



UNIVERSITI PUTRA MALAYSIA

**SOURCES OF INDUSTRIAL GROWTH USING
FACTOR DECOMPOSITION APPROACH:
MALAYSIAN EXPERIENCES, 1978-87**

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**MASTER OF SCIENCE
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1997



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By

AHMED ELYAS ELAMEER

**Thesis Submitted in Partial Fulfilment of the Requirements
for the Degree of Master of Science in the
Faculty of Economics and Management
Universiti Putra Malaysia**

October 1997



*To my beloved
father, Elyas; mother, Nina;
sister, Sara and brothers, Elameer and Salah*

*I dedicate this work with great love and appreciation
for their kindness, encouragement and effort.*



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**Sources of Industrial Growth Using Factor Decomposition
Approach: Malaysian Experiences, 1978-87**

By

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October 1997

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The main objective of the study is to examine sources of industrial output growth of the Malaysian economy, which has undergone changes in its trade policy from import substitution to export orientation strategies. To fulfil this objective, sources of industrial growth are analysed by factor decomposition approach (i.e. demand side analysis) This approach decomposed output growth of each industry into its four sources namely, export expansion, import substitution, intermediate demand expansion and domestic demand expansion.

Input-output tables for the years 1978, 1983 and 1987 which were published by the Department of Statistics were used in this study. The overall period between 1978 to 1987 has been divided into two sub-periods, that is 1978-1983 and 1983-



1987. The 1983 and 1987 tables were deflated to their 1978 constant prices using both sectoral producer price and sectoral import price indices.

The results of the study indicate that the domestic demand expansion has been the dominant source of growth of the overall Malaysian economy in 1978-83. The study also shows that the industrial growth was due to the export expansion during 1983-87 and the overall period. The manufacturing sector appears to play a crucial role in the country's growth process. Its contribution to the overall economic growth has steadily increased. Most important among the manufacturing sub-sectors is the electrical machinery industry.

This study concludes that while it is important to continue pursuing export-oriented strategy to achieve growth objectives, it has to balance it out with an appropriate policy to reduce import of intermediate and capital goods.

Abstrak tesis yang dikemukakan kepada senat Universiti Putra Malaysia sebagai memenuhi sebahagian daripada syarat dikurniakan untuk ijazah Master Sains

**Punca-punca Pertumbuhan dengan Menggunakan Pendekatan
Dekomposisi faktor: Pengalaman Malaysia 1978-87**

Oleh

Ahmed Elyas Elameer

Oktober 1997

Penyelia: Prof. Madya Dr. Zakariah Abdul Rashid, Ph.D.

Fakulti: Ekonomi dan Pengurusan

Objektif utama kajian ini ialah untuk mengkaji punca-punca pertumbuhan output industri dalam ekonomi Malaysia, yang telah mengalami perubahan dalam dasar perdagangannya daripada strategi penggantian import kepada strategi pengembangan eksport. Untuk mencapai objektif ini punca-punca pertumbuhan industri di kaji dengan menggunakan pendekatan dekomposisi faktor (i.e. analisis bahagian permintaan). Pendekatan ini menguraikan pertumbuhan output bagi setiap industri kepada punca-puncanya, yakni pengembangan eksport, penggantian import, pengembangan permintaan perantaraan dan pengembangan permintaan domestik.

Jadual input-output bagi tahun-tahun 1978, 1983 dan 1987 yang diterbitkan oleh Jabatan Perangkaan di gunakan dalam kajian ini. Tempuh kajian keseluruhan 1978-87 telah dipecahkan kepada dua tempuh masa yang kecil, yakni 1978-83 dan

1983-87. Jadual 1983 dan 1987 telah ditukarkan kepada nilai tahun 1978 dengan menggunakan indeks-indeks harga pengeluar dan harga import sektoral.

Hasil kajian menunjukkan bahawa pengembangan permintaan domestik telah menjadi punca yang penting kepada pertumbuhan ekonomi Malaysia keseluruhannya bagi tempoh 1978-87. Hasil kajian ini juga menunjukkan bahawa pertumbuhan industri banyak dipengaruhi oleh pengembangan eksport dalam tempoh 1983-87 dan tempoh keseluruhan. Sektor perkilangan kelihatan memainkan peranan penting dalam proses pertumbuhan ekonomi ini. Sumbangannya kepada pertumbuhan ekonomi keseluruhan telah meningkat, yang terpenting antara sub-sektor sub-sektor perkilangan ini ialah peralatan elektrik.

Kajian ini menyimpulkan bahawa sementara adalah penting meneruskan strategi yang berorientasikan eksport untuk mencapai pertumbuhan, ia haruslah diimbangi dengan satu strategi yang sesuai bagi mengurangkan import barangan perantaraan dan barangan modal.

CHAPTER I

INTRODUCTION

Malaysia is South East Asian country with an area of 329,758 square kilometres, 20.7 million population and Gross National Product (GNP) of RM. 113,595 million in 1995. The economy grew at a rate of 9.3 percent in constant 1978 prices (Ministry of Finance Malaysia, 1996) and had a per capita income of RM. 10,058 in the same year (Bank Negara Malaysia, 1996).

Malaysia is one of the upper-middle-income countries in the world, adopting a free-market economy with the private sector being the dominant (Kurian, 1992). Agriculture has traditionally been the mainstay of the economy. Rubber and palm oil do not only represent the main agricultural products of the economy, but also the export of these products has made the country the world's leading producer of these crops. During the last two decades the share of agriculture in GDP, however, declined from 39.3% in 1957 to 13.6% in 1995 (Table 1).

Currently, the manufacturing sector is the most dominant sector of the economy, while electronics and textiles are the most important industrial products.



Like in most developing countries, Malaysia at the time of Independence in 1957 had only a rudimentary manufacturing industrial sector. Vigorous encouragement of foreign private investment led to a rapid growth of this sector during the 1960s and early 1970s. The manufacturing sector's GDP share in 1995 was about 33.1% which was twice that of 1975.

Malaysia's major exports comprise of electronics, textiles, natural rubber, palm oil, timber and petroleum. The principal imports are consumer and intermediate goods, capital equipment and chemicals. Singapore, The United States, Japan and The European Union are the country's major trading partners.

Over the past three decades, the Malaysian economy has sustained a remarkable growth performance. Many factors have been identified to bring about such growth performance. The most important among them is rich natural resources base of the country, particularly cultivatable land, oil and gas; and the country's outward-oriented trade strategy. There is also an external factor that helps the economy's growth achievement usually associated with favourable developments in the world economy. But, all these factors would have not automatically resulted in that rapid economic growth without the sound management of the economic and financial institutions (World Bank, 1989).

Table 1 Gross Domestic Product (GDP) and Employment by Sector
1957 - 2000 (shown in percentages)

Sector	1957	1965	1970	1975	1980	1985	1990	1995	2000 ^a
Agriculture									
GDP Share	39.3	34.4	29.0	27.7	22.9	20.8	18.7	13.6	10.5
Employment Share	61.3	54.6	53.5	49.8	39.7	35.7	26.0	18.0	13.1
Mining									
GDP Share	6.4	5.2	13.7	4.6	10.1	10.4	9.7	7.4	5.7
Employment Share	6.4	2.5	2.6	2.2	1.7	1.1	0.6	0.5	0.5
Manufacturing									
GDP Share	11.1 ^b	11.0	13.9	16.4	19.6	19.7	27.0	33.1	37.5
Employment Share	6.4	8.4	8.7	11.1	15.7	15.1	19.9	25.9	28.9
Construction									
GDP Share		4.3	3.8	2.1	4.6	4.8	3.5	4.4	4.8
Employment Share	3.2	3.5	2.7	4.0	5.6	6.9	6.3	8.3	9.3
Services									
GDP Share	43.2	45.1	36.2	49.2	40.1	43.6	42.3	44.2	45.7
Employment Share	29.1	33.5	32.5	35.1	37.3	41.2	47.2	47.3	48.2

Source: Malaysia, Five Year Development Plan and Economic Report, various issues

Note:

^a This year's share forecasted by Seventh Malaysia Plan

^b This share including also the construction sectoral share for this year only

Background of Study

British economic policies greatly shaped the nature and extent of industrial development of Malaya¹ during the colonial times. By emphasising export-oriented primary commodity production and favouring British manufactured imports during the colonial era, local industry was largely confined to processing raw materials for export and manufacturing some items for local consumption. The growth of other local industries was effectively discouraged by colonial policy (Jomo, 1990).

Soon after independence in 1957, the government embarked on an industrialization strategy. The strategy aimed to redress the economy's problems caused by several factors. Firstly, too much dependency was placed on two primary export products, namely rubber, whose price was falling steadily, and tin, the non-renewable resource with rapidly depleting reserves. Secondly, there was an uneven distribution of income, manifested in a wide disparity between rural and town dwellers and between inhabitants of Malaya and the Borneo States, as well as within social groups (First Malaysia Plan, 1965). Thirdly, the increasing labour force and unemployment presented a problem (Osman Rani and Haflah, 1990). Fourthly, the initial support for industrialization was given by the International Bank for Reconstruction and Development (IBRD) when its mission recommended the strategy for Malaya in 1955 (Kau, 1979). The IBRD argued that Malaya must broaden the base of secondary manufacturing to supplement the contribution to additional employment and income likely to be made by the primary production

¹ It referred to Malaysia as Malaya before the year 1965, when during that time it combined with Singapore

(IBRD, 1955). Lastly, the government was aware that industrialization must be the cornerstone of the country's future economic structure, as it would provide unlimited opportunities for absorbing surplus manpower, and could be used to solve the nation's long-term balance of payment problems (Kanapathy, 1970).

Since the pre-Independence days until late 1960s, Malaysian imports largely comprised of consumption goods (Appendix A-1). At the same time, the domestic consumption goods industry has yet to be developed to the extent that it could cater the domestic demand adequately. Therefore, the policy formulation during that period was overwhelmed by infant industry argument to justify heavily protected import-substituting industrialization strategy. To promote such import-substituting industries, the government directly and indirectly subsidised the establishment of new factories and protected the domestic market. Offering specific incentives to stimulate investment in the manufacturing sector, the government introduced the Pioneer Industries Ordinance (PIO) in 1958 (Ariff, 1991). Many British companies, previously exporting goods to the Malayan market, seized this opportunity by establishing branch plants in Malaya to consolidate market monopolies behind protective tariff barriers. Chye (1990) pointed out that the achievement of the import-substitution strategy was reflected by a reduction of the imported consumption goods which was trimmed down from 50.7% in 1961 to 32.0% in 1970 (Appendix A-1).

Problem Statement

The Malaysian government introduced the import substitution strategy to solve the economy's problems as highlighted in the previous section. The import substitution strategy which was instituted in the late 1960s had created distortions in prices of domestic products, low value-added and poor linkages with the rest of the economy (Osman Rani and Haflah, 1990). Thus, it became apparent that any further encouragement of import-substituting industries via protection would mean only nurturing greater inefficiency in the Malaysian industrial structure. This would not be compatible with the long-term industrial development of the country. Moreover, further industrial expansion in Malaysia was not viable because of the limited domestic market as reflected by the country's relatively small population and low average-income level, unless there were more overseas market ventures (Ariff and Abdul Aziz, 1988). Export-oriented industrialization strategy seemed to be the solution, especially since the strategy had been adopted with great success by Asian countries such as South Korea, Hong Kong, Singapore and Taiwan since early 1960s. Malaysia was aware that it should not miss out this export oriented industrialization strategy to induce its industrial growth.

The government in 1968 introduced the Investment Incentives Act (IIA) to replace the PIO². The legislation of the act reflected a strategic switch in emphasis from import substitution to export oriented industrialization. Under the IIA, expenses incurred in export promotion were allowed for double deduction from tax payments. In 1971, the government enacted the Free Trade Zone (FTZ) Act to further facilitate

² A brief description about PIO is presented in page 5.

the location of the multi-national corporations in Malaysia. Moreover, firms could apply to be designated as Licensed Manufacturing Warehouses (LMWs) which would allow them to effectively operate as firms located within FTZs (Kanapathy, 1994). Although the FTZs were responsible for rapid development for export industries, but its development has created insignificant demand for the local intermediate products. This is due to the biasness of the production of final consumer and capital goods.

The policy makers' suggested to use industrialization programme to achieve the objectives of the New Economic Policy (NEP)³ in 1971 by the process of export-oriented industrialization (UNIDO, 1985). The NEP in general has had a positive impact on Malaysia's GNP and GNP per-capita being the basic indicators of economic performance. However, these indicators have shown a remarkable upward trend as indicated in Appendix A-4.

The government outlined First Industrial Master Plan (First-IMP) covering the period 1986-95 and emphasising on the continuation of the export oriented industrialization strategy (UNIDO, 1985). The First-IMP stressed the structural problems of the country's industrialization process as (1) delayed industrialization⁴, (2) weakness in inter-industry structure, (3) heavy dependence in key areas on foreign investment, and (4) weakness in export structure. The general strategy pursued under the First-IMP in order to achieve its industrial vision is illustrated in Appendix G. Although the First-IMP highlighted many useful insights into the

³ Objectives of NEP are eradication of poverty and restructuring of society.

⁴ Delayed industrialization: Malaysia started to develop by specialising in exports based directly on its natural resources, only later the country developed exportable manufactured goods and services. This pattern of primary specialisation strategy can be characterised as delayed industrialization.

problems of Malaysia's industrialization, but it has had a very limited impact on industrial development policy. This is due to the fact that overall analysis and policy recommendations have been largely ignored by subsequent policies and practices (Jomo, 1994). Thereafter, the Second IMP for 1996 - 2005 was introduced, to address various issues and challenges that have been identified to sustain and enhance the growth momentum of the manufacturing sector (MITI, 1996).

During the implementation of export-oriented industrialization in the early 1980's, a selected import substituting heavy industries were launched to strengthen the resilience of the manufacturing sector and improve balance of payment (BNEP, 1994). These two major policies were expected to boost the growth of industries.

Over the period 1957-96, Malaysia witnessed not only a remarkable growth performance but also a substantial structural change in its economy as measured by the sectoral share of production and employment. During this period the share of the agriculture to the GDP and employment declined steadily from 39.3% and 61.3% in 1957 to 13.6% and 18% in 1995, respectively. On the other hand, the share of manufacturing sector to GDP has increased more than three times during the last four decades, while its share to employment increased almost four times (Table 1). Zakariah and Chan (1995) observed this reversal in production structure between agriculture and manufacturing during the 1970 and 1994.

There have been few studies that examined the sources of industrial growth and structural changes of the economy using a shift-share analysis⁵, namely Hoffmann and Tan (1975 and 1980), Ariff (1975) and Kanapathy (1994). Abdul Aziz (1990) is the first to examine the issue by using the input-output tables, looking at the changing structure of output, final demand, primary input, technology and linkages by comparing the corresponding technical coefficients. However, Abdul Aziz's study did not model the structural change of the economy. Consequently, there is a need for further studies in this area to explore more about sources of industrial growth and performance of the Malaysian industrial sector. In this sense, the major question raised by the present study is what is the behaviour of the current industrial growth in Malaysia. To answer this question, the study attempts to explore and examine sources of industrial growth of the Malaysian economy by decomposing output growth into export expansion, import substitution, domestic demand expansion and intermediate demand expansion.

⁵ Shift-share analysis has its own limitation, for example, it failed to separate the domestic demand expansion effect from intermediate demand expansion one. A detailed discussion about this issue is presented in Chapter II.