Chapter 3

Resource Based Industry in Malaysia

3.1 Introduction

The development of RBI has featured importantly in the industrialization strategies in Malaysia. The year of 1987 is seen as the turning point of Malaysian economy where manufacturing had overtaken agriculture and expanding rapidly. RBI, defined simply, is generally taken to mean those industries that are involved with downstream processing and manufacturing of the country's "primary industries" viz. agro and mineral products (Mohd. Ismail Ahmad, 1990).

Malaysia as a resource-rich country needs to manipulate this advantage to produce more products in which it has a comparative advantage. According to classical economists, comparative advantage was based on the difference in the labour productivity (if labour is the only factor production they explicitly considered) among nations, but they provided no explanation for such difference in productivity, except for possible difference in climate. Heckscher-Ohlin or factor-endowment theory (after Swedish economist, Eli Heckscher and Bertil Ohlin) which then become the "modern theory of international trade" state that; *"A nation will export the commodity whose production requires the intensive use of the nation's relatively abundant and cheap factor and import the commodity whose production requires the intensive use of the nation's relatively scarce and expensive factor"* (Salvatore, 1995). Therefore, the development of industries in which the country has a comparative advantage such as rubber, wood, palm oil and

petroleum-based products and selected labour-intensive industries such as textiles and electronics industries need to be accelerated (Malaysia, 1984).

A year of 1980s was the early stage for RBI development in Malaysia and clearly stated in the Mid-Term Review of the Fourth Malaysia Plan (4MP), as one of the six major objectives of the Malaysian industrial strategies, which is

"to expand and diversity the manufacturing base so as to generate high value added and to increase foreign exchange earnings through the development of agro-based and other RBI in which the country has comparative advantage". (Pp. 250)

Realizing this issue, Malaysia needs to be careful to implement its industrial policy and strategies within the constraints framework.

3.2 Previous Studies in RBI

Literature on RBI in the field of development economics reveals that there exist some evidence and contradiction of what RBI can achieve especially to meet the macro economic issues. In this section, several important literatures in RBI will be discussed, to get clear-cut view concerning the issues.

In a survey of RBI in the developing countries, Roemer (1979) has attempted to shed light on the potential contribution of industrialization based on resource processing to efficient growth, employment creation, greater equity and economic independence. Two industrial strategies that are primarily based on the utilization of natural resources have been receiving emphasis in the developing countries or third world namely *(i) more complete processing of raw materials for export and (ii) utilization of domestic resources principally for domestic consumption.* The use of capital-intensive methods to reduce raw

material costs appears to confer comparative advantages on countries with cheaper capital. However, it is not obvious that RBI is better suited to achieve national development goals than other potential strategies lower transport costs due to substantial weight reduction in processing may counter this advantages for some stages of processing, but does not universally favour Less Developing Countries (LDCs) exporters. Most major producers export sufficient quantities to achieve scale economies typical of resource processing, but economies of scale are a barrier in processing for the domestic market in all excepts the largest LDCs. Because RBIs are not impressive contributors to direct or indirect employment creation, they are likely to perpetuate the pattern of dualism and inequality present in typical resource-rich countries.

Alam (1983) draws attention to some characteristics of RBI, that are not mentioned in Roemer's (1979). The recent survey conducted on RBI, suggest that efficiency in these industries may be higher than in other LDC industries. It was argued that nearly all the RBI definition given by Roemer (1979, p. 168) have several characteristics which tend to promote efficiency *(i) either because failure to meet certain minimum standards gives occasion to adverse consequences not likely to be tolerated, or (ii) the machines and processes reduce the range of effort and managerial choices available to managers and workers alike.* In other words, the choice and effort latitudes available to these industries are narrower relative to nearly most other industries, a factor that should promote their relative efficiency. The comparison was made between the ratios of value-added per employees in LDCs to value-added per employee in Developed Countries (DCs) by 7 major groups of manufacturing industries. The empirical evidence found that, on average

RBI are relatively more productive than major non-RBI. But the presences of efficiency differentials favouring RBI do not provide a sufficient rationale for a programme of RBI. National studies and conferences concerning RBI development in Malaysia have been also conducted to identify and promotes the development and so as performance of manufacturing industries.

Shand and Ismail (1981), have identified and characterized the structural pattern of RBI in Malaysia. Resource-based development is arguably the most comprehensive strategy yet adopted by Malaysia. They have categorized Malaysia's industry sector into several important groups viz. primary resource, resource-based manufacturing (RBMI), resource-based related, other manufacturing and social and economic services. The most important points were the introduction of three different stages of RBMI in Malaysia becomes the first literature ever revealed in Malaysian economy. It was thought here, that a clearer understanding of the structure of Malaysia's RBMIs could be gained by distinguishing three stages of manufacturing, each of which represents successive steps towards the production of end products. Using data provided by the 1973 Malaysian National Accounts, proportion of total value added in RBMI was only 13 % compared to primary resource, which was accounted about 35 %.

Maisom (1981) has attempted to review the aspects of growth and investment of RBI in Malaysia industries. An interesting notes that the growth rates of manufactured output, value-added and exports of RBI had been decline in relation to non-RBI. This is due to the promotional activities to encourage export-oriented, labour-intensive industries such as electronics and textiles in the seventies. Furthermore RBI are faced with a number of related problem, including marketing both locally and internationally, technology, risks

and in the case of food manufacturing, inconsistent and inadequate supply of raw materials. Domestic demand expansion had been the major source of growth of output and value added of RBI between 1970-74. Export expansion is expected to play an increasingly significant role in the future. With regard to investment in RBI, local investment was three times larger than foreign investments. Therefore greater promotional activities needed to encourage the development of RBI in the near future.

Anuwar Ali and H Osman-Rani (1984), highlighted the prospects and strategies of RBI in Malaysia with attention on employment growth, output growth of RBI and issues concerning the comparative advantage namely factor intensity, effective protection rates (EPR) and domestic resource costs (DRC). Using the five digits Malaysia Industrial Classification (MIC) and three stages of manufacturing (as stated in Shand and Ismail, 1981), the result shows that the contribution of RBMI in the industrial sector shown the relative importance, in which that the RBI sector is generally more capital-intensive than the non-RBI sector. It was also observed that the RBIs vary widely in their characteristics, in terms of factor productivity, capital-labour ratio, growth rate, the EPR and the DRC. The issues concerning the characteristics of RBI in this study will be discussed in section 3.3.

3.3 Characteristics of RBI

The industrial development scenario in Malaysia has long gone past the import-substitution phase industrialization. The push now is towards EOIs. Industries that are preferred under the current industrialization strategies are those that can compete in overseas markets. Shand and Ismail (1981) argue that the RBIs vary greatly in the combination of their inputs. They vary in the extent to which they use primary resource products as inputs. They also vary in their use of other RBIs products as inputs, i.e. for some commodities, more than one stage of manufacturing takes place. Ismail (1990) have different views that RBIs is characterized based on its comparative advantages in overseas markets. Terms of ERP, which is, represent "the proportionate increase in domestic value added per unit output, over free trade value added, per unit of output, as a result of tariff protection" used to indicate the characteristics of RBI. The ERP is a measure of the degree of protection required by an industry as its existing level of production. The degree of required protection reflects the comparative advantage of such an industry: the lower the protection needed, the greater the comparative advantage. Anuwar Ali and H Osman-Rani (1984) has provides a variety of techniques to examines the comparative advantages. One of them is DRC. The DRC measure indicates the amount of domestic resources used per unit of foreign exchange (shadow exchange rate or SER) earned or saved from production of a tradable good. It represents the social cost of promoting exports or protecting import-substitution industries under existing policy. An industry can be said to have comparative advantage or disadvantage if DRC/SER < 1 or DRC/SER > 1.

3.4 Importance of RBI

RBIs which gave Malaysia a foundation to promote and expand its products, has given an important impacts in achieving the main goal of various development in Malaysia, especially more diversifying economy, to eradicate poverty through creating employment opportunities and restructuring society. In this section, the importance of RBI in Malaysia will be scrutinized critically based on several macroeconomic indicators and as well reflecting the microeconomic issues.

3.4.1 Employment Opportunities

It is not argued that the implementation of industrialization programme in Malaysia has given an impact on the growing of the employment opportunities. Lai (1997) in his paper has revealed that the manufacturing sector has taken on the role as mainstay of the economy, where measured in terms of contribution to GNP, export earnings and employment. Thus the manufacturing sector is now by far the most important sector in Malaysia. During the first phase of industrialization from 1957-1968, which concentrated on an import-substitution strategy, one of the main concerns was job creation for the growing labour force. However, the industrialization programme was not fulfilling this objective (Malaysia, 1969). During the First Malaysia Plan (1966-1970), more than 50 % of the new jobs created came from the service industries (which then included the public sector). In contrast, only 15 % of the jobs created were attributed to manufacturing (Malaysia, 1971). In realizing the face of growing unemployment and the constraints of a limited domestic market, an export-oriented strategy of industrialization was devised. The implementation of two acts namely Investment Incentives Act 1968 and the Free Trade

Zone Act 1971 has provides the impetus for the growth of export industries which are highly labour intensive.

During the 1980s, 1990s and early 2000, the significant changes of employment opportunities however, shown in *Table 3-1*. The period of 1985-1995, manufacturing sector has rigorously shift up the employment creation as the primary sector become unable to create sufficient jobs to the labour markets. The increase to 25.3 % (1995) from 15.1 % (1985) or increment of about 10.2 % in the labour market has recorded the manufacturing sector as a major source of employment in Malaysia. However for the periods of Eight Malaysia Plan (2001-2005), the estimated total employment creation up to 29.5 % is reasonable as the prevailing sector experience shift of labour concentration to services sector.

Table 3-1

Employment by Sectors (1980-2005), Percentage (%)

Sector	1980	1985	1995	2000	2005[1]
Agriculture, Forestry and Fishery	39.7	35.7	18.7	15.2	12.0
Mining & Quarrying	1.7	1.1	0.5	0.4	0.4
Manufacturing	*15.7*	*15.1*	*25.3*	*27.6*	*29.5*
Construction	5.6	6.9	9.0	8.1	8.1
All Services	37.3	41.2	46.5	48.7	50.0

Source: Economic Report, various issues
The Malaysian Plan, various issues
[1]Estimated for the period of Eight Malaysia Plan (2001-2005)

3.4.2 Contribution to GDP

In general, RBI has contributed significantly towards the generation and reengineering of the Malaysian economy especially it's GDP. The significant structural changes in the composition of output have occurred among and within sectors with the increasing industrial emphasis since the early 1970s. As illustrated in *Table 3-2*, for the periods of 1970-2005 share of manufacturing sector to GDP increase steadily. This was consistent with the consequences of changing in prevailing industrial policies in the 1970s and supported by the implementation of IMP1[1] and IMP2[2].

According to *Table 3-3*, with the favourable performance of the sector, its share to Gross Domestic Product (GDP) have rose from 27.1 per cent in 1995 to 33.4 per cent in 2000 respectively. During the Plan period, the Non-RBIs grew at an average rate of 11.5 per cent compared to RBIs, which grew at 6.5 per cent. The vegetable, animal oils and fats and petroleum products have recorded during the plan periods (1996-2000) with an average annual growth rates grow at 13.1% and 11.4% respectively. Growth rate for wood and wood products industry was 1.1% and other RBIs grow at ranges around 3% to 8%. With compared to Non-RBIs growth, a more comprehensive measure should be taken to developed RBIs especially for the wood-based products, rubber products, palm oil-based products, cocoa-based products, food products, ceramics and chemical industries in order to be remain competitive in world markets (Malaysia, 2001)

---

[1] The IMP1 had introduced by the focused on further diversification and deepening of the resource- based and non resource-based industries. The plan provided a framework for development of a broad-based manufacturing sector during the period of 1986-1995. It outlined the structural shift from an agricultural and primary product-based economy to one in which manufacturing sector would assume a greater role. The plan also emphasized the importance of preparing the workforce with technical and industrial skills and the need to develop indigenous skills in product design and production technology (Malaysia, MITI 1996). The descriptions of IMP1 will be presented in Chapter 6.

[2] The IMP2 (1996-2005) was introduced as a compliment to IMP1 to promote and emphasizes moving beyond a focus on manufacturing operation through the value-chain in order to enhance industrial linkages, increase productivity and competitiveness.

Table 3-2

Share in Gross Domestic Product by Industrial Origin, 1970-2005 (percentage)

Sector	1970_1	1975_1	1980_1	1985_1	1990_1	1995_2	2000_2	2005^*_2
Agriculture	30.9	27.7	22.9	20.8	18.7	10.3	8.7	7.0
Mining and quarrying	14.2	4.6	10.1	10.5	9.7	8.2	6.6	5.5
Manufacturing	*14.8*	*16.4*	*19.6*	*19.7*	*27.0*	*27.1*	*33.4*	*35.8*
Construction	4.1	3.8	4.6	4.8	3.5	4.4	3.3	3.2
All Services	38.2	47.5	42.8	44.6	42.3	51.2	52.4	53.1

Source: ***Malaysia (1989, 1991,2001)***
Notes: ***$_1$1978=100 and $_2$1987=100***
****Estimated for Eight Malaysia Plan (2001-2005)***

Table 3-3

Growth Of Manufacturing Industries, 1995-2000

Industry	*Value Added (RM million in 1987 prices)*		*Share of Value Added (%)*		*Average Annual Growth Rate, 1996-2000*
	1995	**2000**	**1995**	**2000**	**(%)**
Resource-Based	**21,814**	**29,939**	**48.3**	**42.9**	**6.5**
Vegetables, Animal Oils & Fats	1,203	2,222	2.7	3.2	13.1
Other Food Processing, Beverages &Tobacco	3,504	4,724	7.8	6.8	6.2
Wood & Wood Products	3,030	3,196	6.7	4.6	1.1
Paper & Paper Products	1,888	2,802	4.2	4.0	8.2
Industrial Chemical & Fertilizer	2,581	3,495	5.7	5.0	6.3
Other Chemical & Plastic Products	2,613	3,528	5.8	5.0	6.2
Petroleum Products	2,477	4,252	5.5	6.1	11.4
Rubber Processing & Products	1,549	1,853	3.4	2.7	3.6
Non-Metallic Mineral Products	2,969	3,867	6.6	5.5	5.4
Non-Resource-Based	**22,306**	**38,439**	**49.4**	**55.0**	**11.5**
Textiles, Wearing Apparel & Leather	2,311	2,451	5.1	3.5	1.2
Basic Metal Industry	513	1,049	1.1	1.5	15.4
Metal Products	1,551	3,182	3.4	4.6	15.5
Manufacture of Machinery Except Electrical	2,675	3,434	5.9	4.9	5.1
Electronics	10,288	19,460	22.8	27.9	13.6
Electrical Machinery	832	1,507	1.8	2.2	12.6
Transport Equipment	4,136	7,356	9.2	10.5	12.2
Others	1,055	1,489	2.3	2.1	7.1
Total	**45,175**	**69,867**	**100.0**	**100.0**	**9.1**
% to GDP			**27.1**	**33.4**	

Source: Eight Malaysia Plan, 2001-2005

3.4.3 Manufacturing Investment in RBIs

In line with the Government's policy to promote investments, especially in high-technology and value-added industries that would strengthen international competitiveness of the sector as well as generate strong linkages with the domestic economy, a total of 3,908 projects was approved with a proposed investment of RM137 billion, as shown in *Table 3-4*. Foreign investments amounted to RM73.7 billion or 53.8 per cent, while domestic investments amounted to RM63.3 billion (46.2 per cent). The high level of investment in selected RBIs reflected the confidence and continued commitment among investors to invest in the country.

A total of 1,609 project was approved in RBIs with accumulated total capital investment amounted to RM 71 billion. Foreign investment accounted RM 32.9 billion (46.6 per cent), while a total of RM 38.1 billion were come from domestic investors. The total investment in RBIs which amounted to RM 71 billion (51.8 per cent) of the total RM 137 billion indicating the attractiveness of the country as a location for manufacturing investments. Proposed investments in RBIs were highest in the petroleum products including petrochemicals (RM23.1 billion) followed by chemical and chemical products (RM9.6 billion) and natural gas (RM9.5 billion) industries. Among the identified industries foreign investment were highest in petroleum product (RM 13.8 billion) and chemical and chemical products (RM 5.9 billion) followed by beverages and tobacco (RM 595.9 million). Therefore for the second five years period of IMP2, a more intensive and proactive approaches need to direct towards the expansion and diversification of manufacturing development in Malaysia.

Table 3-4

Approved Manufacturing Projects, 1996-2000[1]

Industry	*Number*	*Capital Investment (RM million)*		
		Domestic	***Foreign***	***Total***
Resource-Based[3]	**1,609**	**38,092.3**	**32,912.0**	**71,004.3**
Food Manufacturing	229	1,679.1	1,479.2	3,158.3
Beverages & Tobacco	34	198.4	595.9	794.3
Wood & Wood Products	191	2,224.9	732.0	2,956.9
Furniture & Fixtures	178	836.4	343.6	1,180.0
Paper, Printing & Publishing	121	4,599.4	3,616.6	8,216.0
Chemical & Chemical Products	241	3,641.4	5,947.7	9,589.1
Petroleum Products	55	9,347.2	13,775.3	23,122.5
Natural Gas	3	7,993.5	1,477.9	9,471.4
Rubber Products	116	908.4	872.3	1,780.7
Plastic Products	225	1,457.2	1,047.0	2,504.2
Non-Metallic Mineral Products	216	5,206.4	3,024.5	8,230.9
Non-Resource-Based	**2,233**	**24,966.9**	**40,610.5**	**65,577.4**
Textiles & Textile Products	218	926.6	1,902.0	2,828.6
Leather & Leather Products	14	45.5	31.7	77.2
Basic Metal Products	187	6,926.4	2,971.0	9,897.4
Fabricated Metal Products	249	1,406.3	2,051.9	3,458.2
Machinery Manufacturing	292	1,329.1	1,596.9	2,926.0
Electrical & Electronic Products	1,003	10,734.8	30,176.5	40,911.3
Transport Equipment	237	3,547.9	1,621.7	5,169.6
Scientific & Measuring Equipment	33	50.3	258.8	309.1
Miscellaneous	**66**	**249.1**	**163.6**	**412.7**
Total	**3,908**	**63,308.3**	**73,686.1**	**136,994.4**

Note: 1 for the year 2000, capital investment is defined to include financing for working capital requirement and pre-operational expenses.

Source: Eight Malaysia Plan (2001-2005)

[3] RBI during IMP1 only consists of 7 industries and during IMP2 11 industries has identified.

3.5 Conclusion

The establishment and implementation of various manufacturing strategies and policies especially both IMPs has had an impact to the overall macroeconomy. Industrialization programme was originally seen in Malaysia as providing an opportunity to reduce vulnerability to the volatile world market for Malaysia's primary commodity exports. Therefore, RBI in Malaysia has taken its role in manufacturing sector especially in 1980s, as one of the main objectives is to diversify and developed market based on its value-added. In realizing the correlation between manufacturing development and national income especially in terms of GDP, employment and labour productivity especially in managing the more competitive and pragmatic economy, government has thus far developed and implement major policy and trade strategy namely the First Industrial Master Plan (IMP1) and Second Industrial Master Plan (IMP2) in early 1986 and 1996 respectively. The direction of Malaysian industrial output especially when comparing with other developed countries has become a subject of debate and discussion. Labour employment issues including wages and productivity levels have also become a major discussion in manufacturing sector in Malaysia.