RINGGIT/YUAN EXCHANGE RATE AND ITS IMPLICATIONS ON MALAYSIA'S TRADE WITH CHINA AND SELECTED TRADING PARTNERS: EVIDENCE FROM INDUSTRY DATA

by

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LIST OF ABBREVIATION

A-GARCH	Asymmetric Generalized Autoregressive Conditional Heteroskedasticity
ADF	Augmented Dickey-Fuller
AFTA	ASEAN Free Trade Agreement
AIC	Akaike Information Criterion
ARCH	Autoregressive Conditional Heteroskedasticity
ARDL	Autoregressive Distributed Lag
ASEAN	Association of Southeast Asian Nations
BNM	Bank Negara Malaysia
BRM	Bickerdike-Robinson-Metzler
CAFTA	China-ASEAN Free Trade Agreement
CFA	Communaute Financiere Africaine
CNY	Chinese Yuan
CPI	Consumer Price Index
CUSUM	Cumulative Sum
CUSUMSQ	Cumulative Sum of Squares
DEAC	Developed Members of the East Asian Countries
DLS	Dynamic Ordinary Least Squared
DLS- IV	Dynamic Ordinary Least Squared and the instrumental variable
DOTS	Direction of Trade Statistics
DUM	Dummy
E&E	Electrical and Electronics
ECM	Error Correction Model
EOI	Export-Oriented Industrialization
EPU	Economic Planning Unit
EU	European Union
EUR	EU Currency
FTA	Free Trade Agreement
FDI	Foreign Direct Investment

FMOLS	Fully Modified Ordinary Least Squared
GARCH	Generalized Autoregressive Conditional Heteroskedasticity
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GLS	General Least Squares
GMM	Generalized Method of Moments
GMM-IV	Generalized Method of Moments and the instrumental variable
HKD	Hong Kong Dollar
IFS	International Financial Statistics
IMF	International Monetary Fund
IMP	Industrial Master Plan
IV	Instrumental Variable
JPY	Japanese Yen
KRW	South Korean Won
LM	Lagrange Multiplier
MA	Monetary Approach
MGARCH-M	Multivariate Generalized Autoregressive Conditional Heteroskedasticity in Mean
MITI	Ministry of International Trade and Industry
ML	Marshall-Lerner
MOF	Ministry of Finance Malaysia
MP	Malaysian Plan
MTR	Mid-Term Review
NAICS	North Amirican Industry Classification System
NDP	National Development Policy
NEP	New Economic Policy
NVP	National Vision Policy
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Squared
OPP	Outline Perspective Plan
PML	Pseudo-Maximum Likelihood

PML-IV	Pseudo-Maximum Likelihood and the instrumental variable
REER	Real Effective Exchange Rate
RESET	Regression Equation Specification Error Test
RM	Ringgit of Malaysia
SD	Standard Deviation
SGD	Singapore Dollar
SITC	Standard International Trade Classification
SUR	Seemingly Unrelated Regression
TB	Trade Balance
TFP	Total Factor Productivity
THB	Thailand Baht
TVC	Time-Varying-Coefficient
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
USD	United States Dollar
VAR	Vector Autoregressive
VD	Variance Decomposition
VEC	Vector Error Correction
WCY	World Currency Yearbook
WDI	World Development Indicators
WITS	World Integrated Trade Solution
WTO	World Trade Organization

KADAR PERTUKARAN RINGGIT/YUAN DAN IMPLIKASINYA TERHADAP

PERDAGANGAN MALAYSIA DENGAN CHINA DAN RAKAN NIAGA

TERPILIH: BUKTI DARIPADA DATA INDUSTRI

ABSTRAK

Pada hari ini, China adalah rakan dagang terbesar negara Malaysia. Walau bagaimanapun, jumlah dagangan antara kedua negara dipengaruhi secara signifikan oleh naik turun kadar pertukaran. Terdapat persaingan antara Malaysia dan negara-negara ahli Pertubuhan Negara-negara Asia Tenggara yang lain dalam pasaran China akibat dari persamaan struktur ekonomi dan komoditi eksport. Kebimbangan ini adalah wajar bagi ekonomi Malaysia, kerana mengurangkan defisit perdagangan dan meningkatkan jumlah perdagangan dengan China, adalah amat penting untuk pertumbuhan KDNK, pendapatan eksport, pelaburan dan pekerjaan di Malaysia.

Tesis ini mengkaji kesan naik turun ringgit/yuan ke atas perdagangan antara Malaysia dan China di peirngkat industri dengan menggunakan analisis kointegrasi teragih autoregresif dan menggunakan data tahunan yang tak diagregat industri import dan eksport dua hala pada peringkat tiga digit Piawai Klasifikasi Perdagangan Antarabangsa dari 1985 hingga 2010.

Pertama, kesan susut nilai mata wang diasingkan bagi menyiasat kesensitifan kadar pertukaran benar ringgit/yuan terhadap 39 industri import dan 39 industri eksport antara Malaysia dengan China. Keputusan menunjukkan kebanyakan industri adalah sensitif kepada kadar pertukaran benar dua hala dalam jangka pendek. Kesan-kesan jangka pendek berpindah ke jangka panjang dalam 46% industri dalam model bayaran keluar dan dalam 37% industri dalam model bayaran masuk. Ini menunjukkan bahawa setiap

satu peratus susut nilai benar ringgit akan memperbaiki imbangan perdagangan Malaysia sebanyak 7.45 peratus.

Kedua, kesan langsung volatiliti ringgit/yuan benar ke atas 151 industri import Malaysia dan 24 industri eksport Malaysia dengan China disiasat. Dalam hal ini, pembolehubah penjelas, volatiliti kadar pertukaran benar dimasukkan ke dalam model. Hasil kajian menunjukkan bahawa kesan volatiliti kadar pertukaran mempunyai impak signifikan yang pelbagai ke atas alian perdagangan dalam kebanyakan industri dalam jangka pendek. Kesan-kesan jangka pendek berpindah ke jangka panjang dalam lebih kurang 60% industri. Dalam jangka panjang, kebanyakan kesan volatiliti kadar pertukaran ke atas jumlah dagangan adalah positif dan bukannya negatif dalam model-model import; sebaliknya, dalam model-model eksport kesan negatif adalah lebih besar dari kesan positif.

Akhir sekali, kesan tak langsung volatiliti ringgit/yuan benar, setelah ia dimasukkan ke dalam model sebagai pembolehubah risiko negara ketiga, ke atas aliran perdagangan Malaysia-China disiasat. Volatiliti ringgit/yuan adalah satu faktor risiko berdasarkan fakta bahawa perdagangan antara Malaysia dengan China boleh dianggap sebagai penggenap atau pengganti kepada perdagangan dengan rakan-rakan dagang utama Malaysia yang lain. Volatiliti ini boleh mempengaruhi perdagangan Malaysia dengan rakan-rakan dagang utama Malaysia yang lain samaada secara positif atau pun negatif. Volatiliti ringgit/yuan benar dimasukkan dalam 185 industri import dan dalam 134 industri eksport Malaysia dalam perdagangan dengan Jepun untuk menguji faktor risiko kadar pertukaran negara ketiga. Keputusan menunjukkan bahawa persamaan-persamaan tersebut adalah sangat responsif terhadap pembolehubah negara ketiga. Volatiliti ringgit/yuan benar juga mempunyai kesan jangka panjang yang signifikan (yang beralih

dari jangka pendek) terhadap model-model import dan eksport yang kebanyakannya menunjukkan kesan positif bagi persamaan import dan persamaan eksport. Hal ini menunjukkan bahawa perdagangan antara Malaysia dengan Jepun dan antara Malaysia dengan China kebanyakannya saling berganti.

Secara keseluruhannya, penemuan kajian memberi implikasi bahawa kadar pertukaran dua hala ringgit/yuan adalah alat utama yang boleh digunakan bagi membantu: (i) membetulkan ketidakseimbangan perdagangan antara Malaysia dengan China, (ii) menyediakan latar belakang yang kukuh bagi perdagangan Malaysia-China dan (iii) menggalakkan daya saing Malaysia serantau.

RINGGIT/YUAN EXCHANGE RATE AND ITS IMPLICATIONS ON MALAYSIA'S TRADE WITH CHINA AND SELECTED TRADING PARTNERS: EVIDENCE FROM INDUSTRY DATA

ABSTRACT

China is the largest trading partner of Malaysia today. However, trade volume between these two countries can be strongly influenced by exchange rate fluctuations. There is also competition between Malaysia and other developing East Asian countries in the Chinese market due to the similarity of economic structures and export commodity. These concerns are crucial for the Malaysian economy, since decreasing trade deficit and increasing trade volumes with China, are very important to GDP growth, export earnings, investment and employment in Malaysia.

This thesis investigates the effect of ringgit/yuan on trade between Malaysia and China at industry level by employing autoregressive distributed lag cointegration analysis and using disaggregated bilateral import and export industry annual data at three-digit Standard International Trade Classification level over the 1985-2010 period.

First, currency depreciation effect is isolated to investigate the real ringgit/yuan sensitivity to 39 import and 39 export industries between Malaysia and China. The results reveal that most of the industries are sensitive to the real bilateral exchange rate in the short-run. The short-run effect shifts into the long-run in 46% industries in outpayment models and in 37% industries in inpayment models. The results also imply that a one percent real depreciation improves Malaysian trade balance by 7.45 percent.

Second, the direct effect of real ringgit/yuan volatility on 151 Malaysian imports and 24 Malaysian export industries with China is investigated. In this case, the explanatory

variable, real exchange rate volatility is added to the model. The findings indicate that, exchange rate volatility has a significant mixed impact on trade flows in most industries in the short-run. The short-run effect shifts into the long-run in around 60% of these industries. Based on the number of industries, in the long-run, most of the effects of exchange rate volatility on trade volume are positive rather than negative in the import models; however, in export models the negative effect of the volatility is greater than the positive effect.

Finally, the indirect effect of real ringgit/yuan volatility, when it is included to the model as a third-country risk variable, on Malaysia-China trade flow was investigated. Ringgit/yuan volatility is a risk factor due to the fact that Malaysia's trade with China can be considered as complement or substitute for trade with other Malaysia's major trading partners. This volatility can affect trade between Malaysia and its other major trading partners negatively or positively. The real ringgit/yuan volatility is added in 185 Malaysian import industries and 134 Malaysian export industries in trade with Japan to test the third-country exchange rate risk factor. The results show that the equations are highly responsive to the third-country variable. The real ringgit/yuan volatility has also a significant long-run effect (which shifted from the short-run) on the import and export models which are mostly positive for both the import and the export equations. This implies that trade between Malaysia and Japan and between Malaysia and China are mostly substitutes.

Overall, the findings of the study imply that bilateral ringgit/yuan exchange rate is a key tool that can be used to help: (i) correct Malaysian trade imbalance with China, (ii) provide a steady backdrop for Malaysia-China trade and (iii) promote Malaysia's competitiveness in the region.

1 CHAPTER 1

INTRODUCTION

1.1   Introduction

Trade has been an effective engine of growth for the Malaysian economy in the recent decades and the country has been extremely dependent on international trade to achieve its economic development goals.[1] Since the 1980s, Malaysia has transformed itself from an exporter of agriculture and primary goods to an exporter of manufactured products. In recent times, Malaysia has been repositioning its industrial sector toward the production of high technology-intensive goods in line with the goals of Vision 2020. This transformation in Malaysia's export good profile is evident in the changes that have taken place since the 1970s. Tin, rubber and forestry goods represented 69% of the export share in 1970, but by 2010, their share has fallen to only 1.7%. Today, the share of manufacturing goods has increased to 72%. For instance, the value of high technology export products to the United States (US) surged to 65.1 billion dollar in 2007 compared to 3.7 billion US dollar in 1988.[2] Nevertheless, Malaysia experienced a decline in the high technology exports due to the Global Financial Crisis (GFC) in 2008 when its exports decreased to 42.97 billion US dollar in 2008 before rebounding to 59.33 billion US dollar in 2010.[3] Besides, its heavy reliance on trade as a driver of economic growth, Foreign Direct Investment (FDI) has also been a catalyst for economic growth. In fact, Malaysia is the second most open economy in South East Asia (6th in East Asia) and it

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[1] Third Industrial Master Plan 2006-2020, *Ministry of International Trade and Industry* (2006), Chapter 2, page 60.
[2] For more details about identification and classification of high-technology products see Malaysian Science & Technology Indicators 2008 Report (page 142).
[3] Source: World bank, *World Development Indicators & Global Development Finance*, database.

has remained a favorable economy to foreign investors as implied by the inflow of Foreign Direct Investment (FDI).[4]

Understanding the sources of long-run economic growth and development has always been a crucial issue for policymakers. In the 1980s, the prevailing theory on trade and growth as postulated by economists held that developing countries could change both the pace and the pattern of their participation in the international division of labour via trade and thence ensure sustainable balance of payments and accelerated technical progress and economic growth (Akyuz, 2005).

Unlike the neoclassical growth model, this FDI and endogenous technological progress based on new growth theory posits that permanent growth is essentially attributable to technological transfer and spillover. Endogenous growth theory was basically premised on Romer's (1986 & 1990) and Lucas's (1988) initial generic models. Endogenous growth models postulate that trade can lead to increased economic growth through increased total factor productivity. This is because participation in open trade facilitates the importation of technology that can accelerate economic growth in the long-run. In other words, in an open economy, technology transfers especially through exports and imports promote economic growth (Frankel, Romer, & Cyrus, 1996; Frankel & Romer, 1999). Thus, exports plus imports as a share of GDP known as a proxy for trade openness, has been considered as one of the main determinants of economic growth. According to this view, as international trade plays a significant role in the economic growth of developing countries, determining which variables significantly influence trade should by default have important implications for economic development.

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[4] The Heritage Foundation and Wall Street Journal's latest index of economic freedom. Retrieved from: http://www.heritage.org/Index/

The role of exchange rates as determinants of international trade especially, in the context of global and regional imbalances have been accorded a great deal of attention by various researchers (Oguro, Fukao, & Khatri, 2008). Exchange rate is also a key element in determining inflation, capital flows and FDI, international reserve and remittance of an economy (Aziz, 2008). Since the emergence of the floating exchange rate system in 1973, the world has experienced a higher degree of exchange rate volatility.[5] This phenomenon has received considerable attention in international economics studies particularly in two areas. First, theoretically a decrease in a currency's value (relative to another currency) can increase exports and thus improve the trade balance (Kreinin, 1967; Houthakker & Magee, 1969; Goldstein & Khan, 1976). [6] The second one is the volatility effects of exchange rate as a risk factor on the volume of international trade. Proponents of fixed exchange rate systems argue that exchange rate uncertainty increases risks and risk-averse buyers and sellers who face possible losses due to exchange rate fluctuations will eventually reduce their trade transactions. There is a large body of theoretical and also empirical literatures such as Clark (1973), Baron (1976), Hooper and Kohlhagen (1978), Poon, Choong and Habibullah (2005), Thorbecke (2008a), and Mukherjee and Pozo (2011) who found that exchange rate volatility had an adverse effect on international trade.

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[5] Along with the US which officially stopped its adherence to the gold standard in 1973, most of industrialized countries also switched from a fixed exchange rates system to a floating rates system. After this, exchange rates for these countries have been floated, or varied, according to the supply of and demand for their currencies in international markets. However, some countries continue to use the previous exchange rate system, fixed exchange rates, to help to achieve economic goals, such as price stability.

[6] There are two economic concepts; devaluation and depreciation which imply to decrease in a currency's value. Devaluation refers to an official fall in the value of a currency against other currencies. Strictly, devaluation is initiated by the government, while depreciation is due to the market forces. However, this study just looks at the lower currency value. From this view, these two terms are not different. Hereafter, in this thesis, following some studies like Bahmani-Oskooee and Kutan (2008), devaluation and depreciation are used interchangeably (Except when discuss about historical changes in special currency's value).

On the other hand, this negative effect have been criticized by adherents of floating exchange rate systems who argue that exchange rate uncertainty could influence highly risk-averse exporters to increase their exports in order to raise their marginal utility of export revenue. For example De Grauwe (1987), Viaene and de Vries (1992), Franke (1991) and Broll and Eckwert (1999) have theoretically explained the positive effect while Bredin, Fountas and Murphy (2003) and Hsu and Chiang (2011) have tested this assumption and found that it has a positive effect.

Finally, some studies have also concluded that exchange rate volatility has no apparent impact on international trade (see Willett, 1986; De Vita and Abbott, 2004 and Caglayan and Di, 2010). However, despite the extensive literature on the effect of exchange rate fluctuations on trade, there is still no consensus on whether increases in exchange rate fluctuation will increase or decrease the volume of trade.

Furthermore, the consequences of exchange rate effects on trade still remain at the centre of the debate of global and regional imbalances. In last two decades, exchange rate issues and trade disputes were concentrated on Japan, but this friction have centered on China in recent decades (Oguro et al., 2008). Hence, China has been under pressure to increase its currency's value to address global imbalances. While strong currency appreciation happened in most of Malaysia's major trading partners from the mid-1980s to the mid-1990s, the value of Chinese yuan has fallen significantly against US dollar in this period.

Similar to US dollar/yuan fluctuation, the long-run behavior of ringgit/yuan exchange rates revealed that ringgit appreciated from around 1.46 ringgit/yuan in the early 1980s

to 0.47 ringgit/yuan at the end of 2000s. Moreover, the degree of exchange rate volatility between the two currencies has been relatively high over recent decades.[7]

Since the emergence of China as a major exporter of manufactured goods in 1990s, bilateral trade between Malaysia and China has expanded. After China's accession to the World Trade Organization (WTO) in 2001 and the conclusion of the China-Association of Southeast Asian Nations (ASEAN) Free Trade Agreement (CAFTA) in 2003, trade between the two countries has increased considerably. Today, China is Malaysia's largest trading partner. The volume of this trade in 2010 reached 147,028 million ringgit which exceeded the trade volume between Malaysia and all members of the European Union (EU) combined (122,443 million ringgit).[8] As a result, studying the relationship between exchange rate behavior and trade volume for an open economy like Malaysia is becoming more important.

In addition, ringgit/yuan volatility could incentivise Malaysian traders to shift their imports or exports from China to other countries. This exchange rate volatility effects as a third-country effect was originally recognized by Cushman (1986) when he found that excluding the third-country effect could have implications on results.[9] Ringgit/yuan volatility is a risk factor due to the fact that Malaysia's trade with China can be considered as complement (substitute) for trade with other Malaysia's major trading

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[7] Source: International Monetary Fund, *International Financial Statistics*.

[8] Source: Economic Planning Unit, Socio-Economic Statistics, Malaysian Economy in Figures 2011, Chapter 8, Table 8.6.

[9] 'Third-country' volatility effect refers to whether uncertainty in the exchange rate of competing trade partner affects a country trade flows with another country (Bahmani-Oskooee, Hegerty & Xu, 2013). For example, in the two trade relationships; Malaysia-China and Malaysia-Japan, third-country effect in the form of ringgit/yuan volatility can influence Malaysia-Japan trade flows. If a negative effect on trade due to the increase in bilateral volatility of ringgit/yen is expected, one might get a positive effect with the existence of higher ringgit/yuan volatility. It means that Malaysian traders might substitute the Japan's market with the Chinese market with the higher exchange rate volatility.

partners, it is believed that this volatility can also affect the trade between Malaysia and its other major trading partners negatively (positively).

The main purpose of this study is to find the effect of exchange rate fluctuation (ringgit depreciation against yuan and ringgit/yuan volatility) on trade between Malaysia and China. Furthermore, real ringgit/yuan volatility can affect Malaysia-China trade in two ways; directly and indirectly (as third-country effect). So, this thesis will also investigate the indirect effect of ringgit/yuan volatility on Malaysia's trade with her other major trading partners. This study employed disaggregated industry data to evaluate the exchange rate fluctuation effect on trade. Determination of this effect on specific industry trade is very important in policy making decisions and implementation of trade related policies. To measure this effect, annual industry trade data between the two countries has been utilized.

The remainder of this chapter discusses (1) development planning, industrialization process and trade policy, (2) external trade in Malaysia, (3) Malaysian exchange rate regime, (4) problem statements, (5) research objectives, (6) research questions, (7) significance of the study, and finally (8) the organization of the study.

1.1.1 Development Planning, Industrialization Process and Trade Policies

Since independence in 1957, Malaysia has attained significant industrialization and economic development. Malaysia has transformed itself from a producer of raw materials into an emerging multi-sector economy (Figure 1-1).

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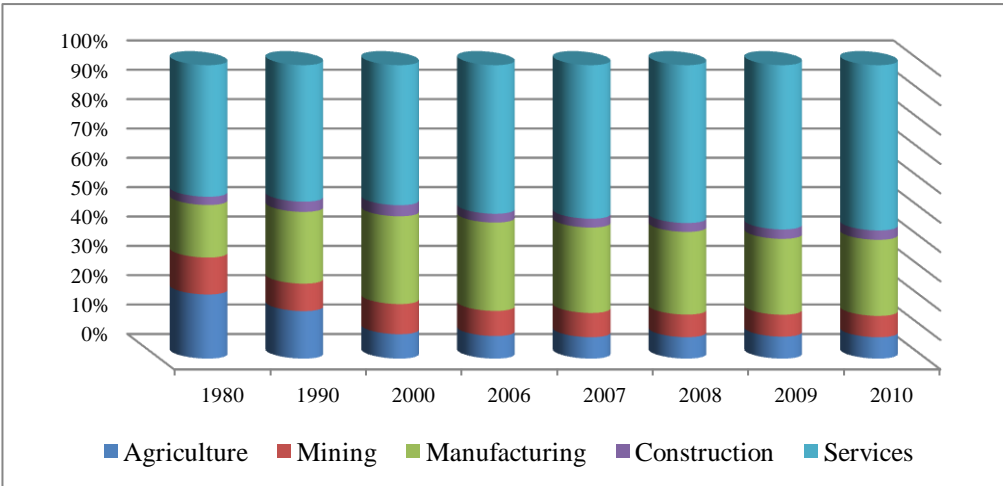
Figure 0-1: Transformation from an agro-based to an industrial based economy (percentage of GDP)
Source: Economic Planning Unit, Socio-Economic Statistics, Malaysian Economy in Figures 2010, Chapter 3, Figure 3-2

The industrialization and growth of Malaysia's economy have been largely the result of the development planning pursued by the government. Development planning was launched since in 1950s with the first five year development plan of the nation, known as the First Malaya Plan from 1956 until 1960 (Economic Planning Unit, 2004). Development planning in Malaysia consists of long, medium and short-term planning horizons, as shown in Table 1-1.

Table 0-1: Planning horizon in Malaysia

Type of planning	Under Taken By	Time-scope	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020
Annual budget	MOF[a]	Short Term Planning													
Malaysian Plan(MP)	EPU[b]	Medium Term Planning	Malaya Plans		1MP	2MP	3MP	4MP	5MP	6MP	7MP / MTR[g]	8MP / MTR[h]	9MP / MTR[i]	10MP	
Outline Perspective Plan(OPP)	EPU	Long Term Planning				OPP1 (NEP[d]) 1971-1990				OPP2 (NDP[e]) 1991-2000	OPP3(NVP[f]) 2001-2010			
Industrial Master Plan(IMP)	MITI[c]	Long Term Planning							IMP1 1986-1995		IMP2 1996-2005		IMP3 2006-2020		
Vision2020		Long Term Planning								Vision 2020 (1991-2020)					

Source: Economic Planning Unit- Prime Minister's Department

a. MOF: Ministry of Finance Malaysia
b. EPU: Economic Planning Unit
c. MITI: Ministry of International Trade and Industry
d. NEP: New Economic Policy
e. NDP: National Development Policy
f. NVP: National Vision Policy
g,h and i. MTR: Mid-Term Review of The Seventh, Eighth and Ninth Malaysian Plans Respectively

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In 1991, Vision 2020 was formulated. It considered the national development goals over the long term and focused on the national development effort. The outline perspective plans (OPPs) was launched in order to bring the broad strategies in the national development agenda over a long term.

Since 1970, Malaysia's economic development strategy has been guided by three OPPs; the New Economic Plan (NEP), National Development Policy (NDP) and National Vision Policy (NVP). Industrial Master Plans (IMPs) also are long term planning instruments focused on the manufacturing sector with a longer time scope, namely ten years for IMP1 and IMP2 and fifteen years for IMP3. The next tier is medium-term planning, where 5-year development plans with second-year review are formulated to operationalize the OPPs. The final tier is short-term planning through the annual budget (EPU, 2004).

The industrialization process in Malaysia actually began after independence. This was due to British policies regarding colonial division of labor and there was not much manufacturing activity before 1957. In other words, Malaysia's experience in manufacturing during the colonial period was limited to export and import processing and the packaging of food. The emphases in this period (1867-1957) were export of primary commodites and import of British products (Jomo, 2007). These policies effectively discouraged growth of local industries.

After the independence in 1957, the new government favored import-substitution industrialization (ISI) with little state intervention. Government involvement was only limited to the provision of tariff protection, infrastructure, tax exemptions, and other incentives. In fact, this strategy sought to substitute the imported goods with locally

produced goods by encouraging foreign investors to set up production, assembly, and packaging plants in the country in order to meet internal demand. Investment was still dominated by the British and was poorly linked to the national economy. Therefore, such industrialization process did not significantly increase new employment and soon its production reached its limits in the small domestic market.

Reduced revenue from rubber and tin in the late 1960s, coupled with the ethnic riot and high unemployment, prompted the government to focus on development strategy. Thus, the government established a new agenda in order to diversify the economy. To do so the government developed the manufacturing sector and imposed complete rules to allocate the public positions, business management and workforce in favor of indigenous Malays. From 1970 to 1980, export-oriented industrialization (EOI) was introduced, free trade zones were established and tariffs were gradually reduced. During this time, Malaysia experienced a shift from import-substitution to EOI as the limits of import substitution became apparent and a new international division of labor emerged, particularly involving manufacturing.

Nevertheless by the end of 1970s, the average real wage has declined, export of manufactured products was also bounded to certain groups of goods and the least development happened in the manufacturing sector (Lall, 1995). In order to overcome the problems of EOI in the 1970s a second round of ISI based on heavy industries was established in 1981. Based on this policy, priority was given to chosen industries in the form of high import duties for competing products. Tariffs on a broad group of manufactured goods were largely increased at the beginning of the 1980s.

The intended objectives of heavy industrialization were dampened by the world economic recession in the mid 1980s. As a result, the government introduced the IMP1 in early 1986 to correct the apparent structural imbalances in the industrial sector.

According to this plan, manufacturing sector is tipped to be the leading sector for economic growth. At the end of the 1980s, as a result of the ASEAN Free Trade Agreement (AFTA), further tariff reduction was implemented. Moreover, the second round of EOI through a cluster-based approach was also implemented. During this period, Malaysia experienced eight successful years of annual growth of more than eight percent (Crouch, 1996).

However, manufacturing sector has been decreasing since 1995. Average annual manufacturing growth rate declined from 11.7 percent during the period 1990-1994 to 5.9 percent over the period of 1995-99. To develop dynamic industrial clusters, and strengthen industry linkages, the IMP2 was launched in 1996 and the IMP3 was introduced with the theme: 'Malaysia-Towards Global Competitiveness' in 2006 (MITI, 1996 & 2006). At the same time, Malaysia brought further liberalization to its trade regime by signing the bilateral Free Trade Agreements (FTAs) with its main trading partners. By 2005, only a number of limited restrictions were applied in Malaysia's trade policy.[10]

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[10] These are focused more on protection of food such as rice and the automotive industry.

Table 1-2: International trade objectives, strategies and policies in Malaysia's national Plans

Period	Objectives and strategies	policies
PRE;NEP 1960-1970 First Malaysia Plan, 1966-1970	Fuller and more efficient use of natural resources. Expansion of economic base to reduce dependence on raw material exports. Generation of higher income through expanding domestic production and increasing exports of manufactured products.	Promotion of traditional and new export possibilities. Industrial development led by private sector. Favorable investment climate, industrial estates, and transport; power and communication provided by government. Foreign private entrepreneurship and capital welcomed. Techniques of production evolved. Protective tariffs for selected infant industries. Tax incentives and subsidies of facilitate industrial development.
NEP;OPP1 1971-1990 Second Malaysia Plan, 1971-1975 Third Malaysia Plan, 1976-1980 Fourth Malaysia Plan, 1981-1985 Fifth Malaysia Plan, 1986-1990	Based on two-pronged approach of • Poverty eradication and • Restructuring of society. Increased production for export, including new industrial and agriculture items. Greater processing of raw materials. Further substitution of domestic production for imports. Malaysia incorporated-emphasizing cooperation between government and private sector.	Increased direct government participation in industrial development. Improved export incentives. Free trade and export processing zone established. Promotional and publicity efforts by government to attract foreign capital and expertise. Promotion of domestic production of intermediate and capital goods Emphasis on productivity increases and more intensive production methods. Progressive and selective privatization of government services. Overall protection in industry reduced to a reasonable level. Encouraging joint ventures with international corporations, using foreign technology and local resources. Ensuring availability of finance for exports. Liberalized equity guidelines.
NDP;OPP2 1991-2000 Sixth Malaysia Plan, 1991-1995 Seventh Malaysia Plan, 1996-2000	Promotion of a balanced, broad-based, resilient, and internationally competitive economy. Enhance potential output growth, achieve further structural transformation, and attain balanced development. Moving towards capital intensive and technologically sophisticated industries.	Accelerating productivity and efficiency, primarily through private sector initiatives. Accelerating the diversification of industries. Reorientating industries to target production for the world market. Encouraging large-scale production for economics of scale. Further liberalization and deregulation of industries Development of a modern, competitive and technologically innovative small and medium industry sector. Greater role of trade and industry associations to improve standards and quality. Establishment of a new trade networks, especially within regional trade blocs. Development of industrial estates.
NVP;OPP3 2001-2010 Eighth Malaysia Plan, 2001-2005 Ninth Malaysia Plan, 2006-2010	Greater responsiveness to challenges and opportunities from global competition. Enhance position as strategic and cost-effective location for foreign investment. Improve knowledge management accumulate new skills and change mindsets.	Developing domestic industries to be globally competitive. Strengthening resilience to external shocks. Focus on more efficient use of labor and capital as well as improvement in skills, technology and managerial capability. Greater application of information and communications technology and knowledge. Increased intra-regional trade using AFTA and other bilateral arrangement mechanisms. Identifying and developing new sources of growth, particularly in services to become the regional center or hub.

This clearly showed that both industrialization and external trade have been closely aligned over time in Malaysia. In other words, the significant growth of trade in Malaysia was strongly related to the process of industrialization in the country (Ariff, 1991a).

The broad objectives and strategies of the country's international trade policies as they evolved over time are set out in Table 1-2. As we can see, the table shows that policy orientation evolved in stages to accommodate the industrialization process and external influence.

1.1.2   External Trade in Malaysia

Over the last decades, Malaysian has transformed itself from an agriculture and primary exporter to manufactured goods exporter (Figure 1-2). During this time, external trade has been playing a significant role in increasing GDP, indicating the notable effect of international trade on the development of the Malaysian economy.

The Malaysian government implemented the export-oriented development strategy in the first half of the 1980s. The development strategy transformed Malaysia from a primary and agriculture based economy to a more industrial based economy, recording an average of 8% economic growth for nine years before the 1997 Asian financial crisis. The share of merchandise trade in GDP was 72% in 1970, increased to 133% in 1990, and further to 192% in 2000. However it decreased to 147% in 2010.[11]

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[11] Sources: World Bank Data, *World Development Indicators & Global Development Finance,* Merchandise trade (% of GDP), by country
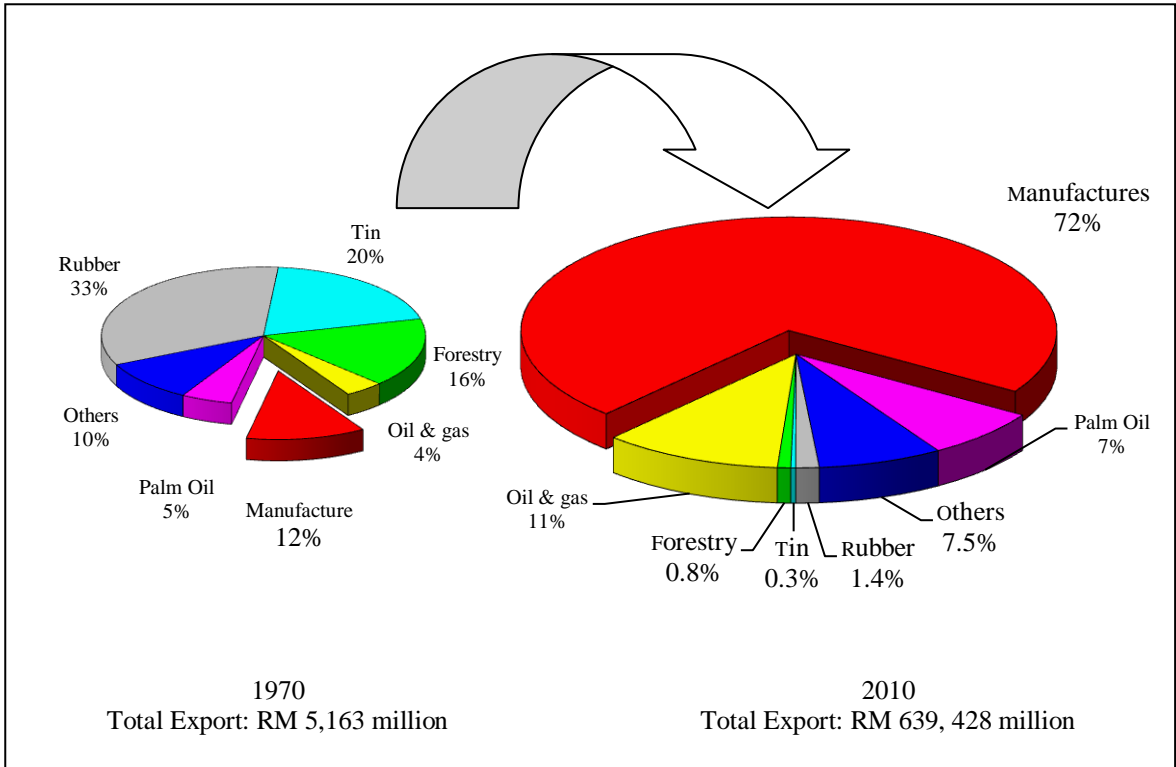
Figure 0-2: Diversification of Malaysian exports (share of total exports)
Sources: Economic Planning Unit, Socio-Economic Statistics, Malaysian Economy in Figures, Malaysian Economy in Figures 2011

According to Direction of Trade Statistics of the Bank Negara Malaysia (BNM), the most important trading partners for Malaysia in 2000–2010 are the US, Singapore, the ASEAN (excluding Singapore), North East Asia (excluding Japan and China.), Japan, and China (See Table 1-3).

Malaysia is heavily involved in trade with the US, Japan, Singapore and China. Table 1-3 shows that the total bilateral trade volume between Malaysia and these four countries at the end of 2010 were 45.9% and 47.2%, respectively. However, the percentages of exports and imports from these four countries (except China) have declined in recent years. As a group, the total share of the US, Japan and Singapore exports and imports with Malaysia were 52% in both sector in 2000 but it decreased to 33.3% (export) and

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34.6% (import) in 2010. Despite this, China has experienced an increase in export and import with Malaysia over the same period to 9.5% and 8.6% of Malaysian total trade respectively.

Table 0-3: Malaysian external sector (percentage of total)

Trading partner	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Direction of Exports:											
USA	20.5	20.2	20.7	19.6	18.8	19.6	18.8	15.6	12.5	10.9	9.5
Singapore	18.4	16.9	16.9	15.7	14.9	15.6	15.4	14.6	14.7	14	13.4
North East Asia[1]	11.7	11.6	12.6	13	12.7	12.1	11.3	11.2	10.6	11.9	12.3
ASEAN[2]	8.2	8.2	8.9	9.1	10.1	10.4	10.7	11.1	11.1	11.7	12
Japan	13.1	13.3	11.1	10.7	10.1	9.4	8.9	9.1	10.8	9.8	10.4
China	3.1	4.4	5.6	6.5	6.7	6.6	7.2	8.8	9.5	12.2	12.6
Sources of Imports:											
North East Asia[1]	12.8	12.2	13.7	13.1	13	13	13.5	13.6	12.1	11.5	12.3
Japan	21	19.2	17.8	17.1	16.1	14.5	13.2	13	12.5	12.5	12.6
ASEAN[2]	9.7	10.1	11	12.4	12.8	13	12.7	13	13.2	14.1	15.8
USA	16.6	16	16.3	15.4	14.5	12.9	12.5	10.8	10.8	11.2	10.6
China	4	5.2	7.7	8.7	9.8	11.5	12.1	12.9	12.8	13.9	12.6
Singapore	14.4	12.6	12	11.7	11.1	11.7	11.7	11.5	11	11.1	11.4

1: Exclude Japan and China.
2: ASEAN-10 excludes Singapore
Sources: Economic Planning Unit, Socio-Economic Statistics, Malaysian Economy in Figure.

Furthermore, Table 1-3 shows that more than 70% of Malaysian import and export is with East Asian countries and the US. To understand more about the major East Asian trading partners of Malaysia, Figure 1-3 shows Malaysian trade with her six East Asian major trading partners namely; China, Hong Kong, Japan, Korea, Singapore and Thailand along with the US, in 2010. Table 1-4 also presents Malaysian export and import share with these countries at industry level in 2010.

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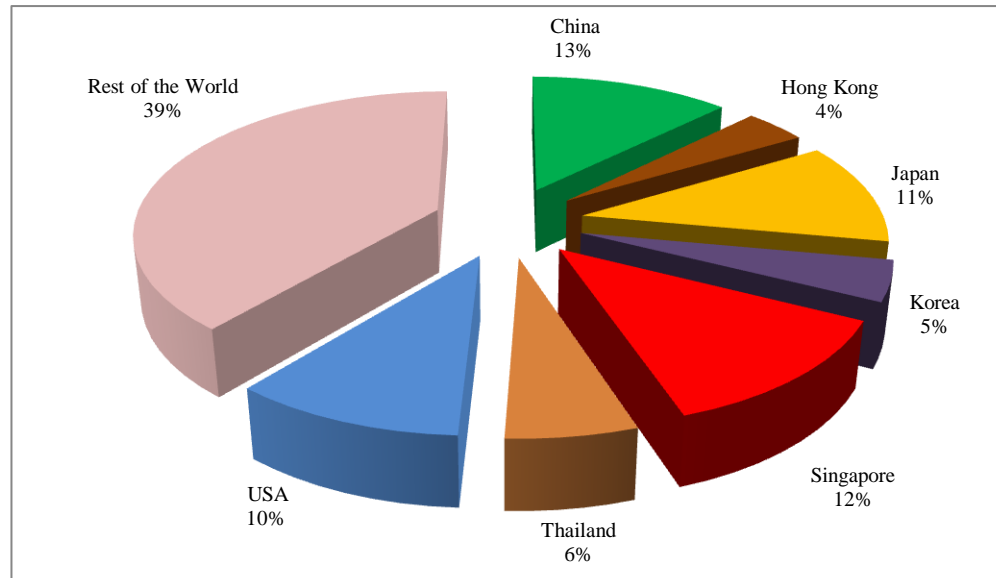
Figure 1-3: Malaysian trade with its seven major trading partners in 2010 (share of total trade in percentage).
Sources: Bank Negara Malaysia, *Monthly Statistical Bulletin*, annual report 2011

From Table 1-4, the share of these countries of total Malaysian export and import in 2010 were 60.03% and 61.2 % respectively. However their share of machinery and transport equipment industries export was 29.24% and import was 35.18%. Specifically in 2010, according to volume of trade between Malaysia and these seven countries, the three largest industries were; parts and accessories for office machines and automatic data processing machines (759), telecommunications equipments (764) and thermionic valves and tubes; and photocells (776). However, in the case of Japan and Singapore three industries; petroleum oils and crude (333), petroleum products (334) and natural gas (343) were also classified as large industries in 2010.[12]

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[12] Sources: World Bank, the *World Integrated Trade Solution (WITS),* online database.

Table 1-4: Malaysian external trade with its seven major trading partners at industry level in 2010

	Industry discribtion	China	Hong Kong	Japan	Korea	Singapore	Thailand	USA	Total
Import from trading partners	0 - Food and live animals	0.65	0.01	0.04	0.02	0.17	0.47	0.31	1.66
	1 - Beverages and tobacco	0.03	0.001	0.007	0.001	0.03	0.03	0.03	0.13
	2 - Crude materials, inedible, except fuels	0.15	0.02	0.18	0.09	0.1	0.75	0.41	1.7
	3 - Mineral fuels, lubricants and related materials	0.09	0.01	0.06	0.35	3.46	0.12	0.11	4.2
	4 - Animal and vegetable oils, fats and waxes	0.01	3E-6	0.002	0.001	0.01	0.05	0.03	0.1
	5 - Chemicals and related products, n.e.s.	1.05	0.11	1.04	0.48	1.21	0.61	0.94	5.44
	6-Manufactured goods classified chiefly by material	1.9	0.18	2.51	0.85	0.53	0.67	0.64	7.26
	7 - Machinery and transport equipment	7.53	1.76	7.26	3.43	4.69	3.27	7.24	35.18
	8 - Miscellaneous manufactured articles	1.07	0.27	1.37	0.16	0.83	0.25	0.85	4.79
	9-Commodities and transactions, n.e.s.	0.09	0.05	0.1	0.05	0.35	0.02	0.1	0.75
Total		12.55	2.4	12.57	5.42	11.37	6.23	10.65	61.2
Export to trading partners	0 - Food and live animals	0.13	0.11	0.17	0.08	0.56	0.134	0.285	1.47
	1 - Beverages and tobacco	0.007	0.03	0.003	0.003	0.12	0.061	0.003	0.225
	2 - Crude materials, inedible, except fuels	0.78	0.02	0.22	0.11	0.11	0.154	0.091	1.48
	3 - Mineral fuels, lubricants and related materials	0.83	0.1	4.42	1.7	2.66	0.89	0.1	10.7
	4 - Animal and vegetable oils, fats and waxes	1.57	0.01	0.29	0.17	0.24	0.06	0.54	2.86
	5 - Chemicals and related products, n.e.s.	1.13	0.25	0.5	0.22	0.61	0.53	0.25	3.49
	6-Manufactured goods classified chiefly by material	1.03	0.2	0.92	0.49	1.24	0.55	0.36	4.79
	7 - Machinery and transport equipment	6.69	4.08	3.04	0.83	6.52	2.19	5.91	29.24
	8 - Miscellaneous manufactured articles	0.39	0.24	0.75	0.17	1.18	0.73	1.98	5.44
	9 - Commodities and transactions, n.e.s.	0.04	0.06	0.03	0.02	0.1	0.05	0.03	0.32
Total		12.59	5.08	10.36	3.78	13.34	5.34	9.54	60.03

Sources: World Bank, the *World Integrated Trade Solution (WITS),* online database.
Note: The term n.e.s. means not elsewhere specified.

1.1.3   Malaysian Exchange Rate Regime

Before 1973, Malaysia adopted a fixed exchange rate regime, under which the central bank was obliged to support the exchange rate of the ringgit (the Malayan dollar prior to June 1967) within very narrow margins by acting as buyer and seller of last resort to the commercial banks in respect of foreign exchange. The official intervention currency for Malaysia had always been the pound sterling; but with the floating of sterling in mid-

1972 and to avoid the depreciation of the Malaysian dollar, Malaysia switched to US dollar as its official intervention currency. Due to the weakness of US dollar in the early 1970s (during the oil crisis), the dismantling of the Sterling Area in 1972, and the heavy inflow of funds into Malaysia, the ringgit was subsequently floated on June 21, 1973. Thereafter the value of the ringgit is being determined de facto in terms of a basket of main Malaysian trading partners' currencies. Since then, the exchange rate of the ringgit against US dollar has appreciated during the period between the two oil crisis in the early and late 1970s (BNM, 1984).

One important element of stabilization policies has been an open foreign exchange regime. One of the main objectives of BNM or Central Bank of Malaysia is "to issue currency and keep the reserves safeguarding the value of the currency". Under this objective, BNM tries to maintain a stable exchange rate which reflects the ringgit underlying value. In general, ringgit value follows a trade-weighted basket of the Malaysian main trading partners' currencies in which US dollar has a large weight. However, the BNM interferes in the foreign exchange market to prevent the rapid fluctuations in order to retain a stable ringgit value. This policy has promoted FDI and improved export-oriented industries. Controlling the nominal exchange rate appreciation at the beginning of oil crisis, a policy was adopted by Malaysian government to allow the ringgit to depreciate against US dollar after 1985. Between 1988 and 1997, the ringgit depreciated marginally by about 3.3% per annum (BNM, 1999). During the 1990s prior to the 1997 crisis, the ringgit was traded in a range of between 2.50 to 2.78 ringgits per US dollar and some appreciation was observed between 1990 and 1992.

The spillover effects of 1997 Asian financial crisis in Thailand, affected other countries in the region too. In countries such as Thailand, Indonesia, and South Korea, macroeconomic fundamentals and banking sectors were reformed by the conditional financial help from IMF, while Malaysia established a self-initiated capital controls program.[13] For the period 1992-1997, the ringgit was almost stable around 2.50 ringgits per US dollar. Following the devaluation of the Thai baht under speculative pressures, currency crisis also spread to the ringgit. The value of ringgit started to deteriorate further reaching a low of 4.88 ringgit per US dollar. BNM tried to support the ringgit, at a cost of around US$ 1.5 billion. As a result, BNM's capability to support the ringgit was decreased temporarily and the ringgit started to float. "On 1 September 1998, BNM took the pre-emptive step to introduce selective exchange controls to contain the internationalizations of the ringgit and stabilize short term capital flows. The following day, the exchange rate was fixed at 3.80 to the US dollar." (BNM, 1999, p. 178)

The ringgit lost 50% of its value against the US dollar between 1997 and 1998, and suffered general depreciation against other currencies between December 2001 and January 2005. In that period there was often a debate on whether the "peg should be lifted". The government decision to peg the ringgit to US dollar resulted in stability and predictability as well as preventing and currency speculation (Khor, 2009).

On July 21, 2005, BNM announced the end of the peg to the US dollar. Ringgit value was determined via a managed float against a basket of several major currencies and the values are closer to the real market value. However, BNM has intervened in foreign exchange rate markets to maintain stability in ringgit trading levels.

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[13] This included the financial assistance of the World Bank and Asian Development Bank.

Following the end of the fixing exchange rate system, the ringgit appreciated to 3.16 against US dollar in April 2008. The ringgit also appreciated against the Hong Kong dollar (HKD) (from 0.49 to 0.44 to the RM/ HKD) and Chinese yuan (CNY) (from 0.46 to 0.45 to the RM/ CNY) as recently as May 2008. During the year 2008, fiscal and political changes in Malaysia and the world led to a slight fall of the value of ringgit against US dollar from May to September of 2008 (due to the Global financial crisis).

The Global financial crisis (late 2008-mid 2009) is very different from the one Malaysia experienced in 1998. In 1998, during Asian financial crisis which originated from Thailand, Malaysia suffered a contraction in GDP growth. In contrast, the global financial crisis originated from the bursting of US housing bubble, which led to a severe financial turmoil. This caused a deep slump in global trade and eventually a global recession by late 2008. Malaysia has also been affected by this financial crisis.

During the Global financial crisis, the ringgit lost 13 percent of its value against US dollar and the domestic economy experienced the full impact of the global recession in the beginning of 2009, decreasing by 6.2%. Thus BNM initiated pre-emptive measures to mitigate the severity of the recession. These measures were supported by monetary policies such as exchange rate depreciation (Elekdag, Lall, & Alp. 2013). It contributed towards the stabilization of the domestic economy in the second quarter and its subsequent recovery in the second half of 2009. As a result, Malaysian economy grew 4.4% in the last quarter of 2009 and increased to 10.1% in the first quarter of 2010 due to increases in both domestic and external demand. The Ringgit also appreciated to 3.06 against the US dollar in the end of 2010.
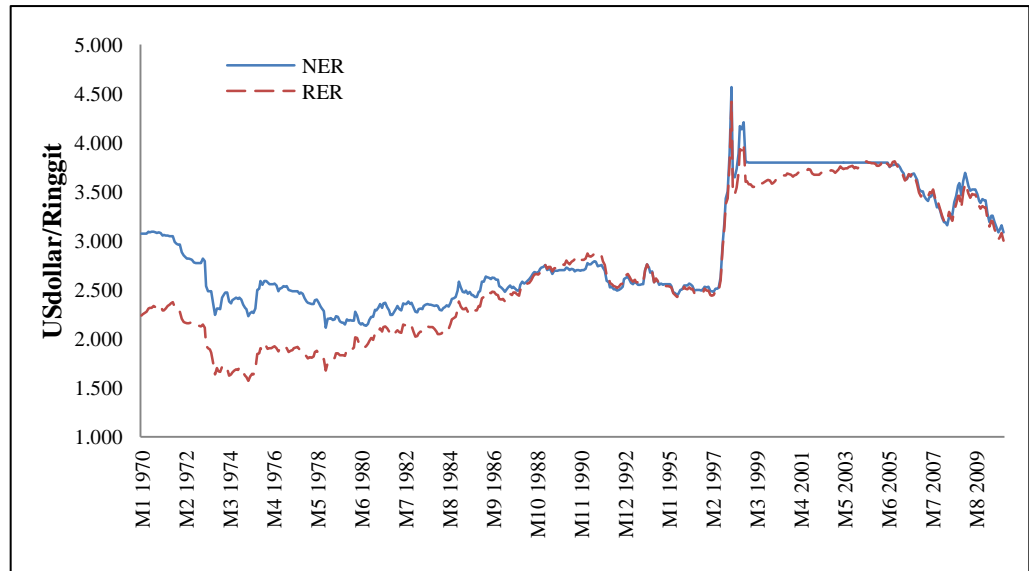
Figure1-4: The real and nominal value of exchange rate between Malaysia and the US

Source: International Monetary Fund, *International Financial Statistics*.

Figure 1-4 shows trends in the nominal and real bilateral US dollar/ringgit exchange rate. The figure presents the bilateral rate in period between 1970M1-2010M12. An increase in the bilateral rate implies a depreciation of the ringgit against the US dollar. The vertical axis shows the value of appreciation or depreciation of the nominal and real bilateral exchange rate. The value of the ringgit has fluctuated dramatically over the four last decades. These movements suggest that the ringgit is one of the more volatile currencies in the region (see also Table 1-5).

Table 0-5: The major changes to the Malaysian exchange rate regime

Date	The major changes
12 June 1967	The unit of Malaysian dollar was created. The old Sterling-linked Malayan/Straits dollar was replaced by separate dollars of Malaysia, Singapore and Brunei. All these 3 currencies can be freely interchangeable. (WCY 1984, p.495)
15 August 1971	The Malaysian dollar linked to the Pound Sterling at a fixed rate M$7.3469 per Sterling Pound. (WCY 1984, p.495)
20 December 1971	A new official rate was established at a rate M$2.81955 per US dollar which based on the Malaysian dollar's unchanged gold content. (WCY 1984, p.495)
25 June 1972	With the floating of Sterling and the dismantling of the Sterling Area on 23 June 1972, Malaysia broke the Malaysian dollar's ties to the British unit and linked the currency to US dollar with a fluctuation range for the effective rate. The range is between M$2.7561 and M$2.8830 per US dollar. (WCY 1984, p.495)
13 February 1973	Following US dollar devaluation in February 1973, the official rate of Malaysian dollar was realigned to M$2.5376 per US dollar, based on the currency's unchanged gold content. The new fluctuation range for the effective range was defined, M$2.4805-M$2.5947 per US dollar. (WCY 1984, p.495)
8 May 1973	Malaysia abrogated the accord with Singapore providing for the free exchangeability at par of the Malaysian and Singapore dollars, which had been functioning since 1967. (WCY 1984, p.495)
22 May 1973	The unrestricted exchange at par of the Brunei dollar and the Malaysian dollar was suspended and the currency interchangeability agreement with Brunei was rescinded. (WCY 1984, p.495, 496)
21 June 1973	Malaysia placed the effective rate for her dollar on a controlled, floating basis. (WCY 1984, p.495) The BNM intervened in order to maintain relative stability in the value of ringgit in relation to the basket of currencies. (IMF 1979, p.266)
21 August 1975	The Malaysian currency (ringgit) Act 1975 amended the BNM ordinance 1958 (IMF 1976, 305). Under the Malaysian currency (ringgit) Act 1975, the names and units of the Malaysian currency were changed from dollars and cents to ringgit and sen respectively effective August 28, 1975.
27 September 1975	The controlled, floating effective rate for the ringgit was replaced, the external value of the ringgit was determined on the basis of its relationship to a weighted basket of currencies of Malaysia's major trading partners. (IMF 1976, p.305)
1978	Rates for all other currencies were determined on the basis of the ringgit/US dollar rate and US dollar rates for those currencies in markets abroad. (IMF 1979, p.266)
31 March 1989	Following the IMF classification, Malaysia was considered to be pegged to composite basket of currency. (Ariff, 1991b. p.155)
4 August 1997	The central bank of Malaysia imposed controls requiring banks to limit outstanding noncommercial-related ringgit offered side swap transactions to $2 million a foreign customer. (IMF 1998, p.556)
2 September 1998	The exchange rate was no longer determined by demand and supply. The central bank announced that the exchange rate of the ringgit would be pegged against US dollar at RM3.80 = $1. (IMF 1999, p.532)
21 July 2005	Bank Negara announced the end of the peg to US dollar. According to Bank Negara, Malaysia allows the ringgit to operate in a managed float against several major currencies.

Source: University Grants Committee, Historical exchange rate regime of Asian countries, Malaysia. Retrieved from:http://intl.econ.cuhk.edu.hk/exchange_rate_regime/index.php?cid=4
Note:
WCY = World Currency Yearbook
IMF = International Monetary Fund, Annual Report on Exchange Arrangement and Exchange Restriction

1.1.4 A Snapshot of Malaysian bilateral Trade and Exchange Rate with China

The East Asian region is recognized as an important global production and trading network area. Multinational companies located in Hong Kong, Japan, South Korea, Taiwan and advanced countries in the ASEAN produced high technology-intensive intermediate goods and capital goods to be sent to China and other parts of ASEAN countries for assembly by lower-skilled workers. The finished products are then exported throughout the world (Thorbecke, 2008b). This trading network has led to an increase in intra-regional trade, especially in parts and component trade within the region.
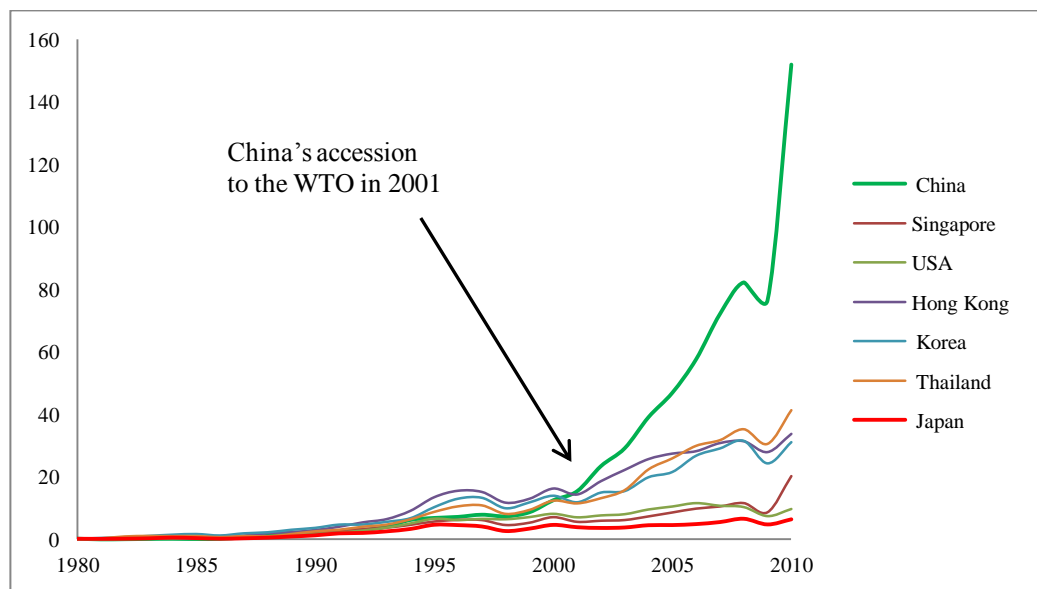

Figure 0-5: Growth index of Malaysia's bilateral trade with seven major trading partners (based year =1980)
Sources: International Monetary Fund, *Direction of Trade Statistics*.

Since the emergence of China as a major exporter of manufactured goods in 1990s, the external trade of Malaysia as a member of international production networks in East Asia has also become more region-oriented and the share of total trade with these

countries has increased, especially with China. Malaysia and China has formed one of the largest trading partnerships in the East Asian region. Over the last two decades, bilateral trade between China and Malaysia has experienced an average growth of 22 % per annum. The rapid increase in bilateral trade has made China, the Malaysia's largest trading partner today, up from eleventh spot in 1990. China is the second largest source of imports and the second largest export destination for Malaysia. On the other hand, Malaysia also elevated its own position to the eighth largest source of imports and the seventh largest export destination of China. In fact, much of the growth has occurred since China's accession to the WTO in 2001, when Malaysia's trade with China really took off (Figure 1-5). At the end of 2000s China has overtaken the traditional top major trading partners of Malaysia namely Singapore, Japan and the US and Malaysia also has became China's largest trading partners among ASEAN countries.[14]

Similar to most economies in the region, Malaysia has a comparative advantage in the export of manufactured products, especially in electrical and electronics (E&E) industries. However, in line with increased manufacturing integration, Malaysia also imports goods in the similar categories that it has comparative disadvantage. Bilateral trade with China in the E&E industries has risen to 47% of total Malaysian imports and 51% of total exports in 2010. As the results of this, intra-industry trade contributed to a relatively large percentage of the bilateral trade between these two countries. The E&E industry is the leading sector in Malaysia's manufacturing that contributes strongly to export earnings, investment and employment. This implies that trade with China plays a crucial role in the Malaysian economy.

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[14] Sources: Bank Negara Malaysia, *Monthly Statistical Bulletin,* various issues.