



***EXPORT DETERMINANTS AND ITS LONG-RUN RELATIONSHIP  
OF MALAYSIA'S MAJOR EXPORT SECTORS***

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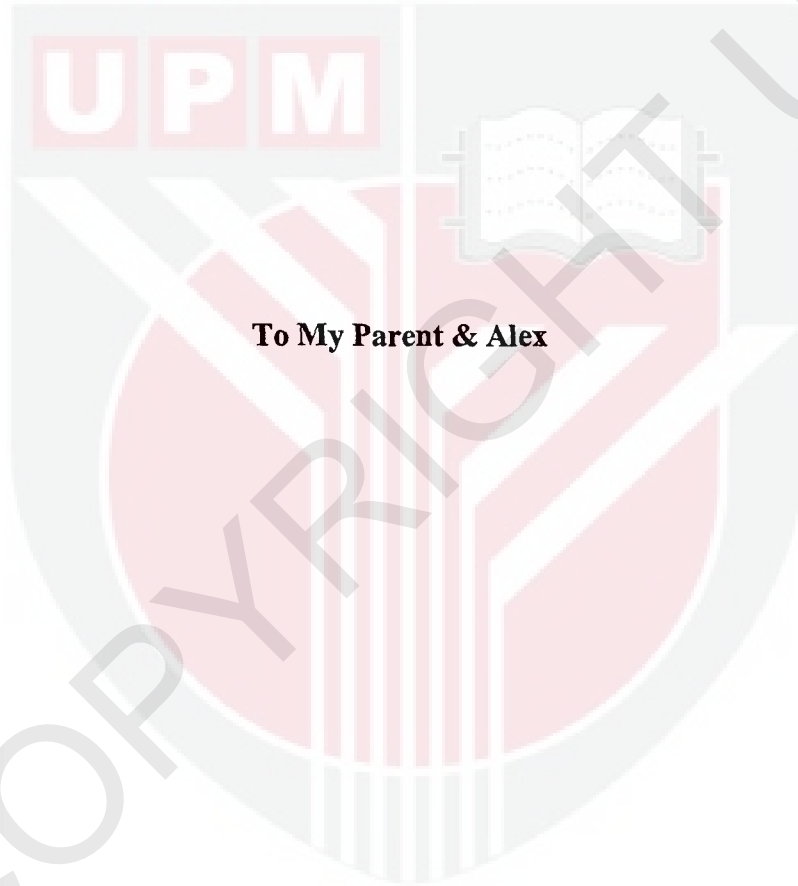
**By**

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**DEDICATION**



**To My Parent & Alex**

## ABSTRACT

Many empirical studies have tried to establish the causal link between export expansion and economic growth, due to the view that structural changes in a nation will alter the sources of growth, which in turn will affect the export-oriented strategy that can be used. The main purpose of this study is to explore the long run convergence of Malaysia's three main export sectors; namely agriculture, manufacturing and services sector, and the determinants of export expansion, by using the cointegration framework. Using annual data for 1960-2002, this paper explores a model in which growth of exports is determined by a combination of human capital, research and development adoption, labor productivity, labor wage rate, real effective exchange rate, imports of capital and intermediate goods as well as gross domestic product or GDP. The results show that the growth of exports of each sector and their respective export determinants were cointegrated, implying that there exists a steady-state relationship between the series. The results of the vector error-correction model or VECM also indicate that in the long run, the hypothesis that GDP-driven exports and imports Granger-causes growth of exports cannot be rejected at the 5% significance level, as for the case of agriculture and manufacturing sector. For the services sector, the hypothesis that productivity-led export and human capital Granger-cause services export also cannot be rejected, indicating a long run relationship between growth of exports and labor productivity as well as development of human capital. The weakening support for export-led growth after Malaysia shifted to an export-oriented development strategy is associated with structural changes associated with industrialization.

## ABSTRAK

Terdapat banyak bahan pelajaran yang cuba untuk membentuk hubungan sebab-penyebab antara eksport dan pertumbuhan ekonomi. Ini disebabkan oleh tanggapan bahawa perubahan struktur dalam sesebuah negara akan mengubah sumber pertumbuhan, di mana ia akan mempengaruhi strategi eksport yang akan digunakan. Tujuan utama kajian ini adalah untuk menyelidik hubungan jangka panjang antara faktor-faktor yang menggalakkan eksport dengan tiga sektor eksport utama Malaysia iaitu pertanian, pembuatan dan perkhidmatan dengan menggunakan rangka integrasi. Kajian ini menggunakan data tahunan dari tahun 1960 ke 2002, dengan tujuan untuk membentuk model di mana kombinasi kapital manusia, kajian penyelidikan dan pembangunan, produktiviti, kadar upah, kadar pertukaran, import barangan kapital dan separa siap serta keluaran negara kasar (KDNK) adalah merupakan penentu-penentu pertumbuhan eksport sesebuah negara. Keputusan kajian ini menunjukkan bahawa pertumbuhan eksport bagi setiap sektor dan faktor-faktor eksport adalah berintegrasi. Ini menunjukkan secara tidak langsung kewujudan hubungan tetap antara rangkaian tersebut. Keputusan *vector error-correction model* atau *VECM* menunjukkan dalam jangka panjang, hipotesis bahawa KDNK adalah perangsang kepada pertumbuhan eksport dan ujian hubungan sebab-penyebab *Granger* antara import dan eksport tidak dapat ditolak pada paras genting 5%. Keputusan hipotesis ini penting bagi sektor pertanian dan pembuatan. Dalam kes sektor perkhidmatan pula, hipotesis bahawa produktiviti merupakan perangsang kepada eksport dan ujian hubungan sebab-penyebab *Granger* antara kapital manusia dan eksport turut tidak dapat ditolak pada paras genting 5%, menunjukkan kewujudan hubungan jangka

panjang antara pertumbuhan eksport dengan kapital manusia dan produktiviti. Sejak Malaysia melaksanakan strategi perkembangan yang berorientasikan eksport setelah perubahan struktur kesan daripada industrialisasi., sokongan terhadap hipotesis bahawa eksport merupakan perangsang kepada pertumbuhan ekonomi menjadi semakin lemah.



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## LIST OF ABBREVIATIONS

ADF	Augmented Dickey-Fuller
DF	Dickey-Fuller
ECM	Error-correction model
ECT	Error-correction term
ELG	Export-led growth hypothesis
EPFZs	Export-processing free zones
FPE	Akaike's minimum Final Prediction Error
GDP	Gross domestic product
HC	Human capital development
IMF	International Monetary Fund
IMP	Industrial Master Plan (1985-1996)
IMPT	Imports of capital and intermediate goods
LP	Labor productivity
LW	Labor wage rate
OLS	Ordinary least square method
PP	Phillips-Perron unit root test
REER	Real effective exchange rate
R&D	Research and development
VAR	Vector Autoregressive
VECM	Vector error-correction model

## **CHAPTER ONE**

### **INTRODUCTION**

Malaysia is a small economy but has had a strong trade orientation where exports have always been important to Malaysian economy. The convention that growth of export contributed to the overall gross domestic product (GDP) is consistent with the basic principle of macroeconomic theory, which defines exports as an injection into the economy. On the other hand, the hypothesis of growth-driven exports had lending support to the basic principle of international trade and comparative theory. In this chapter, a brief overview of the general export performance in Malaysian context is provided, as well as for the manufacturing and services sector. In addition, the problems and challenges faced by the exporting sectors will also be discussed, as well as the objectives and significance of this study.

#### **1.1 Export Performance in Malaysia**

Malaysia is a small economy but with a strong trade orientation throughout most of its history. At independence in 1957, the Malaysian economy was greatly reliant on the so-called twin pillars of rubber and tin which together accounted for some 75 percent of export earnings, while manufacturing accounted for only 8-9 percent of national output. Since these two commodities were subject to the unpredictable fluctuations in the price level, it has prompted the Malaysian government to diversify the agriculture sector

beyond excessive reliance on rubber and tin, and to enlarge the industrial base. Therefore, in 1960s, Malaysia has adopted an industrialization program with import-substitution. However, this import-substitution trade strategy has been proved to be a discontent as an engine of growth throughout its implementation. To remedy this problem, emphasis was given to expand exports instead.

Malaysia pursued policies favouring import substitution during the 1960s gradually shifting to a more outward-oriented strategy in the 1970s as a way to move towards industrialization. The success of this policy shift has dramatically changed the composition of Malaysia's export commodities. Natural rubber and tin have become relatively less significant over time. At the early 1980s, these two commodities jointly contributed as much as 25.28 percent of total export earnings. By 1998, their combined share had fallen to 1.16 percent. The decline in the relative importance of natural rubber and tin has been eclipsed by the emergence of other exports, especially manufactures, palm oil and petroleum products.

There was a significant transformation of the exported goods from Malaysia. This is shown by a marked increase in the proportion of manufactured goods and a decrease in the proportion of agricultural products (Table 1). The share of agricultural exports had declined from 59.17 percent in 1970 to about 4.83 percent in 2000, while the manufactured exports had increased from 11.91 percent to 85.17 percent, with the most significant increase was recorded for electrical and electronic (E&E) products. The growth in manufactured exports reflected the changing structure of the manufacturing

sector in Malaysia. Given the provision of a wide range of incentives for exports and the establishment of the Export-Processing Free Zones (EPFZs), the manufacturing sector has gradually been transformed from the early emphasis on import-substitution to the proliferation of a wide range of manufacturing activities for the export markets.



Table 1: Exports by Major Groups

	1970	1975	1980	1985	1990	1995	1998	2000
<b>Agriculture</b>	3055.0	4879.0	1183.4	10743.3	14543.2	20534.6	24999.2	18028.7
	(59.17)	(52.86)	(4.20)	(28.26)	(18.26)	(11.10)	(8.72)	(4.83)
Rubber	1724.0	2025.6	4618.0	2872.2	3026.6	4038.3	2828.8	2571.3
	(33.39)	(21.94)	(16.39)	(7.56)	(3.80)	(2.18)	(0.99)	(0.69)
Timber	852.0	1111.0	3962.3	3908.0	7105.9	6101.0	4391.4	5509.4
	(16.50)	(12.04)	(14.06)	(10.28)	(8.92)	(3.30)	(1.53)	(1.48)
Palm Oil	275.0	1317.5	2603.1	3963.1	4410.7	10395.3	17779.0	9948.0
	(5.33)	(14.27)	(9.24)	(10.42)	(5.54)	(5.62)	(6.20)	(2.67)
<b>Minerals</b>	1339.0	2083.0	9214.4	12645.6	14175.6	10414.9	13975.7	26098.1
	(25.93)	(22.57)	(32.71)	(33.26)	(17.80)	(5.63)	(4.88)	(6.99)
Tin	1013.0	1206.1	2505.3	1648.0	902.2	545.1	484.6	434.7
	(19.62)	(13.07)	(8.89)	(4.33)	(1.13)	(0.29)	(0.17)	(0.12)
Petroleum, crude & partly refined	202.0	852.8	6709.1	8697.9	10638.6	6701.0	7509.8	14240.9
	(3.91)	(9.24)	(23.82)	(22.88)	(13.36)	(3.62)	(2.62)	(3.82)
Liquified natural gas	n.a.	n.a.	n.a.	2299.7	2634.8	3168.8	5981.3	11422.5
	(n.a.)	(n.a.)	(n.a.)	(6.05)	(3.31)	(1.71)	(2.09)	(3.06)
<b>Manufactures</b>	615.0	2020.4	6319.2	12470.8	46840.5	147253.0	237648.9	317908.3
	(11.91)	(21.89)	(22.43)	(32.80)	(58.81)	(79.60)	(82.93)	(85.17)
Electric & electronics	79.0	506.8	3015.6	6492.9	26502.4	96747.8	161732.6	230429.3
	(1.53)	(5.49)	(10.70)	(17.08)	(33.28)	(52.30)	(56.44)	(61.73)
Textile, clothing & footwear	32.0	217.9	806.3	1288.7	3907.2	6518.5	9441.6	10433.4
	(0.62)	(2.36)	(2.86)	(3.39)	(4.91)	(3.52)	(3.29)	(2.80)
Food, beverage & tobacco	161.0	2755.5	502.7	781.0	2061.4	3615.1	5554.1	5715.1
	(3.12)	(29.85)	(1.78)	(2.05)	(2.59)	(1.95)	(1.94)	(0.01)
Chemical & chemical products	35.0	87.2	187.7	610.2	1468.1	6256.5	10627.0	15011.3
	(0.68)	(0.94)	(0.67)	(1.61)	(1.84)	(3.38)	(3.71)	(4.02)
Wood product	90.0	205.4	469.5	365.1	1347.2	4953.7	5981.7	6801.3
	(1.74)	(2.23)	(1.67)	(0.96)	(1.69)	(2.68)	(2.09)	(1.82)
Rubber product	15.0	43.3	83.6	113.1	1353.8	3267.8	5739.0	4695.0
	(0.29)	(0.47)	(0.30)	(0.30)	(1.70)	(1.77)	(2.00)	(1.26)
Petroleum product	161.0	105.5	189.2	1041.4	1285.1	3126.6	3128.6	8130.7
	(3.12)	(1.14)	(0.67)	(2.74)	(1.61)	(1.69)	(1.09)	(2.18)
<b>Other exports</b>	154.1	248.5	1454.6	2157.0	4087.1	6784.0	9939.3	11235.2
	(2.98)	(2.69)	(5.16)	(5.67)	(5.13)	(3.67)	(3.47)	(3.01)
<b>Total exports</b>	<b>5163.1</b>	<b>9230.9</b>	<b>28171.6</b>	<b>38016.7</b>	<b>79646.4</b>	<b>184986.5</b>	<b>286563.1</b>	<b>373270.3</b>

Note: 1) Figures in parentheses are percentage share of total exports,

2) n.a. means not available.

Source: Various issues of Annual Economic Report, Ministry of Finance.



## **1.2 Export Performance in Manufacturing Sector**

Since 1970, Malaysia has been experiencing high economic growth that was accompanied by a marvelous structural transformation of the Malaysian economy which resulted in the gradual shift from one relying mainly on the production and exports of primary commodities to a more modern industrialized economy. Recently in year 2000s, manufacturing sector continue to dominate Malaysian economy. As reported in the Economic Report 2000/2001, manufacturing sector continued to register double-digit growth, from 14.34 percent in 1999 to 16.99 percent in year 2000.

The rapid expansion of the manufacturing sector was also accompanied by a greater diversification in outputs as well as exports. This attainment was brought about by the successful pursuance of the nation's industrialization program. For instance, the Industrial Master Plan (IMP) (1985-1996) has stressed the importance of export-led industrialization as a strategy for economic growth and development. To facilitate manufacturing exports, the IMP provided a series of export incentives including changes in structure and composition of export allowance, and accelerated depreciation allowance, double deduction for promotion of sales overseas, an exemption from custom duties, drawback facility and export refinancing. In an attempt to extend the end-uses of raw materials, the IMP strongly recommended the strengthening of research and development (R&D) activities to support quality improvement and product development for exports. Within the broad strategy of expanding and diversifying the manufacturing sector, the IMP also emphasized the importance of the development of resource-based

industries in which the country has comparative advantage such as rubber, wood, palm oil and petroleum based products.

Manufacturing sector started to play a prominent role in Malaysian economy from 1970 onwards. Total manufactured exports in 1973 increased by 61.35 percent to RM981 million, against an increase of 19.92 percent in 1972 (Table 2). The economic recession in 1975 and 1985 affected the exports of manufacturing sector. Two years after the recession in 1975, export earnings from manufacturing sector decrease from 35.87 percent in 1975 to 7.66 percent in 1977. A year after that, its growth rate began to increase to 36.96 percent. Another period of economic recession occurred during 1985-1986. However, the export of manufacturing sector has recovered strongly after the recession of 1985. Annual growth rate of the manufacturing exports accelerated upwards to around 23-34 percent during the period 1986-1994. The value of manufactured goods exported remains to increase substantially by 32.81 percent to RM237.65 billion in 1998, even during the financial crisis. The share of manufactured exports to GDP remains high, at 83.9 percent in 1998.

As seen in Table 2, the ratios of manufactured exports to commodities exports fluctuates around 11.85 and 22.43 percent in the 1970s until 1980, due to the fall in major commodities prices. The ratios continued to accelerate upwards to around 85 percent in year 2000, indicating that manufacturing sector becomes a dominant in Malaysian commodities exports.

Table 2: Total exports of manufactured goods and its percentage share to commodities exports and real GDP.

Year	Total exports of manufactured goods		% share of manufactured exports to commodities exports	% share of real export of manufactured goods to real GDP
	Exports value	Growth rate(%)		
1970	612.00	34.51	11.85	4.41
1971	507.00	-17.16	10.11	3.91
1972	608.00	19.92	12.53	4.28
1973	981.00	61.35	13.31	5.24
1974	1487.00	51.58	14.59	6.51
1975	2020.40	35.87	21.89	9.05
1976	2485.20	23.01	18.49	8.85
1977	2675.60	7.66	17.89	8.27
1978	3664.40	36.96	21.46	9.67
1979	4859.90	32.62	20.06	10.47
1980	6319.20	30.03	22.43	11.85
1981	6383.60	1.02	23.55	11.08
1982	7511.50	17.67	26.72	12.00
1983	9748.60	29.78	29.75	13.84
1984	12466.70	27.88	32.26	15.67
1985	12470.80	0.03	32.80	16.10
1986	15351.90	23.10	42.98	21.44
1987	20343.80	32.52	44.98	25.09
1988	26849.60	31.98	48.59	29.07
1989	36572.10	36.21	53.92	34.75
1990	46840.50	28.08	58.81	39.33
1991	61319.40	30.91	64.89	45.38
1992	71457.60	16.53	68.94	47.42
1993	89694.20	25.52	73.98	52.09
1994	120294.40	34.12	78.15	61.54
1995	147253.00	22.41	79.60	66.19
1996	158540.20	7.67	80.47	62.49
1997	178945.10	12.87	81.01	63.50
1998	237648.90	32.81	82.93	83.90
1999	271730.20	14.34	84.50	90.35
2000	317908.30	16.99	85.17	92.63
2001	285316.20	-10.25	85.35	85.32

Source: Various issues of Monthly Statistical Bulletin, Bank Negara Malaysia.

Table 2 also shows the increasing significance of the real export of manufactured goods to real gross domestic product (GDP). In 1971, the percentage share of manufactured

exports to real GDP is only 3.91 percent, as compared to 11.85 percent in 1980. In the late 1995, the rapid expansion of the manufacturing sector as well as the greater diversification in exports, the percentage share of manufactured exports to GDP increase to 66.19 percent. This ratio reached its highest point of 92.63 percent in year 2000. The increasing upward trend of this ratio signifies the important contribution of manufacturing sector to Malaysian gross domestic product.

The period after 1970 witnessed a major re-orientation in the structure and specialization of Malaysia's manufacturing. The export market in the early 1980s placed special emphasis on electronics and electrical products, due to the global demand for these products with strong growth in semiconductor devices, integrated circuits, micro-assemblies, transistors and valves, especially from the United States and others developed countries. In consequence, the share of 'non-traditional' manufactures in total exports increased dramatically from 47.72 percent in 1980 to 65.7 percent in 1995, and further increased to 70.2 percent in year 2000. The share of food, beverages and tobacco in total manufactured exports generally rose, being an important part of the drive for labor-intensive exports. The ratio of exports of wood products to total manufactured exports also increased significantly, reflecting the country's relatively rich resource endowment.

(Various issues of Monthly Statistical Bulletin)

The Malaysia International Trade and Industry Report 2004 stated that the manufacturing sector would continue to remain the main engine of growth through efforts to manufacture more high value-added products and expansion into new markets.

Manufacturing sector is expected to register 7.6 percent growth in 2005, down from last year's 9.8 percent, primarily due to the expected decline in the electrical and electronics (E&E) sector, in particular, the lower demand for semiconductors from major markets, especially from the US, China and Japan, as a result of inventory built-up in year 2004. The output of other E&E products declined as result of weak external demand and increased competition from China, with production of radio and television sets, sound reproducing and recording equipment declining by 14.8 percent.

The machinery and equipment sector is anticipated to grow at a moderate rate of 4 percent. The demand for specialized machinery is expected to grow to cater to specific industries. Malaysia is expected to produce more high value-added machinery due to the introduction of new technology, automated manufacturing process and installation of sophisticated machinery. (The Malaysia International Trade and Industry Report 2004)

Demand for chemicals and chemical products is also expected to expand due to the growth in the oil and gas industry and pharmaceutical sector. The projected hike in health expenditures by the public and private sectors will contribute to the sustained growth of the pharmaceutical sub-sector. (The Malaysia International Trade and Industry Report 2004)

### 1.3 Export Performance in Services Sector

The services sector in Malaysia had generally tended to expand at the same pace of growth as the overall economy reflecting the increased demand for services. At the present stage of development, the services sector is seen as a critical part of the growth process to facilitate Malaysia's progress into the next stage of development.

While the overall share of the services sector has remained at about 40-45 percent of GDP for more than three decades, the relative importance of various sub-sectors had changed over the last 35 years. In the initial stages of development of the services sector, emphasis was focused on basic infrastructure services such as utilities, transportations and government services. Since the late 1980s, however, other services activities such as financial services, wholesale and retail trade, tourism and telecommunications gained importance. The increase in significance of intermediate services essentially reflects the rising demand resulting from the increase in the pace of the industrialization process.

Table 3: Contribution of services sector to real GDP

	Contributions to GDP Growth				
	1960s	1970s	1980s	1990s	2000-2003
	Average (% point)				
<b>Intermediate Services:</b>	0.5	1.2	1	2.2	2.5
Transport & communications	0.1	0.6	0.5	1.1	1.6
Finance	0.3	0.6	0.5	1.9	2.2
<b>Final Services:</b>	1.9	2.6	1.7	3.3	3.5
Utilities	0.2	0.2	0.1	0.7	0.9
Trade, hotels & restaurant	0.7	0.9	0.6	1.9	2.2
Government	0.3	1	0.7	0.9	1.4
Other	0.7	0.3	0.2	0.5	0.7
<b>Services sector</b>	<b>2.4</b>	<b>3.6</b>	<b>2.7</b>	<b>4.5</b>	<b>4.9</b>
<b>GDP growth</b>	<b>5.8</b>	<b>8.2</b>	<b>5.8</b>	<b>9.2</b>	<b>9.8</b>

Source: Department of Statistics, Bank Negara Malaysia

Between 1960-1969, the services sector contributed an average of 2.4 percent points to average real GDP expansion of 5.8 percent. For this period, the final services, especially the wholesale and retail trade, hotels and restaurants and other services, accounted for an average of 1.9 percent point of the economic expansion, while the intermediate services, including transport and communication and finance, contributed half a percentage point. This picture has however, changed by the 1990s.

During the period 1990s, the services sector on the whole contributed 4.5 percent points to the overall economic expansion of 9.2 percent. The final services continued to remain the largest contributor to growth at 3.3 percent points, while the intermediate services, which three decades ago were relatively unimportant, accounted for about 2.2 percent point of the GDP growth.

In the recent period 2000-2003, the services sector contributed an average of 4.9 percent points to average real GDP growth of 9.8 percent. During this period, the significance of the final services continued to increase to 3.5 percent points, as well as the intermediate services at a 2.5 percent point of the GDP growth.

#### **1.4 The Problem Statement**

The main export-oriented industries in Malaysia, which constituted of agricultural exports, manufacturing exports as well as services exports, had undergone a rapid growth and structural changes over the past few decades. For instance, the exports of

manufactured products had achieved significance in contributing nearly 80 percent of total exports for the recent years. The services sector, however, had generally tended to expand at the same pace of growth as the overall economy, thus reflecting the increased demand for services. Although Malaysia's export industry is evidently successful, there are still some problems pertaining to these exporting industries, which can affect its current and future export expansion. One of the problems is that the investment in human capital is still considered low in Malaysia. Several empirical studies have shown that differences in labor skills play a major role in determining comparative advantage and trade patterns. Countries well-endowed with skilled labor will have a comparative advantage in skill-intensive products, and countries with a scarcity of skilled labor will tend to produce products which are intensive in unskilled labor.

During the past few decades, Malaysia was once seen as a suitable place for foreign investors as it had an inexpensive but relatively well-educated labor pool in a politically-stable land. However, over the years, the shortage of skilled labor in the manufacturing industry and increasing in labor wages have hampered Malaysia's effort to move up market since there are too few qualified workers in technical areas, particularly engineering and information technology. Such phenomenon had caused some investors decamping to places such as Vietnam, India and China. Such countries were proving to be cheaper alternatives for the manufacturing sector where the cost of production is much lower. Therefore, to remain competitive, Malaysian workforce must continuously upgrade themselves in technology to remain competitive locally and abroad. The only



way for Malaysians to compete was by having a higher quality workforce trained to handle high technology machinery.

During the past few decades Malaysia went through a rapid industrialization, as the so-called “overheated” economy, especially during years of 1990s. An excess demand for labor was created as many companies were willing to offer higher wages and improve benefits to attract more labor from other companies. The excess demand had put pressure on increased wages in many sectors. The increase in unit labor cost will give impact on the cost of production, which in turn will increase the price of Malaysia’s manufactured goods sold in the international market.

In recent years, China had emerged as a major trading rival for ASEAN countries, especially as its resource endowment suggests it has a strong comparative advantage in unskilled labor-intensive manufactures, besides having lower labor and production costs. Therefore, the rapidly rising real wages in Malaysia will gradually erode its comparative advantage in simple labor-intensive manufactured exports and will cause some investors to relocate their production and investment into countries such as India, China and Thailand, where the cost of production is much lower.

The Seventh Malaysia Plan, 1996-2000 (7MP) signals a new era in the development plans for the Malaysian economy as the Plan highlights the need to shift from input-driven growth to a productivity-driven strategy. According to this new strategy, the growth in output will be generated by both improvements in the utilization of factors as

well as technical change. The significance of this productivity-driven strategy in developing economic growth had increased and it continued to be one of the development thrust under the Eighth Malaysia Plan (2001-2005).

Some studies also provide evidence that Malaysia has become heavily dependent on foreign technology, as it does not have its own adequate domestic technology capability. For instance, the electrical and electronic industry, the main export industry, is dominated by multinational corporations (MNCs) that conduct their research overseas. Moreover, foreign technology had not been transferred successfully and there is very little upgrading and development work on it. In addition, there were too few Malaysia engineers willing to do research and development, despite lacking of funding and resources. Malaysian government are now encourage researchers to aggressively engage in R&D activities and work closely with universities in developing products that they could proudly label as “truly Malaysian”.

Notably, until recent years, Malaysia still has not found a suitable exchange rate for its promotion of manufactured exports. During the years of crisis in 1997 and 1998, Malaysian ringgit was volatile in the exchange market due to money speculation. Such crisis had made the volume of manufactured exports unstable to most of the Malaysia’s major trading partners, which in turn will affect export expansion strategies undertaken by the government.

On 2 September 1998, Malaysian government decided to tie the ringgit to the US dollar at RM3.80. Under this peg regime, the weak ringgit has apparently helped strengthen the current account and external reserves by redirecting resources from imports to exports and import substitutes. Undervalued exchange rate also serves to reduce domestic labor costs and to promote the production of tradable goods.

To be sure, all these benefits are not without costs. Undervalued ringgit with strong revaluation prospects tends to discourage foreign direct investment to the extent that it makes imports of machinery and equipment more costly at the current exchange rate. The weak ringgit has rendered resource-based manufactures with little import content (e.g. wood products and rubber manufactures) more competitive abroad. However, this advantage of cheap ringgit is partially offset by high cost of imported intermediate inputs for other manufactures with high import content. The risk in this case is that manufacturers will rely on the cheap ringgit for export competitiveness rather than on productivity improvements.

On the evening of July 21 2005, ringgit Malaysia was de-pegged from the US dollar. With changes in the international economic and financial environment, the move towards a managed float was important to enable Malaysia to maintain a stable exchange rate against its major trading partners.

There are obviously winners and losers in the market from the expected appreciation of the ringgit after de-peg. The losers are expected would be the exporters and companies

with a large part of their revenue stream in foreign currencies. A stronger ringgit means less revenue in the local currency after conversion. For example, chipmakers are likely to be hurt by a stronger ringgit. Since most of the revenues generated from the export sales are mainly in US dollar, the appreciation of the ringgit will reduce the net profit of chip players.

There are many empirical studies on the relationship between export and economic growth (or growth of real GDP). Obviously in most cases, it shows that export and real GDP are positively correlated. According to the export-led growth hypothesis, the direction of causality runs primarily from export to real GDP. However, many recent time series studies pointed out that there are three possible relations between export and GDP growth, which are: 1) export-led growth, 2) growth driven export, and 3) the two-way causal relationship.

The expansion of the manufacturing sector provides the leading role for achieving the Malaysian economic growth and generates employment within the country. However, its industrial growth is still narrowly-based and heavily concentrated on a few export-oriented industries, such as electrical and electronics, textile and clothing (the Second Outline Perspective Plan, 1991-2000). Furthermore, these two sub-sectors are heavily reliant on imported technology, imported intermediate inputs as well as the investment goods.

It is evident that a sustainable rapid growth in the manufacturing sector does enlarge the proportion of the demand for imported investment goods and predominantly the intermediate goods for manufacturing (Table 4).

Table 4: Total import of capital and intermediate goods, manufactured exports, agricultural exports and GDP

	1975	1985	1995	1998	2000	2001
(RM million)						
<b>Total import of capital goods</b>	4627.0	9481.0	78776.0	180447.0	277612.0	245428.0
Investment Goods	2706.0	9332.0	75108.0	87349.0	230548.0	201753.0
Intermediate goods for manufacturing	1921.0	18813.0	153884.0	93098.0	47064.0	43675.0
<b>Total export of manufactured goods</b>	2020.4	12470.8	147253.0	237648.9	317908.3	285316.2
<b>Total export of agricultural products</b>	235.6	285.1	339.3	390.2	379.5	390.6
<b>Total gross domestic product (GDP)</b>	22332.0	77470.0	222473.0	283243.0	343215.0	334404.0

Source: various issues of Monthly Statistical Bulletin, Bank Negara Malaysia.

From Table 4, the rapid expansion in the manufacturing sector had caused the total investment goods being imported increased from RM2706 million in 1975 to RM87349 million in 1998, while total imported intermediate goods for manufacturing rise from RM1921 million to RM93098 million. However, in year 2001, the contraction in the growth of manufacturing sector, which due to the downturn in global chip sales, was caused a reduction in the total import of capital goods to RM245428 million in year 2001 against RM277612 million in year 2000 (various issues of Bank Negara Monthly Statistical Bulletin). The present phenomenon indicated that manufactured exports and capital imports may be correlated.

Besides that, there exists a positive relationship between the growth of GDP and total import of capital goods. During the period 1975-2000, an increase in the demand for imported capital goods, which in turn were used in the manufacturing sector, boosting up the growth of GDP from RM22332 million in 1975 to RM343215 million in year 2000 (various issues of Bank Negara Monthly Statistical Bulletin). Previous study done by Khalid Y.K. and A.J. Webb (2001) provided evidence that as Malaysian economy moved towards the development of an export-oriented manufacturing sector, it actually reduced the dependence of the economy on exports while increasing its dependence on imports, given the high import content of many manufactured exports.

### **1.5 Objectives of Study**

Most of the literature on the exports of developing countries has emphasized demand of the developed countries as one of critical factor in determining success or failure of a country's export performance. However, the wide range of experience in developing countries indicates that supply factors, which relate to the principle of comparative advantage, also play an important role in determining export performance. Moreover, the traditional trade theory has identified the relative factor endowments of land, labor and capital as the primary determinants of the composition of trade. Recognizing the growing importance of international trade in the world market, most recent theories have emphasized criteria such as economies of scale, skill intensities and technological innovation.

The purpose of this study is to determine the supply factors which contribute to the growth of Malaysian three main export sectors, that is, agriculture sector, manufacturing sector and services sector. This study would also determine the existence of a long run relationship between the real exports of each sector and its determinants, in the context of Malaysian economy.

Specific Objectives:

- ❖ To develop an econometric model and highlight the important variables which contribute to Malaysian export sectors.
- ❖ To explain how the factors of human capital, labor wages, exchange rate, labor productivity, national income, the imported capital and intermediate goods as well as the level of research and development (R&D) have affected Malaysian export performance.
- ❖ To determine the direction of causation between Malaysia's disaggregated exports and the determinants of export expansion.
- ❖ To determine the tendency towards long run equilibrium between exports of agriculture sector, manufacturing sector and services sector, and their export determinants.

## 1.6 Significance of Study

This purpose of this study is to analyze the recent development in Malaysia's export performance. It discusses briefly the general view of the structural changes in the development of Malaysia's economy, as well as in the agriculture sector, manufacturing sector and services sector. In general, this study tries to determine, with the help of the general econometric trade model, the supply factors which contribute to the export expansion of Malaysia's products. The information generated from this study can provide a general framework for the future estimation of the main economic parameters for policy makers, project planners and managers.

This study also tries to provide an analytical framework for economic studies of Malaysia's export sectors, which can be adopted in future studies of this nature in Malaysia, in particular, and in developing countries in general.

Furthermore, this study is conducted to examine the relationship between each of the Malaysia's export sectors and their export determinants, in the context of Malaysian economy. It is hoped that the information generated from this study is helpful in understanding the main determinant of these relationships, especially for students in the field of economics as well as for people who are interested in such issue.

Nowadays, manufacturing sector provide the impetus for Malaysian economy growth. Its share to real GDP is increasing accelerate from 4.41 percent in 1970 to 92.63 percent in



year 2000 (various issues of annual Economic Report). However, we noted that expansion in the exporting sectors, especially manufacturing sector, is associated with an increase in the total import of investment goods and intermediate inputs. Therefore, it is hope that this study is beneficial to policy makers in the ministry, such as Ministry of International Trade and Industry (MITI), Economic Planning Unit (EPU), and so forth, in that it is enabling for them to formulate a relevant policy in order to achieve sustainable rapid economic growth as well as the improvement in balance of payment account.

### **1.7 The Organization of the Study**

This study is organized as follows. In the following chapter, a review of the previous empirical studies which seek to determine the linkages between exports and its determinants is provided. Chapter Three discuss the data and econometric procedures to be used in this study, and the empirical results are in Chapter Four. Finally, the conclusions and sectoral strategies and policies will be discussed in Chapter Five.

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