MALAYSIA – ASEAN TRDAE DETERMINANTS, PATTERNS AND PROSPECTS

MOHMED JALWAR ARMI

815011

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By

MOHMED JALWAR ARMI

815011

A Project paper Submitted to the Othman Yeop Abdullah Graduate School of Business, Universiti Utara Malaysia, in Partial Fulfillment of the Requirements for the Degree Master of Economic

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Abstrak

Kajian ini bertujuan menganalisis faktor-faktor yang memberi kesan terhadap perdagangan antara Malaysia dan negara ASEAN lain dari 1980-2014. Selain Malaysia, negara ASEAN lain adalah Brunei, Indonesia, Thailand, Singapura, Vietnam, Kemboja, Myanmar, Filipina and Laos. Lima ujian punca unit panel yang berbeza (Ujian LLC, Ujian Breitung, Ujian IPS, Ujian F ADS, dan Ujian F-PP) telah dijalankan bagi mengenal pasti isu-isu kepegunan. Hasil ujian punca unit panel menunjukkan kesemua pemboleh ubah pegun pada satu tahap, dan berubah menjadi tidak pegun pada perbezaan pertama. Selain itu, keputusan Ujian *Causality Granger* menujukkan bahawa dalam jangka pendek, *causality* satu arah telah dikenal pasti pada Keluaran Dalam Negeri Kasar (KDNK) per kapita dan kadar pertukaran jumlah perdagangan Malaysia antara Malaysia dan negara ASEAN yang lain, serta pada jumlah penduduk ke jumlah perdagangan negara ASEAN lain. Bagi ujian bersama, *causality* dwiarah telah dikenal pasti pada KDNK per kapita Malaysia, KDNK per kapita negara ASEAN lain, kadar pertukaran Malaysia, kadar pertukaran negara ASEAN lain, jumlah penduduk negara ASEAN lain, jarak antara ibu negara Malaysia dan ibu negara bagi negara ASEAN lain, dan jumlah perdagangan antara Malaysia dan negara ASEAN lain. Dengan kata lain, kesemua pemboleh ubah bergantung antara satu sama lain. Keputusan model GMM menunjukkan KDNK per kapita Malaysia dan negara ASEAN lain serta kadar pertukaran Malaysia dan negara ASEAN lain adalah positif dan signifikan secara statistik. Walau bagaimanapun, jumlah penduduk negara ASEAN lain tidak signifikan, walaupun pada kadar signifikan 10 peratus. Hubungan jumlah jarak antara ibu negara Malaysia dan negara ASEAN lain juga tidak signifikan. Peningkatan kadar KDNK Malaysia dan negara ASEAN lain serta peningkatan kadar pertukaran mata wang Malaysia dan negara ASEAN lain akan turut merangsang kadar dagangan antara Malaysia dan negara ASEAN lain. Kesimpulannya, peningkatan jumlah jarak antara ibu negara Malaysia dan negara ASEAN lain akan membantutkan kadar dagangan antara Malaysia dan negara ASEAN lain.

Kata kunci: Dagangan Antarabangsa, Ujian *Causality Granger*, Model GMM, Malaysia, ASEAN

ABSTRACT

The main objective of this study is to analyze the factors that effect Malaysia – ASEAN trade during 1980 – 2014. The (9) ASEAN countries such as Brunei, Indonesia, Thailand, Singapore, Vietnam, Cambodia, Myanmar, Philippines and Lao PDR. There are five different panel unit root test have been applied to check the stationarity issues the five test are {LLC test – Beritung test - IPS test – F ADS test – F-PP test}. The results of panel unit root tests shows that all the variables are stationary at level and become non-stationary at first difference. In addition, results of Granger causality suggested that in the short run unidirectional Granger causalities were found to be running from per capita GDP and exchange rate of Malaysia total trade between Malaysian and other ASEAN countries, as well as from total population of other ASEAN countries to total trade. For joint tests, bi-directional causalities were observed between per capita GDP of Malaysia, per capita GDP of other ASEAN countries, exchange rate of Malaysia, exchange rate of other ASEAN countries, total population of other ASEAN countries, distance between capital of Malaysia and capital of other ASEAN countries and total trade between Malaysia and other ASEAN countries. In other words all the variables are reliant to each other. The results of GMM model show that per capita GDP of Malaysia and other ASEAN countries as well as exchange rate of Malaysia and other ASEAN countries are positively and statistically significant. However, total population of other ASEAN countries is insignificant even at 10 percent level of significant. Similarly, total distance between capital of Malaysia and other ASEAN countries is negatively significant. An increase of Gross Domestic Product (GDP) of Malaysia and other ASEAN countries as well as exchange rate of Malaysia and other ASEAN countries will increase it will also boost the trade between Malaysia and other ASEAN countries. Consequently, increase the distance between capital of Malaysia and other ASEAN countries will decrease the trade between Malaysia and other ASEAN countries.

Keywords: International Trade, Granger Causality, GMM model, Malaysia, ASEAN

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Everlasting love.

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LIST OF ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
GMM	Generalized Method of Movement
OLS	Ordinary Least Square
MCA	Malaysian Chinese Association
NEP	New Economic Policy
NEM	New Economic Model
NDP	New Development Policy
LNG	Liquefied Natural Gas
FDI	Foreign Direct Investment
AFAS	ASEAN Framework Agreement on Services
AIA	ASEAN Investment Area
DOTS	Direction of Trade Statistics
OECD	Organization of Economic Co-operation and Development
WTO	World Trade Organization
2SLS	Two Stage Least Square
FTA	Free Trade Agreement
SADC	South Africa Development Community
SAARC	South Asian Association for Regional Cooperation
SBC	Schwarz Bayesian Criterion
CLRM	Classical Linear Regression Model
CD	Cross Dependency
LLC	Levin, Lin and Chu
IPS	Im, Pesaran and Shin

CHAPTER ONE

INTRODUCTION

- **Organization of studies:-**

The chapter begins with the background of the study under section 1.1. In this section study explain the importance of international trade towards economic growth and development and role of Malaysian trade with ASEAN countries. The problem of the study is stated under Section 1.2. The problem of the study is stated under Section 1.2. The research questions and objectives have been provided in the Section 1.3 and Section 1.4 respectively. The significance of the study is discussed under Section 1.5 followed by scope of the study under Section 1.6. The structure of the study is presented under section 1.7. Finally, Section 1.8 provides the conclusion of the chapter.

1.1 Background of the Study

International trade have fundamental role in an economic system. The import of raw materials, capital and intermediate goods are always required to enhance the production. The countries want to import these items due to scarcity of these items domestically and foster exports growth. Imports of consumer goods are also required to meet the excess in domestic demand. Export of trade is crucial to meet the required foreign exchange gap and to increase the import capacity. An increase in import capacity boosts the industrialization and overall economic activities, which, in turn, can ensure economic growth .

International trade traces back to the classical debates about specialization in Adam Smith and David Ricardo's eras. Since then numerous studies have been devoted to discover and measure the effects of International trade on the economic growth and development of a country. Many recent studies found positive impacts of international trade on growth (Abidin, Bakar, & Haseeb, 2014; Abidin & Haseeb, 2015; Aggarwal & Urata, 2013; Dollar, 1992; Edwards, 1993; Feder, 1983; Fischer, 1991; Jeffrey A Frankel & Romer, 1999; Ibrahim, 2002; Irwin & Terviö, 2002). Nonetheless, the findings based on the OLS estimates are typically "moderate positive," they may not reflect the true effect of trade on growth (Frankel and Romer 1999).(Irwin and Tervio 2000) further pinpoint that "the downward bias of OLS estimation." The underestimated results are obviously unconvincing. The reasons why empirical studies cannot provide persuasive evidence on the effect of trade on growth include, but not limited to, the possible correlations between trade policies and other economic policies (Frankel and Romer 1999), as well as data measurement errors (Irwin and Tervio 2000). Some reported results are confusing. For example, Frankel and Romer (1999) claim that the direction of causation between trade and growth cannot be identified; while Nourzad (2005) stated that employment and productivity Granger-cause trade. Those weak and confusing results cause difficulties for the general public to envision or perceive how free trade can spur economic growth and lower prices. As a result, the "lack of understanding" in the general public about the effect of trade on public well-being remains one of major obstacles to free trade (Poole, 2004).

1.1.1 Chinese and Indian migration to Malaysia:-

The arrival of Indian and Chinese to the peninsula changed the demographics of Malayan society whereby identity was drawn more along racial lines rather than ethnic or tribal .the first of large immigration of Chinese to mainland Malaya started around 1850.thier arrival coincided with the increase in demand for tin in the industrial countries of Europe and the United States ,and scale of tin mining in the Malaya states increased markedly due to the ready supply of Chinese laborers and capital .the British encouraged unrestricted and large – scale immigration of Chinese from China to Malaya, in order to exploit the tin mines, reputed to be among the biggest in the world ,it was completely free immigration for the Chinese ., it was happen by the year 1929 , due to the Great Depression . It was business adventure for the British colony. Immigration to Malaya was again repeated in the late 19th century, when the demand for rubber increase due to the expansion of the motor industry led by Henry Ford .by that time the British facilitated the migration of Indians from their Indian colony to work in in rubber plantations.it is only targeted by the British and Europe political need for Economic. The immigration for the Indian was began 1880s and intensified with the rubber boom after 1905s, and continued to peak until 1938. 80% of them was unskilled labour (Deng et al., 2014; Gomez, 2015).

As a result of this Chinese and Indian immigrant influx, the percentage of non-Malays, from being almost non-existence or a small minority in Malaya, became prominent during the British rule, in all the three different administrative region under the British,

the arrival of non-Malay to Malay driven by economic motivation and huge influx was facilitated by the colonial government in 1957. When the country gained independence the non-Malay became sizeable enough to alter the power dynamics of the country (A. R. Ahmad, Rahim, & Seman, 2013). The Table below shows that racial composition Federation of Malaya during 1911-1957 by percentage (%) and Table 1.2 below show that Growth of Chinese and Indian population in Malaya 1871-1941.

Table 1.1: Racial Composition Federation of Malaya (1911 – 1957)

	1911	**1921**	**1931**	**1947**	**1957**
Malays	58.6	54	49.2	49.5	49.8
Chinese	29.6	29.4	33.9	38.4	37.2
Indian	10.2	15.1	15.1	10.8	11.3
Others	1.6	1.5	1.8	1.3	1.8
Non – Malaya	41.4	46	50.8	50.5	50.3

Source: Vector Purcell the Chinese in Southeast Asia. London; oxford university press 1965: p 223 and Hirschman, Charles: Ethnic and Social Stratification in peninsular Malaysia. Washington D, C.

Table 1.2: Growth of Chinese and Indian population in Malaya 1871-1941

Years	Chinese Number	Chinese Percentage of the Total Population	Indian Number	Indian Percentage of the Total Population	Total Chinese and Indian
1871	104,615	34%	33,390	11%	45%
1891	391,418	43%	74,081	8%	51%
1901	583,396	48%	115,536	9%	57%
1911	914,143	35%	267,159	10%	45%
1921	1,170,528	36%	471,536	15%	51%
1931	1,703,528	39%	621,774	14%	52%
1941	2,418,615	44%	767,693	14%	58%

Malaysia achieved independence from British on 31th August 1957 and on 16th September 1963 joined Sarawak, Sabah and Singapore to from Malaysia. Singapore left the formation in 1965 to become an independent country.

The political Economic conditions that Malaysia started with include a population with (Bumiputeras), translated as a son of the soil, Chinese and Indians living by a clear occupation and geographical concentration. Whereas the Chines were identified with commerce and tin mining, the Indians populated the rubber estates (Hatin et al., 2011). The Bumiputeras were largely confined to rural sedentary farming with political power vested in the hand of the Malays who constituted the main population among the Bumiputeras, the leads of Malay political party such as UMNO, essentially dominated economic policy making by the Alliance Government whose political partners in 1960s included the Malaysian Chinese Association (MCA) and the Malaysian Indian Congress (Suwannathat-Pian, 2013). Hence, the prime objective of the nascent ruling government was to restructure the economy to eliminate ethnic identification by occupation and region, and to shift significant corporate share of the economy to the Bumiputeras. This became the dual prong of the New Economic Policy (NEP), which was introduced through the second Malaysia plan 1971 (Malaysia 1971), which laid the foundations of government planning until 1990. It was subsequently adapted and extended further until 2009 through the New Development Policy (NDP) (Malaysia 1991). Although the New Economic Model (NEM) of 2010 appeared to depart from ethnic – based privileges, the Tenth Malaysia Plane, targeted for the period 2011-2015 has extended further the special support for the Bumiputeras. However any analysis of the Malaysian Economy cannot

avoid a discussion on the ethnic question and the ethnic restructuring objectives the Government has pursued since independence.

Malaysia managed to enjoy structural transforming from specialization in the primary sectors until the early 1980s to specialization in the secondary sectors thereafter. Manufacturing became the leading sector in 1984 and from 1988 but has since 2000 contracted to contributed only 26.6% in 2009 except for the crisis year of 1973-1975, 1985 -1986 ,1997-1998.and 2008-2009. Malaysia largely stayed clear from current account imbalances, balance of payment deficits, and severe inflationary and deflationary pressure. By the second millennium Malaysia had become one of the most industrialized economies in the world if the criteria used are manufacturing's contribution to GDP and total exports .The manufacturing value added share in GDP rose from 6% in 1947to 9% in 1960 , 13%in 1970, 20% in 1980, 25% in 1990 and 31% in 2000, before falling slightly to 30% in 2005 and to 26.6% in 2009 (Rasiah & Govindaraju, 2009), a cording to those information the manufacturing share in overall exports rose from 12% in 1970 to 23% in 1980 (Amin, Ghazali, & Supinah, 2010) and 80% in 2000 before falling to 73%in 2006 under such optimism the prime Minister of Malaysia then , Dr Mahathir Mohamad announced his virsion 2020 for Malaysia to achieve Malaysia to be developed nation status by the year 2020 . The qualitative targets include the lifestyle, security and social conditions to that of developed countries. Malaysia will became one of the most important economic in the southeast ASEAN region to drive changes and to move the country forward to achieve Vision 2020, the government developed a framework of four pillars to achieve Government Transforming program.

1.1.1.1 Demographic History of Malaysia

Britain established its first colony in the Malay peninsula in 1786, with the lease of the island of Penang to the British East India company by the Sultan of Kedah .The objective of the British of the first place was to attract the Chinese to the new settlement in Penang so that it might profits from their industry, and to interfere with them as little as possible. However, the colony was almost lost in 1825, when the local Chinese plotted an insurrection in league with the Siamese, to overthrow the Government, but it was successfully repelled by the British. In 1824, the British took control of Malacca following the Anglo – Dutch Treaty of 1824, and in 1826, Britain established the crown colony of the Straits Settlements, uniting its three possessing in Malaya: Penang, Malacca and Singapore. It was initially administrated from Calcutta before being switched to Penang, than later to Singapore, and finally to the colonial office in London in 1867 (Hassan & Weiss, 2012). By the turn of the 20th century, the states of Pahang, Selangor, Perak, and Negeri Sembilan, known together as the Federated Malaya States, all came under the de facto control of British Residents appointed to advise the Malay rulers. Although their function was merely as advisors in reality they had huge influence over the Malay states.

The only areas they did not interfere with were religion and Malay customs. The remaining five states in the peninsula, known as Undefeated Malaya States, also accepted British advisors around the turn of the 20th century. Of these, the four northern states of Perlis, Kedah, Kelantan and Terengganu, had previously been under Siamese (Thai) control. The other Undefeated state (Johor) was the only state that managed to

preserve its independence throughout most of the 19th century, but finally accepted British control in 1914 (Gomez, 2015).

1.1.2 Background of Malaysian Economy

Malaysia is located in one of the busiest sea trading in the world, the waterways of the straits of Malacca and the South China Sea, Malaysia's Economic history gives to several centuries back. The early petty commodity production with exchanges of spices by river mouth port was eventually replaced by large scale mining and plantation agriculture activities during colonial rule (Drabble, 2000; Kwame Sundaram Jomo & Ishak, 1986; Reid, 1993). Tin mining has already started in the state of Perak before direct British intervention in peninsular Malaysia began in 1874. It took the country more than two decades of independence before mining and agriculture gave away to manufacturing as the leading generator of gross domestic product (GDP). Manufacturing's contribution to GDP rose sharply from 1988 until 2000 before its share began declining from there on (Abdelal, Blyth, & Parsons, 2010; Athukorala & Hill, 2012; Tipton, 2009). Table 1.3 shows macroeconomic indicators of Malaysian economy since 1980 to 2014.

Table 1.3: Macroeconomic indicators in Malaysian Economy during (1980-2014).

Year	GDP*	Population**	Uemp. Rate***	Inflation****	Total***** Exports	Total***** Imports	Total***** Trade
1980	24.93	13.83	3.30	6.72	12.96	10.83	23.79
1981	25.46	14.18	3.70	9.70	11.77	11.59	23.36
1982	27.28	14.54	4.10	5.83	12.04	12.41	24.46
1983	30.68	14.92	3.80	3.70	14.12	13.24	27.37
1984	34.56	15.33	3.10	3.90	16.56	14.06	30.62
1985	31.14	15.76	4.10	2.58	15.40	12.31	27.71
1986	31.89	16.22	3.30	0.35	13.97	10.83	24.81
1987	33.35	16.70	3.70	0.73	17.93	12.71	30.64
1988	38.47	17.20	4.10	0.29	21.09	16.56	37.66
1989	40.17	17.70	3.80	2.55	25.04	22.59	47.63
1990	40.01	18.21	3.10	3.04	29.41	29.17	58.59
1991	45.45	18.70	3.30	4.32	34.40	36.75	71.15
1992	48.63	19.20	3.70	4.77	40.70	39.93	80.64
1993	51.47	19.70	4.10	3.54	47.12	45.62	92.75
1994	51.89	20.20	3.80	3.68	58.74	59.56	118.31
1995	60.63	20.72	3.10	3.46	73.72	77.63	151.35
1996	63.32	21.25	2.50	3.47	78.21	78.45	156.67
1997	62.43	21.80	2.40	2.65	78.90	79.05	157.96
1998	62.19	22.35	3.20	5.29	73.47	58.33	131.80
1999	62.97	22.89	3.40	2.73	84.55	65.50	150.05
2000	73.95	23.42	3.00	1.55	98.15	82.20	180.35
2001	72.30	23.92	3.50	1.42	88.20	73.36	161.56
2002	72.30	24.41	3.50	1.79	93.38	79.51	172.90
2003	83.24	24.89	3.60	1.07	104.96	82.74	187.71
2004	97.97	25.36	3.50	1.42	126.51	104.30	230.81
2005	109.50	25.84	3.50	3.03	140.97	113.60	254.58
2006	137.26	26.32	3.30	3.62	160.65	130.47	291.13
2007	152.38	26.81	3.20	2.02	176.21	146.98	323.19
2008	170.07	27.30	3.30	5.42	199.51	156.89	356.41
2009	168.15	27.79	3.70	0.59	157.33	123.82	281.15
2010	177.40	28.27	3.40	1.720	198.74	164.73	363.48
2011	213.75	28.75	3.10	3.173	228.28	187.64	415.92
2012	224.64	29.23	3.00	1.664	227.76	196.59	424.35
2013	232.28	29.71	3.20	2.105	228.39	206.11	434.50
2014	246.87	30.18	NA	3.143	234.24	208.96	443.20

Note: *, ****** calculated in Billions of USD, ** calculated in millions, ***, **** calculated in percentage, ***denoted unemployment rate.

Sources: *, **, *** collected from World Bank data base, 2015, **** collected from International Financial Statistics (IFS), ***** from Direction of Trade Statistics (DOTS).

According to the data a above that Malaysian economic growth from the year 1960 to the year 2013, showing the country in improvement economic by given better quality of life and comparing to the rest ASEAN countries in the region. However Malaysian Government sharing to drive the country in better condition of live by developing plan such as , NEP, NDP, NVP,NEM, MALAYSIAN VIRISON 2020, and so on , to became a country more advanced and development nation status by the year 2020.

1.1.2.1 Malaysian Economic Growth by Sectors

Malaysia is one of the fastest growing economies in the world. Malaysian service sector expended by 6.3% in 2014, however in 2013:5.9% and remained the largest contributor to growth (3.5percentage point of overall GDP growth). Growth in the sector was underpinned largely by sub sector catering to the domestic demand in particular, the wholesale and retile trade, sub sector recorded a high growth in tandem with the continued strength in household spending in the communication sub sector. Growth in the finance and insurance sub sector improved marginally due to higher growth in the insurance segment (Hachicha & Amar, 2015).

The next section is construction sector recorded higher growth of 11.6%during the year (2013:10.9%) owing mainly to stronger growth in both the residential and non-residential. The robust growth in the residential sub sector was attributed to continued progress in high end housing project in Johor, Kalng valley and Penang, while construction activates in the non-residential sector were supported by the commercial and industrial projects. The civil engineering provided further support to the sector

underpinned by existing and the new infrastructure project. In the agriculture growth was stronger at 2.6% (2013:2.1%) due to the higher production of the Palm Oil as a result of favourable weather conditions, especially in the middle of the year . this was augmented by the higher production of the food crops , particularly poultry and vegetables, which provided further support to the sector during the year (World Bank, 2015). The mining sector recorded a stronger growth of 3.1% however was recorded 0.7% in 2013. As a result of the higher production of natural gas and crude oil continued demand for liquefied natural gas (LNG) form north Asia led to higher production of natural gas, while crude oil recorded high growth, especially in the second half of the year. This mainly reflected the commencement of production from a new major oil filed, namely Gumusut – Kakap at offshore Sabah (Kwame Sundaran Jomo, 2013).

The manufacturing sector grew at a higher rate of 6.2%in the year2014 (2013:3.5%) attributable to stronger performance of the export oriented industries and expansion in the domestic oriented industries. Export oriented industries were mainly driven by the significant growth of the electrical and electronic cluster, particularly in the first half of 2014, in line with rising global demand. Growth in the domestic oriented industries was supported by the sustained consumption spending and robust domestic construction activity (World Bank, 2015).

1.1.2.2 Malaysia as Chairman of ASEAN Economic Community (AEC)

Malaysia is keen to create a greater sense of belonging among the people of ASEAN through the creation of a "people-centered ASEAN." The theme for its ASEAN chairmanship is "Our People, Our Community, Our Vision." In pursuit of this theme, Malaysia has identified eight priorities to be implemented:

1. Formally establish the ASEAN Community to present an ASEAN that is outward-looking, peaceful, stable, prosperous, and bound together in partnership for dynamic development .

2. Develop ASEAN's post-2015 vision as guidance for the ASEAN Community to further prosper and grow with a stronger sense of belonging as one community .

3. Steer ASEAN closer to its people as part of the overarching theme of Malaysia's chairmanship in creating a truly people-centered ASEAN .

4. Strengthen the development of small and medium enterprises (SME) in the region .

5. Expand intra-ASEAN trade and investment, particularly cross-border investments and trade and bring ASEAN to par with other regional arrangements like the European Union and North American Free Trade Agreement .

6. Strengthen ASEAN's institutions by implementing the recommendations of the High-Level Task Force on Strengthening the ASEAN Secretariat and Reviewing the ASEAN Organs .

7. Promote regional peace and security through moderation as a core value in addressing conflict and finding solutions to issues concerning regional peace and security.

8. Enhance ASEAN's role as a global player by developing a common platform on global issues of mutual interest and promoting enhanced ties with external parties .

The 2015 is not just a critical year for Malaysia but also for all other ASEAN member states. Of course, Malaysia has been put in the spotlight as there is growing expectation among the multitudes of stakeholders that the country will be able to steer the institution toward achieving greater heights and ensuring all promises made are delivered across the three pillars of the ASEAN Community (the Political-Security Community, Economic Community; and Socio-Cultural Community). Though accomplishing these deliverables will be challenging, we will endeavor to complete them during our chairmanship, as they are important for all countries in ASEAN .

1.1.2.3 Malaysian Trade with ASEAN Countries

The Association of South East Asian Nations was established on 8 August 1967 when the five founding members – Indonesia, Malaysia, Philippines, Singapore and Thailand – signed the Bangkok declaration. The association consists of 10 member's states, with Brunei Darussalam 1984, Vietnam 1995, Laos 1997, Myanmar 1997, and Cambodia 1999 joining. The ASEAN secretariat was only established in 1976, after the end of the Vietnam War and almost ten year after the establishment of ASEAN itself (Moreno, Pasadilla, & Remolona, 1998).

The ASEAN members had felt the increasing external pressure from the IMF and the World Bank who wanted to speed up trade liberalisation effort. In January1992, ASEAN leaders established AFTA. In 1995 they also concluded the additional ASEAN framework Agreement on services (AFAS), and 1998 ASEAN ministries established the ASEAN investment area (AIA). According to the plan, according to the plan, AFTA would be fully established by 2008. However, in 1994 ASEAN Economic Ministries decided to accelerate the process, advancing the completion date to 2003. In 1995 the target date was advanced further to 2002. At the same time, it was decided that tariffs on intra – ASEAN import would be completely eliminate by 2010 for ASEAN -6 (Indonesia, Malaysia, Philippines, Singapore, Thailand and Brunei Darussalam).

In Malaysia, the most common form of economic integration is ASEAN free trade area that include our neighbouring countries, the objective of AFTA is to liberalise trade in order to increase the ASEAN region's long term long term competitive advantage as a production base geared for the world market, through the elimination of tariffs and NTBs among the ASEAN members. AFTA involves phasing down intra – regional tariffs to 0-5 per cent over a 15 years period from the 1 January 1993 for a wide range of manufactured products, via CEPT mechanism , with allowance for fast – track tariff cuts for both temporary and permanent exclusion (FATHIMA & MUTHUMANI, 2015). Excluding for in the year-1980s and late 1990s (Asian Financial Crisis), ASEAN-10's growth has exceeded the global average, but below that of the broader Developing Asia, which has been powered by China and India (Annual Change In real GDP%).

By looking to the previous year in 2014 Malaysian economy has recorded the share of exports of 27.88 Per cent and imports 25.69 per cent between the ASEAN Member states (AMSs) Advisor Management Sales system, the export share to AMSs was the highest among the ASEAN followed by China 13.4% and Japan 11.1%. The import from AMSs also registered the highest share of 26.7 percent followed by China (16.4%) and EU-28 (10.8%). Therefore, ASEAN is Malaysia's biggest merchandise trade partner (Aggarwal & Urata, 2013; M. Ahmad, Zakuan, Jusoh, Yusof, & Takala, 2014).

By looking to the Graph which is published by the Ministry of international trade and industry (MITI) seeing clearly that Singapore is one of the significant trade partner with Malaysia from both site of Trade (Import and Export). Several data showing that the biggest trade partner with Malaysia among the ASEAN region is Singapore , however trade a cross the border investment benefited more company linkage and outsourcing activities as well as growing trade activates within ASEAN.

Recent report in 2014 recorded that Malaysian trade with China 63.53 billion$, Singapore 59.51 billion$, Japan 42.01billion$, USA 35.72 billion$ and with Thailand 24.43 billion$ was recorded. According to the MITI Reported by the year 2013, Trade with ASEAN region expanded by 4.8 per cent to RM 374.7 billion and ASEAN accounted 27.4 per cent of Malaysia's total trade and was the largest trade partner in a region .base on this Export to the ASEAN countries increased from RM 188.2 Billion to RM 201.8Billion expending its share from 26.8 percent to 28.0 per cent, the largest import market and export sources was Singapore and Thailand and Indonesia (World Bank, 2015). Malaysia's trade with Singapore which is the largest trade partner grow by

2.6 per cent, and export increased by 5.1 per cent, and import contracted by 0.3 per cent. Singapore remained the largest export destination with Malaysia with 14.0 per cent share of Malaysia's total export RM 100.4 Billion, however Malaysian import from Singapore decrease by 0.3 per cent, RM 80.2 Billion.

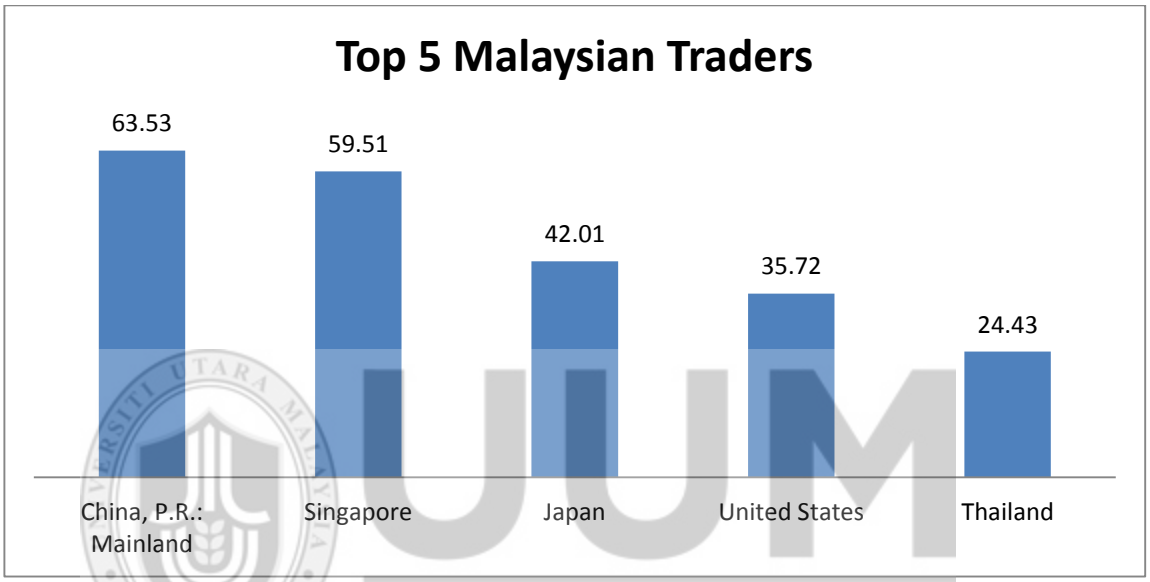

Figure1.4: Top five Malaysian Trade destination 2014 (Billion USD)
Source: Direction of Trade Statistics (DOTS)

Thailand as a second largest ASEAN trading partner with Malaysia expending by 7.2 per cent with export and import an increasing of 6.1 per cent and 8.4 per cent respectively. The main sector export to the Thailand is Electronic and Electrical product recorded as increase by 2013. By contributed high exports of parts and accessories for Automatic data processing machines to meet the raising demand of countries from ICT sectors. However Malaysian's import from Thailand increased by 8.4 per cent to RM 38.7 billion comprised mainly Electronic and Electrical products such as part and accessories for Computer. Indonesia ranking as a Malaysia's third largest trade partner within ASEAN. Malaysia's total trade with Indonesia expended by 4.0 per cent and

count 61.1 billion. Its engorging to note that export were up by 19.9 per cent to share 33.1 billion. Trade performance between Malaysia and Indonesia is a response to the commitment made to increase bilateral trade to US$30 billion by 2015. The ambition was set during the ninth Annual leader consultation between Malaysia and Indonesia in December 2012 (MITI Report 2013). However Malaysian trade with Thailand, the fifth Malaysia –Thailand Annual consultation was held on 28 February 2013. The Prime Ministries of both countries set target for bilateral trade to reach US$25.0 billion by 2015.

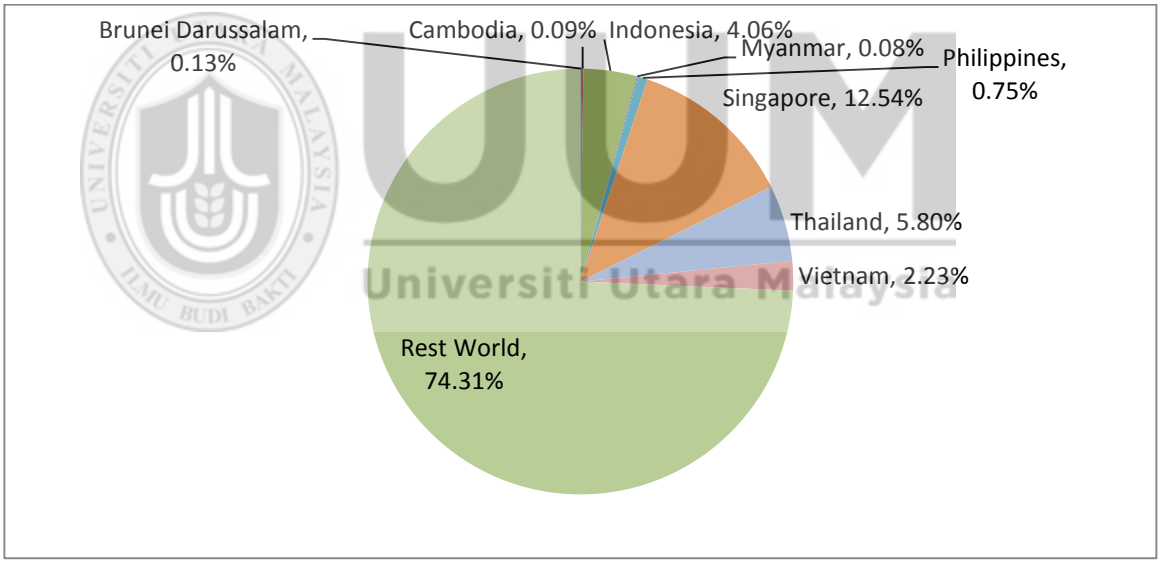

Figure 2.1 Malaysian imports from ASEAN countries (2014)
Source: Direction of Trade Statistics (DOTS)

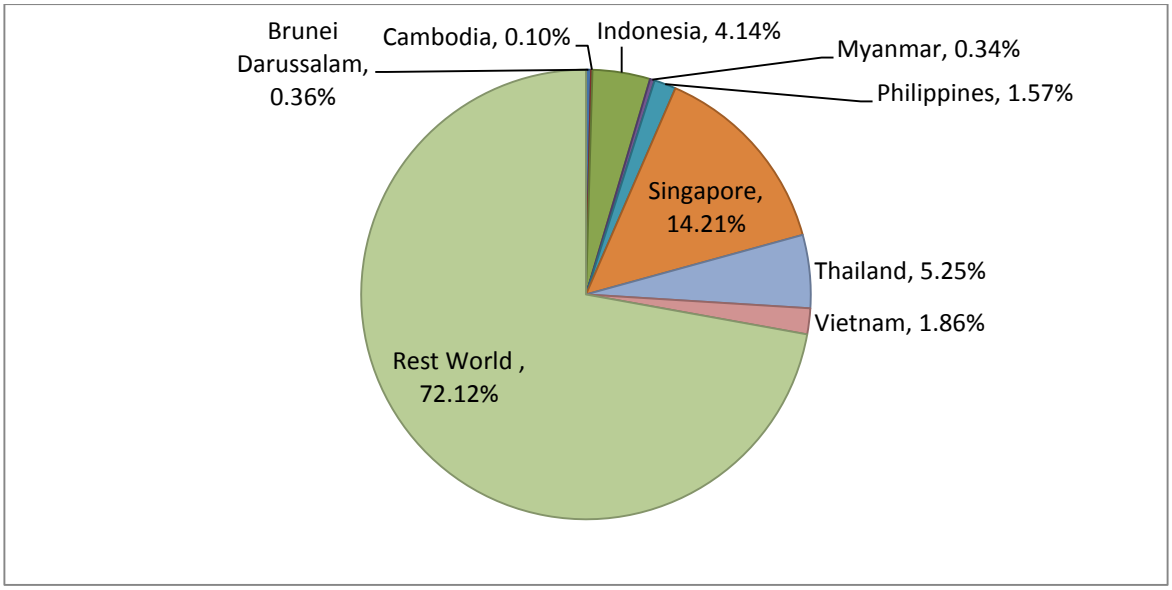

Figure 1.2: Malaysian Exports to ASEAN countries (2014)
Source: Direction of Trade Statistics (DOTS)

Malaysian main Globe trade partner out of the ASEAN Trade block is China, which recorded 14.8 per cent of Malaysia's total trade in 2013. China is the fifth consecutive year reminded Malaysian largest trade partner. Trade between China and Malaysia grow by 12.5per cent to RM203.2 billion, Malaysian export to China increased by 9.2 per cent to 97.0 billion. The main exports to China are the Electrical and Electronic product and palm oil and Chemical and Chemical product. furthermore import form China increased by 15.7 per cent to RM106.3 billion by the end of 2013 which leads China the largest import trade partner with Malaysia out of ASEAN trade region. Malaysian trade with Japan decreased by 6.6 per cent to RM136.1billion and export decline by 4.4per cent to RM79.8billion, import from Japan decreased RM 56.4billion which registered decrease the high export from Japan was registered on a transport equipment section which expended 39.5 per cent which related to the high demand for aircraft associated equipment, and motor vehicle parts. Malaysia trade with South Korea estimated by

13.7per cent RM 56.9billion, compared to RM50billion in 2012, even export to South Korea increase by 0.3per cent to 26.1 billion, the main product were Electronic and Electrical product and Petroleum product. Malaysian import from South Korea was recorded increases 24.7 per cent to RM30.8billion (MITI Report 2014).

Table1.4: Malaysian Annual Trade between 2000 to 2014 (Billion USD)

Period	Export	Import	Total Trade
2002	93.38	79.51	172.90
2003	104.96	82.74	187.71
2004	126.51	104.30	230.81
2005	140.97	113.60	254.58
2006	160.65	130.47	291.13
2007	176.21	146.98	323.19
2008	199.51	156.89	356.41
2009	157.33	123.82	281.15
2010	198.74	164.73	363.48
2011	228.28	187.64	415.92
2012	227.76	196.59	424.35
2013	228.39	206.11	434.50
2014	234.24	208.96	443.20

Source: Direction of Trade Statistics (DOTS)

Table1.5: Malaysian Trade with ASEAN countries between 1980 to 2014 (Million$)

Countries	Total export	%	Total import	%	Total trade	%
ASEAN	847997.921	26.30	668805.15	24.19	1516803.16	25.33
Singapore	512073.48	15.88	347941.1	12.58	860014.62	14.36
Thailand	149764.71	4.64	135956.13	4.91	285720.85	4.77
Indonesia	85102.94	2.64	103695.9	3.75	188798.87	3.15
Viet Nam	35508.65	1.10	33998.1	1.22	69506.75	1.16

Philippines	46140.68	1.43	42174.42	1.52	88315.10	1.47
Burnei	9455.64	0.29	1236.47	0.04	10692.11	0.17
Mynmar	7236.72	0.22	2748.79	0.09	9985.52	0.16
Cambodia	2565.48	0.07	917.30	0.03	3482.78	0.05
Lao PDR	149.621	0.01	136.94	0.01	286.56	0.01

Source: Direction of Trade Statistics (DOTS)

1.2 Problem Statement

Previous empirical and theoretical studies investigate that international trade is back bone of an economy. For example International trade, exports and imports, play a vital role towards economic growth. Malaysia is a rapid growing economy and major part of economic growth comes from international trade. Hence, international trade have significant role in the economic growth and development of Malaysia. Malaysia is located in very much strategic location with the several sea ports and land borders with Thailand, Singapore and Indonesia. According to the Direction Department of Trade Statistics (DOTS), Malaysia has recorded 26.30 percent exports, 24.19 percent imports and 25.33 percent trade with the ASEAN countries during 1980 to 2014. Hence, the importance of ASEAN countries regarding Malaysian trade and economic growth is clear. Moreover, recent Malaysian chairmanships of ASEAN economic community have make Malaysia in a better position in a trade relation. In this regard, it is significant to explore determinants of Malaysian trade with ASEAN countries.

Therefore, several studies explore the determinants of Malaysian trade with the rest of the world such as, Abidin, Bakar, et al. (2014) examine the determinants of Malaysian exports with TPP countries, Abidin and Haseeb (2015) Malaysian exports with 55 OIC countries and Abidin, Jantan, Satar, and Haseeb (2014) Malaysian trade with OIC countries. However, determinants of that affected the trade of Malaysian with ASEAN members countries are not empirically investigated. ASEAN region very competitive international market so, it is very important to explore the patterns, determinants and prospects of Malaysian trade with ASEAN member countries.

1.3 Research Questions

1. What are the determinants of Malaysia' trade with other ASEAN member countries?
2. Does real exchange rate of Malaysia has a positive impact on the trade between Malaysia and other ASEAN countries?
3. Does GDP per capita of ASEAN countries has positive impact on Malaysian trade?
4. Does the distance between capital of Malaysia and other ASEAN countries have negatively impact on Malaysian trade?

1.4 Research Objectives

1. To identify the determinants of Malaysia' trade with ASEAN member country.
2. To investigate the impact of real exchange rate of Malaysia on the trade between Malaysia and ASEAN countries.

3. To examine impact of GDP per capita of ASEAN countries Malaysian trade.
4. To examine the impact of distance between Malaysia and ASEAN countries on Malaysian trade with ASEAN?

1.5 Significance of the Study

In general, this inter disciplinary study can able to contribute significantly to the existing boundary of the knowledge related to Malaysia's international trade with ASEAN member countries for the time period 1980 – 2014. This study also considers such determinants which increase or decrease trade between Malaysia and ASEAN countries. There are several factors that can boost Malaysian trade with ASEAN countries like, GDP per capita, economic growth and exchange rate of ASEAN countries. Whereas, there are numerous which can decrease the trade between Malaysia and ASEAN countries for example, distance, corruption, political and economic instability. In this regard, it is significant to know actual determinants of Malaysian trade with ASEAN countries.

To the researcher's best knowledge, the current study is one of the first studies that simultaneously explore the potential determinants of international trade and impact of long distance and per capita income on the international trade between Malaysia and ASEAN countries.

1.6 Scope of the Study

The research questions and objectives of the study will be investigated on the basis of data collection from 1980 to 2014. This study will identify the determinants of international trade between Malaysia and 9-ASEAN member countries namely Indonesia, Thailand, Philippines, Vietnam, Singapore, Lao, Myanmar, Cambodia and Brunei.

1.7 Organization of the Study

The content of this study are divided into five main chapters. **Chapter 1** outlines the various important contents that are relevant to this research topic. The specific contents are; shed light on the background of the study, explain statement of the problem, report questions and objectives of the study, justify significance of the study, define scope of the study, describe structure of the study and finally demonstrate summary of the chapter. **Chapter 2** investigates the supporting literature and findings of past researches that are related to determinants of international trade. It consists of two main sections namely; theoretical review of the studies related to international trade and the empirical review of the studies investigating the determinants of international trade between Malaysia and ASEAN member countries. **Chapter 3** provides methodology of the study. Furthermore, theoretical framework, justification of variables, methods of collection and description of the data and method of analysis will be presents in this chapter. Finally, results and findings of the study are presents in **chapter 4**. In addition to that, chapter 4 provides a detail comparison between results and findings of the study and previous

studies. Further, **chapter 5** elaborates policy implications, recommendation and limitation of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter will begin with the review of previous studies on the determinants of international trade such as exchange rate, geographical distance, population, GDP growth and relative factor endowment in section 2.1. Review of previous literature on the determinants of imports and exports will discuss in section 2.2 and 2.3 respectively. Finally theoretical framework will describe in section 2.4.

2.1 Previous Studies on Determinants of International Trade

International trade literature in the last few decades offers an array of terminologies to substitute. D. Hummels, Ishii, and Yi (2001) and Irwin (2002) point this case under the name of 'vertical specialization'. 'Slicing the value chain' comes from Krugman (2000). Several others seems to be similar concepts such as 'international production sharing' (Ng & Yeats, 2001; Yeats, 1998), 'product fragmentation' (R. E. Baldwin, 2001; Jones, 2000; Venables, 1999) and 'outsourcing' (Hanson, Mataloni Jr, & Slaughter, 2001; Subramanian & Lawrence, 1999). Following Abidin, Bakar, and Haseeb (2015), Abidin and Haseeb (2015) and Abidin, Jantan, et al. (2014), and others this study stick to the determinants of international trade between Malaysian and

selected ASEAN countries, namely, Indonesia, Thailand, Vietnam, Philippines, Singapore, Brunei and Myanmar.

This study investigates the determinants of trade, integrating the Ricardian model, the Heckscher-Ohlin (H – O), and the gravity model in the multicountry and multi-good set-up. This study extends the Romalis (2004) model, which is a multi-country H – O model with the P. Krugman (1980) model of monopolistic competition and transportation costs. Romalis (2004) incorporates the Ricardian and gravity models in the basic set up, assuming that each country is different in levels of technology and relative factor abundance. It also introduces iceberg transport costs which are implicitly assumed to be identical in all countries, and they are cancelled out in the price function after profit maximization .

Trade theories tell us that trade partners would be better off if they specialize in the good where they have comparative advantage and trade that good with other. Since the 1990s, however, the information communication technology (ICT) revolution has helped global companies to split up production processes into many stages over the various regions, thereby dividing the value added from the production among various countries. Countries no longer trade what they produce exclusively in their own territories, but tend to specialize in specific tasks to produce final goods. With the deepening global value chain, trade in goods has changed to trade in tasks, facilitating a post-industrial revolution. Global value chain has transformed the trade research agenda from trade in gross product to trade in value added product. Recent literature including D. Hummels et al. (2001), Johnson and Noguera (2012) and Koopman, Wang, and Wei (2008) propose

the various methodologies in measuring trade in value added product. For example, Hummels *et al.* (2001) calculate the vertical specialization ratio, in other words, the share of imported intermediate parts to produce the exporting goods, using the input-output tables for the 14 countries including OECD 10 member countries, Ireland, Korea, Taiwan, and Mexico. Their result indicates that the vertical specialization represents 21 percent of the export value of the 14 countries, and the increase in the vertical specialization accounts for about 30 percent of the increase in their exports. Johnson and Noguera (2012) obtained the share of value added to the bilateral trade in order to measure the intensity of international production fragmentation. They use the GTAP 7.1 version data on 94 countries and 57 industries in 2004. The results indicate that the share of value added tends to be low in the manufacturing industries compared to the service sectors. The bilateral trade imbalances in gross value turned out to be largely different from those in terms of value added. Koopman, Wang, and Wei (2008) measure the shares of domestic as well as foreign parts in the Chinese exports in 1997, 2002, and 2006. The share of foreign parts in Chinese exports turned out to be 50 percent, which is about two times greater than the result of Hummels *et al.* (2001). Koopman *et al.* (2008) used the GTAP database and the UN COMTRADE to decompose the trade in gross value by value added components . Their result reveals that developed countries generally have high shares of domestic value in their exports while emerging East Asia has some of the lowest domestic value added shares in exports.

On the other hand, Daudin, Rifflart, and Schweisguth (2011) used the GTAP database in 1997, 2001, and 2004 in order to measure the trade in value added by identifying the material and parts producing industries. The results reveal that about 27 percent of

international trade is vertically specialized and there is a big difference between sectoral trade in gross value and value added. Despite its achievement of having captured the share of imported intermediate parts, however, previous literature do not analyze the time-series trend of bilateral trade balances and trade in value added in recent years. As a result, it did not provide a clear picture of the global value chain to develop since the late 1990s. In addition, few studies except Johnson and Noguera (2012), if any, investigated the determinants of trade in value added. The history of research to investigate what factors determines the trade is a long one, but studies have all focused on the trade in gross value . In the following section study will discuss the previous studies on the determinants of international trade in the different countries and regions.

2.2.1 Exchange Rate

Since the advent of the floating rates many developing countries have preferred to peg their exchange rates to one major currency or a basket of currencies. However, as argue by Bahmani-Oskooee (1984), since major currencies floating against one another, this causes the effective exchange rate facing developing countries to also fluctuate, affecting trade flows .

After providing empirical evidence of the effective exchange rates does affect the trade flows along with the relative prices, one question of interest would be whether changes in exchange rates and changes in relative prices affect the trade flows differently. An affirmative answer to this question was put forward originally by Orcutt (1950) who argue that trade flows may respond differently to small and temporary changes in prices

than to large and fairly permanent changes, such as those caused by a devaluation[1]. One interpretation of Orcutt's argument is that the adjustment of trade flows to large price changes or to exchange rate changes is more rapid than the adjustment to small changes . Similarly, studies pointed towards the impact exchange rate on trade flows. In the area of international trade, it is widely known that a change in the real exchange rate will affect exports and imports under the generalized Marshall – Lerner condition. In theory currency devaluation can improve trade flows if the relative price among the country and its trading partners, and other factors are unchanged. Wilson and Takacs (1979), Warner and Kreinin (1983), Bahmani-Oskooee (1986), Asseery and Peel (1991), Ghura and Grennes (1993), Clarida (1991), Chua and Sharma (1998), Himarios (1989) and Tegene (1991) found that trade flows responded to the exchange rate. However, some consensus has emerged among researchers as they did not find any significant effects of exchange rate on trade (Miles, 1979; A. K. Rose, 1990, 1991). The gravity equation is useful approach to explain the role of exchange rate as well as the other determinants of trade flows between countries.

2.2.2 Geographical Distance

New theories of international trade have incorporated the distance (physical geography) to explain the determinants of trade flows between countries. Theoretical and empirical studies have found significant effects of distance on international trade (Beckerman, 1956; Clark, Dollar, & Micco, 2004; Ghemawat, 2001; Harrigan, 1993, 1996;

[1]Goldstein and Khan (1976) Have argued that changes in the exchange rate would generally result in larger changes in relative prices than would normally occur.

Hoffmann, 2002; D. HUMMELS & LEVINSOHN, 1995; D. L. Hummels, 1999; Limao & Venables, 2001; Yeates, 1969). The most beneficial of those studies was conducted by Linnemann (1966) who extensively investigates the role of distance on trade flows. Additionally, Krugman (1991) considers the distance between two countries to be an important determinant of geographical patterns of trade. In Krugman's view, trading partner located far apart from each other will have to require more cost in their bilateral trade, which erodes possible gains from trade and consequently discourages trade.

Loungani, Mody, and Razin (2002) and Filippini and Molini (2003) state that distance is much more than geography. In their view, distance can represent the history, culture, language, social relations and many other aspects. For example, the mere existence of a border has negative effects on trade. Furthermore, Blum and Goldfarb (2006) find that distance is a good proxy for differences in tastes and performances. Their results provide a new explanation for the persistence effect of distance in gravity regressions. This suggests that the distance effect in gravity will persist for a number of products even if transport costs, search costs and other trade barriers associated with distance are reduced to zero, which is the case to some extent for internet trade .

2.2.3 Population

Jeffrey A Frankel, Stein, and Wei (1997) Explains that countries with large populations tend to be more compete on trade oriented than smaller countries because they are more competent to make advantage of economies of scale in their large domestic markets.

This may explain why bilateral trade flows generally have an inverse relationship to population size.

2.2.4 GDP growth

Macroeconomic theory suggests that a country's imports are positively determined by its national income. In the case of bilateral trade, the levels of GDP in both countries should positively affect their trade. New trade theory regards economies of scale as a very important determinant of modern trade (Helpman, 1981; P. Krugman, 1980). The level of GDP can also be used as a rough proxy for a country's scale economies. At a larger scale of operation, a greater division of labour and specialization becomes possible. This may permit the introduction of more specialized and productive machinery than would be feasible at a smaller scale of operation .

From the demand side, Linder (1961) preference similarity or overlapping demands hypothesis argues that trade in manufacturing is likely to be largest among countries with similar tastes and income levels. Helpman and Krugman (1985), Grossman (1992) and Hunter, Markusen, Relations, and Economics (1986) also suggest that convergence in levels of income leads to increased trade. Bergstrand (1990) Indicates that the scope for exchange rate of product diversity is broadened the smaller the inequality between two countries' economic sizes. The positive relationship between bilateral trade flows and the level and similarity of GDP has been confirmed in a number of empirical studies (Egger, 2000; Ghosh & Yamarik, 2004). From both the theoretical and empirical literature, the general view is that the higher the levels of GDP, the higher the trade

flows between trade partners and the more similar in terms of GDP, the higher the intra-industry trade and hence the trade between trade partners.

2.2.5 Relative Factor Endowment

Based on the assumptions of constant returns to scale and perfect competition, neoclassical trade theory represented by the H-O model concludes that international trade is explained by comparative advantages resulting from differences in factor endowments (including labor, capital, natural resources and technology) among nations. Capital-rich countries should export capital-intensive goods and import labor-intensive goods, while labor-rich countries should do the opposite. The popularity of this theory is mainly due to its success in explaining inter-industry trade which is the main part of North–South trade.

Today more than half of international trade takes place among industrialized countries (WTO, 2008). To explain this, trade theorists, led by Krugman (1979, 1980), Lancaster (1980) and Helpman (1981, 1987, 1988) have developed various theoretical models based on product differentiation, economies of scale and external economies. Inter-industry trade is likely to be larger when the difference in factor of endowments among nations is greater. However, intra-industry trade is likely to be larger among economies of similar size and factor proportion. As a substantial proportion of trade in OECD countries is intra-industry trade, the trade volume tends to be positively associated with that of intra-industry trade. As a result, the difference in factor of endowments is likely to be negatively related to the trade volume in OECD countries .

2.2 Previous Studies on Determinants of Imports

The standard import demand function includes relative price and income as explanatory variables. One important assumption of the traditional import demand function theory is that the higher the relative price, the lower the import quantity will be. However, innovation and product differentiation have been widely recognized as crucial factors in determining the trade performance of countries and sectors. New trade theory suggests that improvement in the variety and quality of products is an important reason for trade flows. For example, P. Krugman (1980) developed a model in which income elasticity of demand for exports and imports depends on the variety of products produced at home and abroad. In empirical follow-up studies, few efforts have been devoted to the estimation of the impact of quality on import quantity.

Price is an indicator of cost, but can also be an indicator of quality. When the price is an indicator of cost, the assumption of the import demand function model holds. However, when price is an indicator of quality, this assumption is not necessarily valid. If consumers care enough about quality and if it comes at a cost, the highest priced goods are the most competitive ones. In that case, the association between observed price and competitiveness is reversed – i.e. firms with the lowest observed prices are the least competitive (R. Baldwin & Harrigan, 2007). Some product attributes imply that certain products have more opportunities for quality improvement than others. On the one hand, for those industries with substantial quality differences within product categories, quality, product innovation and adaptation of the product to meet specialized

needs are important success factors, with a high price being an indicator of high quality . For example, in the US automobile industry, higher prices indicate higher quality (Thomas, Shane, & Weigelt, 1998). On the other hand, for those industries with little quality differences within product categories and with techniques available worldwide, margins are close to zero, with price being an indicator of cost. In this case, the micro-economic demand theory suggests that the demand function is consistent with zero degree margins in prices and money income (Varian 1992). This means that if price and income increase (decrease) at the same proportion, the quantity demanded remains the same. This holds only under the assumption of price competition. With regard to quality as a determinant of the direction of trade, Linder (1961) argues that richer countries spend a larger proportion of their income on high-quality goods. More recent theoretical studies report the same result (Flam & Helpman, 1987; Murphy & Shleifer, 1997; Stokey, 1991). Accordingly, for a developing country like Malaysia, the relative demand for high-quality and highly priced products is lower compared to developed countries. However, if we consider demand in the context of the Malaysian development process, the proportion of high-quality products in total imports is increasing. From such a developmental point of view, a developing country needs to import capital goods to build an industrial base and to import high quality consumer goods to meet the increasing need driven by rising income. Malaysia is no exception, in this respect.

Statistics show that the share of high-tech products in total imports increased significantly in the last decade (Cui & Syed, 2007). In addition, given the fact that Malaysia is considered to be the world's assembly line, its imports are also driven by export, as sophisticated components and equipment have to be imported in order to

assemble and process them for the world market. Besides, Malaysian imports are influenced by the government's policy orientation. In order to foster Malaysia's development and facilitate exports, the Malaysian government has issued some regulations in favor of importing high-tech and high-quality products, particularly those related to export. Hence, we expect Malaysia's import demand for high-tech and high-quality products to increase faster than the import demand for low-end products. In this case, quality competition is more important than price competition, implying that price is closer to being an indicator of quality than one of cost. In this study's empirical analysis, we use unit value as an indicator of price as used in existing studies (Brunner & Cali, 2006; Fernandes & Paunov, 2009; Hallak, 2006; Schott, 2004).

In line with its high development pace, particularly Malaysia's demand for primary products and standard materials, such as energy, raw materials and semi-finished products, is expected to increase substantially. Import demand for these products is more sensitive to import price than quality, because the difference in quality is rather small for these products. By contrast, manufactured products associated with a large variety within a product's group are significantly differentiated in terms of quality. Here, quality is a major determinant of import demand. As we argued above, a higher price is usually an indicator of higher quality. Hence, we expect that the effect of price on import demand for manufactured products is opposite that for primary and standard products.

Another important assumption in traditional import demand theory relates to the elasticity of income, stating that an increase in national income will lead to a rise in import demand. Here, the traditional import demand specification does not discriminate

across different categories of expenditure, therefore assuming that the import demand effect is equal across these categories. Following this assumption, GDP is introduced as the standard representation of income (Reinhart, 1995; Tsionas & Christopoulos, 2004). Abbott and Seddighi (1996) Argue that if the different macro-components of final expenditure have different import demand effects, the use of a single demand variable in the macro-level import demand function generates an aggregation bias. Following this argument, empirical studies separate final expenditure into different categories. However, the findings vary widely depending on the countries concerned and the methods applied. For example, Abbott and Seddighi (1996) found that consumption expenditure has the largest impact on aggregate import demand in the case of the UK. Alias and Cheong (2000) reported that investment expenditure has the highest impact in the case of Malaysia; Narayan and Narayan (2005) found that export has a higher impact on aggregate import than on investment expenditure in the case of Fiji. In China's case, Tang (2003) found that, in the long run, export expenditure has the largest correlation with import, followed by investment expenditure and final consumption expenditure. In the short term, final consumption expenditure has the largest impact on China's import demand, followed by investment expenditure and export expenditure.

These studies utilize macro-data in their analyses, with little information on the products. However, it is well known that the elasticity of price and income varies for each product. Basic economic theory suggests that when expenditure increases, the demand for import will increase as well. However, there is no theory available to predict the differential impact of diverse final expenditures on import demand. Here, we introduce two hypotheses based on basic economic theory and related arguments. We

start with the comparison of the two consumption expenditures: private and government consumption. By definition, both consumption expenditure categories refer to expenditures on goods and services. To the best of our knowledge, a theoretical model explaining a potentially different effect of these two consumption expenditures does not exist. Hence, we applied theoretical insights developed for other purposes to the current context. According to economic growth theory, only expenditures on domestically produced products and services increase a country's GDP. The larger the marginal propensity to import, the smaller the change in real GDP will be (Drazen, 2004). In line with this argument, a country is not recommended to increase its expenditure on imports if it intends to keep a high growth rate. Of the four final expenditure components (private consumption, government consumption, investment and export), government consumption is the easiest to direct. For example, it is international practice that government procurement gives priority to domestically produced products and services. In contrast, private expenditures are not so easily directed by government. Private expenditures are more likely to follow the general macro-economic movement: when income/expenditure increases, the propensity to import may increase, too, as imported products generally have a reputation of higher quality in the eyes of consumers in developing countries. In China, the Government Procurement Law that was passed in 2002 stipulates that 'the government shall procure domestic goods, construction and services' and the National Long- and Medium-term Program of Sci-Tech Development Planning and Related Policies stresses that 'in key projects of the national and local government investment, the ratio of domestic equipment procurement in general, may not be less than 60% of the total value'. In addition, the close ties between local government and local enterprises imply that all outsiders (including import products) are

at a disadvantage when trying to gain a local government's purchasing order. Furthermore, government consumption expenditures consist of two main components: expenditures on goods and services and salaries. In the case of China, only a small part of government expenditure (less than 10%) is used to purchase goods.6Theoretically, only this small component generates import demand directly; the rest can only influence import demand indirectly. On the other hand, by definition, a large part of private consumption expenditure is directed to the purchase of goods, which creates import demand directly.

Besides the two consumption-related expenditures, investment and net export also influence import demand. Investment is defined as net new investment in fixed capital assets by enterprises, government and households within the domestic economy. Examples include the construction of new roads and mines, the purchase of machineries and equipment for factories and the purchase of new houses. Given this definition, investment only generates import demand for this limited set of industries, such as machinery, equipment and instruments; it does not boost import demand for consumer products. Therefore, we expect that, in the short term, investment has a more significant influence on the import of machinery and equipment; in contrast, consumption expenditures have more short-term influences on the import of consumer products. At the lowest aggregation level, there are more items for consumption products than for their capital counterparts. Therefore, we expect that investment has less influence on import demand than private consumption. In addition, investment includes both a private and a government component. Similar to government consumption, government investment favors spending on domestic products. This governmental component

weakens the import demand generated by investment to a certain degree. As far as net export is concerned, a higher value of net export indicates a higher possibility (due to the availability of more foreign exchange) to buy imported products, but it does not necessarily happen immediately. The large accumulation of foreign exchange reserves in Malaysia is evidence of this. Hence, we expect that, of the four final expenditure components, net export has the lowest impact on import demand.

2.3 Previous Studies on Determinants of Exports

Several studies have been conducted by different researchers to pinpoint the determinants of exports and to analyze their impact on export performance. Most of the researchers have used single equation export models, incorporating both the demand and supply side determinants. Many others adopted the simultaneous equation framework, in which the demand and supply side functions are specified with appropriate variables. However there is seldom consensus in their views about the demand and supply side influences. Some studies establish the importance of demand side determinants while others attribute more importance to the supply side factors . Some of the studies on exports determinants are briefly discussed below.

Khan and Knight (1988) Have employed the Two Stage Least Square (2SLS) to examine the relationship between import of inputs and export performance for a sample of 34 of developing countries, using time series data over the period 1971-80. The export demand and supply functions were specified with income and relative prices with the addition of import of inputs in the supply side equation. Likewise the import demand

function was specified with income, relative prices (price of imports relative to domestic prices) and the foreign exchange availability. The findings revealed that import of inputs had a positive and significant impact on export performance whereas the foreign exchange reserves had a negative but relatively less significant impact on imports. Riedel (1988) Used the simultaneous equations approach to examine the demand and supply side determinants of exports quarterly time series data over the period 1972 1984. Export prices, price of competing goods in world market and world demand were used as exogenous variables in the demand side equation while the domestic price of exports, price of raw material, industrial inputs and time trend were used as independent variables in the supply side equation. The results showed infinite price and income elasticity's of exports demand, which supported the small country hypothesis. All the parameters of the wage as well as supply side export equations appeared with correct signs and significant magnitudes accept the time trend variable 'f which carried insignificant coefficient, although correctly signed.

Arize (2001) Has employed Full Information Maximum Likelihood method to estimate the demand and supply side exports equations for India over the period 1960-2000. The dynamic error correction model was estimated in which the error correction representation in the demand side equation carried significant and lager magnitude, indicated that the demand side factors significantly explain the short run dynamics of the export performance. All other variables in the model were found to be significant except the scale variable of the supply side, which was insignificant although correctly signed. Atique, Ahmad, and Zaman (2003) Have empirically analyzed the determinants of exports of Pakistan. The export demand and supply functions were specified and

estimated separately. The explanatory variables comprised world economic activity and real exchange rate in the export demand function while relative prices, domestic GDP and wage rate per worker were employed to explain the export supply function. REER and industrial production index (proxy for world economic activity) were found to be significant in the long run, although current and lagged values of REER were found to be insignificant. On the supply side, the cumulative effect of wage rate was found to be significant but not so at individual level . The domestic production capacity on the supply side appeared with positive and significant coefficient.

Afia (2004) has examined the determinants of textile and clothing exports of Pakistan, using a time series data over the period 1960-200. The demand and supply side exports equation were estimated in a simultaneous equation frame-work. The coefficient on the price of textile exports and world income appeared with correct signs but turned out to be insignificant. All the coefficients on the supply side were found to be statistically significant with correct sign. Roy (2007) Has estimated the demand and supply functions of the manufactured exports for India, using a time series data over the period 1960-2004. The FIML has been used to estimate the demand and supply side exports for six different categories of manufactured exports including cloth and garments, chemicals and machinery, transport equipment, steel and iron, and the leather manufactures. The findings suggest importance of all demand side factors for exports performance . On the supply side, the variables produced mix results in terms of significance and some variables like world GDP and exports volume turned out to be insignificant for textile and iron-steel exports respectively.

2.4 Theoretical Framework

The gravity model is an empirical model that aims to capture the factors explaining trade flows between origin country *i* and its destination *j* (Anderson, 2010). The fundamental theory of this model is an analogy to Newton's gravity law where geographical distance would have a negative effect on trade flows between countries, while the "mass" or economic size of the countries would have a positive effect. The typical gravity model for bilateral trade was first introduced by Tinbergen (1962) and Linnemann (1966). They exploit distance between two countries as a proxy of transaction cost and use a country's market size for measuring potential demand and supply of trading countries. The basic theoretical gravity model for trade between country *i* and *j* is formulated as:

[2.1] $$F_{ij} = G \times \frac{Y_i Y_j}{Di_j}$$

Where $_{ij}F$ denotes trade volume between countries *i* and *j*. Import, export and total trade are the most common dependent variables used in the gravity model. *G* is a constant term. Y_i and Y_j are the economic sizes of country *i* and *j*, and D_{ij} is the geographical distance between the two countries. As described by Hossain (2009) the trade gravity model shows that the trade flows between two countries are proportional to the product of each country's economic mass, generally measured by GDP, divided by the distance between the countries respective economic centers of gravity, generally their capitals. For convenience during the estimation process, the gravity model is usually converted in a logarithmic form. Thus, the standard gravity model for bilateral trade becomes:

[2.2] $$\log(Trade_{ij}) = c + \beta_1 \log(Y_i) + \beta_2 \log(Y_j) + \beta_3 \log(D_{ij}) + \beta_4 \log(A_{ij}) + v_{ij}$$

Besides the GDP (*Y)* and the distance (D) variables defined above, we will assume that $Trade_{ij}$ is the flow of trade between countries *i* from country *j*. A_{ij} represents other factors that may have effects on trade, *c* is the constant term and ij represents the error term. An issue is whether bilateral trade volume should be expressed in nominal or real terms. Shepherd (2013) Suggests that trade flows should be in nominal, not real terms because deflating exports using different country specific price indices, such as the CPI or the GDP deflator, would produce misleading results and would not adequately capture the observed multilateral resistance term (MRT). Here, multilateral resistance refers to all barriers which each country faces in its trade with all trading partners (including domestic and internal trade).

Distance is a typical independent variable in the trade gravity model. The reasons are summarized by Head (2006). First, many economists believe that distance is a standard proxy for transport cost. According to Kepaptsoglou, Karlaftis, and Tsamboulas (2010) transportation cost is the main factor impeding trade flows between countries. Indeed, a country will suffer from larger transportation expenses when importing from a distant country. Furthermore, the time elapsed during shipment increases the risk of damage, loss or decomposition of organic materials while shipping, especially for perishable goods. Also, distance leads to a synchronization cost. For instance, if factories combine many inputs in the production process, they probably need to rent warehouse which raises expenses such as storage cost, technological obsolescence and fashion changes.

Moreover, distance is correlated with transaction cost and communication cost. Increasing the cost of searching for trading opportunity may become central concerns. In

addition, Helliwell (2002) indicates that distance has the same significant impact on the probability of migration as its effects on trade flows. The effects of national borders are even greater for migration than for trade in goods and services. He also point out that networks (or social capital) between countries are generally built by common trust, advocated by common institutions, and improved by frequent interactions. All of these declines with distance and as national borders are crossed.

Anderson and Yotov (2008) Provide empirical evidence that the effect of distance on commodities trade is negative and significant ant any level. There is significant variability in the effect of distance on trade across different merchandises. Distance is a more crucial factor to influence trade for low value commodities such as petroleum and coal, paper and paper products, and furniture, while less important for commodities such as Electrical products and Hosiery and clothing. One obvious explanation for this could be transportation cost. They also find that trade flows are larger between contiguous provinces and states. This finding demonstrates the argument in Brown and Anderson (2002) that contiguous provinces and states will trade more with each other.

The appropriate proxy for market size is discussed in many studies. Some studies use gross domestic product per capita (GDP per capita) or gross national product per capita (GNP) instead of the level of GDP or GNP (Carstensen & Toubal, 2004). Shepherd (2013) Emphasizes that according to properties of the gravity model, it would be ideal to include to include data on spectral expenditure and output. However, this is usually impossible in an empirical study, especially when developing countries are included in the sample. Thus aggregate GDP remains the most appropriate proxy to describe the

economic size of countries because it implicitly takes into account the size of population of each country; using population and per capita GDP as separate explanatory variables should be avoided.

Most empirical studies include more control variables to build an augmented gravity model that analyzes trade flows between regions. Unlike fundamental variables in the standard gravity model, these specific factors have less theoretical justification. Greene (2013) Extends the traditional gravity model by adding factors such as physical land area, real exchange rate, population and population density. He points out that population is a proxy for a county's market size, potential domestic consumption capacity, and potential degree of economic diversification and expects population to have a positive and significant impact on trade between U.S. and its trading partners. However, the final estimation results from his study fail to demonstrate this argument, as both population and population density carry a negative coefficient and are statistically insignificant. Also, several variables in his empirical study such as participating in a free trade agreement (FTA), whether an exporting country is costal, and the existence of a common language between importers and exporters, are typically added in the model. Two countries that speak the same language may trade more because if facilitates transactions between buyers and sellers. Also it may reveal a common history or past colonial links (Head, 2003). Positive effects are expected from the binary variable FTA because FTAs provide a more liberalizing trading environment and eliminate some trading restrictions such as tariff and non-tariff barriers.

A. Rose (2000) And Head (2003) add several dummy variables such as whether two countries share a common border or belong to a currency union. Rose (2000) emphasizes the effects of having the same currency among countries on trade flows. He concludes that countries using common currency are trading three times more with each other than with other countries. Many researchers also emphasize the importance of "culture distance" between countries. They suggest that cultural differences may lead to general misunderstandings and inhibit communication and trade between countries. As suggested above, a variable such as the existence of a common language is often used to represent the culture distance. Thus it is assumed that countries that use the same language are typically closer culturally and usually trade more (Head, 2003).

Many studies add dummy variables to identify participation in economic organizations and trade agreements, for example, membership in an economic union such as EU, NAFTA and ASEAN (Bussière, Fidrmuc, & Schnatz, 2008; Glick & Rose, 2002; A. K. Rose & Van Wincoop, 2001). According to Jeffrey A Frankel and Rose (2000), memberships in a FTA might triple trade between members. However, Baier and Bergstrand (2007) suggest that recent studies do not provide clear evidence of a growing trade benefits from FTAs. Helliwell (2002) Points out that the actual goods flows between British Columbia and Ontario were more than twice than those between Ontario and California. After the Canada- United States Free Trade Agreement (FTA) was signed at 1989, there have been large increases in merchandise trade between two countries. Also these were significant decline in the effect of national borders between Canada and U.S. from seventeen in 1981 to about twelve in 1996. However, the border

effect for services appears to be larger than those for merchandise trade and show less evidence of elimination by the FTA (Helliwell 1998).

Grant and Lambert (2008) Also mention that FATs exhibit varying degrees of regional integration. They emphasize that potential trade flows depend on the specific FTA and the length of its implementation period. For example, even if NAFTA was signed in 1994, it required two separate bilateral trade agreements with Mexico for the agriculture sector and a fifteen year phase – out period ending in 2008 (Grant and Lambert, 2008). Therefore, it may take a long time before observing an actual effect of a FTA on trade.

McCallum (1995) Uses a basic gravity model with several dummy variables to study the impact of the Canada – U.S. border on regional trade patterns. He points out that Canada and U.S. is a particularly interesting case because these two countries are very similar in term of culture, language, and institutions. The statistical from his study support his initial assumption that the effect of a continental free trade agreement could turn out to be relatively modest, ot if not modest, at least gradual. On the other hand, the impact of reduced tariff on the rising trade share is already low and does not have a further or fall before it reaches zero because tariff rates pre – NAFTA were already low. He also concludes that the national borders between Canada and U.S. continue to matter and have important effect on continental trade patterns.

Grant and Andres (2010) use the traditional gravity model with a set of binary variables to investigate the magnitudes on trade resulting from stricter food safety measures in the U.S. fishery and seafood sectors. They estimate three different regression models (OLS

and two fixed effects method) using cross- sectional data for four different time periods. Their results show that all fundamental variables of the gravity model are statistically significant in the three regression estimations. GDPs have a large positive effect on trade flows, whereas distance is negatively correlated to trade flows in fishery and seafood. Moreover, a common language is also an important factor boosting trade flows between countries. On the contrary, they found that there no statistically significance of the binary variable FTA for fishery and seafood trade between U.S. and its suppliers.

Chi and Kilduff (2006) Investigate possible factors influencing U.S. apparel imports. They employ a pooled OLS approach and add several specific factors such as GDP per capita, tariff rates and a set of trade agreements dummy variables in the augmented gravity model. Their empirical investigation demonstrates that U.S. GDP is important factors explaining U.S. imports of clothing. Also, the estimation provides evidence that geographical distance significantly hinder bilateral trade. Moreover, they find that U.S. tends to trade more with English speaking countries. Finally they show that there was an increase in apparel import by U.S. from Mexico after Mexico become a member of NAFTA and from China after it entered the WTO in 2001.

Harding and Rattsø (2005) Extended the basic gravity model in order to analyze the factors that determine export trade flows between South Africa and its main trading partners. Variables included in the model are, in particular, population, exchange rate, language and a dummy variable tracking whether a country is a European Union member or is from Africa. A fixed-effect model is estimated using panel data from 37 South Africa's major partners. A finding worth mentioning is that South Africa tends to

trade more intensively with members of the South Africa Development Community (SADC). Also, SADC membership stimulates potential exports of the rest of world.

Rahman (2003) Include a set of regional dummy variables, per capita GDPs, exports to GDP ratio, and trade ratios as a proxy for the openness of a country, in an augmented gravity model to investigate determinants of Bangladesh imports flows. Both studies use panel data to estimate pooled OLS, fixed effects and random effects models. Both studies expect and find that the trade ratio as a proxy for openness has a positive impact on international trade. Besides, they conclude that although regional agreement such as SAARC is statistically significant, it is negatively correlated to import flows of Bangladesh.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter begins with the model specification on the basis of renowned gravity model. In the next section all the variables are justified on the theoretical and empirical basis. Furthermore, definition of variables, unit of measurement and source of all data explained in the next section. In addition, method of analysis will discuss in the followed section. Finally, chapter will conclude in the last section.

3.2 Model Specification

The gravity model has been extensively used in empirical studies in international economics and has been successfully applied to trade flows of various types such as imports and exports. Despite the fact that the early applications of the gravity model were viewed with skepticism, the model gradually gained acceptance through the further work by scholars such as Anderson (1979) and Oguldo and Macphee (1994). Anderson (1979) made the first formal attempt to derive the gravity equation from a model that assumed product differentiation while Oguledo and Macphee (1994) derived the gravity equation from a linear expenditure system in an attempt to answer criticism that the theoretical foundation for the gravity model is weak .

The gravity model, when specifically applied to the flow of international trade states that the volume of trade flows between two nations is determined by the supply and demand conditions of the exporting and importing states or restraining forces related to the specific flows between the two states. According to Oguledo and Macphee (1994), the first justification for the gravity model originates from the laws of physics. The model utilizes the physical law of gravitation and electrical forces in order to conclude that the flow of trade from one country to another equals the product of the potential trade capacities divided by a resistance or distance factor. According to the most basic gravity model, the volume of exports between two states is a function of their incomes (GDPs), their population, their geographical distance and a set of dummies.

Thus the main purpose of the gravity model is to explain bilateral trade flows among a large group of countries over a long period of time (Jeffry A Frankel, Wei, Stein, & Cooperation, 1994; Hejazi & Safarian, 2001). However, for the purpose of this study we will use conventional gravity model in conjunction with an augmented gravity model similar to that developed by Hejazi and Safarian (2001) in order to simultaneously determine both the conventional and augmented gravity models from the bilateral imports standpoint only.

In accordance with the model done by Hejazi and Safarian (2001), the trade theory approach to the determinants of exports indicates that there is an interaction between exports and trade. This means that exports patterns are highly dependent on the patterns of trade, and vice versa. It is thus typically the case that most MNE's first export to a country, followed by a movement of production facilities abroad so as to avoid

transportation costs and imports protection in order to guarantee access to the local market as well as to compete more effectively with local firms. This is also supported by the findings by (Grosse and Trevino (1996)), which found that multinational corporation companies (MNE's) use exports to preserve markets that were previously established by exports. This can also be constructed as a case of exports promoting trade.

For the purpose of this study, we will be comparing the various variables in both gravity models between Malaysia and other ASEAN member countries namely, Indonesia, Thailand, Vietnam, Philippines, Cambodia, Myanmar, Singapore, Brunei and Lao. However, Equation 3.1 is the basic gravity model for this study;

[3.1] $$\ln(TRADE_{ijt}) = \alpha_0 + \beta_1 \ln(PCGDP_{it}) + \beta_2 \ln(PCGDP_{jt}) + \beta_3 \ln(ER_{it}) + \beta_4 \ln(ER_{ij}) + \beta_5 \ln(POP_{jt}) + \beta_6 \ln(DIST_{ijt}) + \varepsilon_{ijt}$$

Where the variables are as below :-

$Trade_{ijt}$	=	Total Trade of Malaysia (country i) with other ASEAN countries(country j) (in million USD)
$PCGDP_{it}$	=	Per capita GDP of Malaysia i
$PCGDP_{jt}$	=	Per capita GDP of country j
ER_{it}	=	Real Exchange Rate of Malaysia i
ER_{jt}	=	Real Exchange Rate of country j
POP_{jt}	=	Population of country j
$DIST_{ijt}$	=	Distance between capital of Malaysia to capital of other ASEAN countries

3.3 Justification of Variables

3.3.1 Per Capita GDP (+).

Macroeconomic theory suggests that a country's imports are positively determined by its national income. In the case of bilateral trade, the levels of GDP in both countries should positively affect their trade. New trade theory regards economies of scale as a very important determinant of modern trade (Helpman, 1981; P. Krugman, 1980). The level of GDP can also be used as a rough proxy for a country's scale of economies. At a larger scale of operation, a greater division of labour and specialization becomes possible. This may permit the introduction of more specialized and productive machinery than would be feasible at a smaller scale of operation . This study will utilized Per Capita GDP as the proxy for income between countries since greater increase in income will result in greater demand for imported products from abroad in addition to capital machinery. Therefore, a rise in income will generally lead to an increase in imports. Thus, the income variables is expected to be positive.

3.3.2 Population (+).

Jeffrey A Frankel et al. (1997) Explains that countries with large populations tend to be more inwardly oriented than smaller countries because they are more competent to make advantage of scale of economics in their large domestic markets. This may explain why bilateral trade flows generally have an inverse relationship to population size. The sign of the coefficients of the population variable (POP_{ijt}) is somewhat indeterminate since

population size can be trade inhibiting or trade enhancing. According to Oguledo and Macphee (1994), a large population, on one hand may indicate large resource endowment, self- sufficiency and less reliance on international trade. On the other hand, it is possible that a large domestic market (or population) promotes division of labour, and thus crate opportunity for trade in a wide variety of goods. According to latter argument, the expected sign of the population coefficient is positive .

3.3.3 Geographical Distance (-).

New theories of international trade have incorporated the distance (physical geography) to explain the determinants of trade flows between countries. Distance is a proxy variable for natural trade resistance which is a composite for transportation costs and transportation time (Aitken). Long distance between trading countries, *ceteris paribus*, leads to higher costs and lower profit margin to the importer. Consequently, distance is hypothesized to have a negative effect on international trade.

3.3.4 Exchange Rate (+) (-).

Since the advent of the floating rates many developing countries have preferred to peg their exchange rates to one major currency or a basket of currencies. However, as argue by Bahmani-Oskooee (1984), since major currencies floating against one another, this causes the effective exchange rate facing developing countries to also fluctuate, affecting trade flows . The expected sign of exchange rate would be negative or positive.

3.4 Data Source

Annual time series data from the period 1980 – 2014 will utilized in this study. The data of ASEAN countries namely Indonesia, Thailand, Vietnam, Philippines, Cambodia, Myanmar, Singapore, Brunei and Lao will be collected from the various sources. Table3.1 shows the variables, definition and source of data.

Table3.1: Variables, Definition, Measurement and Source

Variable	Definition	Measurement	Source
$TRADE_{ijt}$	Bilateral trade (imports + exports) between Malaysia and other ASEAN member countries	U.S. Billions dollar	Direction of Trade Statistics (DOTS) CD-ROM by International Monetary Funds (IMF). http://elibrary-data.imf.org/DataExplorer.aspx
$PCGDP_{it}$	Per Capita Gross Domestic Product of Malaysia	U.S dollar	World Development Indicators (WDI) data base of World Bank. http://databank.worldbank.org/data/reports.aspx?source=World-Development-Indicators
$PCGDP_{jt}$	Per Capita Gross Domestic Product of other ASEAN countries	U.S. dollar	World Development Indicators (WDI) data base of World Bank. http://databank.worldbank.org/data/reports.aspx?source=World-Development-Indicators
ER_{it}	Real Exchange Rate of Malaysia	U.S. dollar	International Financial Statistics (IFS), CD-ROM data base and website of International Monetary Fund (IMF).

			http://elibrary-data.imf.org/finddatareports.aspx?d=33061&e=169393
ER_{jt}	Real Exchange Rate of other ASEAN countries	U.S. dollar	International Financial Statistics (IFS), CD-ROM data base and website of International Monetary Fund (IMF). http://elibrary-data.imf.org/finddatareports.aspx?d=33061&e=169393
POP_{jt}	Population of other ASEAN countries	Thousands	United States Census Bureau http://www.census.gov/popclock/
$DIST_{ijt}$	Distance between Kuala Lumpur and other capital cities of ASEAN countries	Kilometer	www.indo.com/distance.

3.5 Method of Analysis

The main objective of this study is to find determinants of international trade between Malaysia and other ASEAN countries. The testing procedure consists of the several steps. First, the stationarity properties of the time series variables are examined using alternative panel unit root tests. If proposed variables are non-stationary, the second step is to test whether there is cointegration relationship between the series, using appropriate panel cointegration techniques. The presence of cointegration will leads further to long run relationship by utilizing Generalized Method of Moments (GMM) estimator for the rest of three models.

3.5.1 Testing the Cross-Sectional Dependency

Before proceeding with further steps, cross-section dependence must be tested. Otherwise, results may be biased and inconsistent (Breusch & Pagan, 1980; M. Pesaran, 2004; M. H. Pesaran, 2007). Therefore, prior to further analyses, the existence of cross-section dependency in the series and the cointegration equation should be tested.

The existence of a cross-section dependency among countries is tested via the Breusch-Pagan (1980) *LM* test when time dimension is greater than the cross-section dimension. Pesaran (2004) improved this test in the case of when time dimension is smaller than the cross-section dimension and when the time dimension is greater than the cross-section dimension. This test is biased when the average group is zero, but the average individual is different from zero. Pesaran et al. (2008) adjusted this deviation by adding the variance and the average to the test statistics.

Therefore, it is called the bias-adjusted *LM* test (*LMadj*). The adjusted form of *LMadj* test statistics is as the following:

$$[3.2] \quad LM_{adj} = \left(\frac{2}{N(N-1)}\right)^{1/2} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \left(\frac{(T-K-1\hat{\rho}ij - \hat{\mu}_{Tij}}{\upsilon_{Tij}}\right) \cong N(0.1)$$

Where $\hat{\mu}_{Tij}$ represents the average, υ_{Tij} represents the variance. The test statistics to be obtained here show a standard normal distribution as asymptotic (Pesaran, et al. 2008). The null hypothesis of the *LMadj* test is no cross section dependency.

3.5.2 Panel Unit Roots

The panel unit root tests considering the information about both the time and the cross-section dimension of the data are accepted to be statistically stronger than the time series unit root tests considering the information only about the time dimension (Levin, Lin, & Chu, 2002; Maddala & Wu, 1999) as the variability in the data increases with the addition of the cross-section dimension to the analysis.

The first problem in the panel unit root test is whether or not the cross-sections forming the panel are independent to each other. Panel unit root tests here are divided into two as first and second generation tests. First generation tests are Levin, Lin and Chu (2002), Breitung (2005), Hadri (2000), Im, Pesaran, and Shin (2003), Maddala and Wu (1999) and Choi (2001).

In this study, since it has been identified cross-section dependency between the countries in the panel for the $TRADE_{ijt}$, $PCGDP_{it}$, $PCGDP_{jt}$, ER_{it}, ER_{jt},POP_{jt} and $DIST_{ijt}$ variables used, stationary of the series has been analyzed with one of the second generation unit root test that is CADF test developed by M. H. Pesaran (2007). Through CADF, unit root test can be performed in each cross section unit in the series forming the panel. So the stationary of the series can also be estimated one by one for the panel's overall and each cross-section. CADF test hypothesing that every country is affected differently from time effects and considering the spatial autocorrelation is used in T>N and N>T situations. Stationary for each country is tested by comparing the statistics values of this test with Peseran's CADF critical table values. If CADF statistical value is greater than

CADF critical value, the null hypothesis is rejected and it is found that the series of only that country is stationary. CADF test statistics is estimated as the following:

[3.3] $$Y_{i,t} = (1-\phi_i)\mu_i + \phi_i Y_{i,t-1} + \mu_{i,t} \qquad i = 1,2,....,N \quad and \quad t = 1,2,....,T$$

[3.4] $$\mu_{it} = \gamma_i \int t + \varepsilon_{it}$$

Here $\int t$ shows unobservable common effects of each country, ε_{it} shows individual – specific error. Equation 3.2, 3.3 and unit root hypothesis can be written as the following:

[3.5] $$\Delta Y_{it} = \alpha_i + \beta_i y_{i,t-1} + \gamma_i \int t + \varepsilon_{it} \qquad i = 1,2,.....,N \ and \quad t = 1,2,.....,T$$

$H_0 : \beta_i = 0 \quad for\ all\ i$ (*Series is non Stationary*)

$H_1 : \beta_i < 0 \ \ i = 1,2,.....,N, \beta_i = 0 \qquad i = N_1 + 1, N_1 + 2,.....,N.$ (*series is Stationary*)

3.5.3 Panel cointegration tests

There are several testing procedures available for use, such as Kao (1999), Pedroni (1999), Pedroni (2004), Westerlund (2007) and Maddala and Wu (1999). In this study, for the Model 1 (Equation 3.1), use the first three tests to test the cointegrating relationship between international trade, per capita GDP, real exchange rate, population and distance. Pedroni, 1999 and Pedroni, 2004 proposes a number of different statistics, which is based on the residuals of the Engel and Granger (1987) cointegration regression, for the test of the null of no cointegration in the heterogeneous panels. The first group of tests is termed within dimension. It includes the panel-*v* statistic (*Zv*),

panel rho-statistic ($Z\rho$), panel *PP*-statistic (*ZPP*) and panel *ADF*-statistic (*ZADF*). The second group of tests is based on the between dimension, which include three tests: group rho-statistic $\left(\tilde{Z}_{\rho}\right)$, group *PP* -statistic $\tilde{Z}_{PP}$ and group *ADF* -statistic $\left(\tilde{Z}_{ADF}\right)$. In general, these statistics are based on averages of the individual autoregressive coefficients associated with the unit root tests of the residuals for each cross-sectional unit . The null hypothesis of no cointegration is tested in both groups of tests. However, the difference comes from the specification of the alternative hypothesis.

3.5.4 Generalized Method of Movement (GMM)

This study utlized dynamic panel specification where lagged levels of the international trade are taken into account by using the Arellano and Bond (1991) GMM estimator. Our proposed model is follows:

$$gTRADE_{ijt} = \beta_0 gTRADE_{ijt-1} + \delta gPCGDP_{it-1} + \gamma gPCGDP_{jt-1} + \nu gER_{it-1}$$
$$+ \varsigma gERjt-1 + \tau gPOPjt-1 + \zeta gDISTijt-1 + \sum_{i=j=1}^{7} \theta jZ_{i,t} + \mu_{i,t} + \varepsilon_{i,t}$$

$i = 1,.....,N;\ T = 1,.....,T$

3.5.4.1 Derivation of GMM Model

Estiamte parameters by setting sample moments to be close to population counterpart.

$\beta : \rho \times 1$ parameter vector, with true value β_0.

$gi(\beta) = gwi, \beta) : m \times 1$ vector of function of i^{th} data observation w_i and parameter

E[gi(β0)]=0

$$\hat{g}(\beta) = \sum_{i=1}^{n} g_i(\beta)/n : \text{sample avarage}$$

$$\hat{A} : m \times m \text{ postive semi-definite matrix}$$

GMM Estimator

$$\hat{\beta} = \arg \min \hat{g}(\beta)' \hat{A} \hat{g}(\beta)$$

Choosing $\hat{\beta}$ so sample moments are close to zero.

For $\|g\|\hat{A} = \sqrt{g'\hat{A}g}$, same as minimizing $\|\hat{g}(\beta) - 0\|\hat{A}$

When m=p the $\hat{\beta}$ *with* $\hat{g}(\hat{\beta}) = 0$ will be the GMM estimator for any $\hat{A}$

When $m > p$ *then* $\hat{A}$ *matters*

GMM special cases:

$$\textit{Moments} : E\left[y^i\right] = h_j(\beta_0), (1 \le j \le p)$$

$$\textit{Specific moments functions}: g_i(\beta) = (y_i - h_1(\beta), ..., y_i^p - h_p(\beta))',$$

$$\textit{Estimator}: \ \hat{g}(\hat{\beta}) = 0 \ \textit{same as} \ y^j = h_j(\hat{\beta}), \ (1 \le j \le p)$$

3.6 Conclusion

The chapter detail the research methodology that will applied in this study. Evidently, model is specified in the beginning of the chapter to clearify dependent and independent variables. According to proposed model international trade between Malaysia and other ASEAN countries is a dependent variable. Furthermore, per capita GDP, real exchange rate of both Malaysia and ASEAN coutries, distance between Kuala Lumpur and other capital of other ASEAN countries and population of other ASEAN countries are independent variables. The dependent and independent variables suggestify with the help of previous studies in the next section. In addition, defination of variables, measurment and source of data explained in the next section. Finlly, method of analysis including panel unit root test, panel cointegration and generalized method of movement model expalined in the last section.

CHAPTER 4

EMPIRICAL RESULTS

This chapter presents and discusses the estimated empirical results of Generalized Method of Movement (GMM) obtained from Eviews in accordance to the various respective trade theories. However, before apply GMM study will fulfill assumptions such as panel unit root test and panel cointegration. After achieve the assumptions of GMM this will precede further towards ultimate goal. Finally chapter will conclude at the end.

4.1 Panel Unit Root Test

The results of the panel unit root tests are indicated in table 4.1. There are five different test statistics were calculated for each variables. The results show that the most of the level values of seven variables are panel non-stationary, butt all tests of the first difference reject the joint null hypothesis at 1% significance. Therefore, all series are non-stationary and I (1). All unit root tests were with individual trends and intercepts for each series. The null hypothesis the unit roots for all tests. Lag levels are determined by the Schwarz Bayesian Criterion. $TRADE_{itj}$ indicates total trade between Malaysia and other ASEAN countries, $PCGDP_{it}$ shows per capita GDP of Malaysia, $PCGDP_{jt}$ directs per capita GDP of other ASEAN countries, ER_{it} specifies exchange rate of Malaysia, ER_{ij} signposts exchange rate of other ASEAN countries, POP_{jt} indicates total population

of ASEAN countries and $DIST_{ijt}$ shows distance between Kuala Lumpur and capita cities of other ASEAN countries.

Table4.1: Results of Panel Unit Tests

Unit Root	Variable	LLC	Breitung	IPS	F-ADF	F-PP
Levels	$TRADE_{itj}$	0.786	1.242	-0.173	25.181*	4.110
	$PCGDP_{it}$	1.087	-3.121***	0.489	14.675	8.908
	$PCGDP_{jt}$	-0.987	-0.761	-1.231*	23.234*	9.871
	ER_{it}	-3.652	3.231	-0.786	29.231**	24.897
	ER_{ij}	-0.231	-2.675***	-1.897	26.123**	26.234
	POP_{jt}	2.345	1.212	2.134	5.897	4.981
	$DIST_{ijt}$	0.185	-0.123	0.675	13.243	9.453
First Difference	$TRADE_{itj}$	-10.6**	-9.908***	-13.3**	141.52***	121.12***
	$PCGDP_{it}$	-12.2**	-3.121***	-12.1**	121.121**	109.871***
	$PCGDP_{jt}$	-3.3***	-2.131***	-7.7***	98.121***	141.123***
	ER_{it}	-12.1**	-9.765***	-13.12*	171.89***	671.147***
	ER_{ij}	-13.5**	-7.897***	-13.1**	191.124**	453.141***
	POP_{jt}	-14.1**	-8.56***	-7.98**	97.211***	72.121***
	$DIST_{ijt}$	-12.1**	-6.121***	-11.2**	119.21***	121.90***

Notes: ***denotes significance at the 1% level. ** denotes significance at the 5% level. *denotes significance at the 10% level.

4.2 Results of Panel Cointegration

Based on the above results, we calculated seven cointegration statistics to test the long run relationship among these variables. Table 4.2 shows the panel cointegration estimation results between variables and total Malaysian trade with ASEAN countries. For ASEAN countries, with the exception of the group rho-statistic the other six statistics rejected the null hypothesis of no cointegration. The panel rho-statistic, group rho-statistic and group pp-statistic of the five variables, exchange rate of Malaysia and other ASEAN countries, exchange rate of Malaysia, population of other ASEAN countries and distance between capital of Malaysia and other ASEAN countries did not reject the null hypothesis of no cointegration, but the other four statistics did reject this hypothesis. Karaman (2007) compared the relative performance of Pedroni (2000) Pedroni's (2000) test statistic and found that the panel ADF-statistic performs better than the other three within-dimension-based statistics and three group-mean statistics. Thus, we primarily based our conclusions on the panel ADF-statistics, which suggest that the null of no cointegration is rejected between variables and the total Malaysian trade with ASEAN countries . This means that a long-run equilibrium relationship exists for developed countries.

Table 4.2: Testing for Univariate Cointegration between Total Malaysian Trade with ASEAN countries and other variables

Test Statistics	$PCGDP_{it}$	$PCGDP_{jt}$	ER_{it}	ER_{ij}	POP_{jt}	$DIST_{ijt}$
Panel *v*-statistic	2.341**	3.241***	4.123***	5.098***	11.213***	2.098***
Panel rho-statistic	-0.125	-0.671	-0.981	-0.912	-1.091*	-0.891
Panel pp-statistic	-3.213**	-1.451*	-2.002**	-1.981**	-2.121***	-2.121**
Panel ADF-statistic	-4.121***	-2.901**	-2.121***	-2.543***	-3.213***	-4.128**
Group rho-statistic	0.331	0.425	0.341	0.241	-0.421	0.123
Group pp-statistic	-1.012	-0.432	-0.871	-0.912	-2.431**	-0.800
Group ADF-statistic	-2.123***	-1.312*	-1.876**	-1.675*	-2.131***	-2.121**

*** denotes significance at the 1% level.

**denotes significance at the 5% level.

*denotes significance at the 10% level.

4.3 Results of Panel Granger Causality

The results of panel causality between TRADEijt and other variables are reposted in Table4.3. In the short run, unidirectional Granger causalities were found to be running from per capita GDP and exchange rate of Malaysia total trade between Malaysian and other ASEAN countries, as well as from total population of other ASEAN countries to total trade. For joint tests, bi-directional causalities were observed between per capita GDP of Malaysia, per capita GDP of other ASEAN countries, exchange rate of Malaysia, exchange rate of other ASEAN countries, total population of other ASEAN

countries, distance between capital of Malaysia and capital of other ASEAN countries and total trade between Malaysia and other ASEAN countries. In other words all the variables are reliant to each other.

The $TRADE_{ijt}$ equation is significant at 1% level in the long run, indicating that unidirectional causal linkages exist from dependent variables to all independent variables. These findings indicates that exchange rate in Malaysia and in other ASEAN countries, per capita GDP from the both side, population of other ASEAN countries and distance of both side capita are the factors of Malaysian trade with other ASEAN countries. Moreover, these results indicates that if exchange rate of Malaysia increase it will directly negatively affect the imports but positively on exports, which is ultimately increase the trade.

Table4.3: Panel VECM causality test results for Univariate Model

Null Hypothesis	Short-run causality	Strong Erogeneity Test
$\Delta TRADE_{ijt} \rightarrow \Delta PCGDP_{it}$	1.07	2.23**
$\Delta PCGDP_{it} \rightarrow \Delta TRADE_{ijt}$	0.02**	1.98*
$\Delta TRADE_{ijt} \rightarrow \Delta PCGDP_{jt}$	3.01	2.12**
$\Delta PCGDP_{jt} \rightarrow \Delta TRADE_{ijt}$	0.91	5.32***
$\Delta TRADE_{ijt} \rightarrow \Delta ER_{it}$	0.02	3.123**
$\Delta ER_{it} \rightarrow \Delta TRADE_{ijt}$	1.02*	2.091***
$\Delta TRADE_{ijt} \rightarrow \Delta ER_{jt}$	0.56	2.89**
$\Delta ER_{jt} \rightarrow \Delta TRADE_{ijt}$	0.03	4.98***
$\Delta TRADE_{ijt} \rightarrow \Delta POP_{jt}$	1.09	3.431***
$\Delta POP_{jt} \rightarrow \Delta TRADE_{ijt}$	0.28***	2.987***
$\Delta TRADE_{ijt} \rightarrow \Delta DIST_{ijt}$	0.01	5.981***
$\Delta DIST_{ijt} \rightarrow \Delta TRADE_{ijt}$	1.78	2.981***

Notes:→indicates *x* does not Granger cause variable *y*. When combined with the short-run test of non-causality, the long-run non-causality test yields a strong exogenity test in the VEC model.
***denotes significance at the 1% level.

**denotes significance at the 5% level.

*denotes significance at the 10% level.

4.4 Generalized Method of Movement (GMM)

Earlier studies have employed cointegration and causality approaches to estimate structural parameters of a single equation model. Those techniques allow for estimation of relationship in the long run and short run. The present study focuses to capture the factors of total Malaysian trade with ASEAN countries. Instrumental variable estimation technique such as Generalized Method of Moments (GMM) has been used for estimation of parameters. Our approach is to estimate structural parameters while in the estimation of structural model, total trade variable is treated as endogenous while other variables are treated as exogenous.

Endogenous variables and disturbances are mutually correlated in simultaneous equation models that create the problem of simultaneity or endogeneity bias. Consequently, inconsistent and biased parameter estimates are obtained using ordinary least square (OLS) regressions that leads to violation of one of the assumptions of classical linear regression model (CLRM). However, the use of estimation techniques that involves instrumental variables may lead to the attainment of consistent and unbiased parameter estimates. Instrumental variables provide a set of variables that are correlated with

independent variables of the equation but are uncorrelated with disturbances. Instruments eliminate the correlation between independent variables and disturbances.

Therefore, estimates obtained are reliable and consistent. Arellano and Bond (1991) and Arellano (1993) proposed Generalized Method of Moments (GMM) estimator that is both single equation and system estimator. It is preferred over other estimators of its class because of several reasons. Firstly, GMM offers a simple substitute to other estimators, particularly when it is problematic in writing maximum likelihood estimator. Secondly, GMM covers many standard estimators, thereby offers valuable framework for their evaluation and comparison. Thirdly, GMM is a robust estimator since it does not require information about accurate distribution of error terms. Fourthly, GMM is asymptotically unbiased and consistent estimator regardless of weighting matrix used. Separate instruments are employed for both equations of structural model that are the lagged values of the variables included in that particular equation.

Instrumental variable estimation technique, that is Generalized Method of Moments (GMM), has been employed in this paper to jointly estimate the parameters of the structural model. Separate instruments have been used for equation of structural model that are the lagged values of the variables. Results of structural equation are reported in Table 4.4.

Table 4.4: GMM Estimates for the Model.

Independent Variables	Dependent Variable ($TRADE_{ijt}$)
Per capita GDP of Malaysia	0.456***(23.123)
Per capita GDP of other ASEAN countries	0.032**(-1.121)
Exchange Rate of Malaysia	0.012***(2.987)
Exchange Rate of other ASEAN countries	0.181**(1.123)
Total population of other ASEAN countries	0.003(7.123)
Total distance between capital of Malaysia to capital of other ASEAN countries	-0.231**(2.123)
AR(1)	0.912[0.000]
AR(2)	0.281[0.341]
R^2	0.9811
Adjusted R^2	0.9802
J-statistic (*p*-value)	0.091(1.000)

Note: Column (1) explains main equation of the model. Column (2) explains channel equation of the model.
*** and **, indicate significance at 1 and 5 percent respectively. Robust *t*-statistics are reported in parenthesis. *P*-values for autoregressive tests are shown in square brackets.

Finally after meeting all assumption GMM model applied to analyze the determinants of Malaysia – ASEAN trade. The results of GMM model show that per capita GDP of Malaysia and other ASEAN countries as well as exchange rate of Malaysia and other ASEAN countries are positively and statistically significant. However, total population of other ASEAN countries is insignificant even at 10 percent level of significant. Similarly, total distance between capital of Malaysia and other ASEAN countries is negatively significant. Meaning that if per capita GDP of Malaysia and other ASEAN countries as well as exchange rate of Malaysia and other ASEAN countries will increase it will also boost the trade between Malaysia and other ASEAN countries. Consequently, increase the distance between capital of Malaysia and other ASEAN countries will decrease the trade between Malaysia and other ASEAN countries.

4.5 Conclusion

This paper analyzes determinants of Malaysia - ASEAN trade. The ASEAN such as Indonesia, Thailand, Philippines, Vietnam, Los, Cambodia, Singapore, Brunei and Myanmar are selected due to several reasons. This study utilized time period from 1980 – 2014, because mostly countries are grow in this time period. It uses a traditional gravity model and, based on several tests, the Generalized Method of Movement (GMM) has been selected. However before apply GMM model study check the unit root, cointegration and Granger causality. Our estimation results show that majority of the variables are stationary at level and become non-stationary at first difference. After meeting the first assumption of GMM model study will leads to second step by using panel cointegration test. For ASEAN countries, with the exception of the group rho-statistic for electricity, the other six statistics rejected the null hypothesis of no cointegration. The panel rho-statistic, group rho-statistic and group pp-statistic of the five variables, exchange rate of Malaysia and other ASEAN countries, exchange rate of Malaysia, population of other ASEAN countries and distance between capital of Malaysia and other ASEAN countries did not reject the null hypothesis of no cointegration, but the other four statistics did reject this hypothesis. Our estimation results confirm the well-established facts that per capita GDP of Malaysia and other ASEAN countries as well as exchange rate of Malaysia and other ASEAN countries are statistically and positively significant determinants of Malaysia – ASEAN trade. However, total population of other ASEAN countries does not have any effect on Malaysia – ASEAN trade. Similarly, distance between capitals of Malaysia to capital of

other ASEAN countries statistically but negatively significant on the Malaysia – ASEAN trade.

CHAPTER FIVE

SUMMARY AND POLICY IMPLICATION

5.1 Introduction

This chapter begins with the summary of findings based on panel unit root test, panel cointegration test, panel Granger causality test, cross dependency (CD) test and Generalized Method of Movement (GMM) test. Therefore, policy implication will be discussed in the next section. Finally study will conclude in the last section.

5.2 Summary

This study aims to explore the determinants of Malaysia – ASEAN trade during the time period 1980 – 2014. The Generalized Method of Movement (GMM) utilized to analyze the factors of Malaysia – ASEAN trade. However, several pre-request steps have been taken before apply GMM model. First this study applied panel unit root tests such as Levin, Lin and Chu (LLC), Im, Pesaran and Shin (IPS), Fisher Augmented Dickey Fuller (Fisher – ADF), Fisher Phillips Perron (Fisher – PP). Among seven variables, trade between Malaysia and other ASEAN countries, per capita GDP of Malaysia, per capita GDP of other ASEAN countries and exchange rate of Malaysia and other ASEAN countries are stationary at level with IPS, Fisher ADF and Fisher-PP panel unit root test. However, most of variables are stationary at first difference. Hence, all the variables are considered to be stationary at first difference.

After meeting the first assumption of GMM model study will lead to second step by using panel cointegration test. For ASEAN countries, with the exception of the group rho-statistic for electricity, the other six statistics rejected the null hypothesis of no cointegration. The panel rho-statistic, group rho-statistic and group pp-statistic of the five variables, exchange rate of Malaysia and other ASEAN countries, exchange rate of Malaysia, population of other ASEAN countries and distance between capital of Malaysia and other ASEAN countries did not reject the null hypothesis of no cointegration, but the other four statistics did reject this hypothesis. Karaman (2007) compared the relative performance of Pedroni (2000) Pedroni's (2000) test statistic and found that the panel ADF-statistic performs better than the other three within-dimension-based statistics and three group-mean statistics. Thus, we primarily based our conclusions on the panel ADF-statistics, which suggest that the null of no cointegration is rejected between variables and the total Malaysian trade with ASEAN countries . This means that a long-run equilibrium relationship exists for developed countries.

After conformation of the existence cointegration between dependent and independent variables study applied panel Granger causality test. In the short run, unidirectional Granger causalities were found to be running from per capita GDP and exchange rate of Malaysia total trade between Malaysian and other ASEAN countries, as well as from total population of other ASEAN countries to total trade. For joint tests, bi-directional causalities were observed between per capita GDP of Malaysia, per capita GDP of other ASEAN countries, exchange rate of Malaysia, exchange rate of other ASEAN countries, total population of other ASEAN countries, distance between capital of Malaysia and

capital of other ASEAN countries and total trade between Malaysia and other ASEAN countries. In other words all the variables are reliant to each other. The $TRADE_{ijt}$ equation is significant at 1% level in the long run, indicating that unidirectional causal linkages existed from dependent variables to all independent variables. These findings indicates that exchange rate in Malaysia and in other ASEAN countries, per capita GDP from the both side, population of other ASEAN countries and distance of both side capita are the factors of Malaysian trade with other ASEAN countries. Moreover, these results indicates that if exchange rate of Malaysia increase it will directly negatively affect the imports but positively on exports, which is ultimately increase the trade.

Finally after meeting all assumption GMM model applied to analyze the determinants of Malaysia – ASEAN trade. The results of GMM model show that per capita GDP of Malaysia and other ASEAN countries as well as exchange rate of Malaysia and other ASEAN countries are positively and statistically significant. However, total population of other ASEAN countries is insignificant even at 10 percent level of significant. Similarly, total distance between capital of Malaysia and other ASEAN countries is negatively significant. Meaning that if per capita GDP of Malaysia and other ASEAN countries as well as exchange rate of Malaysia and other ASEAN countries will increase it will also boost the trade between Malaysia and other ASEAN countries. Consequently, increase the distance between capital of Malaysia and other ASEAN countries will decrease the trade between Malaysia and other ASEAN countries. These results show that most of the proposed variables are determinants of Malaysia – ASEAN trade during the 1980 – 2014.

5.3 Policy Implication

According to results of this study it is anticipated that ASEAN countries are major trade partners of Malaysia. It is suggested that Malaysian government should focus on the control of per capita GDP and exchange rate of Malaysia. According to results of this study exchange rate has negative relationship with international trade of Malaysia. The negative relationship between exchange rate and international trade anticipated that with increase in exchange rate of Malaysia will increase the imports but on the other hand it will decrease the exports. Since Malaysia has more exports than imports which consequently decrease the total trade. Hence, Malaysian authorities should calculate the ideal exchange rate to make win-win situation for both exporters and importers. Meanwhile increase the trade including imports and exports with the countries having good exchange rate and per capita income. Similarly, more focus on the trading with countries which are near to Malaysia such as Thailand, Singapore, Indonesia and Brunei. Since international trade has strong contribution in economic growth, thus Malaysian government should give incentives, discount in taxes and rebates to boost and support the international trade.

5.4 Conclusion

This paper analyzes determinants of Malaysia - ASEAN trade. The ASEAN such as Indonesia, Thailand, Philippines, Vietnam, Los, Cambodia, Singapore, Brunei and Myanmar are selected due to several reasons. First, these countries are located near to Malaysia. Second, almost 25 percent of Malaysian trade with these countries. Third,

almost 8.8 percent of world population has been living in ASEAN countries. There are several econometrics techniques has been applied to analyzes determinants of Malaysia – ASEAN trade. This study utilized time period from 1980 – 2014, because mostly countries are grow in this time period.

It uses a traditional gravity model and, based on several tests, the Generalized Method of Movement (GMM) has been selected. Our estimation results confirm the well-established facts that per capita GDP of Malaysia and other ASEAN countries as well as exchange rate of Malaysia and other ASEAN countries are statistically and positively significant determinants of Malaysia – ASEAN trade. However, total population of other ASEAN countries does not have any effect on Malaysia – ASEAN trade. Similarly, distance between capitals of Malaysia to capital of other ASEAN countries statistically but negatively significant on the Malaysia – ASEAN trade. This results confirms the empirical findings suggested by Helliwell (2002) that countries that have higher per capita income are main bases of international direct investment and international manufacturing capacity, usually offer more open trading arrangements.

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