UNIVERSITI PUTRA MALAYSIA

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

AHMED ELYAS ELAMEER

FEP 1997 1
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MASTER OF SCIENCE
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1997
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By

AHMED ELYAS ELAMEER

Thesis Submitted in Partial Fulfillment 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.
ACKNOWLEDGEMENTS

First and foremost, I would like to single out the contribution of Associate Prof. Dr. Zakariah Abdul Rashid, the chairman of my supervisory committee, for his persistent inspiration, constant guidance, wise counsel, encouragement, kindness and various logistic support throughout the stages of my study. I highly appreciated him for giving the first hand knowledge about input-output approach which stimulated my desire to explore more about this interesting area of economic analysis. His command on the subject matter together with his research experiences has been greatly valuable to my study. In spite of his busy schedule, he made enough time available for me to discuss and provide necessary direction in order to progress my study. His enthusiasm and patience has left a feeling of indebtedness which can not be fully expressed.

My deep appreciation and sincere gratitude is also extended to Prof. Dr. Abdul Aziz Abdul Rahman, Director of Agricultural Research Policy Centre and member of the supervisory committee, for his kindly co-operation and thoughtful suggestions to improve my study. I would like to acknowledge his sincere and articulate lectures on theories of growth and development together with the economic policy that enrich my horizon of knowledge in economics with new dimension.

I owe a great deal of gratitude and appreciation to Prof. Dr. Mohd. Ariff Hussein, Dean of Graduate School and member of the supervisory committee, for his supervision and helpful comments to improve my study. I would like also to extend
extend my thanks for the different kinds of assistance he offered in his capacity as
the Dean of Graduate School and for teaching us research methods

My special thanks to the Dean, Deputy Deans, and all members of the
Faculty of Economics and Management for their kind assistance during my study
I am, in particular, indebted to Prof Ahmad Mahzan Ayob, Dr. Ahmad Zubaidi,
Dr Maisom Abdullah, Mr Saroni Judi and Dr Tan Hui Boon who have imparted
valuable knowledge to me in courses I attended on the graduate subjects I am
also grateful to Mr Abdul Manan Ali for the high concern he expressed

My sincere gratitude is also extended to Associate Prof Dr Kamis
Awang, Deputy Dean of the Graduate School for his continuous encouragement
and assistance. My special thanks are extended to Mr Abdul Aziz Bahsir, Ex-
Senior Registrar, Mrs Arbaiyah Mohd Isa, Assistant Registrar, Miss Fadzlon
Mohd Yusof, Mrs Rabidah, Mrs Faridah, Mr Roslan, Mr Tanga, Mrs Selvy
and Miss Madina for their assistance and co-operation during my study. My
gratitude extended to Miss Robi Saad, Mr Jamali Janib, Mrs Zaleha Othman and
UPM library staff for their co-operation and assistance. I am indebted to Dr Idris
Abdul, Principal of the Kolej Tun Dr Ismail (KTDI) where I resided during my
study, Mrs Faridah, the manager, all staff and students of the KTDI for making
my stay in the hostel a pleasant one

For my friends Ahlam Abdel Hadi and Indah Susilowati whatever I state
in the acknowledgement will remain under the true credit of their genuine
contribution to the success of this study. I am enormously indebted to my friends
Bishwa Singh and Mustain Bilallah for their true friendship, persistent assistance and support that made this study a reality. I am also thankful to Faiz Ahmed and Elsadig Mahdi for their strong support and fast response whenever I needed their help; Mohamed Khaled and Hashim Mahgoub, for their advises, comments and encouraging at all lines, and Abu Bakar Haji Sayed and Haji Hamza for their sincere assistance and support which made my stay in Malaysia more easier and memorable.

Last but not the least, my heartfelt thankfulness to my father, Elyas, my mother, Nina, my sister, Sara and my brothers, Elameer and Salah for their sacrifices, devotion and understanding which have always been a source of inspiration and strength throughout my life up to the moment. Also I am thankful to Mustim Ali Eltom, Tarig Elsir, Mohd. Elameen Osman, Yassir Hassan, my relatives and to all my dearest friends in Sudan for their assistance that made possible my arrival to Malaysia.

Studying abroad for a prolong period is unpleasant, if not impossible, without friends. For all those whose names were not mentioned here the moral support and friendship they offered will be remembered.

Most of all, praise be to the Almighty Allah. Had not been merciful, I would not have been able to retain my patience and continue until completion of this study here in Universiti Putra Malaysia and also peace be upon Prophet Mohammed SAW.
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Abstract of thesis submitted to the Senate of the Universiti Putra Malaysia in partial fulfilment of the requirements for the degree of Master of Science

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

By

Ahmed Elyas Elameer

October 1997

Supervisor: Associate Professor Zakariah Abdul Rashid, Ph.D.
Faculty: Economics and Management

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 ekspor. Untuk mencapai objektif ini punca-punca perumbuhan 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 ekspor, penggantian import, pengembangan permintaan perantaraan dan pengembangan permintaan domestik.


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 a South East Asian country with an area of 329,758 square kilometres, 20.7 million population and Gross National Product (GNP) of RM113,595 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 RM10,058 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)

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<td>34.4</td>
<td>29.0</td>
<td>27.7</td>
<td>22.9</td>
<td>20.8</td>
<td>18.7</td>
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<td>Construction Employment Share</td>
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*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 Malaya\(^1\) 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.
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 PIO\(^2\). 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 industrialization\(^4\), (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

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\(^3\) 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 analysis\textsuperscript{5}, 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.

\textsuperscript{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.