to analyse the prospects for semiconductors within the global perspective.*

There are indications that the global semiconductor industry, after growing by more than 30 per cent in 1988, may enter into a mild recession by the end of 1990. Production may actually decrease in 1990 by 3.3 per cent to \$56.5 billion. But some observers have predicted that world-wide production will recover in 1991. As demand and supply have been erratic, prices have also oscillated.

A new generation of newly industrializing economies have been trying to induce Japanese, United States and Western European companies to relocate their manufacturing operations. Malaysia has been particularly active, giving various tax incentives to foreign corporations, and allowing manufacturing equipment and many materials to be imported duty-free. Consequently, many United States corporations have been expanding their manufacturing operations in Malaysia. Previously, Malaysia was used as a manufacturing site only for assembly and test work, the so-called back-end of manufacturing. Recently, however, National Semiconductor, Motorola and Fujitsu announced that they would augment their Malaysian operations by adding wafer fabrication, the so-called front-end of manufacturing in which electronic circuitry is etched on to silicon wafers that are then sawn into individual semiconductor dies.

Fujitsu's expansion in Malaysia is also due to the soaring value of the yen, which makes overseas manufacturing investments comparatively cheaper. Although the high yen value has not yet forced Japanese companies substantially to relocate their manufacturing to offshore sites, any further appreciation of the currency's value would increase the already strong pressure to do so.

* The following analyses draw on a survey of the global semiconductor industry contained in the UNIDO Global Report for 1989-90. See *Industry and Development, Global Report 1989-90* (Vienna, 1989), pp. 153-170.

Malaysia was the main destination for United States exports of electronic components and devices in 1988, and it was number two, behind Japan, for exporting those products to the United States. The figures, however, are misleading. Much of the \$1.2 billion worth of United States exports to Malaysia were semi-finished products that needed to be assembled and tested there. After the work was done, Malaysia shipped the finished products back to the United States, which accounted for much of the \$1.6 billion in imports that year. The same can be said of Singapore, which bought \$670 million worth of United States electronic components and devices in 1988 and exported \$990 million worth back to the United States. In contrast, the electronic components and devices shipped to and from Japan and Western Europe are, generally speaking, finished products ready for use in electronics end-products.

United States companies are continuing to expand their manufacturing in Asia. Motorola, for example, has announced that it will spend \$300 million on a semiconductor and telecommunications factory in China. The company also states that it will build a \$47 million wafer fabrication facility in Malaysia by 1991.

Because of the high-valued yen, the Japanese, too, are doing more manufacturing offshore. Sony is building its first overseas wafer fabrication facility, which was scheduled for start-up in Thailand in 1989. For South-East Asian countries, government assistance comes in the form of certain incentives for foreigners to manufacture there. For example, as discussed earlier, the Government of Malaysia gives tax breaks to foreign companies to induce them to manufacture semiconductors in Malaysia.

Most industries analysts expect countries other than Japan, the United States and those of Western Europe to play an increasingly large role in the global semiconductor industry. The semiconductor market of those countries is expected to grow from 13 per cent of the total world-wide market in 1988 to 20 per cent in 1993. Those figures are based on the fact that production of electronics equipment – end-products like personal computers, video cassette recorders and telecommunications gear that use semiconductors – is rapidly moving to Asian countries.

K. ENERGY SECTOR: CHANGING DEPENDENCE FROM OIL TO GAS AND ELECTRICITY

Malaysia is well endowed with a variety of energy sources. Due to the development of its indigenous resources energy imports amounted only to 4 per cent of merchandise exports in 1987 against 11 per cent in 1965.

The bulk of energy production can be attributed to Malaysia's oil and gas resources. The energy balance presented in Table IV.28 reveals that in 1985 almost 62 per cent of primary energy supply and 65 per cent of secondary energy supply were provided by crude oil and petroleum products. The most worrying aspect of this concentration on oil is the envisaged decline in crude oil production in the 1990s. This could force the country to reverse its current status as a net oil exporter in the next decade, unless oil production is matched with current replenishment of oil reserves.

In order to reduce the country's dependence on oil the government is fostering the diversification of the energy supply side by making use of the country's resource base, which is still largely untapped. This policy centres around the so-called 'Four Fuel Strategy' which aims at providing an adequate and secure supply of energy in the form of natural gas, hydropower and coal, besides oil. Natural gas, hydropower and coal accounted for 18.1, 2.9 and 2.8 per cent of primary energy supply in 1985. According to the objectives of the Fifth Malaysia Plan, oil is to be substituted for natural gas and both domestic and imported coal. The share of crude oil in primary energy supply is expected to decrease to 41.7 per cent, while natural gas and coal are to increase moderately to 20.8 and 8.7 per cent until 1990 (see Table IV.28). These

Table IV.28. Energy balance, 1986-1990

Source	1980		1985		1990 (Planned)		Annual rate of increase (percentage) 1981-1985 1986-1990 (Planned)
	PJ	Percentage	PJ	Percentage	PJ	Percentage	
Crude oil	249.9	55.1	360.2	53.0	360.2	41.7	7.8
Petroleum products	97.4	21.8	60.7	8.9	102.0	11.8	-9.0
Natural gas	2.3	0.5	122.8	18.1	179.5	20.8	121.5
Hydro	16.2	3.6	19.4	2.9	20.7	2.4	3.7
Coal and coke	2.2	0.5	19.3	2.8	74.9	8.7	54.4
Charcoal	3.0	0.7	..	..	..	..	..
Firewood	53.5	11.9	58.9	8.7	78.0	9.0	1.9
Palm oil refuse	26.3	5.9	38.3	5.6	47.8	5.6	7.8
Total	447.8	100.0	679.6	100.0	863.1	100.0	8.7

Source	1980		1985		1990 (Planned)		Annual rate of Increase (percentage) 1981-1985 1986-1990 (Planned)
	PJ	Percentage	PJ	Percentage	PJ	Percentage	
Petroleum products	232.2	69.6	318.5	66.8	432.8	64.7	6.5
Electricity	30.9	9.3	44.1	9.3	65.8	9.8	7.4
Coal and coke	0.9	0.3	18.1	3.8	39.0	5.8	82.3
Charcoal	8.8	2.6	8.5	1.8	8.3	1.2	0.7
Gas	0.9	0.3	11.6	2.4	18.4	2.8	66.7
Firewood	33.4	10.0	37.6	7.9	57.2	8.6	2.4
Palm oil refuse	26.3	7.9	38.3	8.0	47.4	7.1	7.8
Total	333.4	100.0	476.7	100.0	668.9	100.0	7.4

Primary energy supplies^{a)}Energy demand^{b)} by source

Table IV.28 (continued)

Energy demand by sector

Source	1980		1985		1990 (Planned)		Annual rate of increase (percentage)	
	PJ	Percentage	PJ	Percentage	PJ	Percentage	1981 - 1985	1986 - 1990 (Planned)
Agriculture	28.8	8.7	35.3	7.4	40.7	6.1	4.2	2.9
Mine and quarries	19.2	5.8	15.3	3.2	18.6	2.8	-4.4	4.0
Manufactures	109.5	32.8	162.2	34.0	242.5	36.2	8.2	8.4
Construction	8.8	14.7	3.1	21.9	3.3	10.8	8.3	0.0
Transport and communication	51.3	15.4	83.3	17.5	110.9	16.6	10.2	5.9
Commerce and finance	25.1	7.5	33.4	7.0	44.1	6.6	5.9	5.7
Services	9.8	2.9	13.2	2.8	17.0	2.5	6.1	5.2
Domestic	80.9	24.3	119.3	25.0	173.2	25.9	8.1	7.7
Total	333.4	100.0	476.7	100.0	668.9	100.0	7.4	7.0

Source: Information Malaysia 1988 Yearbook; Fifth Malaysia Plan.

a Primary energy supplies means unconverted energy.

b Energy demand takes into account the last consumer.

projections have been derived from the so-called National Energy Planning Study (NEPS), which features a comprehensive energy planning approach completed in 1985. Moreover, biomass (firewood, palm oil refuse) recorded almost 18 per cent of primary energy production. Following the Fifth Plan these two traditional sources are to keep their share in the primary energy supply of the country.

Most of the country's oil and natural gas reserves are located off the shores of Trengganu, Sabah and Sarawak. Proven reserves of crude oil are estimated at 3.5 billion barrels. By mid-1980s, 53 trillion cubic feet of natural gas reserves had been discovered. Malaysia ranks 22nd and 13th in the world oil and gas reserves, respectively. In the recent past Malaysia's oil policy has tended to support the OPEC agreements. Production was decreased from 510,000 barrels per day in 1986 to 503,000 bpd in 1987. A further decline occurred in 1987 as production targets were initially cut to 497,000 bpd in order to assist OPEC's efforts to raise petroleum prices to \$18 per barrel. Although prices slipped well below this level (\$16) Malaysia eventually increased its output to 540,000 bpd in 1988. The target for 1989 was even raised to 562,000 bpd against a fall in prices to \$14 per barrel. This extraction policy which runs counter to the OPEC strategy can be attributed to the need for government revenues.

In view of the depleting known resources measures are being undertaken to encourage more intensive exploration activities. The national oil company, PETRONAS, represents the government's interest and is responsible for the exploration and exploitation of oil. The authority has the ultimate responsibility of determining the country's level of petroleum production. Furthermore, PETRONAS determines the sale price of Malaysian crude, which generally follows the sales price of Arabian Light. However, due to its very low sulphur content the price of Malaysian crude slightly exceeds that of Arabian Light.

Given the lack of local expertise and the capital intensity of petroleum-related activities, PETRONAS enters production sharing contracts with foreign oil companies including Shell and Esso. The opportunities to increase production in the future seem to be quite promising in view of the suitability of 90 per cent of the offshore area for exploration.

Natural gas is expected to be the major non-oil energy supply source for Malaysia in the future. In order to diversify its energy resource base the Peninsular Gas Utilization (PGU) project was launched by PETRONAS in 1982. The goal of this project, which is the largest energy project presently under way in the country, is to reduce significantly the use of oil in the power sector, which presently accounts for more than 80 per cent of total fuel consumption, and to deliver natural gas to the petrochemical industry as well as to end-users in the domestic market. Stage I of this project, which comprises construction and installation of offshore gas production and gathering facilities as well as onshore gas processing and distribution systems, was completed in March 1985. Since that time gas has been delivered to a power plant, a steel mill and households near the land terminal in the State of Terengganu. As part of Stage I a 725 km cross-country pipeline will be laid thus establishing the base for the country's future gas grid. Plans are also under way for gas to be supplied to the towns and to the industries in the main industrial areas of the country. Stage II involves the construction of the second gas processing plant and additional refrigeration facilities for storage.

Gas is also utilized as a fuel and refrigerant in the LNG plant in Bintulu, Sarawak. However, the plant is not yet in a position to utilize its full capacity due to the lack of demand in this part of the country.

Despite the increasing importance of gas as an energy source, an overall pricing policy for gas used within Malaysia is yet to be determined, partly because it has been the subject of a vigorous debate between the power authority seeking advantageous terms and PETRONAS, which is also in charge of gas exploration and exploitation. As in oil production, PETRONAS has tried to develop its gas reserves by entering production-sharing agreements with foreign companies. In this respect, contracts have been settled with Gulf, Esso and Shell.

Besides oil and gas, other resources are of limited importance for the energy balance. Recent estimates of Malaysia's coal resources place them in the order of 500 million tonnes. Though the country has a history of coal mining, production ceased in 1960. There is currently no commercial production of coal, since the price of imported coal, which is mainly provided by Australia, China, Canada and India, falls short of domestic exploitation costs. In order to serve the needs of the power plants and the tin producers Malaysia imports approximately 500,000 tonnes of coal per year.

The use of biomass, mainly firewood and palm oil waste, plays a significant role only in the rural sector of the country. The National University of Malaysia and the University of Science in Malaysia are reported to be studying the potential of non-conventional energy use in co-generation systems, particularly in isolated power plants, with a view to increasing the overall efficiency of energy use. A large-scale use of agricultural waste in industrial energy production cannot be expected in the near future. The same applies to the potential of solar energy production which continues to be untapped.

As far as renewable energy sources are concerned, the country's hydropower potential seems to be more important for industrial production, though hydropower has a lower share in primary energy supply than firewood and palm oil refuse. Table IV.29 shows the shares of various primary energy sources in electricity generation in Peninsular Malaysia. According to this, oil has the largest share both in installed generating capacity and gross units generated, since oil and related products are widely used in diesel power stations and in so-called combined cycle stations, which use either gas or oil.

Table IV.29. Electricity supply by plant types in Peninsular Malaysia, 1987/88

Type	Installed generating capacity		Gross units generated	
	MW	Percentage	GWh	Percentage
Oil	1,930	40	7,310	45
Hydro	1,251	26	4,586	28
Combined cycle	900	19	3,865	24
Coal	300	6	72	0
Gas	280	6	222	1
Diesel	169	3	138	1
Total	4,830	100	16,194	100

Source: National Electricity Board of the States of Malaya, *Highlights 1987/88*.

Note: Rural stations providing 12 hour supply have been excluded.

After oil, hydropower is the largest energy source used for electricity generation. Given an annual rainfall averaging 250 centimetres and favourable topographical conditions, Malaysia is well endowed with hydropower, which is assessed to have a technical potential of about 123,000 GWh per year. However, the larger part of this hydropower potential is located in remote areas some distance away from the electricity demand centres. Only 1 per cent of this technical hydropower potential exists in Peninsular Malaysia, where some 82 per cent of the population lives, while Sarawak with only 9 per cent of the population is endowed with 71 per cent of the hydropower potential.

Hence, hydropower cannot make a further and substantial contribution to the energy supply for power generation, unless the grids of the peninsula and Sarawak are interconnected. This concept, which is under study, involves the construction of two major hydropower stations totalling 2,950 MW capacity and of some 800 km of high voltage transmission lines with about 620 km of submarine cable across the South China Sea. It is envisaged that these projects, which are to provide 1,500 MW of base load capacity to Peninsular Malaysia, will materialize

in the late 1990s. It should be noted that, given the enormous financial requirements of the projects, it is still unclear if it will materialize in time.

Apart from that, mini hydropower plants (50–500 kW each) will be an important feature in the rural electrification programme, which aims at supplying electricity to 70 per cent of all Malaysian households by 1990.

Due to the lack of a national interconnected system, there are basically three independent systems of electricity generation and distribution. The National Electricity Board (NEB) is in charge of the so-called 'national grid', which covers the grid in Peninsular Malaysia and the related power plants. NEB generated 89 per cent of total electricity in Malaysia, while it held 92 per cent of the total generating capacity in 1985. The Sabah Electricity Board supplied only 5 per cent in Sabah, while the Sarawak Electricity Supply Corporation produced roughly 6 per cent in Sarawak.

Basically, all electricity tariff rates are determined by the NEB. They are divided into three groups, namely domestic, commercial and industrial users. Since 1981, tariffs have been adjusted to international standards, though industrial consumers continue to be subsidized through special industry rates.

Power supply and demand forecasts are presented in Table IV.30. In the wake of the ongoing industrialization of the country the power sector faces a steadily growing demand by households and industrial plants. Hence, electricity is at the centre of the government's plans to further improve the infrastructure services. According to the so-called Power Sector Investment Study (PSIS), electricity production is expected to increase at an average rate of 12 per cent between 1985 and 1995. For this reason, the NEB has a programme for steadily diversifying its dependence on petroleum to hydropower and gas for electricity generation. The programme calls for the construction of about 200 mini-dams throughout the country. Further, the NEB is also constructing a major 250 MW natural-gas power station in Paka/Trengganu, which is the first of a series of gas-fired power stations to be built. By the year 2000, it is hoped that hydropower and gas-fired plants will account for more than 50 per cent of power generation.

Table IV.30. Power supply and demand forecasts, 1985–1990

	1985		1990	
SARAWAK				
Generation (GWh)	760	(5.6)	1,470	(7.1)
Peak demand (MW)	150	(6.2)	280	(7.7)
Required generation capacity (MW)	180	(6.5)	340	(7.8)
SABAH				
Generation (GWh)	700	(5.1)	1,200	(5.8)
Peak demand (MW)	140	(5.8)	230	(6.3)
Required generation capacity (MW)	170	(6.2)	280	(6.4)
PENINSULAR MALAYSIA				
Generation (GWh)	12,200	(89.3)	18,100	(87.1)
Peak demand (MW)	2,120	(88.0)	3,130	(86.0)
Required generation capacity (MW)	2,540	(92.0)	3,750	(85.8)
TOTAL MALAYSIA				
Generation (GWh)	13,660	(100.0)	20,770	(100.0)
Peak demand (MW)	2,410	(100.0)	3,640	(100.0)
Required generation capacity (MW)	2,760	(100.0)	4,370	(100.0)

Source: *Information Malaysia 1988 Yearbook*.

Note: Percentage share in total generation, capacity or peak demand is given in parentheses.

L. SUSTAINING THE INDUSTRIAL INVESTMENT MOMENTUM

The level of foreign investment approved by the Malaysian Industrial Development Authority in 1989 reached \$3.2 billion. Foreign and local investment combined recorded a 33 per cent increase over the previous year. The total approved and proposed capital investments of around M\$ 12 billion in 1989 may be an underestimate as investments below M\$ 2.5 million are not considered. The investment boom is continuing in 1990, and a double-digit growth in annual real investment during 1990-1994 is in the offing.

Foreign investors invested heavily in export-oriented electronics, textiles, rubber and plastics products in 1989. Large, capital-intensive projects such as petrochemicals and water fabrication plants took a sizeable share. New avenues were also explored in other segments of manufacturing.

Japan sustained its lion's share with 31.3 per cent of total foreign investment in 1989, followed by Taiwan Province (24.7 per cent), Singapore (10.6 per cent), United Kingdom (8.9 per cent), Hong Kong (4.1 per cent), United States (3.7 per cent), Federal Republic of Germany (3.6 per cent) and others (3 per cent). Investment flows from Taiwan Province rose by 155 per cent, while that of Japan rose by 120 per cent in 1989.

Many paper, printing, publishing, electrical goods, electronics, textiles, clothing and transport equipment industries are operating at almost full capacity. This would tend to encourage new investments. Further upstream and downstream investments in oil and gas-based industries are encouraged by a revival of oil prices on the world market.

In pursuit of boosting investors' confidence the Government of Malaysia constantly revises its investment policy. Under a special offer, 100 per cent foreign equity has been allowed until end-1990. There are indications that the reformulation of the New Economic Policy for the 1990s will be particularly favourable to investors, with a view to sustaining the current investment environment.

Sustaining the momentum of industrial investment calls for further expansion of the infrastructural facilities. According to Japan's Overseas Economic Co-operation Fund (OECF),* Malaysia's road and highway system as well as water and electricity supplies will reach capacity limits by the year 1993. There is a need to assess the exact magnitude of the strains on infrastructural facilities and assign a greater role to the private sector in the creation of these facilities.

Malaysia's Modernization and Manpower Planning Unit predicts a shortage of more than 15,000 industrial managers, systems analysts and engineers by the mid-1990s. This shortage is likely to become more acute given the current pace of technological upgrading across subsectors of manufacturing. This calls for a significant enhancement of skills in the managerial and skilled work force.

Sustaining the momentum of industrial investment thus calls for careful monitoring of signs of overheating in the economy, with a view to avoiding strains on the means of achieving a sustained pace of industrial expansion in the 1990s. The government expects to spend over M\$ 70 billion during the Sixth Plan (1991-1995), mainly to build new and upgrade existing infrastructure to cater for the country's rapid industrial growth.

* See *Far Eastern Economic Review*, Japan warns on Malaysian infrastructure jam tomorrow, (5 April 1990), pp 46-47.

Table IV.31. Major product areas for investment, export and rationalization, 1989

Industry	Major items for investment	Major items for export	Major items for rationalization
Rubber	Tyres	Tyres; latex products; general rubber goods	
Palm oil	Oleochemicals; processed palm kernel oil; fat products	Oleochemicals; processed palm kernel oil; fat products	Palm oil refinery and fractionation subsector
Food	Cocoa products; fruits vegetables; animal feeds	Cocoa products; canned fruits and vegetables	
Wood	Furniture; joinery mouldings; rubber-wood products	Furniture; panel products; joinery mouldings; rubber-wood products	Sawmill subsector; plywood and veneer subsector
Chemicals	Fertilizers; HDPE; LDPE; polypropylene; vinylchloride; vinyl-acetate; SBR; MTBE	Fertilizers	
Non-ferrous	Fabricated products of aluminium and copper; tinplate; solder; pewterware	Tinplate; solder; pewterware	
Non-metallic mineral products	Cement; cement composite products; float glass; ceramic tiles		
Electronics and electrical	Consumer products; parts and components; some industrial products	Consumer products; parts and components; some industrial products	
Machinery	Basic machinery components; foundries; design capability		
Iron and steel	Flat products (under Option 2); light and heavy sections		Bar and rod rolling subsector
Transport equipment	Passenger cars; motor cycles; ships (under 1500 T)	Passenger cars	Car assemblers; shipyards
Textiles apparels	Textiles and apparels	Apparels	Textiles

Source: UNIDO; *Business Conditions*, Malaysia, 1987.

Fig. IV.A. Malaysia's industrial investment boom, 1988 and 1989 (M\$ billion, number)

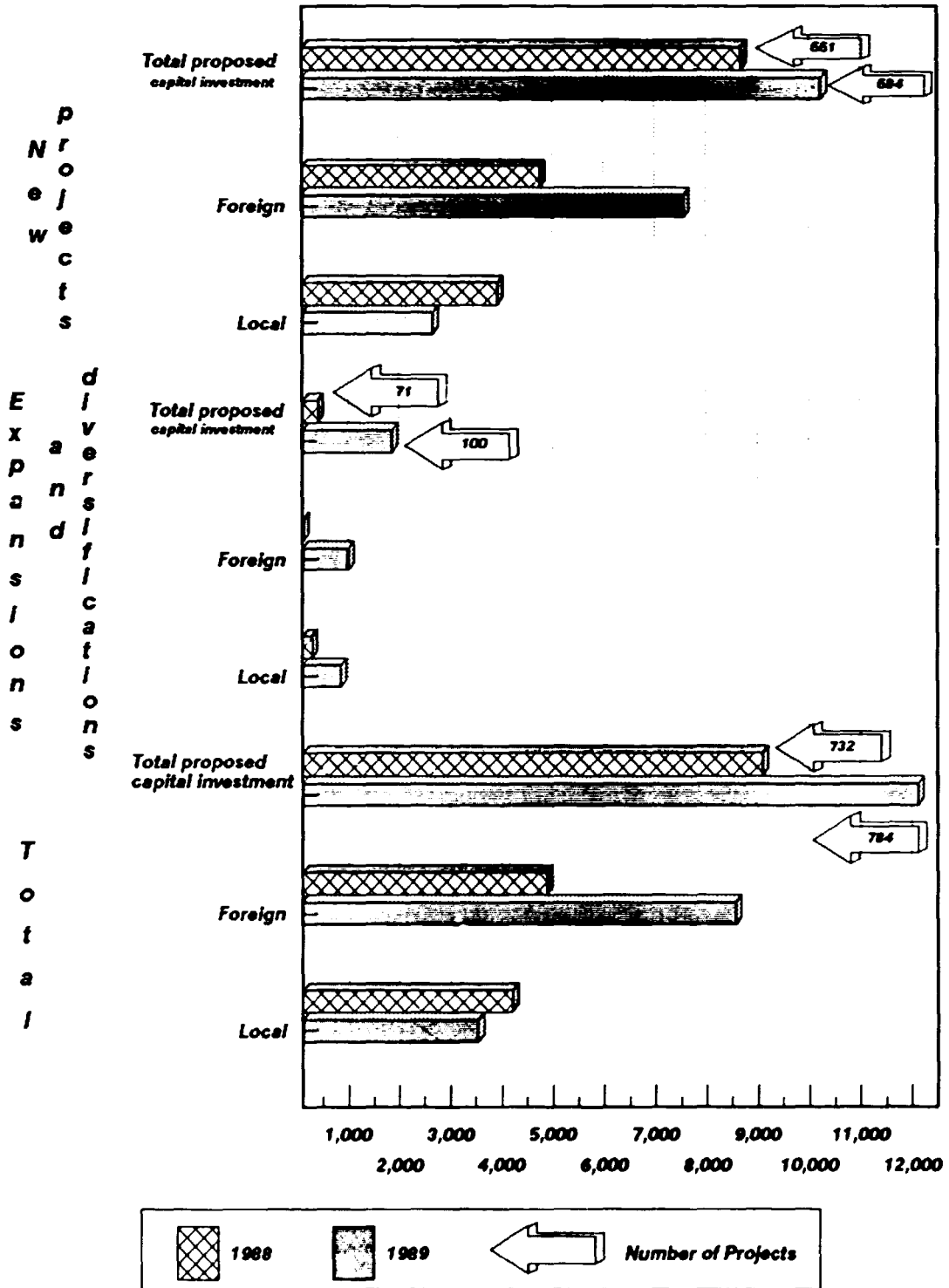


Fig. IV.B. Projects with foreign participation approved by MIDA, 1986 and 1987

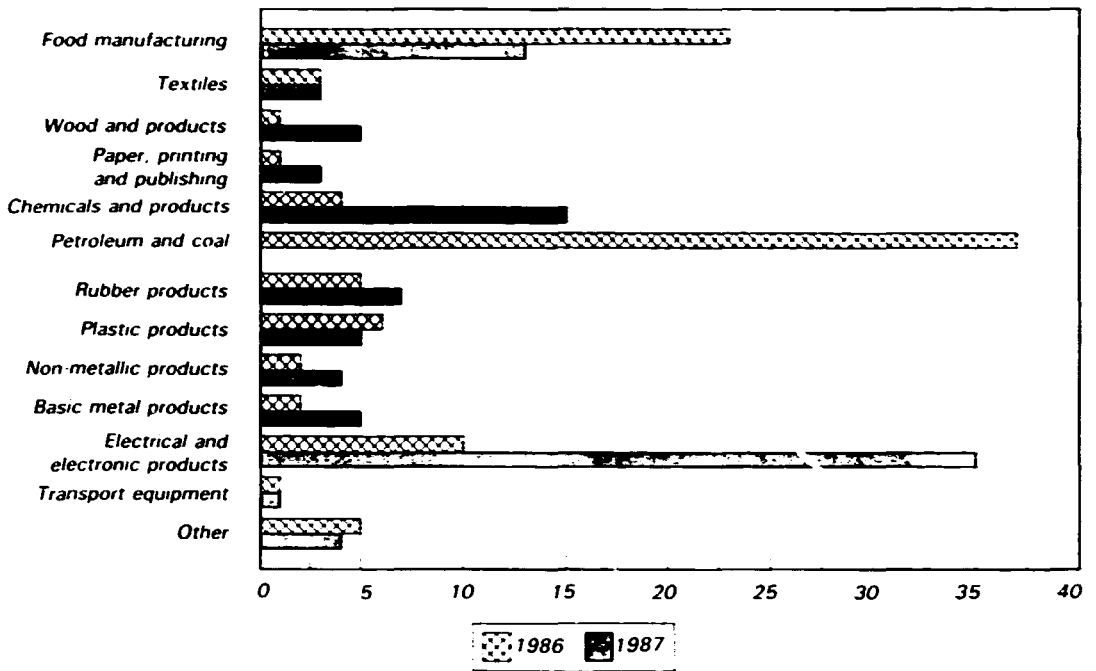
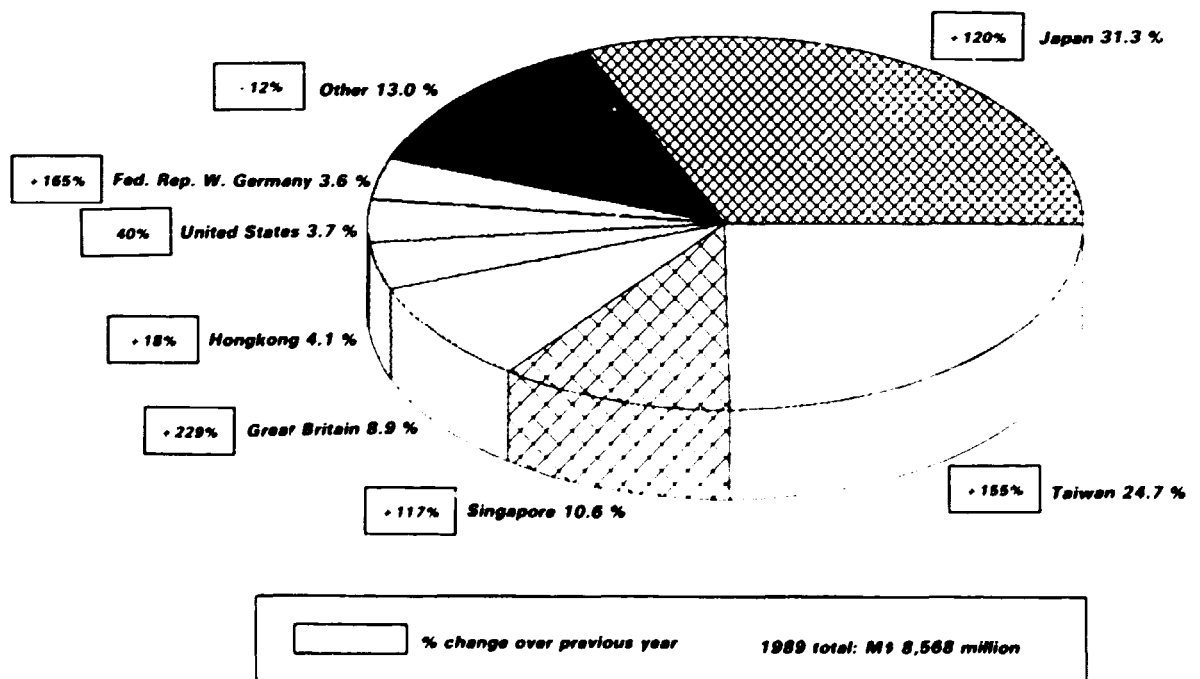


Fig. IV.C. Major foreign investors, 1989



M. BILATERAL AND MULTILATERAL ASSISTANCE TO INDUSTRY

Malaysia receives considerable official development assistance in the form of loans and other types of financial assistance. Official Development Assistance (ODA) has more than doubled between 1983 and 1987. In 1987 net disbursements of Official Development Assistance totalled \$363 million. In absolute terms and as a percentage of GNP, however, the ODA receipts of Malaysia seem to be quite low compared with other ASEAN countries. This can be attributed to Malaysia's relatively advanced stage of development, compared with other countries of the Southeast Asian region.

The World Bank is by far the most important multilateral institution for development assistance. In 1987, the bulk of World Bank assistance was allocated to agriculture, energy and education. Only 7 per cent of World Bank loans have been used for financing projects in the industrial sector.

Besides the World Bank, the Asian Development Bank (AsDB) is of major importance for development assistance to Malaysia. The AsDB's total lending to Malaysia stood at a cumulative amount of \$1.4 billion in 1987, comprising 63 loans for 61 projects. The loans were mainly to finance the foreign exchange components of projects, while only a minor share was provided for local cost financing. In 1987 the largest share of the AsDB loans was provided for projects related to agriculture and agro-industry. Roughly 20 per cent of the AsDB loans went into investment in infrastructure, i.e., transport and communications as well as energy supply.

Malaysia has moreover become an important recipient of loans granted by the Islamic Development Bank (IDB) since the country became a member in 1975, even though loans by the IDB cover a negligible share of all ODA extended to Malaysia. In the 1975-1987 period the IDB provided financial assistance reaching \$75 million. More than two-thirds of these loans have been given as project loans for foreign trade financing. The bulk of the project loans has been used for the financing of vocational schools.

A mid-term review of the Fourth UNDP Country Programme Cycle for Malaysia was conducted in February 1990. The Fourth Country Programme focused mainly on: strengthening and upgrading institutional capability for planning and Plan implementation; support for human resource development; and promotion of science and technology. Although the government found it difficult to keep the programme within the perspective of these three common themes, due to the dynamic nature of changing needs, the mid-term review reiterated the importance of the stated objectives.

A mid-term review of the Industrial Master Plan (1986-1995) is essential in view of the Second Perspective Plan for the 1990s and the Sixth Five-Year Plan (1991-1995) currently being finalized. The UNDP technical co-operation programming for the 5th cycle will need to be closely aligned to the contours of these Plans.

Technical co-operation pipeline project ideas under the auspices of UNIDO and UNDP include policy assessment of the Malaysian Industrial Policy Studies (MIPS) and the Industrial Master Plan; upgrading the Plastics Technology Centre's technical support capability; sectoral projections of the manufacturing sector; assistance to the Industrial Design and Packaging Centre; high-level advice in the establishment of a Furniture Technology Centre; assistance to an Action Plan for development and promotion of the industrial and general rubber goods industry; preparatory assistance in formulating proposals to develop the ceramics, electrical/electronics and automotive parts industries; establishment of computer-assisted patent processing and patent information services; assistance in the establishment of foundry and engineering parts; and assistance to the Metal Industry Development Centre in disseminating advanced technology in the metal industry.

Assistance to the machinery and machine-tools industry is crucial as Malaysia edges into a higher degree of industrialization. The machinery industry in Malaysia is yet to match the country's level of industrial development. The basic thrust is to generate an adequate supply of primary parts and components as the industrial base widens. This could also help reduce imports and develop viable export potentials. The further development of the industry would also result in the enhancement of the country's design capabilities and create further linkages.

The industrial restructuring and development programme launched with the Industrial Master Plan as well as subsequent industrial policy announcements have addressed these issues. It has been recognized that the basic facilities and promotional support provided had been inadequate to effectively foster the development of supporting industries.* Attention will need to be focused on the active promotion of the small- and medium-scale industry sector and on greater diversification of manufacturing activities. The absence of a strong ancillary base has slowed down the process of technology transfer and industrial linkages between small and medium firms and large-scale enterprises. Production linkages through activities of supporting industries or subcontracting between small- and medium-scale industry and large-scale industry have been very limited. Indeed, one effect of the earlier policies had been that little attention was paid to the creation of 'supporting industries', with different product or process specializations along with the development of larger industries. In order to further deepen and strengthen the industrial structure, both in terms of linkages with other economic sectors and in terms of a stronger interdependence of the various branches of manufacturing, a comprehensive promotional approach aimed not only at final producers but also at supporting industries would be required.

* For an analytical exposition of the technical assistance needs of supporting industries in Malaysia, see UNIDO, *Promotion of Supporting Industries in Malaysia* (Vienna 1989).

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ANNEXES: INVESTMENT INFORMATION AND INSTITUTIONS

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ANNEX

I

INDUSTRIAL INVESTMENT INFORMATION AND OPPORTUNITIES

A. METHODS OF CONDUCTING BUSINESS

Investors wishing to establish a manufacturing project in Malaysia are invited to contact MIDA. From the first letter of enquiry through the process of setting up a manufacturing business, MIDA serves as the central agency from which information on industry may be obtained to assist investors in making the right decisions.

In Malaysia, a business may be carried on in any one of the following ways:

- (i) by an individual operating as a sole proprietorship.
- (ii) by two or more (but no more than 20) persons in partnership.
- (iii) by a locally incorporated company or by a foreign company registered under the provision of the Companies Act, 1965.

The above may be utilized by almost any form or type of business. In the case of partnerships, partners are both jointly and severally liable for the debts and obligations of the partnership if assets are found to be insufficient. Formal partnership deeds may be drawn up governing the rights and obligations of each partner but this is not obligatory.

All sole proprietorships and partnerships must be registered with the Registrar of Businesses under the Registration of Businesses Ordinance, 1956.

Company structure

Companies in Malaysia are governed by the Companies Act, 1965, which provides for three types of companies:

- (1) a company limited by shares;
- (2) a company limited by guarantee; or
- (3) an unlimited company.

However, only the first type of company would be of interest to an overseas organization or investor.

Company limited by shares

This is a company where the liability of its members is limited by the memorandum of association to the unpaid portion of the nominal value of the shares held by them. A company limited by shares can be either a private or a public company.

Private companies

A company having share capital may be incorporated as a private company if its Memorandum or Article:

- (a) restricts the right to transfer its shares;
- (b) limits the number of its members to 50, excluding employees and some former employees;
- (c) prohibits any invitation to the public to subscribe for its shares and the debentures; and
- (d) prohibits any invitation to the public to deposit money with the company.

Public companies

A company can be formed as a public company or, alternatively, a company which is incorporated as a private company can also be converted to a public company subject to Section 26 of the Companies Act, 1965.

A public company cannot offer shares to the public unless a Prospectus which complies with the requirements of the Companies Act has been registered with the Registrar of Companies. The proposal for the issue or offer of shares to the public should be submitted to the Capital Issues Committee for approval first before a Prospectus can be accepted for registration.

A public company can apply to the Kuala Lumpur Stock Exchange for permission to have its shares quoted on the Exchange, subject to compliance with the requirements laid down by the Kuala Lumpur Stock Exchange.

Source: MIDA, *Incorporating a Manufacturing Company* (Kuala Lumpur, July 1988).

B. PROCEDURE FOR INCORPORATING A MANUFACTURING COMPANY

The first step for incorporation of a company is to make an application to the Registrar of Companies on the prescribed Form 13A enquiring whether the proposed name of the intended company is available and if so, which action should be taken to reserve the name. A proposed name which is of a kind which the Minister has directed the Registrar not to accept for registration vide Gazette Notification No. 4180 dated 3rd July 1986 will not be approved.

The following documents should be lodged with the Registrar of companies within two months from the date of reservation of name for incorporation of the company.

- (1) Memorandum of Association.
- (2) Articles of Association.
- (3) Statutory declaration of compliance.
- (4) Consent of persons named as directors in the Memorandum or Articles of Association.
- (5) Certificate of identity in respect of the subscribers to, and officers named in, the Memorandum of Association.
- (6) Statutory declaration by a person before appointment as a director, or by a promoter before incorporation of a company.

The Memorandum of Association is the document stating the name, the objects, the amount of authorized capital (if any) with which the company proposes to be registered and the division thereof into shares of a fixed amount.

The Articles of Association are the regulations governing the internal management of the affairs of the company and the conduct of its business.

On the issue of the certificate of incorporation, the subscribers to the Memorandum together with such other persons as may from time to time become members of the company shall be a corporate body, capable of exercising the functions of an incorporated company and of suing and being sued and having a perpetual succession under common seal with power to hold land but with such liability on the part of the members to contribute to the assets of the company in the event of it being wound up, as is provided by the Act.

Requirements of a locally incorporated company

A company must have a registered office in Malaysia at which all books and documents required under the provisions of the Act should be kept.

A company cannot deal with its own shares or hold shares in its holding company. Each equity share of a public company carries only one vote at a poll at any general meeting of the company. A private company may, however, provide for varying voting rights for its shareholders.

The Secretary of a company must be a natural person who has his principal or only place of residence in Malaysia. The directors of the company must be Malaysian nationals and at least two directors must have their principal or only place of residence within Malaysia. Directors of public companies must not normally be over 70 years of age.

It is not incumbent that the director should also be a shareholder. The company must appoint an approved Company Auditor to be the company auditor in Malaysia.

Provisions concerning the winding up of companies are contained in the Companies Act, 1965, and the Companies (Winding-up) Rules, 1972.

Capital Issues Committee

A public company may wish to have its shares listed on the Kuala Lumpur Stock Exchange. If the public company wishes to invite the public to subscribe for its shares it must issue a Prospectus which has to be approved by the Capital Issues Committee and registered with the Registrar of Companies.

Any subsequent issue of shares by any public company whether it is listed or not, for example, right issues, requires the approval of the Capital Issues Committee. For further information please contact:

The Secretary,
Capital Issues Committee,
Ministry of Finance,
11th Floor, Khazanah Malaysia,
Jalan Duta, 50480 Kuala Lumpur
Telephone: (03) 2988044

Public listed companies

The more popular meaning in which a company is said to have turned public is that its shares are to be listed on the Kuala Lumpur Stock Exchange. Technically any public company can apply to have itself listed on the Kuala Lumpur Stock Exchange if it conforms to the provisions of the Listing Manual of the Exchange. A company applying for quotation of ordinary shares is, as a general rule, expected to meet the following criteria:

- (i) It has paid-up capital of at least M\$ 5,000,000
- (ii) At least M\$ 1,250,000 or 25 per cent of the issued and paid-up capital (whichever is the greater) is in the hands of the public and a minimum percentage of the issued and paid-up capital is in the hands of 500 shareholders holding not more than 10,000 shares each and not less than 500 shares each as follows:

Nominal value of issued and paid-up capital	Minimum percentage
Not exceeding M\$ 50 million	15 per cent
Not exceeding M\$ 100 million	12.5 per cent or M\$ 8 million whichever is the greater
M\$ 100 million and above	10 per cent or M\$ 15 million whichever is the greater

For further details contact:

The General Manager,
The Kuala Lumpur Stock Exchange,
3rd and 4th Floor, Block A,
Bukit Naga Complex,
Off Jalan Semantan,
Damansara Heights,
50490 Kuala Lumpur
Telephone: (03) 2546433/2546513/2546662/2546815

For companies which are interested in turning public, the numerous local merchant banks will be of useful assistance as they are specialists in this field.

Government fee

When a company is first registered, the fee payable will depend on the amount of its authorized capital. For details, please refer to the Companies Act, 1965.

Forms

These are technical in nature and should be referred to:

The Registrar of Companies,
16th-20th Floor, Bagunan KUWASA,
Jalan Raja Laut,
50350 Kuala Lumpur
Telephone: (03) 2933733/2933732/2933735

A copy of the Companies Act, 1965 and the Companies Regulation, 1966, can be obtained from the Government Printers on payment of fee.

Source: MIDA, Incorporating a Manufacturing Company (Kuala Lumpur, July 1988).

C. REGISTRATION OF FOREIGN COMPANIES

A foreign company desiring to establish a place of business or carry on business in Malaysia must apply for registration to the Registrar of Companies, subject to the approval of the Domestic Trade Division, Ministry of Trade and Industry. When the approval has been obtained, such a branch must lodge with the Registrar of Companies the following documents:

- (1) a certified copy of its certificate of incorporation (or document of similar effect);
- (2) a certified copy of its charter statute on memorandum and articles or some other instrument constituting or defining its constitution;
- (3) a list of its directors and certain statutory particulars regarding them;
- (4) where there are local directors, a memorandum stating the powers of those directors;
- (5) a memorandum of appointment or power of attorney authorizing one or more persons resident in Malaysia to accept, on behalf of the company, service of process and any notices required to be served on the company;
- (6) a statutory declaration in the prescribed form made by the agent of the company.

The appointed agent is answerable for the performance of all acts required to be done by the company under the Companies Act, 1965. Any change in agents must be reported to the Registrar of companies.

Every foreign company shall, within one month of establishing a place of business or commences to carry on business within Malaysia, lodge with the Registrar of Companies for registration, notice of the situation of its registered office in Malaysia in the prescribed form.

A foreign incorporated company must file each year, within one month of its Annual General Meeting, a copy of the Annual Return and, within two months of its Annual General Meeting, a copy of the balance sheet of the head office, a duly audited statement of assets used in and liabilities arising out of its operations in Malaysia, and a duly audited profit and loss account.

The fees payable for lodging the various forms as well as the fees for registration of a foreign company can be transferred to the Registrar of Companies.

Choices open to foreign investors

An overseas organization wishing to invest in Malaysia has the following choices:

- (1) Set up a branch of its own organization and hence register as a branch of a foreign company in Malaysia.
- (2) Establish a separate Malaysian company, for which the procedure has been described.
- (3) Establish a joint venture with a Malaysian business organization or investor. Joint ventures are encouraged by MIDA, and local capital to be combined with foreign technical skill is plentiful. MIDA can assist in locating suitable local partners. A joint venture can be operated as a company in Malaysia.

Manufacturing companies

Companies wishing to set up manufacturing and or assembly establishments in Malaysia are required to apply for a manufacturing licence from the Ministry of Trade and Industry even though they may be registered with the Registrar of Companies.

Source: MIDA. *Incorporating a Manufacturing Company* (Kuala Lumpur. July 1988).

D. LEGAL FRAMEWORK GOVERNING COMPANIES

(a) Companies Act 1965

The Act provides the procedures for the incorporation of companies with limited liabilities and for the running of companies after incorporation. Local and foreign companies intending to operate in Malaysia must register with the Registrar of Companies with payment of a registration fee which varies with the amount of nominal capital involved. For more information contact:

The Registrar of Companies,
16th-20th Floor,
Bangunan KUWASA,
Jalan Raja Laut,
50350 Kuala Lumpur
Telephone: (03) 2933733 2933732/2933735

(b) Industrial Co-ordination Act 1975

This Act stipulates that no person shall engage in any manufacturing activities unless he is issued with a licence in respect of such manufacturing activity.

For more information contact:

Director-General,
Malaysian Industrial Development Authority,
3rd-6th Floor, Wisma Damansara,
Jalan Semantan,
50720 Kuala Lumpur
Telephone: (03) 2543633

and

Director,
Industries Division,
Ministry of Trade and Industry
Block 10, 7th Floor,
Government Offices Complex,
Jalan Duta,
50480 Kuala Lumpur
Telephone: (03) 2540033/2548014/2546022

(c) The Contracts Act 1950 (Revised 1974) (Act 136)

The law relating to contracts in Malaysia is contained in the Contracts Act, 1950 (Revised 1974) (Act 136). English law relating to contracts is applicable in Malaysia, by virtue of the Civil Law Act, 1956 (Revised 1972) only in the absence of any express provision in the Contracts Act.

For further information contact:

The Attorney-General's Chambers,
Bangunan Bank Rakyat,
Jalan Tangsi,
50480 Kuala Lumpur
Telephone: (03) 2923077

(d) Royalty and technical assistance agreements

Companies which enter into such agreements must seek approval from the Ministry of Trade and Industry.

For further information contact:

Director,
Industries Division,
Ministry of Trade and Industry,
Block 10, 7th Floor,
Government Offices Complex,
Jalan Duta, 50480 Kuala Lumpur
Telephone: (03) 2540033/2548044/2546022

(e) Patents Act 1983 and Trade Marks Act 1976**(i) Patents Act, 1983**

Malaysia provides adequate protection in the field of industrial property for local and foreign investors. Patent protection in Malaysia is governed by the Patents Act 1983 and the Patents Regulations 1986, which came into force on 1st October 1986.

Under the said Act and Regulation, an application for a patent can be made directly in Malaysia and registration is effective for the whole of Malaysia as opposed to territorial registration under the repealed legislations relating thereto. Similar to the provisions in the legislations of other countries, an invention is patentable if it is new, non-obvious and industrially applicable. The Act provides that a patent shall expire 15 years after the date of its grant. The owner of a patent has the right to exploit the patented invention, to assign or transmit the patent and to conclude licence contracts. Malaysia will also take steps in the very near future to accede to the Paris Convention thus providing further safeguards in the field of industrial property in the country. Malaysia's industrial property laws accord the same treatment for both nationals and foreigners.

(ii) Trade Marks Act, 1976

Trade mark protection in Malaysia is governed by the Trade Marks Act 1976 and the Trade Marks Regulations 1983. The above Act, which is modelled on the Acts of some of the industrialized countries, provides effective and adequate protection for registered trade marks in this country. If a trade mark is registered, then no person or enterprise other than its owner or authorized users may use it, otherwise infringement actions can be taken against them. The protection of a trade mark is not limited in time, provided its registration is periodically renewed and its use continues.

(f) Acquisition of Assets, Mergers and Take-overs

For details on Guidelines for the Regulation of Assets, Mergers and Take-overs, please contact:

The Secretary,
Foreign Investment Committee (FIC),
Economic Planning Unit,
Prime Minister's Department,
Jalan Dato' Onn, 50502 Kuala Lumpur
Telephone: (03) 2300133/2933333

Fees to be paid to the Registrar by a company having a share capital:

For registration of a company whose nominal share capital does not exceed M\$ 25,000	M\$ 500.00
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For registration of a company whose nominal share capital exceeds M\$ 25,000 the above fee of M\$ 500 with the following additional fees regulated according to the amount of nominal share capital:

For every M\$ 5,000 of nominal share capital or part of M\$ 5,000 after the first M\$ 25,000 up to M\$ 50,000	M\$ 25.00
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For every MS 5,000 of nominal share capital or part of MS 5,000 after the first MS 500,000 up to MS 1,000,000 MS 20.00

For every MS 15,000 of nominal share capital or part of MS 15,000 after the first MS 1,000,000 up to MS 50,000,000 MS 10.00

For every MS 20,000 of nominal share capital or part of MS 20,000 after the first MS 50,000,000 MS 5.00

No company shall be liable to pay any greater amount of fees than MS 65,000 taking account of the fees paid on registration in the case of an increase of share capital after registration.

Other fees

On application for search of name MS 10.00

On application for the reservation of a name MS 25.00

For granting extension of time for the reservation of name for a further period after the first reservation MS 10.00

On lodging Articles of Association of a company MS 20.00

For registration of a foreign company, subject to paragraph (b) of item 17 of the Second Schedule, Companies Act 1965, the fee is equivalent to the appropriate fee prescribed in respect of a company registered or incorporated under Part III of this Act; and where the foreign company has no share capital and engages in trade, commerce or industry including transportation, the fee is also equivalent to the maximum fee in respect of a company with a share capital registered or incorporated under Part III of this Act.

Source: MIDA, Incorporating a Manufacturing Company (Kuala Lumpur, July 1988).

E. LEGAL FRAMEWORK GOVERNING TRANSFER OF TECHNOLOGY

Policy

All manufacturing projects licensed by the Ministry of Trade and Industry should obtain the prior written approval of the Ministry before entering into any agreement involving foreign partners.

This is done to ensure that:

- (i) the agreement will not impose unfair and unjustifiable restrictions or handicaps on the local party;
- (ii) the agreement will not be prejudicial to national interest; and
- (iii) the payment of fees (if applicable) will commensurate with the level of technology to be transferred.

Type and nature of agreements

Technology transfer agreements cover licence rights over specific processes, formulae or manufacturing technology (may be patented or unpatented); other knowledge and expertise necessary for the setting up of a plant; and provision of various technical assistance and supporting services.

Under these arrangements, specific agreements entered could be in the form of:

- (i) **Joint Venture Agreement**
An agreement to set up a joint venture company between two or more parties involving local and foreigners.
- (ii) **Technical Assistance**
An agreement between two or more parties where one party will provide the technical assistance and know-how for the manufacture of certain products for a certain amount of fee royalty.
- (iii) **Know-how Agreement**
Basically the same as in (ii) above.

- (iv) **Licence Agreement**
An agreement between Licensee and Licensor where the latter grants licence right to the Licensee to use its patents, trademarks and other industrial intellectual properties for the manufacture of certain products for a certain amount of fee/royalty.
- (v) **Patent and Trademark Agreement**
An agreement between two or more parties where one party gives the right to the other to use its patents and trademarks for the manufacture of certain products for a certain amount of fee.
- (vi) **Sales Commission Agreement**
An agreement between two or more parties where one party will provide marketing assistance services to the other for a certain amount of sales commission fee.
- (vii) **Turnkey Contract**
A contract between two or more parties where the contract is awarded to one of the parties to perform all stages from initial to final stages inclusive of consultancy, managerial, technical services and others until the contractual project is ready for immediate commercial production or final use.
- (viii) **Management Agreement**
An agreement between two or more parties where one party will provide the management services to the other in return for payment of management fee. This normally exists in the management of international class hotels and to some extent in manufacturing.

Guidelines on transfer of technology

Agreements on transfer of technology must define in detail the following:

- (i) technological content and principal features of technology or process.
- (ii) anticipated production.
- (iii) quality and specification of products.
- (iv) particulars of technical assistance services and manner in which they are to be provided.

The transfer of technology must be effected through the following:

(a) Access to improvements

The technology to be supplied should incorporate:

- (i) the latest development known to the supplier
- (ii) access to innovations/breakthrough in technology, including new patents applied for or registered.

(b) Remuneration for technology

Payment for technology can be in the form of a 'fixed lump sum fee' or a 'running royalty' or a combination of lump sum fee and running royalty for a specified period of time. Lump sum payments are usually allowed in cases where the know-how can be fully and completely transferred and absorbed within a specified period of time. The method of payment that is preferable is the running royalty based on net sales. Initial lump sum payments in addition to royalties are not encouraged by the Ministry. Where such payments are requested it should be only for the recovery of actual expenses incurred by the Licensor for preliminary services provided to the Licensee.

(c) Method of payment

- (i) Royalty is imputed in relation to the level of technology and principal elements of transfer. Depending upon the merits of each case, a rate of 1 per cent to 5 per cent of net sales can be considered. Where technology transferred is not highly sophisticated, the rate allowed by the Ministry is usually around 2 per cent of net sales. (Net sales is defined as gross sales less sales discounts or returns, transport costs (including freight), insurance, duties, taxes and other charges, and where applicable, cost of raw materials, parts and components imported from the foreign Licensor concerned or its subsidiaries.)

- (ii) Practice of itemization of service under separate agreements are discouraged.
- (iii) Capitalization of know-how fees/royalty is not encouraged.
- (iv) For the motor vehicle assembly, heavy machinery, construction machinery and related industries where basically assembly operations are involved, royalty payment is not allowed.

(d) Duration and renewal

- (i) Duration of agreement should be adequate for full absorption of technology. The life of any patent relating to the technology is also taken into consideration.
- (ii) An initial period of five years is normally approved and any renewal is subject to prior approval of the Ministry.

(e) Training

A provision for adequate training for the local company's personnel in the technology supplier's plant facilities as well as in-plant training in the local company's plant should be incorporated and clearly specified. In the case of the former, the number of personnel to be trained, the areas of training and its duration, together with arrangements and the facilities to be made available for the training should also be defined.

The costs of training should be borne by the technology supplier but all expenses related to salaries, wages, living and travelling allowances should be borne by the local company.

(f) Patents and Trade Marks

Patents and trade marks may come as one of the components of the whole technology transfer package. In the case of patents, it is of utmost importance that those patents involved in any process know-how be explicitly defined in the agreements and the local company is granted the user rights over all such patents. Where the life of the patent extends beyond the duration of the agreement concerned, an arrangement should be made for continued use of the patent after the expiry of the agreement.

(g) Confidentiality/Secrecy

Confidentiality of information should be confined to the duration of the agreement only.

(h) Guarantee/Warranty

The agreement should define guarantee with respect to the production capacity, product quality and specifications and other features of the manufacturing process.

(i) Taxes

A withholding tax of 15 per cent is levied on payments made to foreign suppliers of technology and this tax has to be borne by the foreign recipient. Exemption under Double Taxation Agreement where applicable has to be made to the Ministry of Finance separately.

(j) Sales Territory

The local company should be free to sell its produce (manufactured with the licensed technology) in the whole of Malaysia and all other countries except where the foreign technology supplier is manufacturing directly or where he has given exclusive rights to others or where he is legally not empowered to allow sales based on his technology.

(k) Governing Laws and Arbitration

The governing laws for any technology transfer arrangement should be Malaysian laws and arbitration proceedings must be conducted in Malaysia in accordance with either the Malaysian Arbitration Act, 1952 (Revised 1972) or the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules and conducted at Asian-African Legal Consultative Committee (AALCC) Regional Centre for Arbitration, Kuala Lumpur.

Industrial and intellectual property protection in Malaysia

(a) Patents Act, 1983

Malaysia provides adequate protection in the field of industrial property for local and foreign investors. Patent protection in Malaysia will be governed by the Patents Act 1983 and the Patents Regulations 1986, which came into force on 1st October 1986.

Under the said Act and Regulations, an application for a patent can be made directly in Malaysia and registration is effective for the whole of Malaysia as opposed to territorial registrations under the repealed legislations relating thereto. Similar to the provisions in the legislations of other countries, an invention is patentable if it is new, non-obvious and is industrially applicable. The Act provides that a patent shall expire 15 years after the date of its grant. The owner of a patent has the right to exploit the patented invention; to assign or transmit the patent and to conclude licence contracts. Malaysia will also take steps in the very near future to accede to the Paris Convention thus providing further safeguards in the field of industrial property in the country. Malaysia's industrial property laws accord the same treatment for both nationals and foreigners.

(b) Trade Marks Act, 1976

Trade mark protection in Malaysia is governed by the Trade Marks Act, 1976 and the Trade Marks Regulations 1983. The above Act modelled along the Acts of some of the industrialized countries provides effective and adequate protection for registered trade marks in this country. If a trade mark is registered, then no person or enterprise other than its owner or authorized users may use it, otherwise infringement actions can be taken against them. The protection of a trade mark is not limited in time, provided its registration is periodically renewed and its use continues.

(c) Copyright Act, 1987

Copyright protection in Malaysia is governed by the Copyright Act, 1987 (Act 332) which replaced and repealed the Copyright Act, 1969. The 1987 Act came into force on 1st December, 1987. The Copyright Act, 1987 not only provides for a better and more comprehensive protection of copyrightable works but also many peripheral issues pertaining to copyright. The Act outlines the nature of works eligible for copyright, which include computer software, the scope of protection and the manner in which the protection is accorded. Duration of copyright protection has been increased from 25 to 50 years under the new act. A unique feature of the Act is the inclusion of provisions for enforcing the Act which include such power to enter premises suspected on having infringing copies, power to search and seize infringing copies and contrivances, and a special team of officers to be appointed to enforce the Act. Foreign works are also protected if they are made in Malaysia and are published in Malaysia within thirty days of their first publication in the country of origin. Protection accorded to foreign works is similar to national works. The Copyright Act, 1987 also provides provisions for Malaysia to extend the use of the Act internationally.

Source: Malaysian Industrial Development Authority (MIDA), Malaysia: Investment in the Manufacturing Sector - Policies, Incentives and Procedures (Kuala Lumpur, March 1990).

F. INVESTMENT INCENTIVES

The principal incentives for the manufacturing, agricultural and tourism sectors are contained in the Promotion of Investments Act, 1986 and the Income Tax Act, 1967. The taxes applied to companies in Malaysia are in the form of income tax of 40 per cent and development tax of 5 per cent.

Types of incentives available

A. For the manufacturing sector

1. Pioneer Status
2. Investment Tax Allowance (ITA)

3. Abatement of Adjusted Income for manufacturing companies that are:
 - (i) Located in promoted industrial areas
 - (ii) Resident small-scale manufacturing companies
 - (iii) Complying with government policies on employment or capital participation in industry
 - (iv) Exporting self-manufactured products
4. Accelerated Depreciation Allowance
5. Reinvestment Allowance
6. Double Deduction for promotion of exports
7. Double Deduction of Export Credit Insurance premiums
8. Incentives for research and development:
 - (i) Double Deduction of expenses incurred by a person on scientific research related to his business
 - (ii) Industrial Building allowance for buildings used for purposes of approved research
 - (iii) Capital Allowance for plant and machinery used for purposes of approved research
9. Incentives for Training:
 - (i) Industrial Building Allowance used for purposes of approved training
 - (ii) Double Deduction of operational expenses
10. Industrial Building Allowance for buildings used as warehouses and as bulk storage installations for storing goods for export

B. For the agricultural/agro-based sector

1. Pioneer Status*
2. Investment Tax Allowance (ITA)**
3. Agriculture Allowance
4. Export Allowance
5. Abatement of Adjusted Income:
 - (i) Located in promoted industrial areas
 - (ii) Resident small-scale manufacturing companies
 - (iii) For export of self-manufactured products
 - (iv) For complying with government policies on employment or capital participation in industry
6. Double Deduction of Export Credit Insurance premiums
7. Double Deduction for promotion of exports
8. Accelerated Depreciation Allowance
9. Reinvestment Allowance
10. Incentives for research and development
11. Industrial building allowance for buildings used as warehouses and bulk storage installations for storing goods for export

C. For the tourism industry

1. Pioneer Status
2. Investment Tax allowance (ITA)
3. Industrial Building allowance
4. Tax exemption for tour operators bringing in at least 500 foreign tourists

* Apart from companies, agro-based co-operative societies, associations, sole proprietorships and partnerships solely engaged in agriculture are also eligible for these incentives.

** Trading companies which export agriculture produce and products manufactured in Malaysia are eligible for this incentive.

D. Other incentives

In addition to the above incentives provided for under the Promotion of Investments Act, 1986 and the Income Tax Act, 1967, other incentives are also available, the principal ones being:

- Export Credit Refinancing Facility (available to the manufacturing and agricultural sectors)
- Special incentives for the rubber products industry
- Exemption from customs duties on direct raw materials/components, depending on whether the finished products are for the domestic or export markets
- Exemption from customs duty on nearly all machinery and equipment which is not produced locally
- A Double Taxation Agreement which has been signed with various countries

Investors may seek guidance from MIDA on the types of incentives they are likely to obtain for their proposed projects.

Pioneer Status

Companies granted Pioneer Status can enjoy a tax relief period of 5 years commencing from the date of production. The tax relief is from income tax of 40 per cent and development tax of 5 per cent.

This incentive will be granted to companies manufacturing products or engaged in activities on the list of priority activities and promoted products.

To encourage expansion and reinvestment, pioneer companies undertaking manufacturing activities are eligible for a further 5-year tax relief period on meeting certain conditions as determined by the Minister of Trade and Industry. The criteria are:

- (i) The company's fixed assets (excluding land) at the end of the initial 5-year period reaches at least MS 25 million

or

- (ii) The company's employment level reaches at least 500 full-time Malaysian workers by the end of the initial 5-year period

or

- (iii) Any factor that at the discretion of the Minister of Trade and Industry, would contribute towards promoting and enhancing the economic or technological development of the country.

In the agricultural sector, a company undertaking integrated agricultural activities and fulfilling any of the above conditions is eligible for the five-year extension.

The additional years of tax relief, however, applies only to the manufacturing activity of the company. In the tourism industry a project granted Pioneer Status is limited to a five-year tax relief period.

A list indicating the promoted products and activities that are eligible for the extension of the tax relief period is found in Annex I.G. Where a company diversifies into a different promoted activity or product, separate Pioneer Status can be granted for the additional promoted product or activity; the tax relief period in this instance will commence from the production date of the additional promoted product or activity.

Separate accounts are required to be maintained in respect of an additional promoted activity or promoted product as well as activities or products for which Pioneer Status is not granted.

A company granted Pioneer Status is also entitled to the initial allowance and annual allowance on qualifying capital expenditure and this expenditure incurred during the tax relief period may be carried forward and treated as capital expenditure incurred on the day following the end of the tax relief period.

Pioneer losses incurred during the tax relief period may be carried forward and offset against assessable income in the post tax relief period, but the amounts so carried forward must be net loss i.e. total losses less total profits made during the tax relief period and after deduction of those pioneer losses which have been allowed against non pioneer income.

Dividends paid from the exempt income are exempted from tax in the hand of shareholders.

Investment Tax Allowance

This is an alternative incentive to the Pioneer Status and is also available to companies manufacturing promoted products or engaged in promoted activities.

A company granted the Investment Tax Allowance (ITA) may be given an allowance of up to 100 per cent in respect of qualifying capital expenditure* incurred within 5 years from the date of approval of the project.

A company granted ITA in respect of a promoted activity or product diversifying into a different promoted activity or product can be granted a separate ITA approval for the additional promoted activity or product. As in the case of pioneer companies, separate accounts are required to be maintained.

In view of the time lag between start up of the agricultural projects and processing of the produce, integrated agricultural projects are eligible for ITA for another 5 years for expenditure incurred for their manufacturing activity.

Where an ITA is given to a company for a year of assessment, as much of the adjusted income of the company for the basis period for that year as is equal to the amount of the allowance (or to the aggregate amount of any such allowances as the case may be) shall be exempt from tax for that year of assessment.

Where income for the year is insufficient to offset the allowance which the company is entitled to, then as much of the allowance in question as cannot be given for that year shall be deemed to be allowance to be given to the company for the first subsequent year of assessment for the basis period for which there is adjusted income from that business, and so on for the subsequent years of assessment, until the company has received the whole of the allowance to which it is entitled.

The Minister of Trade and Industry has approved certain criteria to be used in awarding the Investment Tax Allowance for manufacturing, agricultural and tourism projects.

Abatement of Adjustment Income

- (i) An Abatement of 5 per cent of the Adjusted Income for a minimum period of 5 years is granted to resident manufacturing companies located in gazetted 'promoted industrial areas'.
- (ii) An Abatement of 5 per cent of the Adjusted Income is granted to resident small-scale manufacturing companies (i.e. companies with shareholders' funds of not more than MS 500,000) for a period of 5 consecutive years commencing from the year of commencement of business.
- (iii) An Abatement of 5 per cent of the Adjusted Income is granted to companies complying with the government's policies on capital participation or employment in industry on or after 1.1.1986 (excluding those which complied before 1.1.1986). Compliance in this context refers to:
 - capital participation, where at least 30 per cent of equity should be held by Bumiputera Malaysians throughout the year,
 - or
 - where the racial composition of the employees at all levels for that year reflects the multiracial composition of the country.
- (iv) An Abatement of Adjusted Income for exports is granted to resident manufacturing companies exporting, directly or through agents, products which are manufactured in Malaysia.** The amount of the adjusted income to be abated shall be an amount equal to:
 - (a) a rate which is equivalent to 50 per cent of the proportion of export sales to total sales; and
 - (b) 5 per cent of the value of indigenous Malaysian materials which are incorporated in the manufacture of the products exported.

Dividends issued out of the amount abated are tax exempt in the hands of shareholders.

* To enable manufacturing, agricultural and tourism projects granted the ITA to derive maximum benefit from this incentive, the term 'qualifying expenditure' is defined differently to take into account the varied nature of the projects in these three sectors.

** A number of products which have only been subjected to basic processing are excluded. These are listed in Appendix VII of MIDA, *Malaysia Incentives for Industry* (Kuala Lumpur, 1988).

Accelerated Depreciation Allowance (ADA)

In order to encourage the establishment, modernization and expansion of industries or activities, an Accelerated Depreciation Allowance in the form of an initial allowance of 20 per cent and annual allowance of 40 per cent is granted to companies incurring qualifying capital expenditure on plant and machinery before 31.12.1988.

Reinvestment Allowance (RA)

Companies engaged in manufacturing which incur qualifying capital expenditure for the purpose of expansion before 31.12.1990 can enjoy this incentive. The RA is in the form of an allowance of 40 per cent of capital expenditure on plant, machinery and factory building incurred on or after 1.1.1988. (For companies which incurred qualifying capital expenditure for the purpose of expansion before 1.1.1988, the previous RA rate of 25 per cent will apply.)

Double Deduction for Promotion of Exports

Certain expenses incurred by resident companies for the purpose of seeking opportunities for the export of products manufactured in Malaysia are eligible for double deduction. The expenses that qualify are expenses incurred on:

- overseas advertising
- supply of free samples abroad
- export market research
- preparation of tenders for supply of goods overseas
- supply of technical information abroad
- public relations work connected with exports
- expenses directly attributable to the exhibits and/or participation required in trade or industrial exhibitions approved by the Minister of Trade and Industry
- fares in respect of travel overseas by employees of companies for business
- accommodation and sustenance expenses incurred by Malaysian businessmen going overseas for business, subject to an upper limit of MS 200 per day
- cost of maintaining sales offices overseas for the promotion of exports.

Double deduction of export credit insurance premiums

To encourage exporters to penetrate into non-traditional markets, double deduction is allowed for premium payments in respect of export credit insurance insured with a company approved by the Minister of Finance. This is effective from year of assessment 1986.

Incentives for research and development

- (i) Expenses of a revenue nature incurred by a person on scientific research related to his business and directly undertaken by him or on his behalf are eligible for deduction. Revenue expenditure incurred for research approved by the Minister of Finance is eligible for double deduction.
- (ii) Industrial Building Allowance in the form of an initial allowance of 10 per cent and an annual allowance of 2 per cent is available for buildings used for purposes of approved research.
- (iii) Plant and machinery used for purposes of approved research are eligible for capital allowances.

Incentives for training

In order to upgrade skills and improve productivity the following incentives have been provided:

- (i) Industrial Building Allowance (IBA) is granted to a company which has incurred expenditure on buildings used for approved industrial training. The incentive consists of an initial allowance of 10 per cent and an annual allowance of 2 per cent.
- (ii) Double Deduction of Operational Expenses is granted to a manufacturing company that has incurred expenditure for approved training. This incentive is effective from the year of assessment 1988.

Industrial Building Allowance (IBA)

A company is eligible for IBA in respect of buildings used as warehouses and as bulk storage installations for storing goods for export. The IBA consists of an initial allowance of 10 per cent and an annual allowance of 2 per cent.

Agriculture allowance

Under the agriculture allowance, certain capital expenditures incurred in agricultural activities are eligible for deduction as follows:

- (i) expenditure incurred on the clearing and preparation of land, planting of crops and construction of roads for purposes of agriculture can be written off at the rate of 50 per cent per annum
- (ii) expenditure incurred on construction of buildings for the welfare of persons or living accommodation can be written off at a rate of 20 per cent per annum
- (iii) expenditure incurred on the construction of any other building used for the purpose of working the farm can be written off over a period of 10 years, that is, at the rate of 10 per cent per annum

As long as companies incur the above qualifying expenditure they will be given this allowance, irrespective of whether or not they have been granted Pioneer Status or the ITA. As pioneer companies will not benefit from this allowance during their tax holiday period, the allowance will be available for deduction against the post-pioneer income.

This incentive can be of substantial benefit and possibly extend the number of years that the company is not liable to income tax on its business income from agricultural activities.

Industrial Building Allowance for hotel building

The Industrial Building Allowance, which consists of an initial allowance of 10 per cent and an annual allowance of 2 per cent is granted in respect of capital expenditure incurred on a hotel building which is used for the purpose of a hotel business carried on by a pioneer company, or a company granted Investment Tax Allowance.

Tax exemption for tour operators

Tour operators who bring in at least 500 foreign tourists through group inclusive tours will be exempted from tax in respect of income derived from the business of operating such tours. This incentive, effective for the years of assessment 1986 to 1990 inclusive, is given to operators registered and approved by the Tourist Development Corporation of Malaysia.

Export allowance

This incentive, designed to encourage exports, is in the form of an allowance of 5 per cent based on the FOB value of export sales. The export allowance is granted to:

- (i) resident agricultural-cum-exporting companies, agro-based co-operative societies, associations, sole-proprietorships and partnerships which are solely engaged in the production and export of agricultural produce and
- (ii) resident trading-cum-exporting companies which are engaged in trading and exporting of agricultural produce and/or products which are manufactured in Malaysia.

This incentive is given as a deduction against the gross income of the company and as such will be available for set-off against income from other sources in the same year. Any excess can also be carried forward as part of business loss to be utilized in future years against any business income.

Companies which wish to avail themselves of this incentive should first check on the eligibility of their products.

Export Credit Refinancing Scheme

In line with the government's objective to promote the growth of exports, Malaysia's Central Bank, Bank Negara, has implemented an Export Credit Refinancing (ECR) Scheme which provides Malaysian

exporters with short-term credit at preferential rates of interest to enable them to compete more effectively in international markets. The scheme is administered by Bank Negara and is operated by commercial banks. The main features of the facility are as follows:

- The credit is extended by commercial banks to exporters of goods manufactured in Malaysia. The maximum period of refinancing for all eligible products for pre-shipment is four months, and for post-shipment six months;
- Eligibility of goods for refinancing under the ECR scheme is determined through a 'negative list' concept, whereby products not listed in the negative list will be eligible for refinancing under the pre-shipment and post-shipment refinancing schemes provided they satisfy the 20 per cent value added and 30 per cent local content criteria. However, these criteria are being implemented flexibly taking into account special circumstances. Currently, crude rubber, vegetable oil products, cocoa products, agricultural food products and textile products are exempted from these requirements. For other products that do not fulfil the local content and value-added criteria, exemption is given by Bank Negara on a case by case basis;
- The current maximum interest rate for exporters under this facility is 4 per cent per annum.
- The maximum amount of refinancing for each firm is M\$ 5 million on an outstanding basis (for both post- and pre-shipment), but higher limits may be given on a case by case basis upon application to Bank Negara; and
- The minimum amount for refinancing, that is the minimum value of each substitution bill, is M\$ 20,000 expressed to the nearest thousand ringgit. Exporters can 'bunch' several smaller bills to make M\$ 20,000.

Incentives for the rubber products industry

In line with the government's policy of encouraging greater utilization of indigenous raw materials, a discount of M\$ 0.20 per kg of rubber will be given to manufacturers of export-oriented rubber products who purchase their natural rubber requirements from any of three government agencies handling smallholder rubber, viz. Federal Land Development Authority (FELDA), Malaysian Rubber Development Corporation (MARDEC) and Rubber Industry Smallholders Development Authority (RISDA).

A maximum discount of 20 per cent on the electricity bills will be allowed to manufacturers of rubber-based products. The amount of electricity tariff discount is determined by the export level of the company. Therefore, a company exporting 100 per cent of its output will receive a 20 per cent discount, while a company exporting 40 per cent of its output will receive an 8 per cent discount (i.e. 40 per cent of the maximum 20 per cent discount).

Source: MIDA, Malaysia Incentives for Industry (Kuala Lumpur, July 1988).

G. LIST OF PRIORITY ACTIVITIES AND PRODUCTS ELIGIBLE FOR 5-YEAR EXTENSION OF TAX RELIEF PERIOD (PIONEER STATUS)

Industries	Products/activities
I. Integrated agriculture	(1) Cultivation and processing of cocoa (2) Cultivation and processing of fruits (3) Cultivation and processing of vegetables, tubers and roots (4) Cultivation and processing of cereals (5) Cultivation and processing of herbs or spices (6) Cultivation and processing of essential oil crops (7) Cultivation and processing of medicinal products (8) Cultivation and processing of fodder crops or animal feed ingredients

Industries	Products/activities
	<ul style="list-style-type: none"> (9) Floriculture and packaging or processing of its produce (10) Sericulture and processing of its produce (11) Apiculture and processing of its produce (12) Breeding and rearing of livestock and processing of livestock and livestock products (13) Spawning, breeding or culturing and processing of aquatic products (14) Off-shore fishing and processing of its produce
II. Agricultural processing	<ul style="list-style-type: none"> (1) High fructose syrup (2) Processing of agricultural waste and by-products
III. Manufacture of rubber products	<ul style="list-style-type: none"> (1) Tyres, all types (2) Conveyor belts, transmission belts, V-type belts and other rubber belting (3) Dipped, extruded or moulded rubber products
IV. Manufacture of palm oil and palm kernel oil products and their derivatives	<ul style="list-style-type: none"> (1) Oleochemicals and their derivatives
V. Manufacture of chemicals and pharmaceuticals	<ul style="list-style-type: none"> (1) Chemical derivatives obtained from methyl and ethyl alcohol (2) Chemical derivatives from petroleum/natural gas (3) Plant and vegetable extracts for pharmaceutical perfumery, cosmetics and food flavouring industries (4) 2,4-Diochlorophenyl acetic acids, methylechlorophenyl acetic acids (5) Antibiotics (6) Animal vaccines and clinical diagnostic (7) Basic manufacture of pharmaceuticals (8) Engineering plastic products
VI. Manufacture of wood and wood products	<ul style="list-style-type: none"> (1) Integrated timber complex (2) Medium-density board, wafer board (3) Timber furniture
VII. Manufacture of pulp, paper and paperboard	<ul style="list-style-type: none"> (1) Integrated pulp and paper (2) Security paper
VIII. Manufacture of textiles and textile products	<ul style="list-style-type: none"> (1) Man-made fibre, all types excluding polyester staple fibre (2) Continuous yarn or filament yarn of man-made fibre (3) Commission dyeing, bleaching, printing and finishing facilities of high standards for yarn and fabrics (4) Cord fabrics
IX. Manufacture of clay and sand-based products and other non-metallic, mineral products	<ul style="list-style-type: none"> (1) Industrial ceramics (2) Laboratory, chemical or industrial wares (3) Medium and high tension porcelain insulators (4) Decorative glass and glassware

Industries	Products/activities
	<ul style="list-style-type: none"> (5) High tension electrical glass insulators (6) Glass fibres (staple and continuous) for
X. Manufacture of iron and steel and their products	<ul style="list-style-type: none"> (1) Plates, sheets, coils, hoops and strips of all grades of steel, either hot-rolled or cold-rolled
XI. Manufacture of non-ferrous metals and their products	<ul style="list-style-type: none"> (1) Dressing and smelting of non-ferrous metals other than tin metal
XII. Manufacture of machinery and machinery components	<ul style="list-style-type: none"> (1) Machine tools (2) Machinery components including ball bearings, valves, pumps, gears and gear boxes, couplings and mechanical seals (3) Industrial processing machinery (4) Agricultural machinery and equipment (5) Mining and mineral processing machinery including equipment for oil and gas exploration and extraction (6) Power generation machinery (7) Industrial machinery and equipment including engines, motors, generators and compressors
XIII. Supporting products/ services	<ul style="list-style-type: none"> (1) Steel forgings (2) Tools, moulds and dies
XIV. Manufacture of motor vehicles, components and accessories	<ul style="list-style-type: none"> (1) Engines, all types (2) Transmission and final drives
XV. Manufacture of other transport equipment	<ul style="list-style-type: none"> (1) Locomotives (2) Aeroplanes and helicopters (3) Pleasure crafts, hydrofoils and hovercrafts
XVI. Manufacture of electrical and electronic products and components and parts thereof	<ul style="list-style-type: none"> (1) Colour television receivers/monitors (2) Video cassette records (3) Computers (4) Printers (5) Word processors (6) Disk drives (7) Facsimile equipment (8) Photocopying machines (9) Electronic typewriters (10) Compact disk players (11) Telecommunication equipment (12) Vacuum cleaners (13) Washing machines (14) Microwave ovens (15) Electronic cash registers (16) Optic fibre products and parts thereof (17) Cathode ray tubes

Industries	Products activities
	(18) Wafer fabrication
	(19) Multilayer printed circuit boards
	(20) Tape player recorder mechanisms
	(21) Compressors
	(22) Ceramic substrates or packages
	(23) Gold and aluminium bonding wires
	(24) Stamping and plating of lead frames
XVII. Manufacture of professional, medical, scientific, measuring equipment and components and parts thereof	(1) Medical, surgical, dental, veterinary instruments and equipment and parts thereof, all types
	(2) Scientific gauges and measuring apparatus, all types
	(3) Surveying, hydrographic, navigational, meteorological, hydrological, geophysical instruments and parts thereof
	(4) Testing equipment and parts thereof, all types

Source: MIDA, *Malaysia Incentives for Industry*, (Kuala Lumpur, July 1988).

H. NEW INCENTIVES, 1989 AND 1990

Reduction of development tax

A one percentage point reduction in the development tax from 5 per cent to 4 per cent with effect from the year of assessment 1990.

Rationalization of the incentive structure

Several revisions were made to the Promotion of Investments Act (PIA), 1986 as follows:

- (i) A 'second round' of pioneer status and investment tax allowance. New companies set up by existing or ex-pioneer companies, producing the same promoted product or activity, could qualify for a 'second round' of pioneer status or investment tax allowance on meeting certain conditions, including the location of the project in a new building, with separate plant and equipment; employment of new staff (except key personnel); offering capital investment (in fixed assets) at equal to or more than the local cumulative cost of investment in any existing company; and installing capacity similar to or larger than that of any existing companies;
- (ii) Companies that apply for pioneer status on or after January 1, 1991 would not be allowed to carry forward any unutilized capital allowances or unabsorbed losses during the pioneer period to the post-pioneer period; and
- (iii) For the development of the rattan and wood-based industries, the following incentives were announced in the 1990 budget:

- Extension of pioneer status for the manufacture of rattan and wood-based furniture and components for an additional five years, without having to comply with the present criteria on capital and employment;

Companies exporting more than 60 per cent (80 per cent previously) of their component products and with 51 per cent Malaysian equity would qualify for tax incentives under the PIA, 1986; and

Additional incentives for manufacturers of rattan and wood-based products (excluding sawn timber and veneer) in Sabah and Sarawak. These include extension of pioneer status for an additional five years for manufacturers oriented towards exports, without having to comply with present capital and employment criteria; extension of existing incentives under the PIA and full exemption from import duty and surtax on raw materials and components (for all rattan and wood based products) to manufacturers producing for the domestic market; and double deduction on freight charges.

Support for small- and medium-scale industries (SMIs)

To promote the development of SMIs, the 1990 Budget announced the setting up of an Industrial Technical Assistance Fund, with an initial contribution of MS 50 million by the government, to provide matching grants and loans to assist SMIs in conducting feasibility studies and research and development.

Additional condition for eligibility to pioneer status and investment tax allowance for the electronics industry.

In order to promote linkages between small- and medium-size industries, the government introduced an additional condition for eligibility for pioneer status or investment tax allowance to the electronics industry. All new electronic projects would have to achieve at least 50 per cent local content (defined as value added plus local materials and components) by the third year of operations to be eligible for pioneer status or investment tax allowance. The same condition could be applicable to ex-pioneer and existing pioneer electronic companies which have applied to reinvest in similar lines of products. Nevertheless, exemptions would be considered if the proposed projects comprised only a part of the total manufacturing process (that is, the major portion of the upstream and downstream activities is being undertaken outside the country), as well as when the components are not available locally.

Launching of the new ECR and the ECIG Scheme

The Phase II reform of the Export Credit Refinancing (ECR) Scheme, which was initially implemented on a pilot basis in October 1986, was launched nation-wide in November 1989. The reform was concentrated mainly on the reorganization of the pre-shipment facility in order to expand the facility to both direct and indirect exporters as well as to promote backward linkages. To ensure greater access to the ECR Scheme by indirect exporters, particularly the small, new and unknown manufacturers, a new export credit insurance guarantee (ECIG) scheme was launched by the Malaysian Export Credit Insurance Berhad (MECIB) in March 1990.

New Entrepreneurs Fund

The MS 250 million New Entrepreneurs Fund (NEF) was launched in December 1989 in line with the government's effort to achieve New Economic Policy through the provision of funds for new ventures by Bumiputeras at reasonable cost.

Incentives for tourism

To develop the tourism sector, additional incentives were introduced, including the following:

- (i) Double deduction for hotel and tour operators for specified expenditure incurred on overseas promotion and approved staff training;
- (ii) Exemption of import and excise duty on completely knocked down (CKD) components for local assembly of tour buses and limousines (the latter would be effective from October 27, 1989 to December 31, 1990);
- (iii) Exemption of service tax for hotels with 25 rooms or less below to assist the development of smaller hotels;
- (iv) Abolition of service tax in Labuan; and
- (v) A MS 120 million Special Fund for Tourism was launched by the Central Bank on March 19, 1990 to stimulate new fixed investments in the tourism sector by making available funds at a maximum rate of 7.75 per cent per annum for a maximum of five years.

Development of the KLSE

During 1989, the Kuala Lumpur Stock Exchange (KLSE) undertook further steps to enhance its efficiency, modernize its operations and inject greater sophistication by adopting the following major measures:

The KLSE amended its listing guidelines in April to allow for the listing of property trusts. In December, the Exchange also approved the listing of warrants and transferable subscription rights (TSR).

- The KLSE introduced its new semi-automated trading system, SCORE (System on Computerized Order Routing and Execution) in May, thereby doing away with the inefficiencies of an open-outcry system in executing and matching orders.
- Amendments were made to the Exchange's Articles of Association in August to accommodate non-member equity participation in member companies, up to an aggregate total of 49 per cent of the paid-up capital of the member company, with each participation generally not exceeding 10 per cent.
- The Capital Issues Committee (CIC) revised its guidelines for the 'New Issue of Securities and the Valuation of Public Limited companies' in September. Among the major changes were a higher range of price-earnings multiples to be used in pricing new issues; and additional rules and regulations for compliance by public companies.
- The delisting of all Malaysian incorporated companies from the Stock Exchange of Singapore (SES) by the end of 1989, with the aim of establishing the KLSE as an independent exchange.
- The introduction of a fixed delivery and settlement system for transactions in securities in February 1990.
- Approval was given by the Capital Issues Committee in February 1990 to stockbroking firms with paid-up capital of between M\$ 5 million and M\$ 20 million to seek a listing. Listing was previously only allowed for those which had merged with corporate partners or other stockbrokers.
- In mid-March 1990, the Minister of Finance amended the KLSE rule requiring every member company with limited liability to have a paid-up capital of not less than M\$ 20 million in order to strengthen their financial base. The member firms were given up to June 1, 1990 to comply.

Source: *Economic Survey 1989-1990*.

I. INDUSTRIAL COST STRUCTURE

WAGES

a) Average monthly wage rates for selected occupations in the chemical industry, 1984

Occupations		Wage rates (M\$)
Laboratory technician	Male	800-1000
Office clerk	Male	350-800
	Female	350-750
Typist	Female	300-550
Book-keeping clerk	Male	650-1200
	Female	650-1000
Supervisor	Male	620-1600
	Female	350-1000
Mixing machine operator	Male	380-620
	Female	250-350
Cooker, chemical and related processors	Male	380-1000
Reactor convertor	Male	420-1000
Packer	Male	320-900
	Female	250-760

Source: Ministry of Labour, *Occupational Wages Survey* (January 1984)

b) Average monthly wage rates for selected occupations in the electronics industry, 1984

Occupations		Wage rates (M\$)
Office clerk	Male	330 - 670
	Female	300 - 700
Typist	Female	290 - 750
Plant maintenance mechanic	Male	390 - 1200
	Female	310 - 920
Supervisor	Male	690 - 2000
	Female	640 - 1500
Production operator	Male	280 - 520
	Female	200 - 620
Quality control inspector	Male	290 - 710
	Female	260 - 570
Material handler	Male	250 - 500
	Female	250 - 660

Source: Ministry of Labour, *Occupational Wages Survey* (January 1984).

c) Average monthly wage rates for selected occupations in the plywood industry, 1984

Occupations		Wage rates (M\$)
Laboratory technician	Male	750 - 1000
Office clerk	Male	300 - 475
	Female	250 - 440
Book-keeping clerk	Male	380 - 600
Typist	Female	295 - 650
Plant maintenance mechanic	Male	480 - 800
Production supervisor	Male	490 - 1300
	Female	380 - 490
Rubber millman	Male	450 - 850
	Female	450 - 800
Rubber compounder	Male	250 - 560
Rubber extruding machine operator	Male	270 - 560
	Female	200 - 370
Rubber moulding press operator	Male	500 - 870
	Female	250 - 370
Rubber goods assembler	Male	250 - 550
	Female	250 - 500
Packer	Male	200 - 450
	Female	200 - 600

Source: Ministry of Labour, *Occupational Wages Survey* (January 1984).

d) Average monthly wage rates for selected occupations in the textile industry, 1984

Occupations		Wage rates (M\$)
Laboratory technician	Male	450 - 650
Office clerk	Male	280 - 640
	Female	280 - 550
Typist	Female	280 - 500
Plant maintenance mechanic	Male	230 - 550
Carpenter	Male	280 - 600
Production supervisor	Male	450 - 1100
	Female	350 - 610
Textile bleacher	Male	200 - 470
	Female	190 - 360
Garment cutter	Female	160 - 510
Spinner	Female	160 - 280
Sewer	Female	160 - 480

Source: Ministry of Labour, *Occupational Wages Survey* (January 1984).

e) Average monthly wage rates for selected occupations in the plywood and particle board industry, 1984

Occupations		Wage rates (M\$)
Laboratory technician	Male	720 - 950
Office clerk	Male	300 - 680
	Female	255 - 480
Book-keeping clerk	Male	255 - 460
	Female	295 - 700
Typist	Female	235 - 450
Plant maintenance mechanic	Male	400 - 1050
Production supervisor	Male	390 - 1050
	Female	350 - 820
Veneer cutter	Male	200 - 520
Plywood press operator	Male	190 - 510
Plywood core layer	Male	160 - 450
Tool grinder	Male	300 - 600
Boilerman	Male	350 - 760
General worker	Male	200 - 350
	Female	180 - 330

Source: Ministry of Labour, *Occupational Wages Survey* (January 1984).

f) Average monthly wage rates for selected occupations in the industrial machinery and parts industry, 1984

Occupations		Wage rates (M\$)
Office clerk	Male	300 - 760
	Female	250 - 570
Book-keeping clerk	Male	350 - 700
	Female	350 - 760
Typist	Female	250 - 500
Plant maintenance mechanic	Male	280 - 950
Production supervisor	Male	530 - 1700
Moulder (floor foundry)	Male	340 - 820
Moulder (pit foundry)	Male	430 - 880
Machine setter operator	Male	380 - 740
Lathe setter operator	Male	320 - 820
Metal products, filter assembler	Male	320 - 820
Welder	Male	390 - 920
Boiler maker	Male	380 - 1000

Source: Ministry of Labour, *Occupational Wages Survey* (January 1984).

UTILITY RATES*

a) Electricity

i) Peninsular Malaysia

Some extracts of National Electricity Board (NEB) tariffs for industrial consumers from its 24-hour supply system are shown below. Discounts** granted are enjoyed by the respective consumers on their electricity bills based on these tariffs.

Tariff D - Low Voltage Industrial Tariff	Rate per unit
For all units	M\$ 0.21
Minimum monthly charge	M\$ 6.00
<hr/>	
Tariff E1 - Medium Voltage General Industrial Tariff	
For each kilowatt of maximum demand per month	M\$ 12.00
For all units	M\$ 0.16
Minimum monthly charge	M\$ 500.00
<hr/>	
Tariff E2 - Medium Voltage Peak/Off-Peak Industrial Tariff	
For each kilowatt of maximum demand per month during the peak period	M\$ 17.00
For all units during the peak period	M\$ 0.16
For all units during the off-peak period	M\$ 0.08
Minimum monthly charge	M\$ 500.00
<hr/>	
Tariff E3 - High Voltage Peak/Off-Peak Industrial Tariff	
For each kilowatt of maximum demand per month during the peak period	M\$ 15.00
For all units during the peak period	M\$ 0.15
For all units during the off-peak period	M\$ 0.07
Minimum monthly charge	M\$ 500.00

* Detailed information available in MIDA, *Malaysia Infrastructure for Industry* (Kuala Lumpur, 1987).

** Effective from 1 September 1985, NEB tariffs were revised downwards by 4 per cent to 15 per cent. A new peak/off-peak tariff was also introduced. In addition, since 1 October 1986, discounts on monthly electricity bills have been given by NEB to the manufacturing (20 per cent), hotel (10 per cent) and mining (25 per cent) sectors.

ii) *Sabah**Tariff ID1 - Industrial Class 1*

Rates for electricity consumed by an industrial consumer who is in the manufacturing or quarrying business and a consumer (normally under the government) who utilizes energy for the purpose of pumping water:

	<i>Rate per unit</i>
0-2,000 kWh per month	MS 0.32
2,001 kWh per month and above	MS 0.26
Minimum monthly charge	MS 15.00

Tariff ID2 - Industrial Class 2

Rates for electricity for an industrial consumer taking supply above 500 kWh, with installation of maximum demand metering:

	<i>Rate per unit</i>
Above 500 kWh, maximum demand charge per kWh per month	MS 15.00
All units	MS 0.23
Minimum monthly charge	MS 1.000

iii) *Sarawak**Industrial premises*

	<i>Rate per unit</i>	
	<i>Class I Stations</i>	<i>Class II Stations</i>
<i>Low Voltage Supply</i>		
For the first 60 units	MS 0.43	MS 0.46
For units in excess of 60 units but not exceeding 3,000 units	MS 0.30	MS 0.33
For units in excess of 3,000 units	MS 0.21	MS 0.24
Minimum monthly charge	MS 6.00	

These rates are applicable to industrial premises where industrial and manufacturing processes are carried out and where electric motors and plants are used in connection therewith. For industrial premises where the total wattage of lamps installed exceeds 20 per cent of the total wattage of all electrical equipment installed (for the purposes of this tariff, one horse power shall be deemed to be equivalent to 750 watts), tariff charges shall be as for commercial premises.

	<i>Rate per unit</i>	
	<i>Class I Stations</i>	<i>Class II Stations</i>
<i>High Voltage Supply</i>		
Maximum demand charge	MS 12 per kilowatt	MS 15 per kilowatt
Running charge	MS 0.17	MS 0.19
Minimum monthly charge	MS 800.00	

Available only to consumers under the industrial category whose expected consumption is 100,000 units or over per month on application.

Definitions

'Industrial Consumer' includes a consumer who is in the manufacturing or quarrying business, and a consumer who utilizes energy for the purpose of pumping water.

'Low Voltage' in the context of tariff classification means a supply voltage below 6,600 volts.

'Medium Voltage' in the context of tariff classification means a supply voltage from 6,600 volts to 66,000 volts.

'High Voltage' in the context of tariff classification means a supply voltage of 132,000 volts and above.

'Kilowatts of Maximum Demand' for any month shall be deemed to be twice the largest number of kilowatt-hours supplied during any consecutive thirty minutes in that month.

'Unit' means one kilowatt-hour.

'Peak' period means the period between 08.00 and 22.00 hours.

'Off-Peak' period means the period between 22.00 and 08.00 hours.

Class I Stations: Kuching, Sibul, Miri and Bintulu.

Class II Stations: All stations operated by Sarawak Electricity Supply Corporation (SESCO) except Kuching, Sibul, Miri and Bintulu.

b) Water

Water rates vary from State to State. The rates currently charged for industrial use in the various States are as indicated below:

		<i>Water rates for industrial use States (MS per cu m per month)</i>
Johor	1.20	
Kedah Darul Aman	0.86	
Kelantan	0.70	
Malacca:		
Gazetted areas	0.70	
Non-gazetted areas	1.03	
Negeri Sembilan	0.65	
Pahang Darul Makmur:		
Gazetted areas	0.92	for the first 227 m ² . Subsequent amounts charged at MS 0.84.
Non-gazetted areas	1.45	
Penang	0.36	for the first 20 m ³
	0.45	for amounts ranging from 20 m ³ to 20,000 m ³ . Amounts above 20,000 m ³ are charged at MS 0.40.
Perak	0.90	
Perlis	0.60	
Selangor Darul Ehsan	0.88	
Terengganu	0.88	
Sabah	0.90	
Sarawak	0.95	for the first 25 m ³ . Subsequent amounts charged at MS 1.20.

c) Telecommunications*Rentals and fees**Telephone service*

Minimum deposit

Residential	:	MS 75.00
Business	:	MS 200.00-MS 500.00 depending on the type of business

Line rentals:

i) Direct exchange lines (within 4 km radius of exchange)

<i>Exchange line capacity</i>	<i>Business rate</i>	<i>Residential rate</i>
Above 10,000	MS 420.00 p.a.	MS 240.00 p.a.
501 - 10,000	MS 360.00 p.a.	MS 204.00 p.a.
500 and below	MS 240.00 p.a.	MS 120.00 p.a.

Additional distance beyond radius, per 0.5 km route distance or part thereof MS 24.00 p.a.

ii) Internal extension lines within the same building MS 72.00 p.a.

iii) External extension lines
Up to 0.5 km route distance MS 96.00 p.a.
For each additional 0.5 km route distance or part thereof MS 24.00 p.a.

Mobile radiophone service

Access fee	MS 600.00 p.a.
Radio licence fee	MS 50.00 p.a.

<i>Kurfon service</i>	
Minimum deposit	M\$ 200.00 – M\$ 500.00 depending on the type of business
Access fee	M\$ 1,080.00 p.a.
Radio licence fee	M\$ 50.00 p.a.
<i>ATUR service (Automatic telephone using radio)</i>	
Minimum deposit	M\$ 300.00
Access fee	M\$ 720.00 p.a.
Access fee for each extension	M\$ 48.00 p.a.
Licence fee for each station	M\$ 50.00 p.a.
<i>Telex service</i>	
Deposit	M\$ 1,000.00
Line rental:	
Within 4 km radius of telex exchange	M\$ 180.00 p.a.
Additional distance beyond radius, per 0.5 km route distance or part thereof	M\$ 24.00 p.a.
When the line passes via one or more telephone exchanges to the telex exchange, line rental per km radial distance or part thereof between the terminal exchanges	M\$ 30.00 p.a.
Keyboard perforator	M\$ 900.00 p.a.
Teleprinter (complete)	M\$ 2,090.00 p.a.

INDUSTRIAL LAND RATES

Range of selling prices of land in existing industrial estates by State (as at 31st December 1987)

State	Number of existing industrial estates	Range of selling prices per square meter M\$
Johor	13	10.76 – 75.35
Melaka	7	21.53 – 32.29
Negeri Sembilan	7	12.02 – 37.67
Selangor Darul Ehsan	14	13.45 – 86.11
Perak	11	16.15 – 43.06
Penang	8	36.86 – 44.13
Kedah Daru. Aman	5	21.15 – 52.80
Perlis	2	11.16 – 21.53
Pahang Darul Makmur	9	9.26 – 96.88
Terengganu	11	14.50 – 38.00
Kelantan	5	8.65 – 32.30
Sarawak	6	53.82 – 75.35
Sabah	4	64.00 – 97.00
Federal Territory:		
Kuala Lumpur	1	108.00
Labuan	2	107.64

Source: Malaysian Industrial Development Authority (MIDA) (May 1988).

J. INDUSTRIAL ESTATES IN MALAYSIA, 1987

<i>Industrial estate</i>	<i>Total area developed (hectares)</i>
Penang	
Mak Mandin	76.08
Prai	438.21
Prai FTZ	120.86
Prai Wharf FTZ	4.73
Pulau Jerejak	7.93
Bayan Lepas I	35.58
Bauan Lepas II	0
Bayan Lepas FTZ I*	10.32
Bayan Lepas FTZ II	23.92
Bayan Lepas FTZ III 96.56	
Seberang-Jaya	19.49
Perak	
Parit Buntar	88.42
Tupai I*	9.51
Tupai II*	17.28
Tupai III	10.94
Kanunting*	158.64
Kanunting Tambahan	78.51
Kuala Kangsar	50.18
Jelapang*	37.19
Jalan Selibin*	64.09
Tasek*	149.33
Taman Meru*	49.53
Seri Manjong	16.27
Kampung Acheh	214.33
Kanthan	30.37
Selangor Darul Ehsan	
Shah Alam	473.79
Ampang/Hulu Kelang*	16.37
Ampang/Hulu Kelang FTZ*	36.47
Batu Caves*	49.80
Bukit Rajah*	111.94
Selat Kelang Utara	249.30
Pandamaran	61.84
Sungai Way/Subang FTZ	42.77
Cheras Jaya (Balakong)	42.68
Telok Panglima Garang FTZ*	21.28
Telok Panglima Garang	25.56
(i) Petaling Jaya (Section 51A and 52A)*	28.35
(ii) Petaling Jaua (Selatan)	35.99
Seri Kembangan	30.85
Bangi (Phase I and II)	75.90
Federal Territory (Kuala Lumpur)	
Setapak	42.27
Melaka	
Alor Gajah	68.79
Tanjung Keling FTZ*	8.01
Tanjung Keling Phase II	60.70
Batu Berendam FTZ*	18.48
Air Keroh*	102.51
Merlimau I and II	72.88
Bukit Rambai I, II, III and IV	77.84
Johor	
Tanjung Agas	79.72
Tongkang Pecah*	15.18
Parit Raja	28.33
Sri Gading	58.48
Larkin and Tampoi*	167.14

<i>Industrial estate</i>	<i>Total area developed (hectares)</i>
Pasir Gudang	1,057.88
Senai I	40.47
Senai II	70.01
Bandar Penawar	3.00
Kota Tinggi	12.15
Bandar Tenggara	87.52
Kluang	51.80
Segamat*	39.65
Tebrau	88.60
Negeri Sembilan	
Lukut Mini IE	20.23
Kg. Diok*	23.07
Sg. Gadut*	48.56
Senawang*	133.55
Simpang Pertang	30.35
Nilai	121.46
Nilai Mini IE	20.23
Chembong I	44.52
Chembong II	33.19
Chembong Mini IE	12.14
Pahang Darul Makmur	
Mu'adzam Shah	26.30
Bentong	105.22
Songsang	62.32
Peram	57.25
Semambu	187.00
Jerantut	45.32
Gebeng	278.42
Maran*	14.16
Terengganu	
Seri Bandi (Ulu Cukai)*	20.62
Cenih Baharu (Cenih)*	20.22
Jakar I	45.34
Jakar II	16.19
Ketengah Jaya (Rasau Kerteh)*	1.21
Bukit Besi*	12.50
Al-Muktafi Billah Shah (Durian Mas)*	37.59
Dungun	22.26
Gong Badak	117.40
Kulai Ibai	59.08
Kerteh	1.5
Telok Kalong	116.30
Kelantan	
Gua Musang	42.29
Tanah Merah*	84.37
Jeli I	36.02
Pengkalan Chepa I	9.71
Pengkalan Chepa II	226.50
Miel Lundang*	7.20
Kedah Darul Aman	
Kulim	174.00
Mergong Barrage	19.05
Mergong II*	34.80
Mergong II (Extension)	6.60
Perlis	
Jejawi	13.35
Chuping	11.21

<i>Industrial estate</i>	<i>Total area developed (hectares)</i>
Sarawak	
Pending*	483.20
Upper Lanang	91.06
Bintulu Serviced I*	13.89
Kidurong Serviced I	34.70
Kidurong Serviced II	26.93
Piasau I*	33.59
Piasau II	33.80
Limbang*	14.16
Sabah	
Likas I*	50.20
Likas II*	63.20
Lok Kawi I	55.00
Lok Kawi II	6.52
Sandakan I*	8.60
Sandakan II	39.70
Tawau I	13.80
Federal Territory (Sabah)	
Labuan I*	2.20
Ranca-Ranca I*	111.29
Ranca-Ranca II	94.74

Source: Malaysian Industrial Development Authority (MIDA). Statistics on the Manufacturing Sector 1988.

* Fully Alloted Industrial Estate.

PROPOSED INDUSTRIAL ESTATES (as at December 31, 1987)

<i>Proposed industrial estate</i>	<i>Planned area (hectares)</i>
Perak	
Kamunting Tambahan II	89.84
Gunong Rapat	15.78
Pengkalan I	278.03
Pengkalan II	342.77
Sri Iskandar	80.94
Tambun	40.47
Selangor Darul Ehsan	
Sungai Besar	26.76
Kalumpang	14.16
Sekinche	28.32
Kuala Selangor	77.70
Sungai Choh	24.28
Pandamaran Jaya	26.70
Banting Phase I	19.02
Banting Phase II	27.92
Beranang	141.64
Batang Kali	33.18
Rawang Bt. 16	74.13
Olak Lempit	80.93
Salak Tinggi	24.28
Melaka	
Durian Tunggal/Gapam	445.28
Bukit Rambai IV, Bahagian II (extension)	42.49
Merlimau II, Bahagian II (extension)	28.32

<i>Planned industrial estate</i>	<i>Planned area (hectares)</i>
Negeri Sembilan	
Gemas	20.23
Titi Jelebu	20.23
Kelantan	
Kemubu	58.72
Jeli Expansion	142.05
Pengkalan Chepa II (expansion)	80.94
Kedah Darul Aman	
Tanjung Pauh	80.93
Baling	97.77
Mergong Barrage Tambahan	21.66
Sarawak	
Sijingkat	1,283.27
Sri Aman	
Betong	
Sarikei	56.05
Bintangor	
Song	
Bintulu Serviced II	20.20
Kemena Phase I	129.00
Lutong	178.87
Sabah	
Lahad Datu	1.62
Meruntum	85.83
Sepangar Bay	80.97
Kimanis	80.97
Semporna	71.40
Keningau	4.40
Papar	8.09
Ranau	4.04
Beaufort	20.25
Federal Territory (Sabah)	
Labuan II	4.20
Pahang Darul Makmur	
Rompin	103.60

Source: Malaysian Industrial Development Authority (MIDA), Statistics on the Manufacturing Sector 1988.

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ANNEX

II

**MALAYSIAN INDUSTRIAL
DEVELOPMENT AUTHORITY (MIDA),
OVERSEAS OFFICES**

ASIA and PACIFIC

Australia

Consul (Commercial)
Consulate of Malaysia (Commercial Section)
11th Floor, R & W House, 92, Pitt Street, Sydney,
N.S.W. 2000
Telephone: 232-5737
Telex: TC SY D AA 26936

Hong Kong

Trade Commissioner (Investment)
Malaysian Commission (Investment Section),
23rd Floor, Malaysia Building, 47-50
Gloucester Road, Hong Kong
Telephone: 5-270921
Telex: 60567 MIDAA HX

Japan

Director
Malaysian Industrial Development Authority,
Nichiginmae Kyodo Building, 2nd Floor,
3-2-4, Nihonbashi Hongoku-cho, Chuo-ku,
Tokyo 103
Telephone: (03) 279-3082
Telex: MIN J27596

Korea, Republic of

Investment Attache
Commercial Section, Embassy of Malaysia,
4-1, Hannam-dong Yongsan-ku, Seoul
Telephone: 7953032/7959203
Telex: MAWAKIL K 27382

Singapore

Trade Commissioner (Investment)
Malaysian Industrial Development Authority
5 Shenton Way, #26-05/07, UIC Building
Singapore 0106
Telephone: 2210155 (2 lines)
Telex: MIDA SP RS 28474

EUROPE

France

Commercial Attache
Bureau Economique, Embassy of Malaysia
42, Avenue Kleber, 75116, Paris
Telephone: 4727-6696/4727-3689/4727-3691
Telex: MIDA 613031 F



Germany, Federal Republic of

Trade Commissioner (Investment)
Malaysian Trade Commission (Investment Section)
6th Floor, ABC Haus, Bahnhofstr. 1-9
D-5000 Koln-1
Telephone: (02221) 124007/124008
Telex: 888 1080 MA D

Switzerland

Director
Malaysian Commercial Bureau (Investment)
Weinbergstrasse 43, 8006 Zurich
Telephone: 01-251 2646
Telex: 816629 MIDA CH

United Kingdom

Trade Commissioner (Investment)
Malaysian Industrial Development Authority
(London Office), 17, Curzon Street,
London W1Y 7FE
Telephone: 409-0411/493-0616
Telex: 24371 MIDA UK G

UNITED STATES

Chicago

Director
Malaysian Industrial Development Authority
Suite 3350, John Hancock Centre
875, North Michigan Avenue, Chicago,
Illinois 60611
Telephone: (312) 787-4532
Telex: 4330368 MIDA UI

Los Angeles

Consulate General of Malaysia
(Investment Promotion Section)
World Trade Centre Building, 30,
South Figueroa Street, Los Angeles
California 90071
Telephone: (213) 621-2661/2686
Telex: 4720504 MALA UI

New York

Consul-Investment
Consulate General of Malaysia (Investment Section)
630, Third Avenue, New York, N.Y. 10017
Telephone: (212) 687-2491
Telex: NYMIDA 424869

MIDA REGIONAL OFFICES

Johor

Regional Director, MIDA, 7th Floor, Room No. 5
Kompleks Tun Abdul Razak,
P.O.Box 179, 80720 Johor Bahru, Johor
Telephone: (07)220550

Kedah

Regional Director, MIDA, 8th Floor, Wisma PKNK,
Jalan Sultan Badlishah,
P.O.Box 192, 05720 Alor Star, Kedah
Telephone: (09) 783151

Kelantan

Regional Director, MIDA, 5th Floor, Bangunan PKNK,
Jalan Tengku Maharani,
15000 Kota Bharu, Kelantan
Telephone: (09) 783151

Pahang

Regional Director, MIDA, Suite 3, 11th Floor,
Komplek Teruntum,
P.O.Box 178, 25720 Kuantan, Pahang
Telephone: (09) 7507334

Perak

Regional Director, MIDA, 1st Floor, (Tower Block),
Bangunan Wisma Wan Mohamed, Jalan Kelab,
P.O.Box 210, 30720 Ipoh, Perak
Telephone: (05) 513036/513833

Sabah

Regional Director, MIDA, 4th Floor
Bangunan Bank Negara Malaysia,
P.O.Box 11915, 88730 Kota Kinabalu, Sabah
Telephone: (088) 211411/211412

Sarawak

Regional Director, MIDA, Room No. 404, 4th Floor,
Bangunan Bank Negara,
No. 147, Jalan Satok, P.O.Box 716,
93714 Kuching, Sarawak
Telephone: (082) 52375/52251

Terengganu

Regional Director, MIDA, 1st Floor, Bangunan UMBC,
Jalan Sultan Ismail,
20300 Kuala Terengganu, Terengganu
Telephone: (09) 627200

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ANNEX

III

**LIST OF MAJOR FINANCE
INSTITUTIONS AND MERCHANT BANKS
OPERATING IN MALAYSIA**

Finance companies (locally incorporated)

Bank-owned

1. Arab-Malaysian Finance Berhad
2. Chew Geok Lin Finance Bhd
3. Chung Khiaw Finance (Malaysia) Bhd
4. Credit Corporation (M) Bhd
5. D & C Finance Bhd
6. Hock Thai Finance Corporation Bhd
7. Kewangan Bumiputera Bhd
8. Kewangan Utama Bhd
9. Kong Ming Finance Corporation Bhd
10. Kwong Yik Finance Corporation Bhd
11. Malaysian International Finance Bhd
12. Mayban Finance Bhd
13. Mortgage and Finance (M)
14. Overseas Chinese Finance Corporation
15. Overseas Union Trust
16. Public Finance Bhd
17. Sabah Finance Bhd
18. Southern Finance Company
19. UMBC Finance Bhd

Non-bank owned

1. Asia Commercial Finance (M) Bhd
2. Bolton Finance Bhd
3. Boon Siew Finance Bhd
4. Cempaka Finance Bhd
5. City Finance Bhd
6. Delta Finance Company Bhd
7. Equity Finance Corp Bhd
8. Eu Finance Bhd
9. First Malaysia Finance Bhd
10. Hong Leong Finance Bhd
11. Interfinance (M) Bhd
12. JP Finance (M) Bhd
13. KCB Finance Bhd
14. Kewangan KGN Bhd
15. Kewangan Pekembarjaya Bhd
16. Kewangan Usaha Bersatu Bhd
17. Kuala Lumpur Finance Bhd
18. Magnum Finance Bhd
19. Malayan United Finance Bhd
20. Malaysia Borneo Finance Corporation (M) Bhd
21. Malaysia Credit Finance Bhd
22. Pertama Malaysia Finance Bhd
23. Petra Finance (M) Bhd
24. Supreme Finance (M) Bhd
25. Tenaga Finance Bhd
26. Visia Finance Bhd

Merchant banks in Malaysia

1. Amanah-Chase Merchant Bank Bhd
2. Arab-Malaysian Merchant Bank Bhd
3. Aseambankers Malaysia Bhd
4. Asian International Merchant Bankers Bhd
5. Asiavest Merchant Bankers (M) Bhd
6. Bumiputera Merchant Bankers (M) Bhd
7. D & C Nomura Merchant Bankers Bhd
8. Malaysian International Merchant Bankers Bhd
9. Permata Chartered Merchant Bank Bhd
10. Pertanian Baring Sanwa Bhd
11. Rakyat First Merchant Bankers Bhd
12. Utama Wardley Bhd

Source: Information Malaysia (1988).

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**ANNEX
IV**

**OFFICES OF THE STATE ECONOMIC
DEVELOPMENT CORPORATIONS
(SEDCs)**

Johore: (Perbadanan Kemajuan Ekonomi Negeri Johor), 8th-10th Floor, Tun Abdul Razak Complex, Jalan Wong Ah Fook, P.O. Box 307, Johor Bahru.

Kedah: (Perbadanan Kemajuan Negeri Kedah), Wisma PKNK, Jalan Sultan Badlishah, Alur Setar.

Kelantan: (Perbadanan Kemajuan Iktisad Negeri Kelantan), T.9-11, Bangunan PKINK, Jalan Tengku Maharani, P.O. Box 142, Kota Bharu.

Melaka: (Perbadanan Kemajuan Negeri Melaka), Bangunan Dewan Negeri, P.O. Box 221, Melaka.

Negeri Sembilan: (Perbadanan Kemajuan Negeri Negeri Sembilan), Banunan Pelancongan, Jalan Paul, P.O. Box 158, Seremban.

Pahang: (Lembagan Kemajuan Negeri Pahang), T.16, Kompleks Teruntum, Jalan Mahkota, 25000 Kuantan.

Pinang (Pulau Pinang): (Perbadanan Pembangunan Pulau Pinang), 1, Jalan Sungai Nibong, Bayan Baharu, P.O. Box 967, Pulau Pinang.

Perak: (Perbadanan Kemajuan Negeri Perak), Jalan Kelab, Wisma Wan Mohamed, P.O. Box 217, Ipoh.

Perlis: (Perbadanan Kemajuan Negeri Perlis), 2nd Floor, Bangunan Wisma Kemajuan, Kangar.

Sabah: (Perbadanan Kemajuan Negeri Sabah), SEDCO Complex, P.O. Box 2159, Kota Kinabalu, Sabah.

Sarawak: (Perbadanan Pembangunan Negeri Sarawak), T.6-11, Menara SEDC, P.O. Box 400, 93902, Kuching.

Selangor: (Perbadanan Kemajuan Negeri Selangor), Persiaran Barat, Off Jalan Barat, Petaling Jaya.

Terengganu: (Perbadanan Memajukan Iktisad Negeri Terengganu), 2nd Floor, Wisma Maju, Jalan Paya Bunga, Kuala Terengganu.

Source: Information Malaysia (1989), p. 275.

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ANNEX

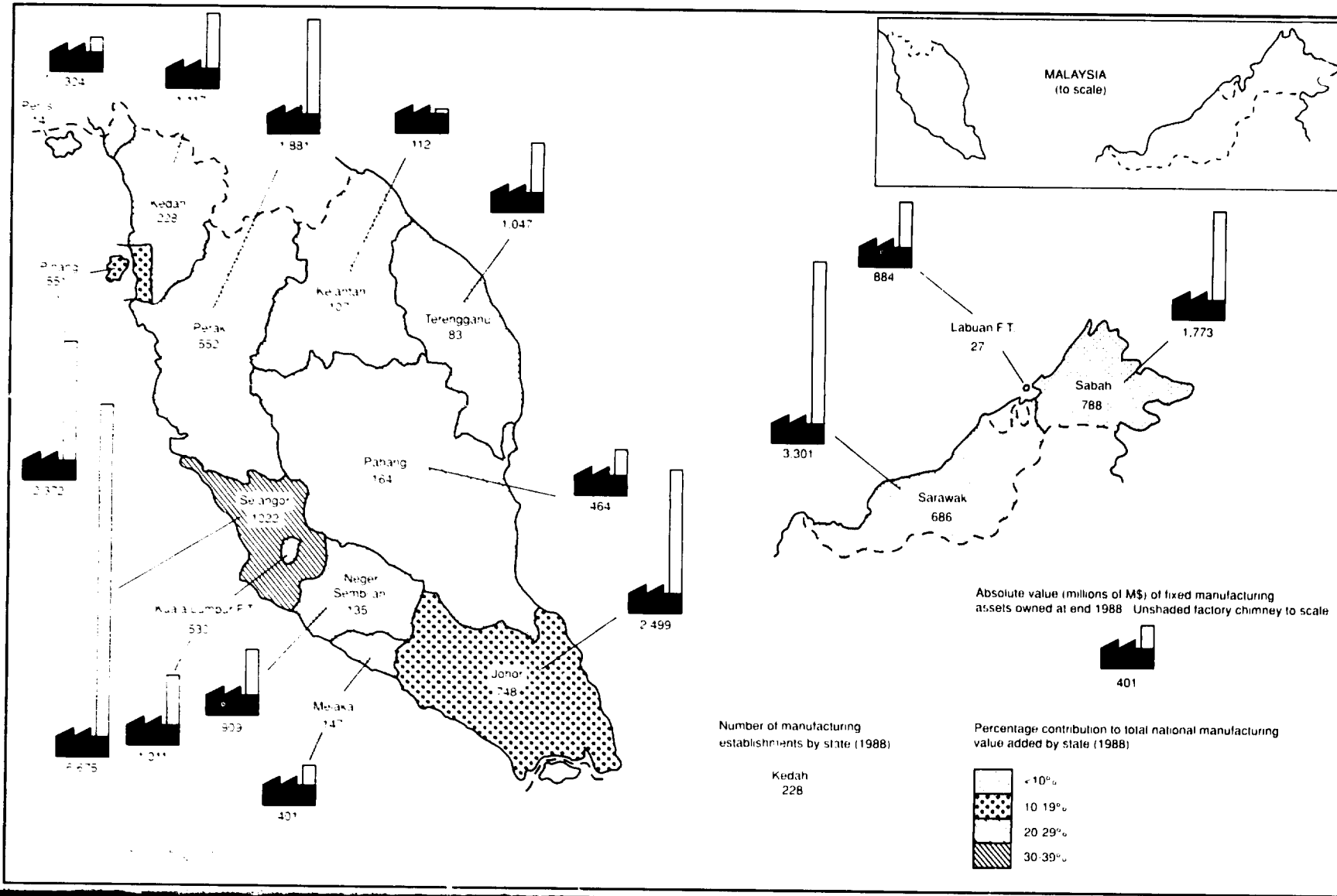
V

**LEADING INDUSTRIAL COMPANIES,
1988**

Company	Main activities	Turnover (Thousand M\$)
Sime Darby Bhd	Plantations, manufacturer of footwear, heavy equipment, motor vehicles and tractors	4,220,300
Shell Refining Co.	Processing and refining of petroleum crude	1,085,498
ESSO Malaysia Bhd	Refining and production of petroleum and ammonia	974,376
Federal Flour Mills	Manufacturer of animal feed, flour milling	968,690
Tan Chong Motor Holdings Holdings	Production and assembly of motor vehicles motor vehicle component parts	915,186
Rothmans of Pall Mall Bhd	Manufacturer and importer of cigarettes, pipe tobaccos and cigars	765,330
Tractors Malaysia	Caterpillars and tractors	675,853
Malaysian Tobacco Company	Manufacture, import and marketing of cigarettes and tobacco products	489,207
Berjaya Corporation	Manufacture and sale of galvanized wire ropes and other wire products	477,369
Chemical Company of Malaysia	Manufacturer of fertilizers, agrochemicals and chlor-alkali products	468,497
UMW Holdings Bhd	Vehicles	383,383
Gold Coin	Milling and marketing of feeds for livestock, veterinary products, agrochemical and electric equipment	338,172
Raleigh Bhd	Assembly of bicycles	328,708
Guinness Malaysia Bhd	Brewers of beer	291,111
Malayan United Industries	Cement manufacturing	284,527
Matshushita Electric Company	Assembles consumer appliances and electronic equipment	269,872
Malaysian Mosaics Bhd	Manufacture and sales of mosaic tiles	246,889
Hong Leong Industries Bhd	Manufacturer of mosaic tiles, carbon papers, typewriter ribbons, etc.	246,103
East Asiatic Company	Manufacture and sales of nutritional products, pharmaceutical products	241,180
Malayawata Steel	Manufacturer of reinforced steel bars	192,883
Hume Industries Bhd	Asbestos, cement, concrete, steel products, plastics, rubber, electronic devices	182,651
Malayan Cement Bhd	Cement	181,636
Uniphone Telecommunications	Telecommunications equipment	144,461
South Pacific Textile Industries	Textiles	112,776

Source: *Asian Finance*, 'The Big 500 in Asia' (15 December 1989); *Asia 1988*, 'Measures and Magnitudes'

INDUSTRIAL MAP OF MALAYSIA



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