



Faculty of Economics and Business

**The Determinants of Malaysia's Export: A Comparative Analysis of the
TPPA and RCEP Free Trade Agreement**

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The Determinants of Malaysia's Export: A Comparative Analysis of the TPPA and RCEP Free Trade Agreement

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A thesis submitted

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DECLARATION

I hereby declare that this research is the result of my investigation, except where otherwise stated. All sources of data or information utilized in this research are acknowledged and a list of reference is appended. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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ABSTRACT

Exports play an essential aspect in economic growth and development, through its multiplier influence, enlarge the production, employment and the balance of payments consequently affecting the achievement of economic growth. Currently Malaysia is facing two challenging negotiations, that include a free trade agreement with TPPA and a free trade area with the ASEAN + 6FTAs partners also known as RCEP. As the RCEP and the TPPA are considered as a contender in the South East Asian market, this is an extremely remarkable parallel issue. Hence, this investigation has assessed empirically to find out the determinants of Malaysia's export to compare between TPPA and RCEP countries Free Trade Agreement framework to develop a new unique market as export target for Malaysia and as well to find out the major determinants of export as an economic growth engine. This paper examined the association among exports, and GDP per capita of Malaysia, GDP per capita of TPP and RCEP countries, Openness of Malaysia, Openness of TPP and RCEP countries, bilateral exchange rate and remoteness by employing the augmented gravity model to its 11- TPPA participants' nations and as well 15-RCEP members by utilizing panel data from 1997 to 2015 and finally compare its export performance with TPPA and RCEP framework to determine which integration will better suit for Malaysia to avoid overlapping FTAs. By employing two augmented gravity equation, namely TPPA and RCEP model, the outcomes of this dissertation have been achieved. The results are based on FMOLS and DOLS estimator. Estimated results indicated that the influence of exports to RCEP countries produce a higher GDP growth. This outcome recommends that the development of RCEP has improved the ability of Malaysian to trade with RCEP nations rather than with TPPA members. It can be concluded from the results of FMOLS and DOLS estimators of the existence of a long run

relationship between the variables. This can be suggested based on assessed coefficients of the different sample, a stronger intensive long-run association between exports and economic growth RCEP countries than TPPA nations. Finally, results show that TPPA model indicated that, long-run coefficient of GDP per capita of Malaysia, Openness of 11-TPPA countries and bilateral exchange rate of Malaysia can explain Malaysian export. On the hand for RCEP model, in the long run, Malaysian exports can be explained by all the variables of the study. Nevertheless, this investigation will helpful for the policy maker of Malaysia to make adequate and relevant policy in order to promote exports between Malaysia and RCEP nations and as well contribute to the exports and economic growth literature

Keywords: Exports, economic growth, TPPA, RCEP, panel analysis, Malaysia

Penentu Eksport Malaysia: Analisis Perbandingan TPPA dan Perjanjian Perdagangan Bebas RCEP

ABSTRAK

Eksport memainkan peranan penting dalam pertumbuhan ekonomi dan pembangunan, melalui pengaruh pengganda, pertambahan pengeluaran, pekerjaan dan imbalan pembayaran yang mempengaruhi pencapaian pertumbuhan ekonomi. Terdapat dua cabaran rundingan bagi Malaysia iaitu perjanjian perdagangan bebas TPPA dan kawasan perdagangan bebas ASEAN + 6FTA yang juga dikenali sebagai RCEP. Memandangkan RCEP dan TPPA dianggap sebagai pesaing di pasaran Asia Tenggara, ia merupakan isu selari yang menarik perhatian dunia. Oleh itu, kajian ini telah menilai secara empirikal untuk mengetahui faktor-faktor penentu eksport Malaysia untuk membandingkan antara rangka kerja Perjanjian Perdagangan Bebas TPPA dan RCEP untuk membangunkan pasaran unik baru sebagai sasaran eksport untuk Malaysia dan juga untuk mengetahui penentu eksport utama sebagai enjin pertumbuhan ekonomi. Kajian ini mengkaji menganalisa hubungan antara eksport dan KDNK per kapita Malaysia, KDNK per kapita TPP dan negara-negara RCEP, Keterbukaan Malaysia, Keterbukaan TPP dan negara-negara RCEP, kadar pertukaran dua hala dan keterpencilan dengan menggunakan pengukuhan model graviti kajian ini meliputi 11-Negara-negara peserta TPPA dan ahli 15-RCEP dengan menggunakan data panel dari tahun 1997 hingga 2015 dan membandingkan prestasi eksport ke dua-dua blok untuk menentukan integrasi yang lebih sesuai untuk Malaysia bagi mengelakkan pertindihan FTA. Dengan menggunakan dua persamaan pengukuhan graviti, iaitu model TPPA dan RCEP, hasilnya adalah berdasarkan kepada estimator FMOLS dan DOLS. Keputusan kajian menunjukkan bahawa pengaruh eksport ke negara-negara RCEP menghasilkan pertumbuhan KDNK yang lebih tinggi. Hasilnya

mengesyorkan bahawa Malaysia mampu mempertingkatkan keupayaan perdagangan dengan RCEP berbanding TPPA. Berdasarkan FMOLS dan DOLS, terdapat kewujudan hubungan jangka panjang antara pembolehubah. Perubahan koefisien mengikut sampel mengesyorkan terdapatnya hubungan jangka panjang yang lebih intensif antara eksport dan pertumbuhan ekonomi negara-negara RCEP berbanding negara-negara TPPA. Selain itu, model RCEP menunjukkan keupayaan pelarasan yang lebih tinggi dibandingkan dengan model TPPA. Manakala, keputusan menunjukkan bahawa beberapa pembolehubah seperti KDNK per kapita, keterbukaan dan kadar pertukaran Malaysia dapat menjelaskan hubungan eksport Malaysia. Namun, untuk model RCEP, eksport Malaysia dapat dijelaskan oleh semua pembolehubah kajian dalam jangkamasa panjang. Hasil kajian ini dapat menyumbang pelbagai dasar yang jelas dan komprehensif untuk kerajaan Malaysia untuk mempromosikan pertumbuhan ekonomi dan pembangunan melalui orientasi eksport dengan negara-negara RCEP.

Kata kunci: Eksport, perkembangan ekonomi, TPPA, RCEP, analisis panel, Malaysia.

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LIST OF ABBREVIATIONS

AANZFTA	ASEAN Australia-New Zealand Free Trade Agreement
ACFTA	ASEAN-China Free Trade Agreement
AIFTA	ASEAN-India Free Trade Agreement
AJCEP	ASEAN-Japan Comprehensive Economic Partnership
AKFTA	ASEAN-Republic of Korea Free Trade Agreement
APEC	Asia-Pacific Economic Co-operation
ARDL	Autoregressive Distributed Lag
ASEAN	Association of Southeast Asian Nations
ATIGA	ASEAN Trade in Goods Agreement
BOP	Balance of Payment
CARICOM	Caribbean Community and Common Market
CEPT	Common Effective Preferential Tariff
CPI	Consumer Price Index
DOLS	Dynamic Ordinary Least Square
EADM	East Asian Development Strategy
EAFTA	East Asia Free Trade Agreement
ECM	Error Correction Model
ELG	Export-Led Growth
EU	European Union
FDI	Foreign Direct Investment
FMOLS	Fully Modified Ordinary Least Square
FTA	Free Trade Agreement

GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GST	Goods and Services Tax
IPR	Intellectual Property Rights
MNCs	Multinational Corporations
NAFTA	The North American Free Trade Agreement
NICs	Newly Industrializing Countries
NTMs	Non-Tariff Measures
OECD	Organization for Economic Co-operation and Development
OIC	Organization of Islamic Cooperation
OLS	Ordinary Least Square
PMG	Pooled Mean Group
RCA	Revealed Comparative Advantage
RCEP	Regional Comprehensive Economic Partnership
SAARC	South Asian Association for Regional Co-operation
TFP	Total Factor Productivity
TPPA	Trans Pacific Partnership Agreement
TRGDP	Trade Ratio to GDP
UAE	United Arab Emirates
US	United States
VAR	Vector Autoregressive
WDI	World Development Indicator
WTO	World Trade Organisation

CHAPTER 1

INTRODUCTION

1.1 Introduction

For the last few decades, export led growth has become an important controversy in the development and growth history (Keesing, 1967; Little et al., 1970; Mrydal, 1970; Bhagwati & Srinivasan, 1978; Krueger, 1978, 1980, 1985; Meier, 1984). Some determinants of exports are necessary to determine as an external strategy for achieving export-led growth (ELG). Generally, the ELG controversy is related to the topics that by adapting a trade policy from import substitution to export led growth, whether the country can improve its economic growth or not? Export-led growth (ELG) is a significant contributor of economic growth from the view of neoclassical theory and as well evident from the Asian newly industrializing countries (NICs), such as Hong Kong, Singapore, Korea, Taiwan, Malaysia and Thailand. By transforming import substitution to export led economy, these newly industrializing countries, experienced a high economic growth and as well improved their standards of living remarkably (nearly doubled) for the last few decades. Findlay and Watson (1996) explored that, a robust and efficient growth can be achieved through a countries openness to trade and as well, openness, allocated internal resources more precisely. China's recently joined to this group also support this argument. Krueger (1995) and Sachs and Warner (1995) and a plenty of studies as well recommended for different nation that trade policy can be a fundamental strategy for economic development. The World Bank (1993) declared that NICs nations can be a model for developments, the International Monetary Fund as well supported this point of view. Over the last few years, export led growth

contribution to the economic growth become the top empirical argument so that there is a tendency for such studies by utilizing different statistical methods.

During the period between 1960s and 1970s, the failure of the internal based economic strategies to stimulate the intended growth, influenced Malaysia to consider the most relevant development strategy. Malaysia transformed its import substitution industrialization policy to export based and trade liberalization in order to go beyond the inherent deficiencies and unfavourable consequences. Therefore, the concentration was transformed from producing for the internal economy to the external economy. Exports play an essential aspect in economic growth and development, through its multiplier influence, enlarge the production, employment and the balance of payments consequently affecting the achievement of economic growth. Increased capacity utilization, increasing returns and economies of scale can be achieved by developing potential market size. As well, by exposing internal productions to international markets, exports, produce competitiveness in the production process which in turn encourage innovation and promote technological progress also knowledge spill over into the internal economy that lead to contribution of efficiency gains in the production and administration processes. Moreover, the import demand of capital goods can be resolved through the revenues earned from export enlargement to assist improve the national production efficiency. Export development will enable the exportable zone, which in turn, realize of economies of scale and the performance of better effective technology. Malaysia`s economy has considerably contributed to its continuous economic growth through integrating into the international economy. Export based economy lead to Malaysia, to experience a high level of specialization in some industries that have comparative advantages and produce a strong GDP growth, a tremendous inflow of foreign exchange and expansion in employment and as well increase

in productivity of internal industries and improvement of technology. In the early 1990`s, Malaysia`s considerable imports of machinery goods had a direct influence on productivity and as well developed the level of science and technology.

According to Tyler (1981), Feder (1983), Balassa (1985), Chow (1987), Ram (1987), Krueger (1990), Sengupta and Espana (1994), Vohra (2001), Ullah, Zaman, Farooq, and Javid (2009), that exports-based economy experience, a positive and vital influence on economic growth and development. Moreover, under the new growth theory approach, exports increase the accumulation of resources and capital formation that can increase the production capacity of the economy and that successively accelerate economic growth. Exports accommodate emerging nation`s accession to more sophisticated technology of advanced nations in the framework of personified capital stocks (Daraisami, 2004). In addition, Muhammad and Mafizur (2014), explore that exports allow enhancing of capability utilization which promotes goods produced and consumed.

A necessary determinant of differences in productivity and income in between nations can be possible through the integration into the global economy. Economic doctrine has established the renowned process by which trade influences on economic growth. Particularly, it is identified from previous research that international trade enhances the effective appropriation of economic resources, permit a nation for achieving economies of scale and capacity, promote the distribution of knowledge between countries, raised technology advancement, as well promote competition, both in national and foreign markets that contribute to the expansion of the production process and the development of innovative commodities.

More specifically, trade patterns of emerging nations, and variations of those patterns are intimately related within the relocation of technology over time. As well, introduction of the product life cycle occurred due to a country's openness to international trade as the creation of particular commodities formerly manufactured in advanced economies transfers to emerging nations. Product Life Cycle is associated with an expansion in the volume of trade of emerging nations by distributing of further innovative manufacturing technology, and which successively generate the technology accessible to emerging nations.

To realize the economic development objectives, Malaysia, as an open economy, has been significantly concerned about its international trade. In the past few decades, international trade has supported a considerable part of its gross domestic product (GDP), demonstrating that foreign trade has been performing a significant aspect in the expansion of the Malaysian economy. According to Freeman and Hew (2002) and Baek (2005), Malaysia effectively converted its economy from an agriculture-based economy to an industrial-based and presently introduced as a higher middle-income economy by adopting the East Asian Development strategy. The most significant aspect is openness to international trade also known as economic liberalization within the EADM. For the last three and a half decades, a prompt economic growth of Malaysia has come from its openness to international trade and which result in a decrease in poverty rates and income inequality. Ghatak, Milner and Utkulu (1997), Khalafalla and Webb (2001), Thangavelu and Rajaguru (2004) and Chandran and Munusamy (2009) have established the significant contribution of trade which promoted in stimulating growth in Malaysia.

Since regional integration has increased in the south East Asia and subsequently, it has frequently emerged as a potential policy mechanism for the challenges developing nations face in integrating their economies into the international markets. Malaysia has

followed this approach since the signing of the Agreement of Association of Southeast Asian Nations (ASEAN) in 1967 and has endeavoured to strengthen its integration purposes. During the year 1992, ASEAN has eliminated most of the trade barriers among themselves and established ASEAN Free Trade agreement (AFTA) under the Common Effective Preferential Tariff (CEPT) scheme. For a decade, the ASEAN performed one of the strongest degrees of integration in South East Asia; however, the economic stagnation in the region in the last several periods, and particularly Malaysia is searching for new international market, which can bring fast export growth and increased export diversification among its participants. Currently Malaysia is facing two challenging negotiations, that include a free trade agreement with Trans-Pacific Partnership Agreement (TPPA) and a free trade area with the ASEAN + 6FTAs partners also known as Regional Comprehensive Economic Partnership (RCEP). Malaysia has already been joined the TPPA lead FTA. Though a considerable uncertainty concerning with the prospects of liberalizing a collection of sensitive areas, the TPPA process has steadily improved and has already produced significant positive consequences in a collection of sectors. To achieve more free and open trade in the Asia Pacific and beyond, TPPA has increasingly served as a stimulant for expanding and strengthening regional integration, as well as supplementing the commitment of the multilateral process. Trade negotiations within ASEAN and its 6-FTA participant started with the Regional Comprehensive Economic Partnership Agreement, which was intended to improve economic association, strengthen political ties and make arrangements for the reciprocal liberalization process. Both ASEAN and its 6-FTAs partners, namely China, Japan, India, Korea Australia and New Zealand reached an agreement to negotiate for the establishment of a Free Trade Agreement (FTA) through a continuous and mutual process. Though both blocs acknowledge the significance of establishing an FTA, one of the

most complicated disputes is placed in the negotiations is that from ASEAN bloc only Malaysia, Singapore, Brunei Darussalam and Vietnam joined to TPPA and as well common countries in both TPPA and RCEP are Australia, Malaysia, Brunei Darussalam, New Zealand, Vietnam and Japan. This issue is frequently influencing the agenda of the trade negotiations, and the prospects of strengthening and coordinating trade associations between the two blocs will depend considerably on the development in this region. For Malaysia, RCEP is a considerable regional trade participant; it consumes more than 50% of its exports. On the other hand, within TPPA, the US economy has been a traditional stronghold for Malaysian exports and by joining TPPA, Malaysia desire to create a free trade agreement with the US to restore its lost share of trade, strengthening trade relations and promoting business opportunities.

As the RCEP and the TPPA are consider as a contender in the South East Asian market, this is an extremely remarkable parallel issue. Although it is assumed that both the negotiations will not only produce about substantial advantages for Malaysia in both trade and GDP growth, but as well considerable structural transformations with extensive internal economic and political relationships. In this study, we investigate the possible influence on RCEP and TPPA countries to Malaysian economic growth using a gravity model, thus allowing Malaysia to proceed further improvement of the measure of the new market established. The consequences indicated that integration with the RCEP brings about higher achievements in terms of growth in trade and GDP for Malaysia. The main target for Malaysia to join TPPA was to create a free trade agreement with the US and to restore its lost share of trade and restore its FDI inflows. But the US economy already withdrawn them from TPPA, makes TPPA less attractive for Malaysia

1.2 Malaysia`s Export Overview

During the period between 1970 and 1980, Malaysia transformed its import substitution development policy toward an export-led industrialization policy. Since 1980, Malaysia has aggressively applied the second-round export-based policy to improve the heavy industries such as the locally produced automobile, cement, and steel manufacturers through its Heavy Industries Corporation of Malaysia with full government backing finance. Greater portion of Malaysian exports were in the nature of raw materials between 1970 and 1980, such as inedible crude materials, petroleum fuels, and lubricants. The exports of raw materials decreased from 61% to 57% within 1970 to 1980. These exports considered merely 33% from the overall exports. By the year 1990, the exports of manufactured goods started to emerge which increased from 26 % to 55% between 1970 and 1990. Due to greater exports and tariff liberalization, Malaysia`s exports are concerned with its observed impetuous development which has experienced a great expansion during the period of 1990 – 2015. Its overall exports in 1990 was at US\$ 32,783.097 million that expanded to US\$ 112,369.47 million in 2000. Malaysia`s exports have resurgence in the year 2000s with a growth rate of 36.7%. In 2001, the overall exports were US\$ 102,435.79 million reflecting an expansion of 10.25% yearly between the periods of 2001 to 2015. During the period 1990-2015, ASEAN, the U.S, China, Japan and the EU nation are the main trading partners of Malaysia which comprised of more than 70% of Malaysian exports. Total exports US\$3,042,274 million with an expansion of 167.39 % was observed during the period of investigation 1997-2015. After the transformation of Malaysian economy from agricultural based economy to industrial based economy, the formation of Malaysian trade with its trading partner has as well changed over time. Specifically, during the period of 1970 and 1990, exports between Malaysia and Japan were accounted for 68% of the total exports and the main exports were, raw materials,

inedible crude materials, mineral fuels and lubricants. The nature of exports between Malaysia and Japan have been changed overtime, for instance, machinery, electrical, nonelectrical and electronics, and transport equipment and as well as final manufactured goods. Likewise, exports between Malaysia and USA were involved of raw materials and intermediate manufactured goods during the period from 1970 to 1990. Since Foreign Direct Investment inflows increased from the US to Malaysia, the formation of Malaysian exports to the US has also been transformed subsequently.

Even if, export between Malaysia and Singapore reflects the similar pattern like Japan and USA but they are considerably diversified. As Malaysia and Singapore share common boarder, hence, major exports from Malaysia to Singapore are (assembled products) re-export.

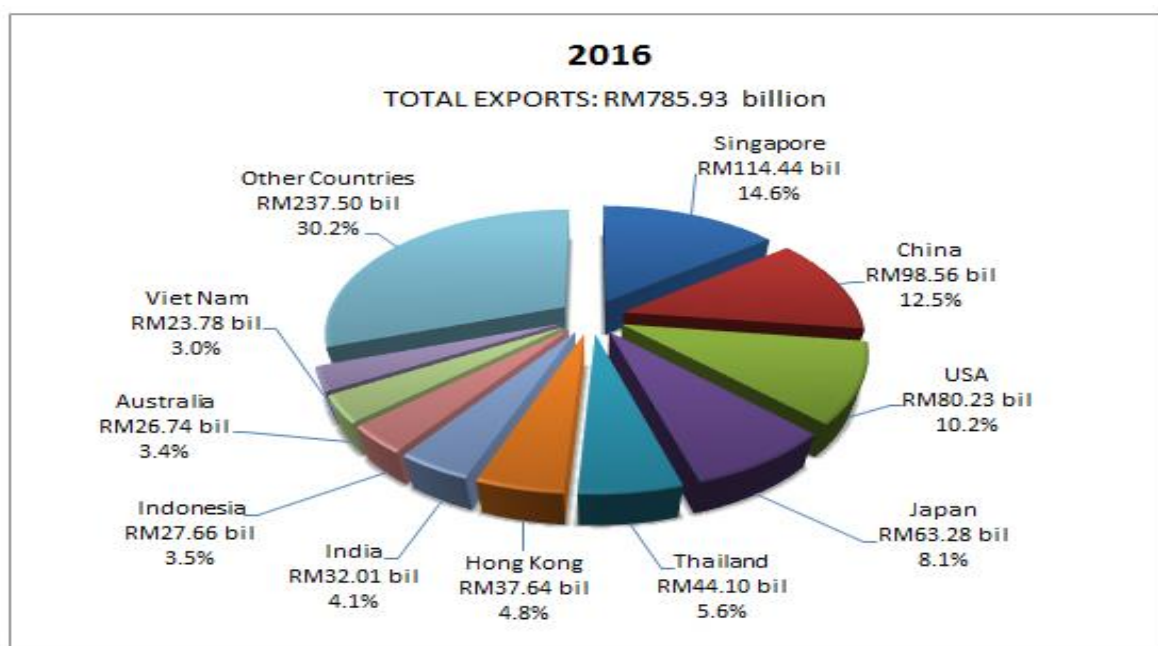


Figure 1.1: Malaysia's Total Export.

Sources: Department of Statistics, Malaysia (2016).

According to Malaysian Department of Statistics (2016), major Malaysian exports are Electrical and electronics products (32.9%), refined petroleum products (9.1%), Liquefied natural gas (8.2%), Chemical and chemical products (6.6%), Palm oil (6.4%), crude petroleum (4.4%), manufactures of metal (3.9%), Machinery appliances and parts (3.8%), optical and scientific equipment (2.9%), rubber products (2.6%) and others (19.2%) and the main exports destinations are Singapore followed by China, U.S.A, Japan, Thailand, Hong Kong, India, Indonesia, Australia, Korea and others country.

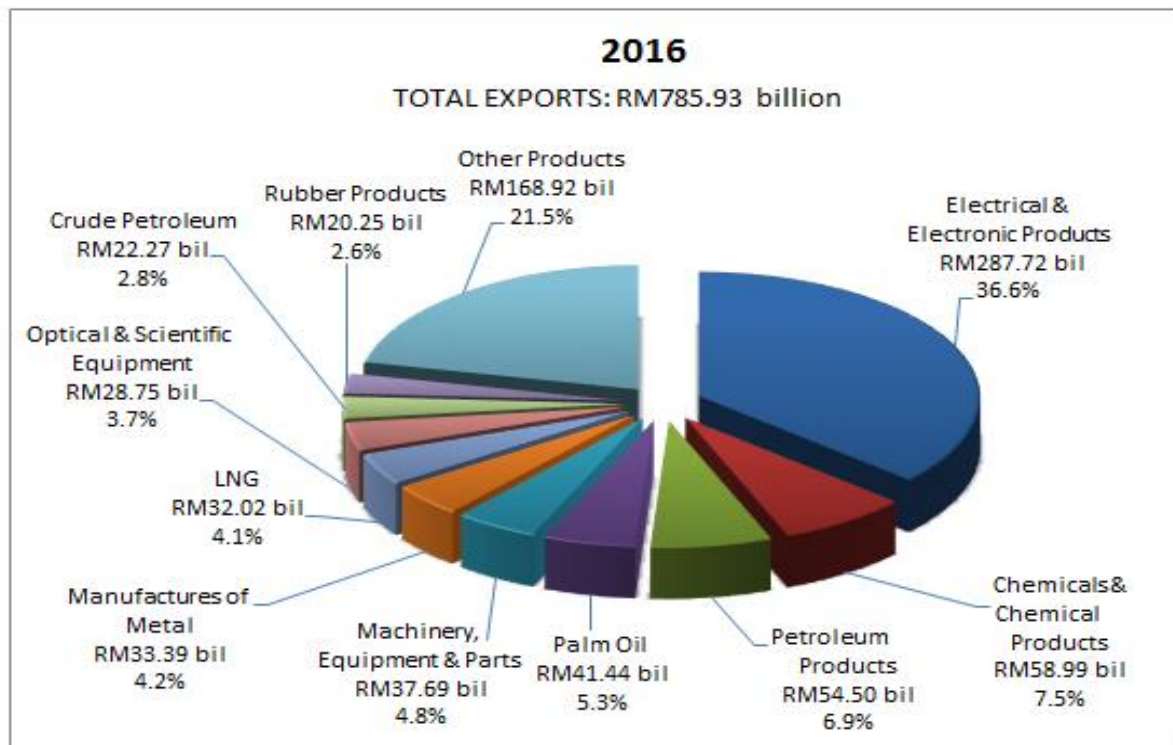


Figure 1.2: Major Malaysia's Exporting Products.

Sources: Department of Statistics, Malaysia (2016).

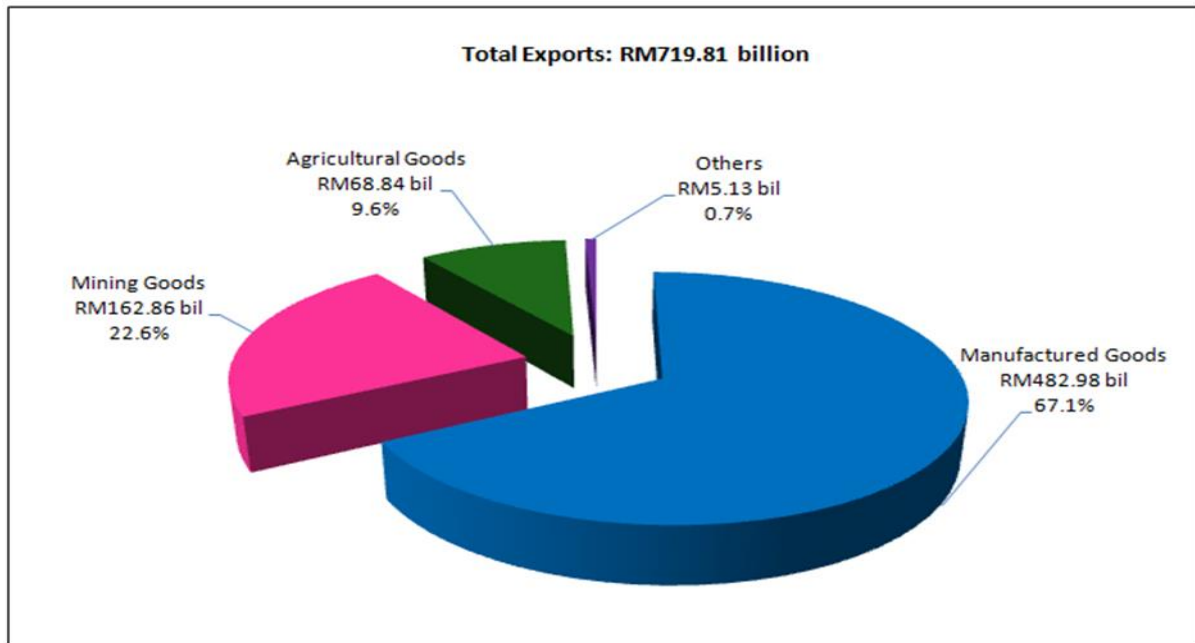


Figure 1.3: Malaysia's GDP Contributors.

Sources: Department of Statistics, Malaysia (2016).

Since 2009, China become the largest trading partner of Malaysia. Between 1997 and 2015, Malaysian export increased from US\$ 1,873.631 million to US\$ 28,222.68 million with an annual growth rate of 6.64%. From the context of trade pattern within the Asia pacific region, China can be demonstrated as an important import market. In 2012, within ASEAN and RCEP, Malaysia contributes 24% and 8% of total Chinese trade respectively. As a consequence, in between the ASEAN and extended Regional Comprehensive Economic Partnership, Malaysia become a vital import source for China in compare with an export destination. In the same year, China economy surpasses the US economy and take places as the largest trading partner and second largest export destination of Malaysia. During the year 2009, Malaysian trade with China amounted for US\$ 36.35 billion about 19.66% of world trade share of Malaysia and at the same time that surpassed the trade share of Malaysia with the USA which was 10.9%. In 1997 the value of Malaysian trade with China was only stand for US\$ 4.12 billion and which was 4.41% of Malaysian total trade.

Wang and Wei (2005) and Okamoto (2005) stated that, due to the ASEAN-China FTA, the bilateral trade between Malaysia and China has been expanded steadily.

Until 2008, the United States regarded as Malaysia's largest trading participant. Malaysia's trade share was recorded 16.6% with the United States in the year 2005, which was an expansion by 8.7%, in comparison with the previous year. Individually within TPP countries, the USA economy is one of the largest trading participants of Malaysia. In comparison, between 1997 to 2015, Malaysia's overall exports decrease from 15.72% in 1997 to 7.4% in 2015. The main exported products from Malaysia to USA are, assembled electrical products and manufactured electronic goods. Accounted for 1997, until 2008, average Malaysian exports to the United States was approximately US\$30 billion and the highest amount was recorded in 2006, which was US\$ 36 billion, and it was declined to US\$ 19.70 billion, approximately 8.4% of total trade in 2015.

According to the Department of Statistics Malaysia (2016), Singapore is the first largest trade partner of Malaysia within the ASEAN communities. Electrical and electronic products, machinery, metals, and petroleum are the major exporting goods exported to Singapore. In comparison between 1997 to 2015 Malaysia's overall export increase from 6.47% in 1997 to 12.99% in 2015 to Singapore.

Yusoff (2005), explored that, Japan is the third largest Malaysian export destination country for the last few decades which includes, electrical and electronic products, machinery, and petroleum. Malaysia can be further penetrated the Japanese market as a lot of the Japanese Multinational Corporations operate their business in Malaysia for exploiting natural resources by utilizing cheaper labour. In 1997, Malaysia's exports to the Japan were nearly 10.50% of Malaysia's overall exports which decrease to 10.27% in 2015.

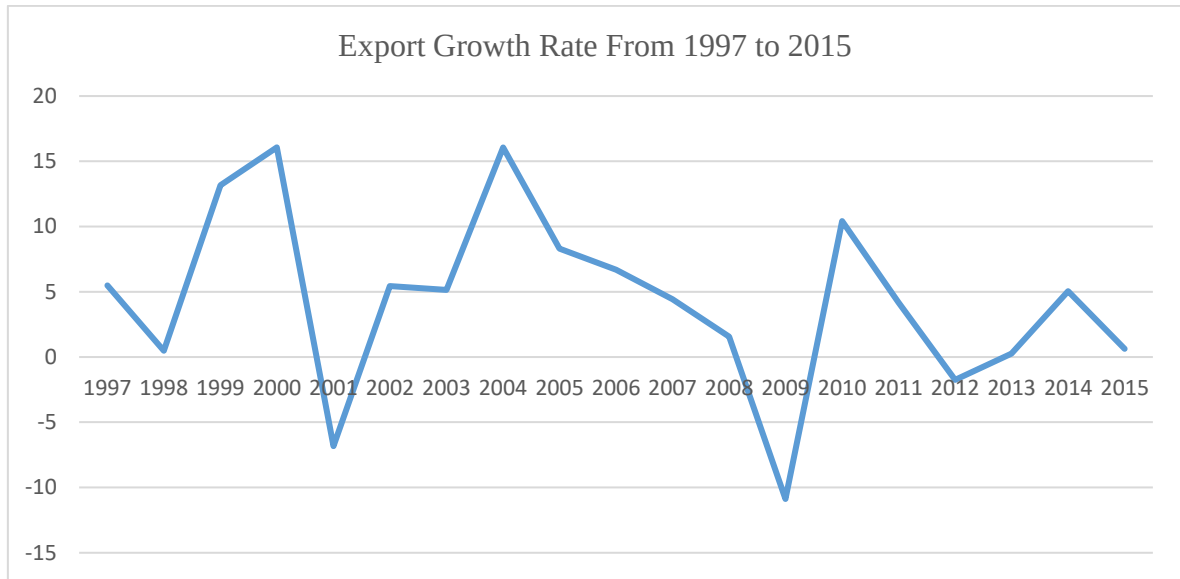


Figure 1.4: Malaysia's Export Growth Rate.

Source: World Development Indicators, (2016).

From the period 1997 to 2015, figure 1.4 illustrates Malaysian exports inflows. Because of Asian financial crises, the yearly growth of export started to decrease between 1998 and 2001. Malaysian export growths started to improve gradually to 5.42% in 2002. Later in 2004, export growth started to increase speedily. Exports again began to decrease for the year 2005 until 2009. The export growth was recorded for the period of 2004 to 2008 respectively 8.30%, 6.68%, 5.63%, 4.42% and 1.57 %. It started to expand by 10.42% in 2010 again. During the periods from 1997 to 2015 Malaysian exports growth experienced two terms negative growth rate or decline in overall exports. The negative growth in 2001 can be fundamentally justified by the US economic downturn. The US is one of the leading trading partners of Malaysia, as a result, sluggishness in US economy as well influence demand for Malaysian exports. The down turn in 2009 can be explained through the impact of the European Union crisis along with natural disaster existed in Japan which is likewise among the dominant three Malaysian export targets. So, it can be concluded that, economic

growth of Malaysia has been inevitably associated with the expansion of its external sector. A considerable influence on the prospects for its economic growth is linked up with the contraction of external sector.

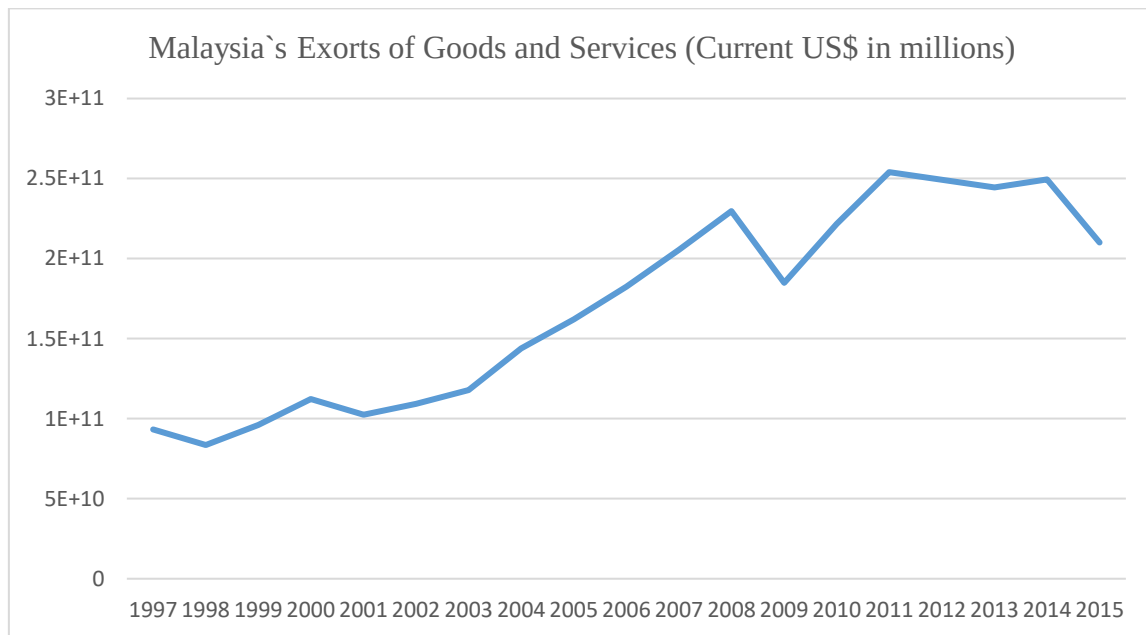


Figure 1.5: Malaysia's Export of Goods and Services.

Source: World development Indicator (2016).

Besides other participant, ASEAN nations play a vital role, particularly, Singapore, Thailand, Indonesia, Philippine and Vietnam for Malaysia's exports. With US\$ 401,247.78 million exports Singapore become the largest export partner within ASEAN, with US\$ 133,767.53 million export, Thailand ranked second, with US\$ 78,946.16 million, Indonesia placed the third largest, with US\$ 37,783.83 million, Philippine established its position at fourth place and finally, with US\$ 34437.41 million, Vietnam placed at fifth during the period between 1997 and 2015. Singapore, Thailand, Indonesia, Philippine and Vietnam

recorded 13.19%, 4.40%, 2.60%, 1.40% and 1.13% of total Malaysian export for the same period of time.

On the other hand, Malaysia's total export flows to India between 1997 and 2015 was US\$ 86,138.03 million which was 2.84% of total export. Within the same periods of time Korean export flows was recorded US\$ 96,037.40 million and 3.16% of total export.



Figure 1.6: Malaysia's Export Growth to GDP

Source: World development Indicator (2016).

Moreover, for the last few decades, as a fast-growing economy, Malaysian economy has achieved a remarkable economic growth rate in the world. According to World Bank (2016), between the periods from 1997 to 2013, its GDP per capita (PPP) rose from US\$12,233 to US\$24,230 and achieved a GDP growth averaged 4.61% for the same period of time. From the figure, the annual GDP growth of Malaysia is recorded 7.32% in 1997. It drops into a negative growth of -7.35% during the year 1998. From the year 2002, an increasing trend of the GDP growth is observed until 2004 but started to decrease again in the year 2005 which was recorded 5.33%. Between the period of 2006 and 2007, it expanded by 5.59% and 6.30%. A declining trend of Malaysian economic growth has been noticed in

the year 2008 to 2009, which was 4.83% and -2.51%. In comparison with 2008, the growth rate has decreased by 3.31%. Malaysian GDP growth appeared to increase again in the year 2010. In 2014, GDP growth of Malaysia expanded 1.32% over the previous year. The annual GDP growth rate averaged 4.6% during the period from 1997 to 2015, with a high growth rate of 7.32% in 1997 and a low growth rate of -7.35% in 1998. Malaysia is an emerging economy also known as a diversified economy in the Asia Pacific region. Its GDP contribution from services sector is approximately 54%, manufacturing sector is accounted for 26%, Mining and quarrying constitutes of 9 % and agriculture is comprise of 9% (Department of Statistics Malaysia, 2016).

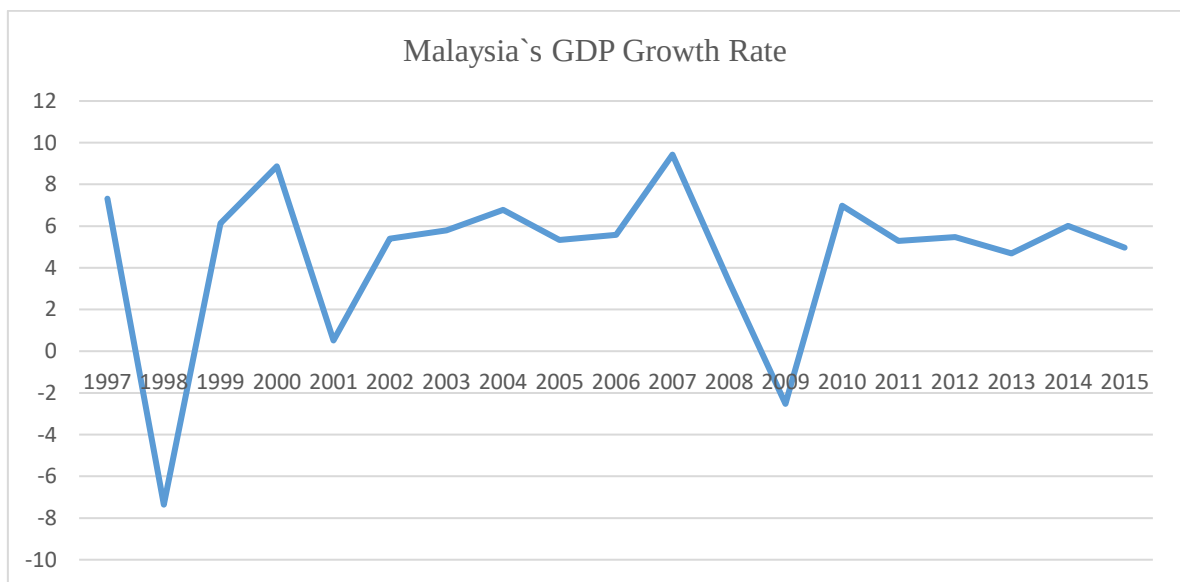


Figure 1.7: Malaysia's GDP Growth Rate

Source: World development Indicator (2016).

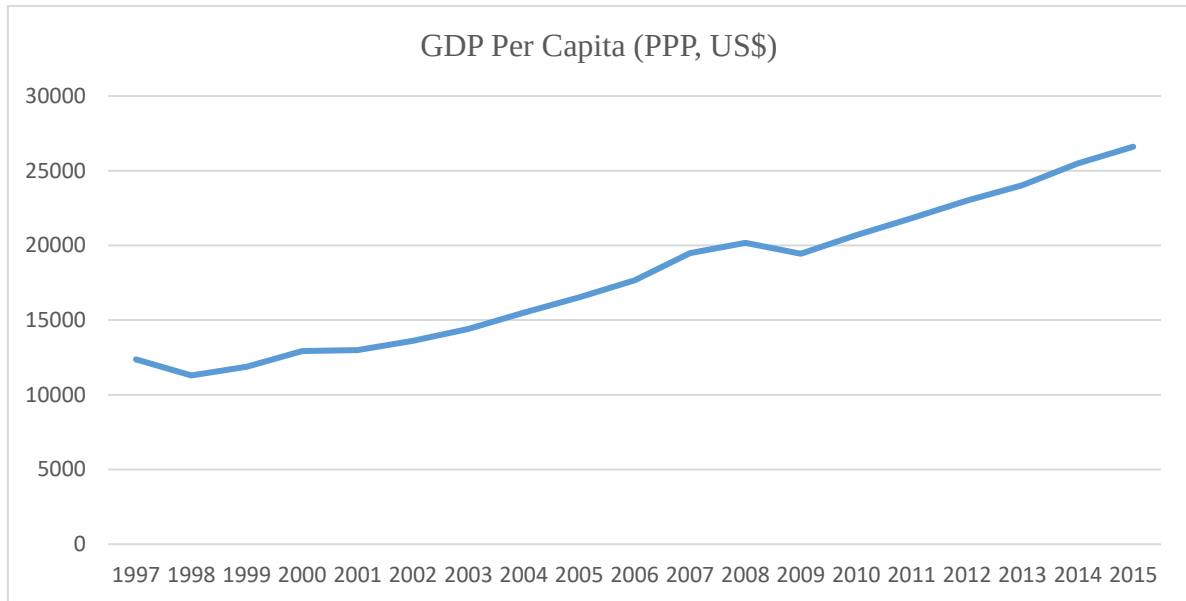


Figure 1.8: Malaysia's GDP Per Capita.

Source: World development Indicator (2016).

1.3 Trans-Pacific Partnership Agreement (TPPA)

International trade contributes a vital role to the economic growth and development in Malaysia. That is why, trade policy of Malaysia is to pursue efforts towards forming a further liberalised and appropriate international trading atmosphere. Though, Malaysia is engaging in regional and bilateral trading agreements to counterpart the multilateral strategy to trade liberalisation, it's as well give special preference to the rule-bound multilateral trading system under the World Trade Organisation (WTO). The collapse of Doha Development Agenda and the following failure of discussions the validity of the multilateral trade system, increases consciousness of nations to Free Trade Agreements (FTAs). Thereafter, FTAs have performed a significant part in this tendency towards regional integration. To assure Malaysia proceeds to be capable of gaining market entry in the world market and continues an attractive place for international investment, Malaysia as well

requires engaging in the reciprocal and regional trading agreement. The Trans Pacific Partnership Agreement (TPPA) and Regional Comprehensive Partnership Agreement are such kind of mega Free Trade Agreement.

With the increasing consciousness of the policymakers, particularly from the advanced nations, has shifted from multilateral trade agreements to the mega free trade agreements. These types of mega FTAs are recognized as a pluri-lateral in nature because of involving advanced likewise emerging nations. The main objective of these kind of mega FTAs involve rapid economic growth likewise strategic achievements. The Trans Pacific Partnership Agreement (TPPA) is such kind of mega Free Trade Agreement in which participating nations are from various continents. The negotiation was started with Brunei, Chile, New Zealand, and Singapore in 2005. Twelve nations from the Asia Pacific continent has been negotiated the treaty until 2014. Members of the TPPA with its initial participants are NAFTA members (the U.S, Canada and Mexico), ASEAN members including Malaysia, Singapore, Brunei, Vietnam and others involved Australia, Japan, New Zealand, Chile, Peru. The Trans Pacific Partnership Agreements desire to strengthen economic development within the Asia Pacific continents by introducing more participants with its existing members. TPPA is a widespread, aristocratic-quality 21st century FTA led by the US and mediated by 12 APEC member economies. It includes 21 sections (with 29 chapters) beyond tariff modifications, such as investment (involving the ISDS), services, intellectual property rights, competition policy (consisting of state-controlled enterprise reform), government procurement, labor, and the environment. The TPP is anticipated to promote supply chain performance in the Asia-Pacific territory. It includes three parts. First, the TPP is with a sentiment an expansion of the North American Free Trade Agreement (NAFTA) developed by the US, Canada, and Mexico. Second, it is a de facto US–Japan FTA is given the vast

amount of the two nations among the mediating representatives. In the US–Japan bilateral agreements, Japan faces difficulties in the agricultural division, while the US faces problems in the automobile division. Third, it is a major FTA that involves both advanced and emerging nations and as a consequence poses numerous challenges in the sphere of market entrance, services relaxation, competition policy, intellectual property rights, state procurement, labor, and environmental criteria. Finally, it consists of both agricultural exporters and importers and a favourable negotiation would call for the latter's market opportunity and internal reforms, which are invariably politically problematic

Due to its nature and scope TPPA, differs from other regional trade agreements as it extends far away from the prevailing trade treaties which consists of 29 chapters on conventional also new concerns of Free Trade Agreements. New Free Trade agreements concern in the TPPA includes, investments, services, financial services, competition, government procurement, labour, intellectual property, environment and traditional concern involved, the market access, technical barriers to trade, sanitary and phytosanitary measures, rules of origin, customs cooperation, investment, services and legal and institutional aspects. Within Asia Pacific region, Trans Pacific Partnership Agreement, aims to form a platform of economic integration through its intended FTA.

Trade liberalism is one of the fundamental advantages for the TPPA consumers. Free Trade Agreements, provides the consumers to experience a further variety of foreign products and services, with more sophisticated quality at a competitive price by tariff removal. Moreover, due to liberalization of trade, industries are capable of sourcing cheaper raw and materials. To make national manufacturers of products and services provider more competitive by bringing about of gradual competitiveness through liberalization. Through gradual liberalization of trade, TPPA can create more sophisticated featured goods for its

national consumers and more competitive producer in the foreign market. To make a Malaysian citizen educated locally in prominent institutions at a considerably cheaper price by liberalizing of the education sector.

Technical regulations on goods, health and sanitary concerns is as well negotiates in TPPA. In comparison with different TPPA participant, omissions of Malaysia's from the TPPA will as well make Malaysia less engaged as an investment destination. The TPPA is anticipated to develop into a role model for the FTA for the Asia Pacific, including the 21 APEC participant nations, Malaysia will lose a first mover advantage to formulate the regulations and assure its concerns and sensibilities by eliminating from TPPA. If Malaysia deny the TPPA negotiations immediately, it has to consider agreeing to the regulations, practices and terms and conditions determined by other TPP participants in case consent to the TPPA later and deprive of the advantages and considerations of Malaysia. By decreasing the expense of cross-border trade and providing improved access to trade information and also by simplifying regulatory and administrative procedure, TPPA aims to promote the operating situation for business. TPPA will support to participant nations' economies to develop the institutional capability to execute and take benefit of the advantages of trade and investment reformation. For achieving the purposes of strong, continual and balanced growth in the Asia-Pacific Area, TPPA also assists the multilateral trade negotiations within the World Trade Organization (WTO).

From the overall Malaysian exports US\$ 93.29 billion in 1997, US\$ 43.37 billion (49.49%) with TPP participant nations and with the rest of the world US\$ 49.92 billion (53.51%) was reported. In 2011, the highest Malaysian exports quantity US\$254.02 billion was recorded, from the total quantity of export with TPP participants US\$ 90.24 billion (35.52%). During the year of 1997 to 2015, out of the overall exports of US\$ 3,042.49 billion,

US\$ 1,245.39 billion was (40.93%) with TPP nations and with the rest of the world US\$ 1,797.1 billion (59.07%) was reported. Malaysian exports to 11-TPP participant nations is approximately 41 percent can be concluded from the above scenario. In 2013, the FTA coverage ratio with ASEAN communities that consist of the member of the TPP (such as Brunei, Vietnam and Singapore) is 15.06%. Thus, it implies that, with the TPP members, the marginal coverage ratio for commodity trade accounted for only 25.87% and most of that determined by USA.

As of 2014, it is estimated that the 12 TPP nations together determined approximately 41% of the world market, with an aggregate GDP of about USD31 trillion, and an inhabitant of higher than 800 million. Malaysia currently does not have any FTA namely Canada, Mexico, Peru and USA by taking entry to TPPA, Malaysia will contribute with trading entrance to four trade participants. The Free Trade Agreements negotiation has been suspended between Malaysia and United States in 2009 momentarily by the US authority as they gave priority to regional economic association, especially the Trans Pacific Partnership Agreement. As of 2014, these four nations considered for about 73% of the market capacity of the TPPA economic bloc, with a GDP of approximately US\$ 21 trillion. In comparison, between 1997 to 2015, Malaysia's overall exports decrease from 15.72% in 1997 to 7.4% in 2015 with the U.S. If Malaysia can establish a FTA with U.S.A, it can turn around the deterioration of trade between Malaysia and US and as well US FDI outflows move back to the Malaysia.

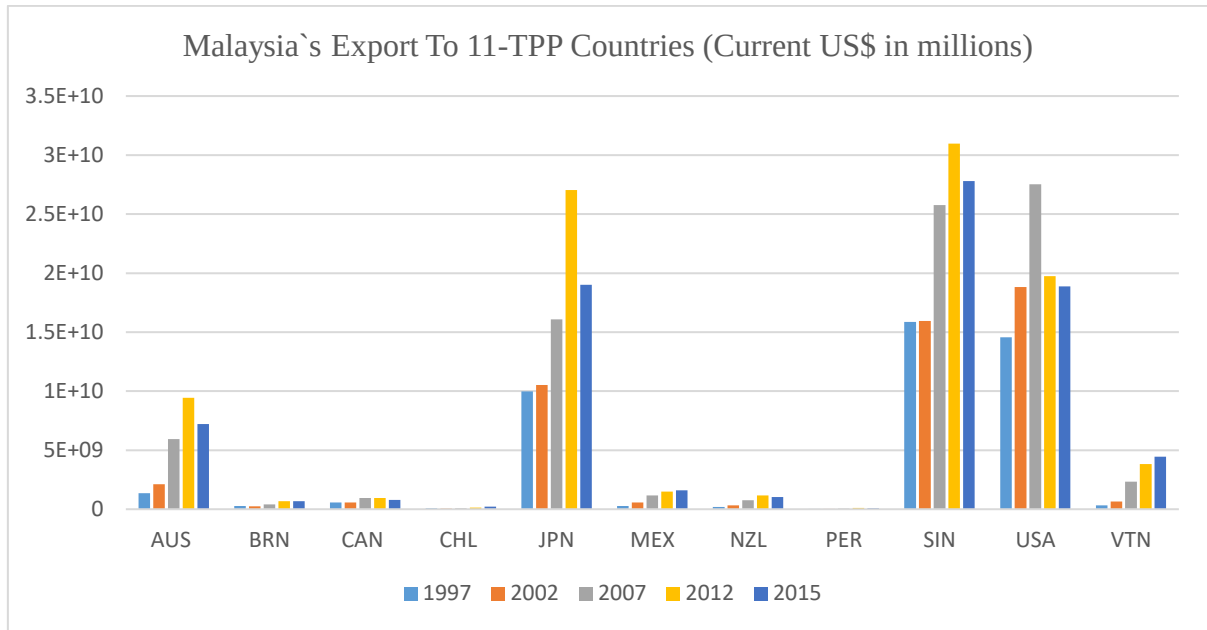


Figure 1.9: Malaysia's Export to TPPA Countries.

Source: UN Com Trade (2016).

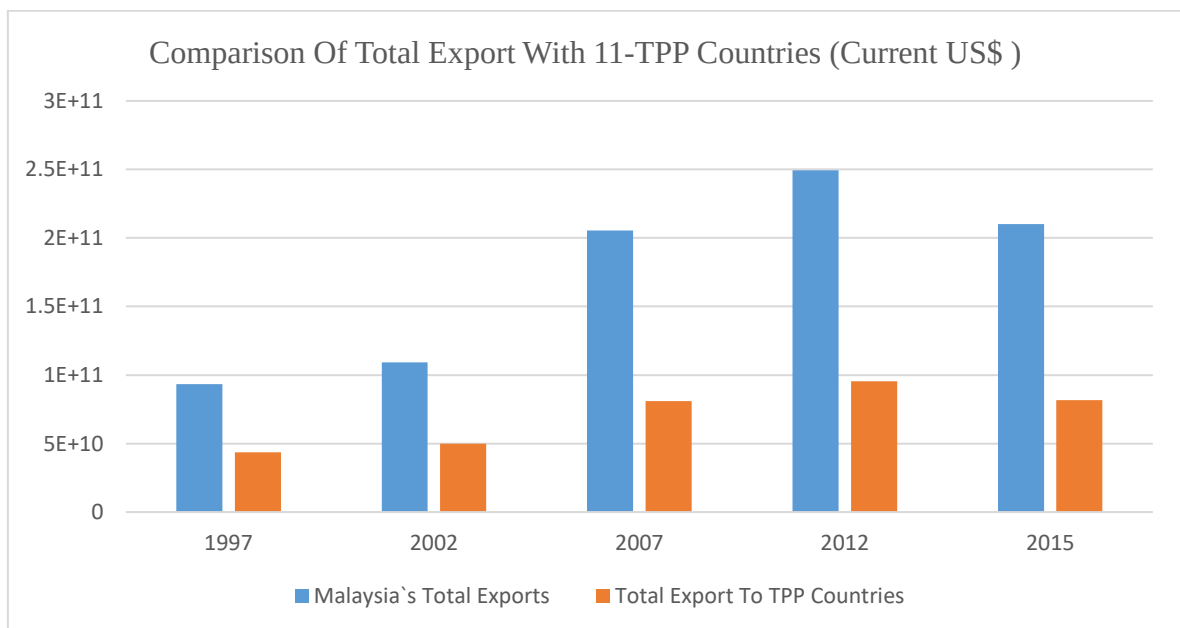


Figure 1.10: Malaysia's Export Comparison

Source: Com Trade (2016).

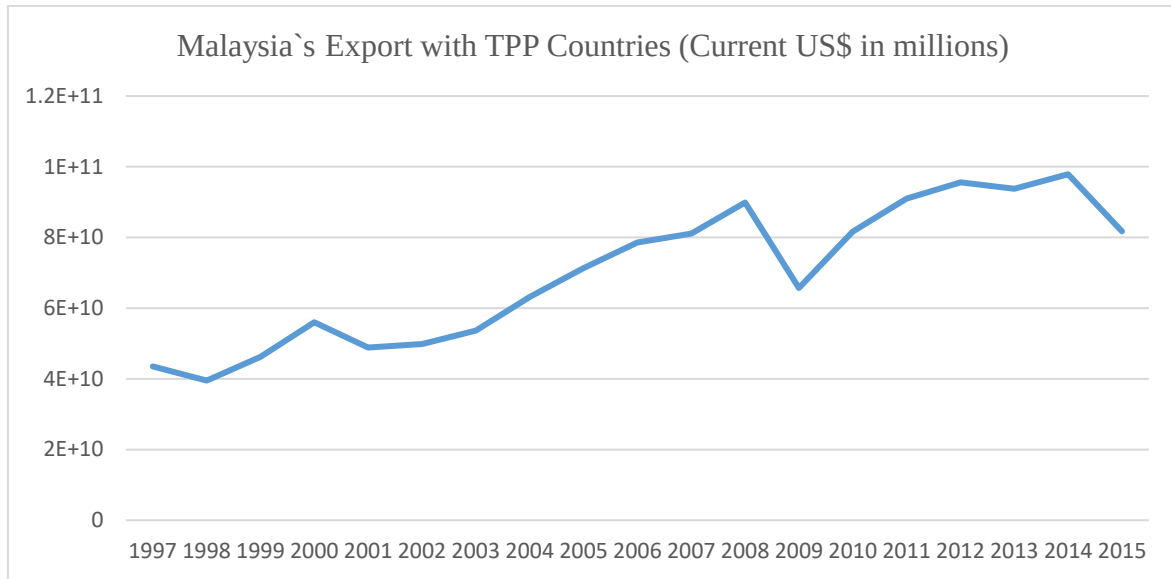


Figure 1.11: Malaysia's Export with TPPA Countries.

Source: UN Com Trade (2016).

1.4 Regional Comprehensive Partnership Agreement (RCEP)

In 1967, The Association of Southeast Asian Nations (ASEAN) was founded with initially by five countries, which include, Indonesia, Malaysia, the Philippines, Singapore and Thailand with an objective to establish the deeper regional integration among the member countries and later on extended with another five countries namely, Brunei Darussalam, Cambodia, Lao PDR, Myanmar, and Vietnam. The ASEAN FTA (AFTA) was initiated in 1992 and the strategy of AFTA, the Common Effective Preferential Tariff (CEPT) has come into effect in 1993 in order to enhance trade and production growth within the member states. Later on, in 2010, ASEAN Trade in Goods Agreement (ATIGA) was take in place in lieu of Common Effective Preferential Tariff (CEPT). The main purpose of the ATIGA is to abolish import tariffs on all goods traded within the participant nations by 2015, with the exception for four nations namely, Cambodia, Lao PDR, Myanmar and Vietnam by 2018. According to Bernabe (2011), in compare with CEPT, ASEAN Trade in

Goods Agreement include more comprehensive arrangements, as it take into account for Non-Tariff Measures (NTMs), for instance, Sanitary and Phytosanitary measures, rules of origins and other trade simplification arrangements. Besides. under ASEAN a number of FTAs has been implemented such as, the ASEAN-China FTA (ACFTA) in 2005, the ASEAN-Japan Comprehensive Economic Partnership (AJCEP) in 2008, the ASEAN Australia-New Zealand FTA (AANZFTA) in 2010, the ASEAN-India Free Trade Agreement (AIFTA) in 2010, and the ASEAN-Republic of Korea Free Trade Agreement (AKFTA) in 2010.

The Regional Comprehensive Economic Partnership Agreement (RCEP) is a comprehensive, high-quality and mutually beneficial economic partnership agreement among ASEAN and other 6-ASEAN FTA members, such as Australia, China, India, Japan, Republic of Korea and New Zealand. During the East Asian Summit in 2012, RCEP was introduced formally. With a total 3.5 billion people, five major drivers market growth that include China, Japan, Republic of Korea, India and ASEAN, the globe's largest free trade association will be formed by RCEP. The core objectives of RCEP to produce balanced economic growth and deeper integration between its participants beyond the traditional Free Trade Agreements within ASEAN. RCEP combined the East Asia Free Trade Agreement (EAFTA) and the Comprehensive Economic Partnership in East Asia (CEPEA) which is considered as ASEAN++ method. The East Asia Free Trade Agreement (EAFTA) is Chinese backed and originated from ASEAN + 3FTA that include China, Japan and Republic of Korea. Based on ASEAN + 6FTAs, the Comprehensive Economic Partnership in East Asia (CEPEA), is supported by Japan. RCEP has taken place in 2015 with a core purpose is depend on an "open accession" clause.

The RCEP is accounted for approximately half of the world population, a combined GDP of USD22.4 trillion or 30.6% of global GDP, total trade amount for USD11.9 trillion and total FDI inflows amounting to USD329.6 billion. According to Leal-Arcas (2013) and Das (2014), RCEP is aiming to reinforce The Association of Southeast Asian Nations hub for further Asia-Pacific regional framework by strengthening on going engagement that has already been obtained within ASEAN and its Free Trade Agreement participants. Due to the trade diversion effects, the China-Japan-Korea (CJK) Free Trade Agreements, is expected to have adverse influences on all ASEAN economies, since RCEP involve China, as well the Japan and Korean economies, RCEP structure may produce in different dynamics (Fukunaga & Isono, 2013).

Within the RCEP framework, China could take the opportunity of developing its economic position within Asia Pacific region. Over the few decades, Malaysia has grown as an important trading participant of China, in accordance with market shares of China`s trade with the ASEAN and RCEP partners. Since 2009, China is the largest trading partner of Malaysia. In between the ASEAN and extended Regional Comprehensive Economic Partnership, Malaysia become a vital import source for China in compare with an export destination. Wang and Wei (2005) and Okamoto (2005) stated that, due to the ASEAN-China FTA, the bilateral trade between Malaysia and China has been expanded steadily. It is expected that, within the Asia pacific region, RCEP will provide a deeper widespread economic integration and for Malaysia it is vital to establish itself as a trading nation. During the year 2014, Malaysia trade share with its 16-RCEP partners accounted for US\$ 275.31 billion and covers 56.95% of its total trade. Last few years, in the Asia pacific region in compare with exports, Chinese imports growing faster and not only in terms of raw materials and production resources but also manufactured products.

China usually imported consumer products, intermediates, and machinery from developed neighbours such as, Japan, Singapore, South Korea, and Taiwan. For the rest of the world, to process exports, these countries as well-established manufacturing plants in China. Within RCEP frame work China`s developing neighbours like, Malaysia, Thailand, Indonesia, and Vietnam are participated to its multinational production chains. MNCs in China promoting regional trading by incorporating the global production system along with earlier entrants. On the other hand, coordination with its regional counterparts is concentrated by China`s own enterprises and in this way enhancing its intra-industry trade in diversified commodities. Chan et al. (2003) and Chan, 2008 demonstrated that, China`s appearance as an economic powerhouse has arisen from the extended labor diversification and intra-regional trading that may result to regional economic integration in the long-run like wise, EU and NAFTA.

The Free Trade Agreements coverage ratio of Malaysia was accounted for 64.1% and total trade with its FTA partners was US\$277.25 billion in 2014. It is accounted that approximately 49% of exports to free Trade Agreements participants` nations were resulted from preferential access and in which ASEAN become an important trading partner. During the year 2014, Malaysia total trade to ASEAN trading partners was recorded US\$ 118.97 billion or 27% of total trade. Since 2009 to 2014, Malaysian largest trading partner remained China for the six successive years. During the year 2014, Malaysian trade with China amounted for US\$ 63.56 billion about 14% of world trade share of Malaysia and there is strong integration of the supply chain within both nations. For Malaysia, RCEP with a middle-income group at the same time advanced income group and reform initiatives with enormous strategic trading partners will promote its development.

From the overall Malaysian exports US\$ 93.29 billion in 1997, US\$ 39.026 billion (41.83%) with RCEP participant nations and with the rest of the world US\$ 54.27 billion (58.17%) was reported. In 2011, the highest Malaysian exports quantity US\$254.02 billion was recorded, from the total quantity of export with RCEP participants US\$ 138.67 billion (54.59%). During the year of 1997 to 2014, out of the overall exports of US\$ 3,042.49 billion, US\$1,527.11 billion was (50.19%) with RCEP nations and with the rest of the world US\$ 1,515.17 billion (49.80%) was reported. Malaysian exports to 15-RCEP participant nations is approximately 50 percent can be concluded from the above scenario. So, it can be concluded that, in compare with TPPA, Malaysian exports expanded US\$269.79 billion between the year 1997 and 2015 which is 8.87% of total exports during the same period of times.

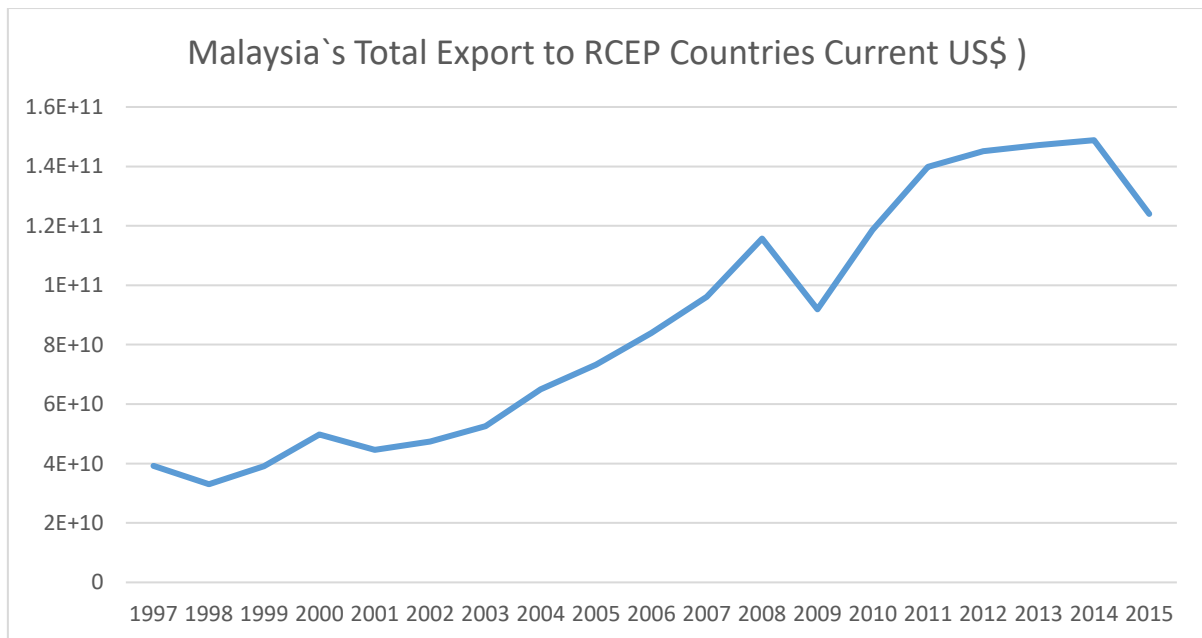


Figure 1.12: Malaysia's Export to RCEP Countries.

Source: UN COM Trade (2016).

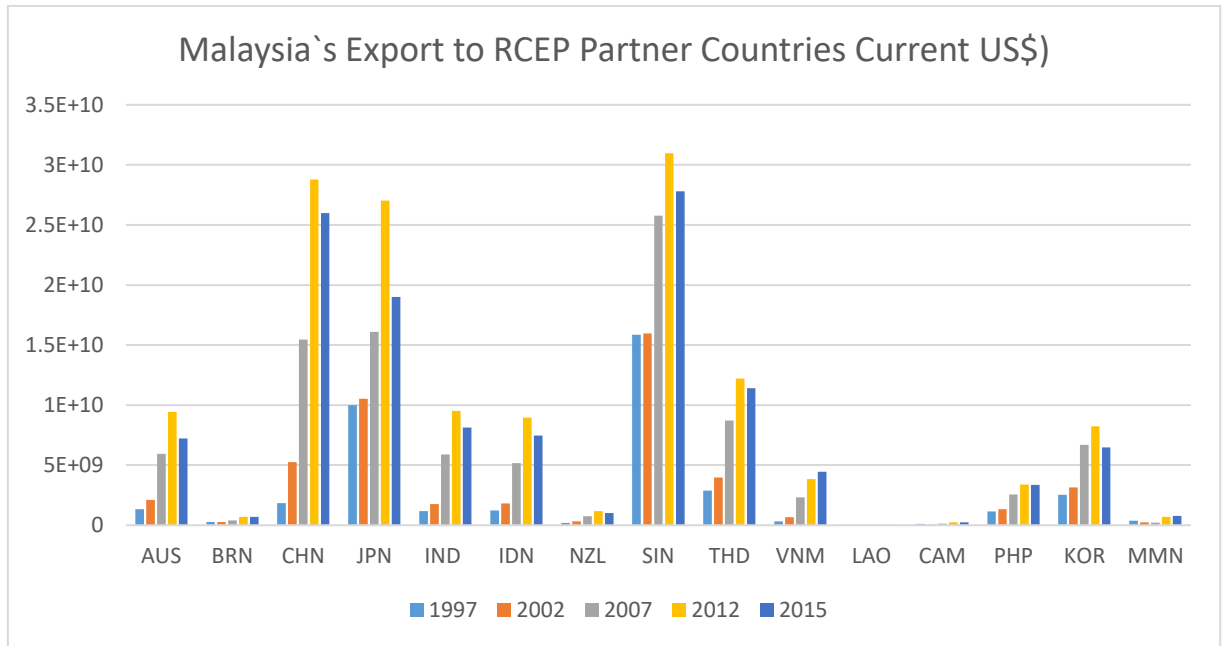


Figure 1.13: Malaysian Export to RCEP Countries.

Source: UN COM Trade (2016).

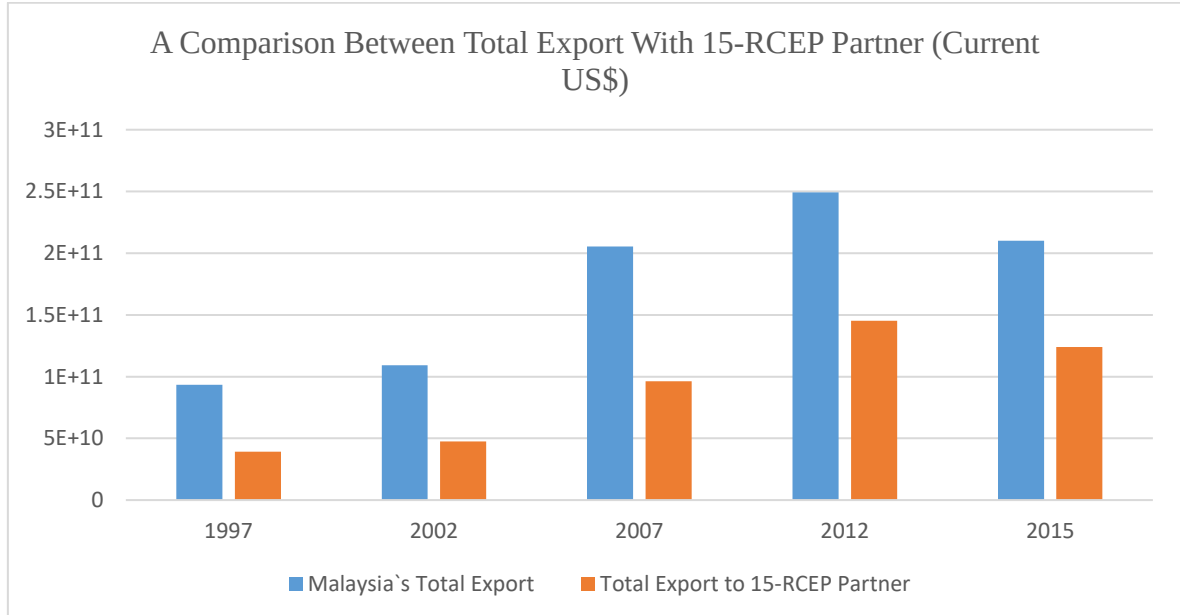


Figure 1.14: Export Comparison between Malaysia and RCEP

Source: UN COM Trade (2016).

1.5 TPPA and RCEP

The two mega FTAs namely TPP led by the US and RCEP spearheaded by China, there has been a number of concerns recently regarding the application of the FTAs to promote themselves and support each other out of their particular regional economic agreements. Moreover, within the Asia Pacific region, the Association of Southeast Asian Nations (ASEAN) and its member states are as well performing a vital part in the future of trade arrangements. ASEAN is concerned not only about the welfare effects of TPP and RCEP on its member countries, but also about their influence on the development of ASEAN as an economic community, as its economic collaboration and integration efforts have continued to a significant stage.

From these high-level regional agreements, the most extensively accepted advantages for ASEAN to overcome the “noodle bowl” impact of small, overlapping Free Trade Agreements. Within a simple structure, RCEP and TPP are supposed to support bring together the trade patterns in ASEAN’s different FTAs. Though current investigation from the Asian Development Bank indicated that, ASEAN solidarity and interfere with its internal economic cooperation and integration may be affected by the two FTAs. The recent TPP talks consist of only four ASEAN representative countries, which are Brunei, Malaysia, Singapore, and Vietnam. Because of the particular obligations for regulatory concentration in sectors such as intellectual property rights (IPR), state-owned enterprises, and competition, some ASEAN partner have showed unwillingness to participate the negotiations. For instance, latecomers will have to agree with all obligations on a reciprocal basis before they can participate, which will undoubtedly delay the agreement phase and expand their transaction costs.

The TPP negotiations shows a potential impendence within the internal economic integration of ASEAN due to the omission of six ASEAN partner countries. As the concern of ASEAN's regulatory coordination of Intellectual Property Right has also existed within TPP and because of extensive development differences among its 10 partner countries, coordinating the IPR provisions is a difficult responsibility for ASEAN. Further wider differences in IPR regulation between the partner nations may arises due to the demanding requirements of TPP create a burden to the four ASEAN signatories and that in turn pose a challenge for them to cooperate within ASEAN. Furthermore, a plenty of scholars assert that the welfare effects of TPPA on ASEAN are uncertain. Current investigations indicated that the four ASEAN participant countries that are already involved in TPPA may promote growth by TPPA negotiation, but these advantages may occur at a cost to other ASEAN partner that are not in TPPA. Because of preferable tariff and regulatory treatment, trade may have diverted to other TPPA participant countries rather than ASEAN members that are not associated with TPPA.

Due to demanding requirements of TPPA negotiations, ASEAN economy is unlikely to exercise considerable impact as an economic association under TPPA and it has concentrated most of its enthusiasm on the RCEP negotiations. RCEP is regarded as an extension of the five FTAs within ASEAN and its six partners' namely, China, India, Japan, South Korea and Australia, and New Zealand, that has already been existed. ASEAN has attempted to attain functional centrality within RCEP framework by depending on these five existing ASEAN-centred FTAs. RCEP aim to carry on as a policy for collaboration and have greater negotiating power to protect its own concerns in the negotiations. RCEP is initiated by ASEAN with the expectation that ASEAN regional economic partnership and integration

will be promoted through this RCEP negotiation and in compare with TPPA, RCEP may promote more balanced growth within ASEAN community.

Fukunaga and Isono (2013), found three important economic incentives for pursuing RCEP by ASEAN. Firstly, higher level market entrance advantage within the ASEAN community is not provided by some of prevailing ASEAN+1FTAs. So that development of liberalization commitments in goods and services trade and rules of origin can be conceivably produced through RCEP framework. Secondly, the noodle-bowl position is created through the ASEAN + 1FTAs that in turn interferes with the complete utilisation of preferential treatment. The situation of noodle-bowl within a collection of rules and commitments in the ASEAN + 1 FTAs can be possibly facilitated within RCEP framework. Thirdly, Itakura (2013), stated that, if China-Japan-Korea is implemented but RCEP is not implemented, ASEAN has to give up its possible economic advantages. ASEAN can alleviate adverse impacts and significantly extend its economic possibilities by accomplishing RCEP prosperously.

Furthermore, for a longer time period, the advantages of free trade agreements (FTAs), have been argued. Trade diversion and trade creation are two potential conflicting consequences with FTAs. Trade diversion losing efficiency by shifting FTA members to higher-cost manufacturers while Burfisher, Robinson and Thierfelder (2001) demonstrated that, when trade is created, FTA will receive a better economic performance and higher welfare by depending on the primary economic structure, especially the tax structure between the FTA members. By considering TPPA, there are only four ASEAN members include this agreement and other six members are outside of the agreement. Therefore, there are supposed to have trade diversion influence from this agreement under the trade agreements between TPP and nations other than ASEAN community which are not included

within TPPA. On the other hand, within RCEP framework only seven countries such as Japan, Australia, New Zealand, Brunei Darussalam Malaysia, Vietnam and Singapore are in both TPPA and RCEP, which can create a conflict between these two regional Agreements. To implement Tenth Malaysian Plan as well as Malaysia's "Vision 2020" to be a "High Income Country status", Malaysia is as well planning to expand its exports market to the traditional market by pursuing FTA. Hence it is imperative for Malaysia to find a balanced regional integration market to diversify its export destinations to stimulate investment as well aims to develop trade growth, to work jointly with its trading participant and also economic, trade, and investment partnerships can be established. Through this balanced regional integration, the Government trying to reverse back to the steady decline of trade between Malaysia and its trading partner. (Tenth Malaysia Plan, p.12 and p.103). Malaysia can produce an effective buffer for the economy through stable exports by penetrating its potential markets. To go on the offensive and seek benefit of the global marketplace, Malaysia desire to start up increasing market possibilities and prospects for Malaysians.

Table 1.1: Comparison between RECP and TPPA

Title	RCEP	TPPA
Membership	16 countries in Asia and Australia region ▶ Negotiations commenced in March 2010. ▶ 10 Association of South East Asian Nation partner: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam ▶ Six ASEAN Foreign Members: Australia, China, India, Japan, New Zealand and South Korea	12 countries across the Pacific ▶ . In November 2012, during the 21st ASEAN Summit in Phnom Penh, Cambodia ,the RCEP negotiation was introduced ▶ 7 ASEAN members (also in Regional Comprehensive Partnership Agreement) Australia, Brunei, Japan, Malaysia, New Zealand, Singapore and Vietnam • Plus Canada, Mexico, Chile, Peru and the United States
New FTAs	▶ To establish and coordinate ASEAN+ 6 Free Trade Agreements (Australia, China, India, Japan, Korea, New Zealand into a single and better systematic trade and investment framework in the region is the main purpose of Regional Comprehensive Economic Partnership.	▶ TPPA will create four new FTAs for Malaysia that currently Malaysia does not possess, namely Malaysia-USA, Canada, Mexico and Peru.

Table 1.1 continued

Title	RCEP	TPPA
Combined Market and Population	► A federation of a territory inhabited by higher than three billion people, with a half of the world`s inhabitant, an attached GDP of USD22.4 trillion or 30.6% of global GDP, total trade amount for USD11.9 trillion and an overall inflow of FDI amounting to USD329.6 billion.	► As of 2014 it is estimated that the 12 TPP nations together determined approximately 41% of the world market, with an aggregate GDP of about USD31 trillion, and an inhabitant of higher than 800 million
Total Trade of Malaysia	► During the year of 1997 to 2014, out of the overall exports of US\$3042.49 billion, US\$1527.11 billion was (50.19%) with RCEP nations and with the rest of the world US\$ 1515.17 billion (49.80%) was reported. Malaysian exports to 15-RCEP participant nations is approximately 50 percent can be concluded from the above scenario.	► During the year of 1997 to 2014, out of the overall exports of US\$3042.49 billion, US\$1245.39 billion was (40.93%) with TPP nations and with the rest of the world US\$ 1797.1 billion (59.07%) was reported. Malaysian exports to 11-TPP participant nations is approximately 41 percent can be concluded from the above scenario.

Table 1.1 continued

The influence of the US and China`s economy to The Malaysian economy	Since 2009, China is the largest trading partner of Malaysia. Between 1997 and 2014, Malaysian export increased from US\$1,873.631 million to US\$28,222.68 million with an annual growth rate of 6.64%. From the context of trade pattern within the Asia pacific region, China can be demonstrated as an important import market	After 2008, total trade between Malaysia and the US has fallen substantially. The main objective of Malaysia to join TPPA was to create a FTA with the US to restore back its trade and FDI inflows from the US. Recently The US economy withdrawn them from TPPA which makes TPPA less attractive.
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Source: Ministry of International Trade and Industry (Malaysia)

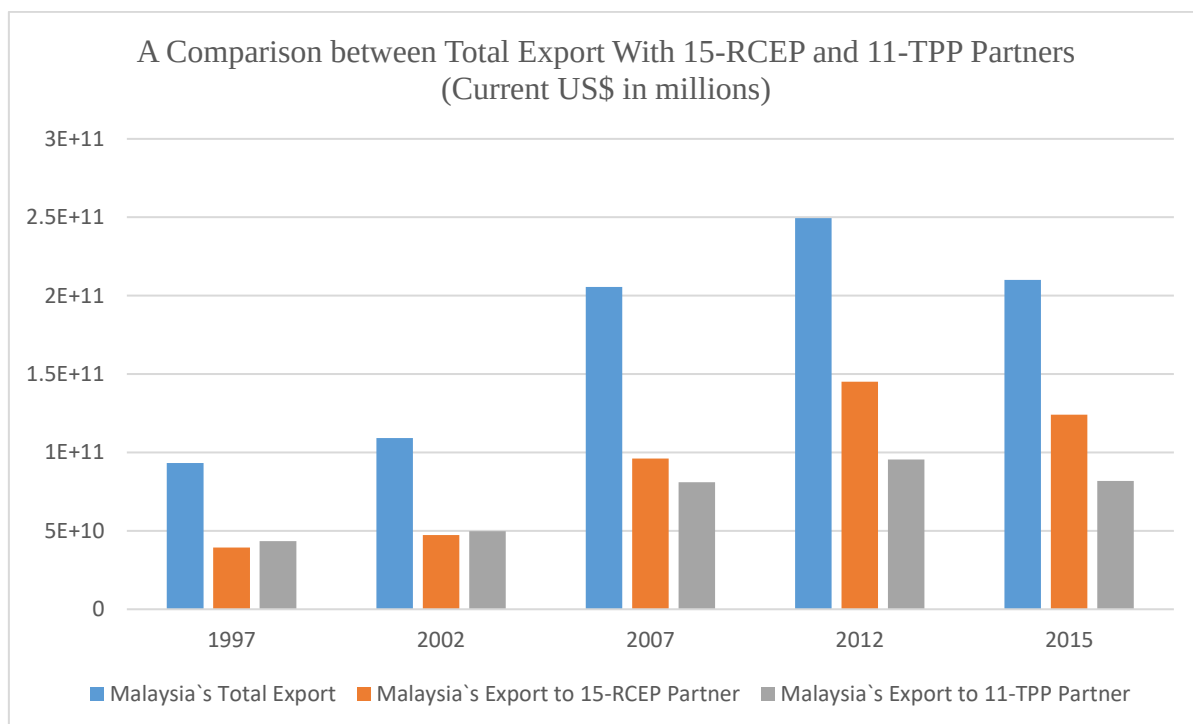


Figure 1.15: Malaysia's Total Export Comparison between TPPA and RCEP.

Source: UN COM Trade (2016).

1.6 Problem Statements

Malaysia's economic growth is inevitably associated with the development of the external sector. Therefore, facing a contraction in the external sector will result a considerable influence on the expectation of its economic growth. The economic growth performance of Malaysia has been unfavourable for the last few years by considering both domestic and external factors. Depreciating of the Malaysian Ringgit, a sudden drop of the commodity and oil prices, outward flowing of international capital, domestic political issues, economic slowdown in China and the goods and services tax (GST), both externally and internally these factors are impacting Malaysian economy. In between 2001 to 2009, the short fall of export due to the global recession, produced in prolonged balance of deficit issues that extremely influenced the economic growth of a several fastest expanding economies and also Malaysia. Moreover, in the case of Malaysia, some trade diversion

effects are as well identified (such as EU and NAFTA) that destruct the direction of trade and which in terms depressed the country's economic achievement. Since 2014, oil prices have declined more than 50% due to the surplus and low demand in the international oil market. Malaysia is the second largest palm oil manufacturer in the world, so a decline in the palm oil price also affect the nation as oil-based industries are accounted for third position for its revenues. Malaysia is facing a narrowed trade surplus for the above consequences and as a result to currency depreciation problems as well. In addition, China is the largest trading partners of Malaysia since 2009, the Chinese economy is experiencing economic stagnation at present which resulted a comprehensive drop in internal consumption and that causes a decline in Malaysia's primary exports to China.

For realizing a sustainable economic growth, the external sector plays a crucial role for the achievement of satisfactory growth as no country is self-dependent in generating the adequate savings that is imperative for sustainable economic growth. For the last few decades Malaysia become an open country to increase its external network with the rest of the world. A country's export sector can perform a significant role in the growth performance, this can be the evident from the case of Malaysia, as the country's export has contributed approximately 85% to GDP and as well it produces foreign currency, which is very crucial to pay for imports demand of the nation.

Over the recent periods, most of the nation over the globe has established their business atmosphere investment friendly for understanding global opportunities by drawing more export funds to the country. Malaysia is no difference in the implementation of these procedures. Recently, the government of Malaysia is serious in reconstructing the economy and will carry on initiating proactive means to further promote exports to assure that Malaysia meets the purpose of high income country by 2020. In realization of making vision

2020 Plan successful, the government should identify the most effective determinant of export to economic growth in Malaysia to assure that there is no miss-step in attracting export. Vision 2020 – was launched in 1991, it laid out nine challenges Malaysia had to meet to become a high-income country by 2020. Less than three years to go, analysts claim the country is not going to hit its targets. Vision 2020 is far from being on track. To qualify for “developed nation” status, Malaysia must achieve per capita gross national income (GNI) of US\$15,000. Malaysia’s GNI per capita dropped from US\$10,345 in 2013 to US\$8,821 in 2016, leaving the target well out of reach. The depreciation of the ringgit was one of the causes for the drop in GNI. Amidst global political and economic uncertainty, a drop-in oil prices and the 1MDB scandal led to currency value falling and a knock-on negative effect on GNI. The budget deficit is holding Malaysia back.

It is all very well for the government to put in place plans to create a better Malaysia by 2050. They must make sure they are not just moving the goalposts, but better aligning the country with prevailing economic and geopolitical conditions and projections. Malaysia is already to launch on a recent 30-year transformation strategy, named Transformasi Nasional (TN50), which will establish a unique ‘spirit’ for the nation. The TN50 or Transformasi Nasional 50 is not a replacement of ‘Vision 2020’ but an integral part of the same continuum in Malaysia’s journey of development. TN50 will span three decades, and the youths of all races will establish the foundation of this current transformation strategy. TN50 will be the roadmap, after Vision 2020 which will reconstruct the nation’s economy, citizen well-being, environment, technology, social interaction, governance and public administration.

Malaysia recently entered on Trans-Pacific Partnership Agreement (TPPA) with eleven different nations and desire to engage a free trade agreement under TPP agreements. After the TPPA became a matter of discussion, RCEP turned into the attention.

The Association of South-East Asian countries (ASEAN) led Regional Comprehensive Economic Partnership (RCEP) and the US focused Trans-Pacific Partnership Agreement (TPPA), introduced a new chapter of cooperation and integration. Trade liberalisation and economic integration is the core of these two-compelling regional argument. These overlapping FTAs may introduce difficulties within the process of economic integration though it is usually expected that Free Trade Agreements can introduce the Asian region as a global prominence. With the appearance of RCEP and TPP, which include both narrower and larger economies, a different level of influence contest has been introduced regional politics in Asia, especially in Southeast Asia and the Asia-Pacific. Considering both, RCEP and TPPA, ASEAN community is in the central position of the diplomacy and influence. While both TPPA and RCEP are supported by some ASEAN members and others remain undecided as they are expecting RCEP lest they miss out on possibilities that the Chinese-focused economic order allows them at the regional level. Currently, with the engagement and influence of the world first largest economy, (the US) and second largest economy (China) constitute TPPA and RCEP more interesting. Japan, Australia, New Zealand and from ASEAN community Malaysia, Singapore, Brunei Darussalam and Vietnam are adopting dual strategy as these countries joined both TPPA and RCEP. There was a possibility for arising difficulties to form the East Asian economic integration under the ASEAN+6 (RCEP) for following the dual strategies by some countries under TPPA and RCEP.

Fundamentally on the negotiation aspect, RCEP and TPPA are not certainly in conflict but are primarily contrasting economic patterns. At present with the consideration of regional politics, RCEP can be considered as the economic and political domination of the Chinese and ASEAN. Again, RCEP can be considered as ASEAN centric in which China

is the largest economy. Whereas, TPPA was the US centred, has taken into account the Asia-Pacific initiative, comprising particularly APEC nations. It's aimed to draw dynamic ASEAN members into consideration. It goes beyond of World Trade Organisation (WTO) commitments and liberalisation of trade in almost all goods and services and regarded as high quality and comprehensive FTA within the region. But by withdrawing US economy from TPPA make China to play alone in the battle field in the East Asia, South East Asia and Asia pacific region. As a consequence, TPPA may become less attractive within the participant nations.

To relieve from this unfavourable influence of overlapping FTAs, it is logical for Malaysia to assess its trade preference with either TPPA or RCEP. Thus, it is carried to analyse comparatively the relationship both of these two FTAs in order to produce well-balanced economic growth go beyond by vision 2050. The focus of this research is to examine Malaysia's export relationship with TPP or RCEP member countries. This can be seen in the economic blueprint of the New Economic Model (NEM) which was launched in March 2010, where a new strategy would be adopted to shift its trade dependency on the traditional markets and exploring new markets especially for exports. Particularly, the reason for undertaking this investigation for the implication of economic policy by determining the major factors of Malaysian export and develop a new unique market, either TPP or RCEP countries as export target for Malaysia.

1.7 Research Objective

1.7.1 General Objective

The general objective of this thesis is to find out the determinants of Malaysian export in comparison of TPPA and RCEP frame work.

1.7.2 Specific objective

Therefore, the specific objectives of this study are:

- i. To find out the determinants of exports of Malaysia to TPP trading participants .
- ii. To determine the determinants of exports of Malaysia to 15-RCEP trading participants.
- iii. To analyse comparatively Malaysian trade preference on both FTAs.
- iv. To investigate the long run relation between exports and the trade variables.

1.8 Motivation of the study

Moreover, there have been only a few empirical analyses on this topic as the US economy recently withdrawn itself from TPPA. It is also important for Malaysian Government to know the impact of both TPPA and RCEP agreement for policy implication. Nevertheless, the early outcomes as well differed. As the previous investigations utilize particular intervals of time, as well their sample size and econometric methodology were also different. This study carried on an extensive investigation in order to make a comparison of the performance of Malaysian's exports between two regional integration TPPA and RCEP towards its economic growth to participate in a deeper precise manner with considerable trading participants and as well to remains as a major component of the strengthening economic integration leading position within the Asia Pacific territory through the augmented Gravity model. To produce the most appropriate and updated results, this study provides the latest available and relevant data from difference sources.

1.9 Scope of the Research

To explore the possible impact of Malaysian's exports to its 11-TPPA and 15-RCEP trading partners markets, five explanatory variables were selected for consideration which involves Gross Domestic products per capita (PPP) of Malaysia, Gross Domestic products per capita (PPP) of 11-TPPA partners, openness of Malaysia and openness of its 11-TPP trading participants, remoteness, and bilateral rate of exchange between Malaysia and its 11-TPP trading partners for TPPA model and for RCEP model Gross Domestic products per capita (PPP) of Malaysia, Gross Domestic products per capita (PPP) of 15-RCEP partners, openness of Malaysia and its 15-RCEP trading participants, remoteness, and bilateral rate of exchange between Malaysia and its 15-RCEP trading partners. For providing most appropriate and revised outcomes, this investigation was carried on the latest possible data between 1997 and 2014.

1.10 Significance of the Study

For establishing the determinants that have positive or negative influence on Malaysian's exports, the consequences of this investigation might be advantageous for the Malaysian policy makers. Hence, through those determinants the policy makers can exercise relevant steps to accomplish their expected exporting targets. For its future FTA agreement with TPPA or RCEP nations, this research result may as well be beneficial for Malaysian government's strategic action. As a whole for allocating better trading policies in subsequent time they can make possible modification of the factors of exports.

1.11 Term definition

1.11.1 Exports

According to World Bank (2013a), exports illustrate the amount of all commodities and services that are produced by one country and transferred to the rest of the universe. It is a purpose of global trade by which commodities are manufactured by a nation and moved to different nation for prospective economic gain. The process of this transferring product from one nation to the rest of the world attaches to the manufacturing country's gross production. It represents the earliest methods of economic transfer, countries with fewer constraints on trade, such as tariffs or subsidy

1.11.2 Gross Domestic Product

Gross domestic product (GDP) leads to the market price of all finished commodities and services manufactured within a nation in an assigned period of time. It is usually regarded a gauge of a nation's standard of living. The gross domestic product (GDP) is one the basic indicators utilized to determine the strength of a nation's economy. Gross domestic product per capita of Malaysia and member nations are utilized as criterion of economic size. According to World Bank (2013b), Per capita GDP can be measured by dividing the total gross domestic product by midyear population.

1.11.3 Nominal Bilateral Exchange Rate

Moffett, Stonehill, and Eiteman (2009) explore that bilateral rate of exchange is the rate at which the currency of one nation is substituted for that of another nation. The inclusion of the rate of exchange on gravity model has served to clarify the trade variation among participating nations. (Bergstrand, 1985 & Dell'Arricia, 1999). Hence, the rate of

exchange has taken as an independent variable in the gravity equation and measured by as follows:

$$EX_{it} = \frac{\text{Malaysian Ringgit per US dollar}}{\text{country } j \text{ currency per US dollar}}$$

With this method, we can figure out annual average rate of exchange by the Malaysian's currency units per one unit of member nation's currency. A rise in rate of exchange implies that Malaysian's currency depreciated, as a consequence exports would be cheaper, and imports would be costlier.

1.11.4 Openness

The most fundamental procedure of a nation's integration in global trade is its degree of openness. Estimating a nation's openness is a relatively straightforward attempt. Let X_i , M_i , and Y_i be respectively nation i 's overall exports, total amount of imports and GDP. Nation i 's openness proportion is denoted by:

$$O_i = \frac{X_i + M_i}{GDP_i} \quad (1.1)$$

The higher the O_i , the more open is the country.

1.11.5 Remoteness

Head (2003), demonstrated that, remoteness is proxy for transportation cost when engaging in foreign trade. A technique commonly employed to deal with for the multilateral resistance terms for exporter and importer nations is to be comprised of a substitute for these indicators called "remoteness". This is usually a method that estimates a nation's average weighted distance from its trading nations

Here, weights are the participant nations' shares of global GDP (denoted by GDPW). A negative influence on trade flows supposed to be generated by this variable because transportation cost would be proportional to the distance between two nations.

$$\text{Remoteness}_{ij} = \sum \frac{\text{Distance}_{ij}}{\text{GDP}_j / \text{GDP}_w} \quad (1.2)$$

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter primarily concerns with the reviewing of related literature. The research focuses on examining the determinants of Malaysia's export to compare between TPPA and RCEP framework. Previous empirical findings and relevant economic theories on export, economic growth, trade openness and exchange rate serve as basis for understanding the relationship among the variables identified in this research. The research attempts to bridge the existing gap in the literature by examining the link between Malaysia's export and GDP growth, trade openness and exchange rate of TPPA and RCEP countries.

This section begins with theoretical review in Section 2.2, export and GDP in Section 2.2.1, export and exchange rate in Section 2.2.2, export and openness in Section 2.2.3 and export and remoteness in Section 2.2.4. Next Section 2.3 examines the empirical studies on gravity model and the chapter ends with the remarks.

2.2 Theoretical review

Until the late 18th Century, mercantilism was the prevailing economic philosophy of that time. Lofty tariffs on imports combined with a heavily subsidised export industry allowed to accumulate massive surpluses enriching the nation and demonstrating power. The crux is obvious. Adam Smith stated, that not all countries are able to run trade surpluses, as this would also mean that no one runs deficits. Smith puts labour productivity in the centre of attention by establishing the concept of absolute advantage. Trade is therein beneficial for

countries specialising in production in which they have a superior productivity over the other and exporting the surplus in specialized goods (Das, 2008, p. 1-2). The Ricardian Theory proposes the model of comparative advantage highlighting the importance of technology differences and enforcing the paradigm of free trade. David Ricardo's main contribution was the use of labour productivity ratios instead of absolute values. This allowed poorer countries to participate in the world trade system as their absolute productivity was inferior to the developed ones but in relative terms still allowed for specialisation (Ricardo, 1817; Das, 2008). The Heckscher-Ohlin (H-O) or Factor Endowment Model, following the Ricardian tradition of comparative advantage, then removed technology differences and introduced variable capital to the model years later coming forward with a model stressing the factors of production. Four major theorems have arisen from the famous $2 \times 2 \times 2$ -model (2 goods, 2 countries and 2 factors of production).

First, the Heckscher-Ohlin Theorem states: A capital-abundant country will export mostly the capital intensive good, while the labor abundant country will export prevalently the labour-intensive good (Bowen et al., 1987, p. 791). The reason for this is the price advantage a country has for goods using the abundant factor intensively. Second, the Stolper-Samuelson theorem postulates that international trade necessarily lowers the real wage of the scarce factor expressed in terms of any good (Stolper & Samuelson, 1941, p. 66). According to Stolper & Samuelson (1941, p. 73) this does not imply to impose protectionist measures as the benefits of free trade outweigh any gains of real wages through protecting the scarce factor rewards. Third, factor price equalisation had already been noted by Bertil Ohlin in 1933, but Samuelson (1948, p. 163) criticises that an adequate proof is nowhere to be found. Samuelson (1948, p. 175) subsequently delivers the proof under certain assumptions, e.g. constant returns to scale, law of diminishing marginal utility, land &

capital are qualitatively identical inputs, different factor intensity for the goods and all goods move perfectly freely in international trade. Under the conditions previously mentioned, factor prices tend to equalise along with commodity prices. Caveats of the model are being addressed in the last part of his landmark work as the strong conditions do seem to fail in reality. The fuzzy concept of production factors, whether or not knowledge is included, or zero trade frictions are just an example of highly controversial assumptions. The fourth theorem explains that at a constant rate of substitution in production, an increase of one factor must lead to an absolute increase in output of the good using that factor intensively as well as a reduction of supply of the other good (Rybczynski, 1955, p. 337-338).

New trade theories emerged. Krugman (1979) provides more realistic assumptions and focuses on economies of scale instead of technology differences or factor endowments as explanations for patterns of trade. Costless product differentiation and imperfect competition (monopolistic competition) complement the existing H-O model and allow for intra-industry trade. The main insight is that countries export products in what they also have a strong home market for. It is also acknowledged that further extensions regarding demand patterns and zero trade flows are needed (Krugman, 1980, p. 958). Helpman (1981, p. 337) refines the model considering inter-industry trade as result of differences in capital-labour ratios while intra-industry trade takes place between countries with close factor-proportions giving rise to the hypothesis that a country's share of bilateral intra-industry trade is negatively correlated with the absolute difference in bilateral GDP per capita. Moreover, it is proposed that higher average per capita income represents a higher average capital-labour endowment ratio. On the assumption that industries that are capital intensive tend to have relatively more production of differentiated products, countries with higher average capital-labour ratios will experience a greater share of intra-industry specialisation (Helpman &

Krugman (1985) in Bergstrand (1990, p. 1217)). This tells us that within north-north trade flows mainly differentiated products are being traded. Evenett & Keller (2002, pp. 310-311) highlight the large differences in factor endowments to be essential for perfect product specialisation in north-south trade flows. The H-O model does predict incomplete product specialisation allowing two-way trade in differentiated, similar goods only in a north-north setting. The H-O model and the Krugman model are both subject to the assumption of identical technologies. That a firm's productivity vary greatly is self-evident in reality.

So far, trade models provided possible explanations on absolute values of trade. A larger economy will inherently export a larger amount than a smaller economy. Little has been done to get a grasp on how trade flows are composed of. Although the Krugman model features a prominent extensive margin in differentiated goods, predictions are still ambiguous. Two other streams of trade theory are the Linder-Hypothesis and the prominent gravity equation presented in the following paragraphs. The Linder hypothesis states that "the more similar the demand structures of two countries, the more intensive, potentially, is the trade between these two countries (Linder, 1961, p. 94)". The assumption of changing relative demand with income per capita was newly introduced to trade theory implying differing aggregate preferences across countries. So far, the H-O model stressed the importance of differences in production functions and factor endowments rather than centring the theory on demand side considerations. Counter-intuitive results of the H-O model regarding intra-industry trade lead to Linder's conclusion that other forces might be at work, such as transport costs and economies of scale. In his thinking, goods are bipolar switching from labour-intensive to capital-intensive and in reverse if necessary. In other words, Capital is stored-up labor and labor is stored-up capital. Furthermore, internal demand, a product being consumed at home, is seen as a necessary condition for a product

to become a potential export (Linder, 1961, p. 87). Therefore, the home bias later implemented in several other works along with other assumptions such as the aforementioned trade costs and economies of scale were already predicted by Linder, see also Krugman (1979, 1980); Helpman (1981). In this regard, Linder (1961) concludes that international trade is really nothing but an extension across national frontiers of a country's own web of economic activity. Also, the phenomena of "zeros" are mentioned explained by fundamentally different demand patterns so that some countries do not even participate in world trade if there are no primary exports to trade. Several overlaps exist between Linder's hypothesis and neoclassical theories and its successors, e.g. that the more capital per head in an economy, the higher GDP per capita. will be. The conclusion of Helpman (1981) is that intra-industry trade depends on income per capita and inter-industry trade from differences in factor endowments, being related to Linder's insight as differentiated products are dominant in capital-abundant countries. Linder's signature is ubiquitous in trade theory although all the insights do not stem from supply-side considerations. Our analysis so far provides a rather blurred picture of current streams of trade theory and the next line manifested in the gravity equation does not relieve this pain. Both supply (H-O model) and demand (Linder) reasons simultaneously contribute the understanding of patterns of trade. Several other propositions evolved and were tested in gravity equation-like models (Bergstrand, 1990).

Tinbergen, (1962) and Poyhonen, (1963) first employed the gravity model to international trade investigation for determining the reciprocal trade flows pattern between the European nations. This illustration indicates that the reciprocal trade flows within a pair of nations is proportionate to its economic size usually proxies by Gross Domestic Products and inversely related with the distance, as other factors remaining the same which is

analogous with the Newton's gravitational doctrine. (Krugman and Obstfeld, 2009). Subsequently, in defining trade flows among nations, the model has been enhanced to take into consideration other determinants.

For example, Bergstrand (1985) initiate price and rate of exchange determinants in the gravity model. To illustrate the international trade pattern there after the authors comprehended GDP per capita, Wholesale Price Index (WPI) and trade agreement dummy variables to his investigation (Bergstrand, 1989). With the claim that trade flows spontaneously between a pair of nation if they are sharing an adjacent boarder and at the same time similar dialogue Frankel et al., (1995) was first initiate the Dummy variables for adjacent border and language to his gravity equation. Summary (1989), Anderson and Marcoullier (2002), Dollar and Kraay (2003) and Levchenko (2004) discovered political and institutional Variables with the belief that these factors would be the fundamental factor influencing trade associations. Between the political and institutional attributes and bilateral trade flows, they obtained positive association.

Due to the absence of theoretical frameworks in the gravity model, the prior studies were criticized. For the gravity equation, Anderson (1979) was primarily effort to produce a theoretical foundation depend on a demand function with a number of utilized studies. Anderson and van Wincoop (2003), explore according to theoretical-basis of gravity models, therein they established that for a properly-defined gravity model, controlling for relative trade values is crucial. By eliminating multilateral resistance terms from the gravity model, they claimed that the model will become affected by omitted variables influence and therefore Ordinary Least Square will generate distorted and incompatible coefficient measure as multilateral resistance terms are associated with trade costs. They proposed that, the use of county-specific fixed effects is a potential approach to deal with this problem;

however, time-invariant variables are perfectly collinear with the fixed effects that is why these variables cannot be include in the model. In applied work, the errors commonly experienced, by eliminating multilateral resistance terms applies a gold medal error, the silver medal mistake occurred from inappropriate averaged of reciprocal trade or taking the log of average trade flows rather the average of the logs and finally bronze medal mistake is resulted from wrongly dispersed trade values by utilizing inappropriate price index (Baldwin & Taglioni, 2006). Another crucial concern are endogeneity, the zeros problem and heteroscedasticity. The causal association within trade policies and trade flows can progress in either direction which create the endogeneity problems. Unfortunately, this is complicated to deal, as endogeneity problem can be solved by only GMM method and by using instrumental variables, but it also depends on deciding a suitable instrument and the number of lags, subsequently.

Martínez-Zarzoso and Nowak-Lehmann (2003) cited that in a sequence of studies the theoretical determinants of reciprocal trade is analysed by Anderson (1979), Bergstrand (1985, 1989), where by based on simple monopolistic competition models they applied gravity equation. By following their investigations, Helpman and Krugman (1985) and Helpman (1987) demonstrated, from both of the perspective, such as conventional and new trade theories, the gravity model can be obtained. In that circumstance, from a Ricardian framework, Eaton and Kortum (1997) subsequently developed the gravity model, at the same time, Rahman (2003) cited that from a Hecksher-Ohlin perspective Deardorff's (1998) improvement is originated. In spite of the gravity model's continuing observant, Deardorff established, with a monopolistic framework the Hecksher-Ohlin model will yield the identical reciprocal trade pattern, if trade is impeded and all commodities are manufactured by particular nations. The author further suggested that the distance variable must be

introduced in estimating the gravity equation, if transaction costs remain in the international trade within nations (Dardorff, 1998).

Likewise, other authors expressed that in deciding the amount of trade flows between countries, the distance within them is a basic determinant (Rahman, 2003). Oguledo and Macphee (1994) and Karemera and Smith (1999) concluded from the study of Bergstrand (1985, 1989) and Tinbergen (1962), Pöyhönen (1963), whereby they found the required signs and statistically significant relationship between the incomes of trading participants and the distances by applying the general equilibrium method. Undoubtedly, within the empirical investigation history, the gravity model has continued one of the best prosperity records. To estimate different trade policy concerns.

A collection of gravity studies are conducted, such as Wall (1999) and Harrigan (1996), the study of regionalization trends, Frankel (1997), the benefits of prospective regional trade arrangements, Wakasugi and Itoh (2003), the benefits of prospective regional trade arrangements and influence on non-members nations, McCallum (1995), Evans (2000), Anderson and Van Wincop (2003), the benefits of prospective regional trade arrangements and the influences of internal borders. In current periods the gravity equation has expanded as well for defining the patterns of non-trade theory concerns such as, Haliwell (1997), migration issues, Portes and Rey (1998), reciprocal equity flows, and Brenton et al. (1999), FDI flows. The gravity model will remain at the point of concentration of applied investigations on foreign trade of the day.

2.2.1 Export and GDP

The gravity literature corroborates that exports are proportional to the market size of origin and destination countries, which is often measured by GDP per capita. The results of positive

and significant influence of GDP of the exporting and importing countries on trades are consistent and significant across the studies of Grunfeld and Moxnes (2003), Lejour and Verheijden (2004), Kimura and Lee (2006) and Shingal (2009). Additionally, comparing the effect of origin and destination countries' GDPs on exports Grunfeld and Moxnes (2003) and Lejour and Verheijden (2004) found that home country GDP coefficient is slightly higher than 1, whereas the GDP coefficient for the destination country is less than unity. This finding implies that the domestic market size has a higher influence on exports than the market size of the destination country (Lejour & Verheijden, 2004). Revealing a strong home market effect in services trade, Grunfeld and Moxnes (2003) suggest that the effect is in line with the heterogeneous nature of services. Kimura and Lee (2006), however, found a contradicting result regarding the home market effect while testing determinants of exports and imports. Examining exports flows, the authors found that the home country GDP coefficient was larger than the destination country's coefficient on GDP, while the analysis of imports displayed a higher magnitude of the importing country's coefficient on GDP. Thus, contradictory results for exports and imports of services did not allow Kimura and Lee (2006) to confirm the presence of the home market effect in their research. Further, some authors augmented the gravity equation with GDPs per capita alongside GDPs to control for the effect of countries' income on trade flows (Grunfeld & Moxnes, 2003; Lennon, 2006). However, high correlation between GDP and GDP per capita might cause model specification problem. Therefore, Kimura and Lee (2006) suggest estimating separate gravity equations with GDPs and GDPs per capita as explanatory variables. Thus, we incorporate GDPs of the origin and destination countries into the gravity equation and in accordance with gravity literature expect a positive impact of these variables on Malaysia's exports.

2.2.2 Export and Exchange rate

Furthermore, a plenty of studies confirm the empirical evidence between exchange rate and exports of different countries. Wilson and Takacs (1979), Warner and Kreinin (1983), Bahmani-Oskooee (1986), Himarios, (1989) and Chua and Sharma (1998), found that variation in exchange rate have a significant influence on reciprocal trade flows. As evident from various theories, an appreciation of home countries' currencies increases the relative price resulting a decrease of exports and encourage of imports for that country. Fang et al. (2006) found a devaluation of currencies, stimulate exports growth for the most countries by analysing between export and exchange rate of eight Asian countries. They concluded that, a devaluation of exchange rate stimulates exports, however, it produces a balancing outcome. Agbeyegbe, Wolde Mariam and Obadan (2006) demonstrated that, in order to make exports competitive to the global market a policy instrument is usually performed which is currency devaluation. This make export cheaper relative to other countries and the country able to trade more with rest of the world hence experience more growth and development.

Bernard and Jensen (2004), discovered currency devaluation as a significant factors of exports booms from their investigation "Entry, Expansion, and Intensity in the US Export Boom" between 1987 and 1992. Moreover, Growth of exports in Turkey resulted from the continuous depreciation of Turkish Lira by examining the export expansion of Turkey during the period 1980. They estimate the comparative performance of various determinants for instance, subsidies for exports, growth in import in the Middle Eastern countries and rate of exchange devaluation (Arslan & van Wijnbergen, 1993). Exchange rate plays a vital role in determining the U.S import prices and subsequently play an important aspect in the allocation of US import flows. (Nicita & Tumurchudur-Klok, 2011; Nicita, Ognitvsev &

Shirotori, 2013; Nicita, 2013). Curcuro et al (2009) and Xing (2010) claimed that, the competitive advantage can be increased through weaker dollar in the case of the U.S. Choudhri and Hakura (2012) concluded in their studies that export and import prices are determined by the exchange rates strategies and which eventually affect the international trade of a nation.

2.2.3 Export and Openness

Trade openness (that is trade ratio of GDP) is one more significant determinants of this study. A lot of studies investigated the significant effects between trade openness to GDP growth. The presence of positive association within trade openness and economic growth is represented by the new classical theory of economic growth. Openness increase international trade which expand the technological advancement of a nation and finally through better allocation of resources a nation can gain further efficiency. In general, technological advancement is an instrument of economic growth is indicated by this theory. According to Yucel (2009), Adhikary (2011), Sakyi (2011), transformation of technological improvement can be facilitated through trade openness. A country can enjoy the static and dynamic advantages of external trade and more integrated to the global economy by exposing its internal economy to the global economy (Frankel & Romer, 1999; Irwin & Tervio, 2002; Dollar & Kraay, 2003; Dowrick & Golley, 2004). The authors discovered that, between trade openness and economic growth, there is an existence of positive and significant relationship.

Calderon et al. (2004) and Dollar and Kraay (2004) explained the degree of openness to trade. They explore that more open countries to international trade, can produce more economic gain. By utilizing a panel GMM model, they established that trade openness and

economic growth are positively associated with each other's. Furthermore, Yucel (2009) found a positive influence and bidirectional causality between openness and economic growth by using vector error correction technique which as well consistence with the investigation of, Hsiao and Hsiao (2004) and Konya (2006). Comparatively in recent literature, Goldberg et al. (2010) explained that by exposing Indian internal inputs markets to the wider variety of global markets through tariff liberalization, India strengthened its internal production growth.

It is claimed that, a country's economy can be benefitted with the increased degree of trade openness. Based on the comparative advantage theory of international trade proposed by David Ricardo, countries specialize in commodities and services that can produce with less opportunity cost unlike, simply financial costs, global production will be expanded and there will be an improvement in economic progress of all countries. Hence, the actual scenario of demand and supply of a market is reflected by free trade rather a protectionist economy. Moreover, by utilizing free trade, global production will be expanded as nation's specialize in commodities where they have the highest comparative advantage, unlike make protection to weak industries from international competition by placing trade constraints. Trade improvement and gain in economic growth are the two purposes that anticipated by almost all nations engaged in Free Trade Agreements.

A collection of empirical investigations has been identified positive relationship between the trade effects and Free Trade Agreements, remarkable instances consist of studies of Carrere (2006), Coulibaly (2007), Baier and Bergstrand (2007, 2009), Eicher et al. (2008) and Magee (2008). By employing different measurement of openness, Dollar (1992), Sachs and Warner (1995), Frankel and Romer (1999) and Dollar and Kraay (2004) found FTA and economic growth are positively related. Trade openness produces

productive and expected consequences for economic growth, promoted by institutions, for instance the Organization for Economic Co-operation and Development and the World Bank (OECD, 1998). Consequently, provided the advantages of global trade, many nations entered bilateral free trade negotiations.

Since 1975, the amount of free trade negotiations has increased dramatically (Hur and Park, 2012). Rodriguez and Rodrik (2001), Rodrik, Subramanian, and Trebbi (2004) and Wacziarg and Welch (2008) found a negative relationship between free trade agreement and growth and assert that stronger trade restrictions promote the economy. Grossman and Helpman (1991) and Edwards (1992) illustrated the impact of free trade agreement in developing technological advancement, asserting that a higher degree of openness allows developing nations to access technology from developed nations and progress more promptly.

2.2.4 Export and Remoteness

Head (2003), demonstrated that, remoteness is proxy for transportation cost when engaging in foreign trade. A technique commonly employed to deal with for the multilateral resistance terms for exporter and importer nations is to be comprised of a substitute for these indicators called “remoteness”. Moreover, to explain the factors of international trade flow between various nations, new trade theories have introduced the distance variable. Distance influences considerably on bilateral trade flows between the countries (Himarios, 1989; Krugman, 1991; Harrigan, 1993; Hoffmann, 2002; Clark et al., 2004). Distance variable is found an important factor from the investigation of the performance of geographical pattern of international trade between two nations. (Harrigan, 1993).

Furthermore, longer distance dampens bilateral trade between two trading partners by increasing the transportation cost (Krugman, 1991). Moreover, in comparison with geography, the distance variable is a significant determinant for the analysis of bilateral international trade flows (Loungani et al., 2002; Filippini & Molini, 2003). In accordance with their investigation, numerous features can be characterized from the distance variable, such as the culture, history, language, social relation. Further, for variation in taste and preference, Blum and Goldfarb (2006), studies indicated that distance is an appropriate substitute. Their findings provide a unique argument for the persistence outcomes for gravity model. They suggested that, though the transaction cost and different sorts of trade restrictions that associated with the distance become to zero still in the gravity model for a collection of products, the distance effect will persevere. Chang and Ying (2008) found that transformation of freight service from air cargo to shipping cargo will reduces freight expenses. The authors came into a conclusion by analysing the contribution of air cargo to promote economic growth and found reduced freight cost influence positively on economic growth.

A number of investigators have identified that trade liberalization has contributed to substantial trade improvements in a collection of situations by utilizing gravity model analysis and different econometric methods. Anderson and van Wincoop (2003), confirmed that, between advanced nations, trade restrictions alleviate trade by 20% to 50%, the result produces positive implications for subsequent FTAs among adjoining nations. The authors employed the concept of the gravity model both to estimate and to the general-equilibrium comparative statics of borders. By conducting a variant of the gravity model on panel data of trade flows for 96 nations, Baier and Bergstrand (2006), found that, on average after 10 years, Free Trade Agreement enhances two partners reciprocal trade by 98%.

2.3 Gravity Model

From the generalised model of the gravity equation and based on panel data, the determinants of Bangladesh trade were investigated by Rahman (2003). In establishing the most suitable method of the gravity model, the paper examines both economic and natural factors by employing data of 35 nations between the periods of 1972 to 1999. Outcomes confirmed that the size of the economies and openness of the trading partners is positively influenced, and transportation cost is discovered negative factor of influence as well influenced negatively for Bangladesh trade. Finally, the researcher recommended that Bangladesh could promote its international trade by trading more with its neighbouring nation. The consequences of the investigation constitute the justification that in order to improve Bangladesh's trade, the country should liberalize all trade restrictions within the respective nations. To analyze the trade association within trade alliances and intra trade of economic alliances, Gravity model is as well employed.

Wah (2004) in his study reported that for the past forty years (1961-2000), the Malaysian economy grew at an impressive average rate of 6.8% per annum. The rapid growth was attributed, in part, to the remarkable success in the export-oriented industrialization policy. Sachs and Warner (1997) found that lack of openness was the most significant contributor to the dismal- economic growth performance in sub-Sahara Africa. Ann Harrison (1991) study made a synthesis of previous empirical studies between openness and the rate of GDP growth comparing the results from cross section and panel estimations while controlling for country effects. The study concluded that on the whole, correlations across openness measure seem to be positively related with GDP growth the more open the economy, the higher the growth rate or the more protected the local economy.

By applying a gravity model and spanning data from 1981-2000, Tang (2003) identifies that a significant trade decline between European Union member countries and Association of South East Asian Nation and North American Free Trade Agreement has occurred from the European Union integration. Thornton and Goglio (2002) identified the major determinants of Association of South East Asian Nation intra-regional reciprocal trade are economic size, distance and linguistic variables. To identify commodities that enjoy export strength under gravity model framework, Martinez-Zarzoso et al. (2004) tried to classified sectors of export in respect to their sensitiveness to the geographical and economic distance. Their conclusions indicate that reciprocal trade within European Union and nations in Southern Common Market (including Argentina, Paraguay, Uruguay and Brazil) enjoying strong and considerable geographical influence in areas like footwear, furniture.

By applying gravity model Sohn (2005), obtained it as the most suitable mechanism as an individual nation situation. The author investigated reciprocal trade flows of South Korea and enforced the model in the development of trade policy. The outcomes showed that trade flows of Korea mostly relied to comparative advantage, income variations, and development stage instead of economies of scale that is confirmed by the coefficient on the trade variable, also consistence with the Heckscher-Ohlin model on the consideration of international trade model.

In an attempt to examine trade association between Malaysia and the Gulf Cooperation Council (GCC) nations that comprise of United Arab Emirates (UAE), Bahrain, Saudi Arabia, Oman, Qatar and Kuwait by spanning data between 1990 and 2007 and applying trade intensity index Asmak and Abu-Hussin (2009), found Malaysian trade association with individual member nation of GCC and as well group GCC nations considerably lower. The authors recommended to facilitate the Free Trade Agreement (FTA)

action and concentrating on appropriate areas that it has comparative advantage is the ultimate solution for enhancing the flows of trade. Furthermore, based on the gravity model estimation in strengthening bilateral trade between Malaysia and the GCC nations,

Evelyn et al. (2011) identified that culture and religion are insignificant. By applying a qualitative approach of semi-structured interviews and as well through Revealed Comparative Advantage (RCA) with the trade intensity indicator Abu-Hussin (2010) examined trade relation of Malaysia with GCC member countries and concluded with similar outcomes that there is no relationship between religion affiliation and expanding trade. (Ismail and Panni, 2008).

A comparatively recent investigation, with data from the year 1999 to 2005, by applying a gravity analysis on merchandise exports among China and 30 OECD nations GU (2008) illustrated that China's export trade experiences substantial positive influences on the traditional explanatory variables, GDP, GDP per capita and population while adverse consequences provided by distance and remoteness and regional economic association and the rate of exchange factors found insignificant. These conclusions confirm that on the nation's export trade, trade cooperation has significant positive impacts.

The fundamental factors of reciprocal trade within Malaysia and its dominant trade partners are both nations GDP, Foreign Direct Investment, rates of exchange, distance and adjacent border identified by Mawar Murni and Mohd Abid (2009). The authors applied a gravity model for Malaysian exports with its 96 trading partners including 36 OIC participant nations with a OIC and non-OIC dummy variables in the augmented gravity equation and determined insignificant and negative coefficient that in turn indicate between Malaysian exports to OIC and non OIC participant nations has no distinction. The authors concluded

that between Malaysia and OIC countries there are more opportunities for improvement of international trade.

Rahman (2009) utilized an expanded gravity model for investigating international trade capacity between Australia and its 57 trade participants by using data from 1972 to 2006. The author introduced per capita Gross domestic product of Australia and its trading participant, openness and dummy variables FTA and common language as independent variable and the outcomes indicated that GDP, openness of trading participants, common language and FTA variables are positively and per capita income differential and distance variables are negatively influenced reciprocal trade of Australia. With a related application, Roy and Rayhan (2011), applied a gravity model by spanning data from 1991 to 2007 for determining the factors of trade flows between Bangladesh and 13 other countries that included in the South Asian Association for Regional Co-operation (SAARC). They found trade flows of Bangladesh are significantly related with the size of the economy of Bangladesh and its participants, openness, rate of exchange, FTA and boarder dummy.

By utilizing a gravity models for period of time from 1999-2009 by following previous authors, Kepaptsoglou et al. (2010) furnished a unique outline to empirical literature. The authors claim that gravity model has been widely applied for estimating trade policy implications for the previous forty years of period and extremely widespread among investigators because of its extensive empirical stability and explanatory capability. By applying the expanded gravity equation from 1980 to 1998 period of times, the reasons of trade flows between 19 OECD nations is examined (Wang, Wei & Liu 2010). Outcomes illustrate that the dominant determinants influencing trade flows are inward FDI and accumulated inward FDI, level of GDP and factor endowment, geographic distance, internal technology (R&D) accumulation.

2.4 Remarks

In economic literature a large quantity of empirical studies used gravity model, but their application remarkably differs in each investigation. Gravity model as well shares some common characteristics between that intensive literatures. Firstly, gravity model is employed to analyse reciprocal trade flows and trade variable is always used as the dependent variable of the gravity equation. Secondly, Gross Domestic Product, Gross National Product or per capita, Gross National Product, per capita Gross Domestic Product are used to determine the economics mass of exporting and importing nations in some expanded gravity model for instance Rahman (2003), Montanari (2005). Nations with larger income contribute to trade better and small nation with less income trade less is the main conception here. Thirdly, Distance is used as a proxy of transportation cost a commonly used variable in the gravity model.

Trade flows between countries depend on a number of factors. Bilateral trade flows between two countries are assumed to be proportional to the level of their GDP. The GDP takes into account the fact that higher income economies tend to be more interested in product differentiation and specialization, thus they trade more (Fujimura & Edmonds, 2006). In the traditional trade theory, such as the Heckscher-Ohlin model, patterns of trade between countries depend on natural resources, skills, and factors of production. It is assumed that trade takes place in a perfectly competitive and frictionless world without distance or geographic features (Salvatore, 1998). However, traditional explanations are thus incapable to explain the diverse patterns of exports across countries (Matthee & Naudé, 2008). 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; Yeates, 1969; Harrigan 1993; Hummels & Levinsohn 1995; Harrigan 1996; Hummels 1999; Lima~o & Venables 2001; Hoffmann 2002; Clark, Dollar & Micco 2004). The most beneficial of those studies was conducted by Linneman (1966) who extensively investigated 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 partners 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.

Other studies pointed toward the impact of 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 prices among the country and its trading partners, and other factors are unchanged. Wilson and Takacs (1979), Warner and Kreinin (1983), Bahmani –Oskoei (1986), Himarios (1989), Tegene (1989, 1991) Asserery and Peel (1991), Ghura and Grennes (1993), Clarida (1994), Reinhart (1995) and Chua and Sharma (1998) 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; Rose, 1990; Rose, 1991). The gravity equation is a useful approach to explain the role of exchange rate as well as the other determinants of trade flows between countries.

A bulk of studies has examined the relationship between trade openness and export as an indicator of or proxy for trade liberalization on trade flows (Ahmed, 2000; Santos-Paulino & Thirlwall, 2004; Edwards & Alves, 2006; Wu & Zeng, 2008; Rahman, 2009; Anwar, Shaikat & Hussain, 2010; Roy & Rayhan, 2011; Allaro, 2012; Hoque & Yusop, 2012;

Abidin et al., 2014). Most of these studies found that trade openness has a positive impact on exports. While, Enimola (2011) found openness has a negative and insignificant effect on exports. Empirical studies examining the impact of export and trade openness on macro-economic performance in the 80s and 90s were characterized by weak econometrics analysis and misleading selection of openness indicators. After considering the latter criticism and developing better empirical methodology by Engle & Granger (1987), Husted (1992) and Arize (2002), besides other newly developed methodologies, authors suggested to re-examine a possible relationship between export, trade openness and macro-economic performance. Most of the studies have examined developing countries as the history has shown that they have experienced rapid growth in their international trade, openness and economic growth.

Therefore, this research, considered six variables applied large data sets of developed and developing countries as many studies considered only two of the variables and limited data. To the best of this researcher's knowledge, past studies of trade openness, GDP and exchange rate on export tend to focus on either developing or developed countries. In this view, this research attempts to fill the gap in existing literature by examining the effects of trade openness, GDP and exchange rate on export in RCEP and TPP countries.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This study will assess the determinants of Malaysian export with TPPA and RCEP framework to create a new unique market as export target for Malaysia and as well to find out the major determinants of export as an economic growth engine. Hence, this dissertation will examine the association among exports, and GDP per capita, openness, and exchange rate of Malaysia and GDP per capita, openness of 11-TPPA countries and GDP per capita and openness of 15-RCEP countries by employing the gravity model to its eleven TPPA participants' nations and as well 15-RCEP members by utilizing panel data from 1997 to 2015 and finally compare its export performance with TPPA and RCEP framework to determine which integration will better suit for Malaysia. There are many components of export, but this paper examined the effect of Gross Domestic Products (GDP per capita), Openness and exchange rate on Malaysia. The fundamental purpose of this investigation is to study the determinants of export of as well to determine whether there is existence of short run or long run association between exports and other variables between Malaysia and its 11-TPP and 15-RCEP trading partners.

3.2 Theoretical framework

In 1962, to study international trade flows, Tinbergen was first used this gravity model and later a set of econometric models of reciprocal trade flows had developed by many other researchers. Gravity model utilized in reciprocal trade can be design as follows:

$$T_{ij} = A \frac{Y_i Y_j}{D_{ij}} \quad (3.1)$$

Here, Constant term is A

i and j represent exporting nation and importing nation.

T_{ij} represents overall flows of trade from exporting nation i to importing nation j

Y_i, Y_j represent exporting countries Gross Domestic product and importing countries Gross Domestic product, it is usually illustrating economic size.

D_{ij} is defined distance from exporting nation to importing nation.

In physics, according to Newton's universal law of gravity, the gravitational affinity within two objects is proportionate to their volumes and inversely related to their distance. in accordance with the doctrine, we can have formulated as follows:

$$F_{ij} = G \frac{Y_i Y_j}{D_{ij}} \quad (3.2)$$

Here, F_{ij} = gravitational attraction Y_i, Y_j = the mass of two objects and D_{ij} = the distance, G = the gravitational constant.

Gravity model for trade is corresponding to this doctrine. The relationship is as regards: "the trade flow between two nations is proportionate to the product of each nation's 'economic mass', usually determined by GDP, each to the power of amounts to be measured, divided by the distance between the nation's particular 'economic axes of gravity', usually their capitals, raised to the power of another quantity to be measured." (Christie 2002:1). This definition can be induced to:

$$X_{ij} = G \frac{Y_i^{\beta} Y_j^{\gamma}}{D_{ij}^{\delta}} \quad (3.3)$$

Here, X_{ij} act as the overall export values from exporting nation i to importing nation j , Y_j represents importer countries specific factors which combine overall importer's countries demand (for instance importers nation's Gross Domestic Products) and Y_i represent exporter country's specific factors (for instance the exporter's nation's Gross Domestic Product) which denotes overall quantity exporter's country are intending to supply. G represent a variable which is not rely on either exporter nation I or importer nation J for instance the degree of world liberalization. Lastly, D_{ij} denoted the ease of exporter country i to entrance of importer countries market j (which is also known as transportation cost, inverse of reciprocal trade costs).

The gravity equation is multiplicative in nature, so for estimating a gravity equation, the standard method is simply to use natural logarithms of all variables and get a log-linear equation that can be measured by OLS regression estimation, obviously simpler than non-linear estimation techniques. The gravity equation then can be written as follows:

$$\text{Log}(X_{ij}) = \alpha + \beta \log(Y_i) + \gamma \log(Y_j) + \delta \log(D_{ij}) \quad (3.4)$$

Most assessments of gravity models use a particular number of dummy variables to equation (3.4) that test for specific influences, for example consisting of partner countries trade treaty, sharing an adjacent boarder, speaking the common language.

Even though gravity model fits appropriately with regression methods, but it is not adequately grounded or based on by economic theory. This criticize has been provided by Deardorff (1984) and Frankel, Stein, and Wei (1995), who argued that gravity model has considerably inadequate theoretical frameworks. Several investigators thereafter pursued to accommodate potential theoretical justifications for what produced the gravity model an influential mechanism in examining reciprocal trade relations.

Anderson (1979), Helpman and Krugman (1985), and Bergstrand (1985), first attempt to provide theoretical frame work of the gravity model. Polak (1996) and Feenstra, Markusen, and Rose (2001) furnished well assistance to support the justification and validation of using gravity model and provide more solid theoretical ground. Polak (1996), established further attention to the performance of distance variable, though the great number of investigations attempted to discover associations between the gravity model and prevailing trade theories.

After the theoretical justification of gravity model had been created from 1990s further investigations focused on the empirical study of the gravity model. Frankel (1997) developed a further superior even standardized form of gravity model where particularly attention was put on the performance of geographical determinants, such as distance, common border, and population as a factors of reciprocal trade flows. Dummy variables such as, similar language, adjacency, and colonial relations can as well be added to show geographical determinants. Through gravity model a lot of authors determine the influence of regional trade association on reciprocal trade flows. Such as APEC, NAFTA, ASEAN, and MERCESUR.

3.3 Model specification

To determine trade influences and trade associations, traditional gravity equation utilize cross-section data for a specific period of time. Cheng and Wall (2004) suggested that, issue of misspecification and also biased estimation between the amounts of reciprocal trade can be produced by these techniques as this particular method is not capable of controlling for heterogeneity. To get rid of this problem the ultimate solution is the use of panel data in the gravity model, as panel data is a combination of time series and cross-

sectional data (Matyas et al., 1997; Egger, 2000). Main benefits of using panel data over cross-sectional data includes: primarily, appropriate relationship between variables over time can be captured by panels. Secondly, it can observe missing (unobservable) variables (trade participant's pairs) individual influences. In the case of a correlation between independent variable and individual effects, ordinary Least Square estimation with the omission of individual effects produces a biased result. Hence, this study utilizes panel data methodology for the estimation of the gravity equation.

Traditional gravity model was with the doctrine of, "Between a pair of nations, the amount of total trade flows, X_{ij} (export plus import) is a function of that pair of nations economic size normally measured by their Gross Domestic Products or Gross National Products (GDP_{it} , GDP_{jt}), populations, distance, D_{ij} (proxies for transportation costs)". Some authors include a series of dummy variable to examine FTA, common language, common boarder etc can have effects on trade flows or not? From the above idea, gravity equation can be written as follows:

$$X_{ij} = \alpha_0 Y_i^{\beta_1} Y_j^{\beta_2} A_{ij}^{\beta_3} D_{ij}^{\beta_4} \varepsilon_{ij} \quad (3.5)$$

Where Y_i is the GDP per capita of nation i (Malaysia), Y_j represents the GDP per capita of the nation (j), D_{ij} covers the distance between nations i centres usually capital (or economic centres) to nation j , A_{ij} (Usually, border, common language, FTA and colony), ε_{ij} and β_s are respectively dummy variables, the error term and parameters of the model.

From its original formulation, the model is multiplicative form in nature, to make it linear we can take natural logarithm of all variables. So, we can write equation (3.5) in log-linear form as follows:

$$LX_{ijt} = \beta_0 + \beta_1 LY_{it} + \beta_2 LY_{jt} + \beta_3 LA_{ijt} + \beta_4 LD_{ijt} + \varepsilon_{ijt} \quad (3.6)$$

Where, t is denoted for period of time and L is denoted for natural logarithm. To study the performance of Malaysian exports to TPP nations from the period of times from 1997 – 2015, this investigation developed the standard gravity model specification but transformed the model further by introducing rate of exchange (ER), and Openness.

Hence, after transforming bilateral trade (BT) with bilateral exports (EXP), the expanded form of equation (3.6) will become:

$$L\text{Export}_{it} = \alpha_0 + \beta_1 L\text{GDP}_{it} + \beta_2 L\text{GDP}_{jTt} + \beta_3 L\text{OPENNESS}_{it} + \beta_4 L\text{OPENNESS}_{jTt} + \beta_5 L\text{ER}_{it} + \beta_6 L\text{REMOT}_{it} + \varepsilon_t. \quad (3.7)$$

Applies the specific model supported by previous investigation: For comparing TPPA with RCEP, we develop two new equation for empirical analysis. For Malaysian Export to its 11-TPPA members:

Where,

Country I is Malaysia and country jT is denoted as 11-TPPA countries.

L denoted logarithm.

Export_{it} = Exports from exporter nation I to importer nation J

GDP_{it} = Economic size (Gross Domestic Product) of Malaysia

GDP_{jTt} = Economic size (Gross Domestic Product) of 11-TPP countries

ER_{it} = Nominal bilateral rate of exchange from exporter nation I to importer nation J

Openness_{it} = Openness of Malaysia

Openness_{jTt} = Openness of 11-TPP countries

β = Coefficient

ε_t = Error Term

For, Malaysian export to its 15-RCEP participants:

$$\begin{aligned} \text{LExport}_{it} = & \alpha_0 + \beta_1 \text{LGDP}_{it} + \beta_2 \text{LGDP}_{jRt} + \beta_3 \text{LOpenness}_{it} + \beta_4 \text{LOpenness}_{jRt} + \beta_5 \text{LER}_{it} + \\ & \beta_6 \text{LREMOT}_{it} + \varepsilon_t. \end{aligned} \quad (3.8)$$

Where

Country I is Malaysia and country jR is denoted as 15-RCEP countries.

L denoted logarithm.

Export_{it} = Exports from exporter nation I to importer nation J

GDP_{iRt} = Economic size (Gross Domestic Product) of Malaysia

GDP_{jt} = Economic size (Gross Domestic Product) of 15-RCEP countries

ER_{it} = Nominal bilateral rate of exchange from exporter nation I to importer nation J

Openness_{it} = Openness of Malaysia

Openness_{jRt} = Openness of 15-RCEP countries

REMOTNESS = Average weighted distance from exporter nation I to importer nation J

β = Coefficient

ε_t = Error Term

3.4 Data

Whereas the theoretical foundation and specification of the gravity model were hot topics in the 1980s and 1990s, respectively, the estimation techniques of gravity models were plenteously discussed over the past several years. In this section, we list and describe some

principal estimation methods applicable to panel data. We will mention their crucial assumptions, usual usage, and possible difficulties. Originally, it was a usual practice to use exclusively cross sections for estimation of gravity equations. Nevertheless, with only one observation for each unit, it cannot be controlled for heterogeneity among these units. Moreover, as Gomez and Milgram (2009) warn, the results may vary substantially depending on the group selected, which leads to an estimation bias. That is why many researchers as Wall (2000), Egger (2000), or Rose and van Wincoop (2001) have turned towards panel data. Panel data are repeated cross sections as time series or vice versa. Therefore, they differ in two dimensions: across different individuals (countries) and across time (annual observations). Their advantage over simple cross sections or simple time series is that they are more informative (more variability, less collinearity, more degrees of freedom) thus the estimates are more efficient. Moreover, longitudinal data allow for controlling for individual unobserved heterogeneity (Bröderl, 2005).

Annual time series data for Malaysia (country i), and its 11 other trading partners from TPP countries (country jT) and RCEP countries (country jR) are gathered from different sources between the period of time 1997 and 2015. Data of GDP per capita (PPP). Gross domestic product of Malaysia and partner countries are used as measure of economic size. These two variables are expected to have positive impact on the trade promotion. Data on GDP of the countries are obtained from the database of World Development Indicator (WDI) database of World Bank.

Previous studies, such as Bergstrand (1985) and Dell'Arricia (1999), showed that the addition of the exchange rate on gravity model has helped to explain the trade variation among participating countries. Therefore, the exchange rate will be included as an explanatory variable in the model and calculated by the formula:

$$EX_{it} = \frac{\text{Malaysian Ringgit per US dollar}}{\text{country } j \text{ currency per US dollar}}$$

With this formula, we will determine annual average exchange rate by the Malaysia's currency units per one unit of partner country's currency. An increase in exchange rate means that. Malaysia's currency devalued, as a result imports would be more expensive, and exports would be cheaper. Bilateral rate of Exchange (ER) for exporter nation *i* (Malaysia) and importer nation *jT* (11-TPP nations) and nation *jR* (15-RCEP) have been collected from World Development Indicator (WDI) database of World Bank.

Whereas, from the website UN Com Trade: International Trade Statistics within the Com Trade Database, data of Exports and Imports from exporter nation *i* to importer nation *jT* and *jR* are obtained, export data are measured in millions of US\$. Data of Distance are obtained from CPEII database from country *i*'s (Malaysia) capital to country *j*'s capital city, considered as measuring the minimum geographical distance on the surface of the earth. This variable is expected to cause a negative impact on trade flows because transportation cost would be proportional to the distance between two countries.

The variables used to measure trade openness are calculated by taking the sum of import and exports over GDP. It measures the disclosures to trade interactions, clearly indicating the level of integration.

Table 3.1: List of TPPA countries.

Australia	Brunei Darussalam	Canada	Chile	Japan	Malaysia
Mexico	New-Zealand	Peru	Singapore	USA	Vietnam

Table 3.2: List of RCEP countries.

Australia	Brunei Darussalam	Cambodia	China	Indonesia	India
Lao PDR	Japan	Malaysia	Myanmar	Mexico	Peru
New-Zealand	Singapore	USA	Vietnam		

3.5 Methodology

In panel framework with the presence of co-integration, for estimating a long run association among the variables, Dynamic Ordinary Least Square (DOLS), Fully Modified Ordinary Least Square (FMOLS) estimators are recommended. DOLS are considered in our study, as small sample bias problem is associated Fully Modified OLS (FMOLS) and that the DOLS estimator be evident of outperforming both estimators indicated by Kao and Chiang (1997, 2000).

For determining the long-run coefficient we need to apply the fully modified ordinary least square (FMOLS), Dynamic Ordinary Least Square (DOLS) To establish a Co-integration relationship within a series of $I(1)$ variables must be fulfilled. To implement the operation of DOLS some sort of measures requires to carry out.

Initially, we need to perform panel unit root test to confirm whether at level all the variables are non-stationary and stationary at first difference which implies $I(1)$ or at level stationary and non-stationary at first difference meaning $I(0)$, (Maddala & Wu, 1999; Levin, Lin & Chu, 2002; Im, Pesaran & Shin, 2003). By performing panel unit root test, we can confirm the order of integration.

Secondly, with the expectation of same order integration of all variables, we utilize two panel co-integration tests. To establish the presence of co-integration, Pedroni (1999)

developed seven particular experiments. The above-mentioned experiments can be classified and employed as constant and constant and trend analyses. Kao (1999) suggested for a panel co-integration test which is residual based co-integration among all the variables also known as Kao panel co-integration. Among the levels of panel data, the existence of a unit root in the residuals of (co-integrating) regressions can be identified through these tests.

Thirdly, to investigate the long-run association within Malaysian export and different macro-economic factors of Malaysia and 11-TPP and 15-RCEP nations, a Dynamic Ordinary Least Square and Fully Modified Ordinary Least Square have been applied.

In this assessment, it is assumed that GDP per capita variables have positive consequences on the trade flows based on Oguledo and Macphee (1994) and Karemera et al. (1999). In the composition of demand side of the economy, an expansion in income will produce an increase in import while on the supply side, the increase in income may contribute to the higher national production convenient for export. Thus, both positive sign is predicted for both β_1 and β_2 .

Trade openness corresponds by the ratio of the total value of external trade (exports plus imports) to GDP. A number of existing empirical literature support a positive link between trade openness and export (Rahman, 2003, 2004; Abidin et al., 2014). In the model is included an interaction term between openness and Malaysia's export to capture the effect of trade openness on export. It determines due to trade openness, Malaysia can be benefitted or not. The more a country is open to the world economy, the more that particular country trade. So β_3 and β_4 expected is as well a positive sign.

This study introduced exchange rate as a proxy for relative prices. The proportion of relative price will indicate the comparative valuation of export and impacts on the choice for

the importing nations to determine whether to import from Malaysia or not. If the comparative price of Malaysia is lower than importing nations, they incline to import more from Malaysia. So, we expect β_5 negative sign. Exchange rate depreciation (rise in rate of exchange) of a nation is predicted to enhance the volume of its export as export price would be lower. Besides this, the exchange rate appreciation of the trading participant may appear in a contraction of exporter's nation as the import of the trading participant would be further costly. In regard of this claim, it is anticipated β_6 may receive positive or negative value followed by Abidin et al. (2014).

Transportation cost between nations is proxies by the remoteness between any indicated combinations of nations. Therefore, remoteness between a combination of nations simply measures a capacity of trade between two nations; higher transportation cost is supposed to have a negative influence on trade movements. Thus, β_7 is supposed to be negative. The remoteness is not only a proxy for transportation cost, but the longer distance might point out the wider psychological distances (Papazoglou et al., 2006). The adjacent border implies cheaper price and easier market entrance and there by β_8 is supposed to have positive sign.

3.5.1 Panel Unit Root Test

The stationarity of the variables is one of the vital assumptions for the standard classical methods of estimation in the applied econometrics application. For a stationary series, the mean and the variances will be constant over time and between two periods of time the covariance relies particularly on the difference between that particular periods, and not the actual time at which this covariance is examined that particular variable can be considered as covariance (weakly) stationary. On the other hand, for a non-stationary series,

with the sample size, the variance increases, and it possess different mean at various periods of time. Hence, to investigate whether a series is stationary or not is the initial object in an econometric practice. To estimate associations with non-stationary variables occurs in spurious regression by using the classical estimation methods.

Harris (1995), suggested that the outcomes achieved from the regression model showed statistically significant associations between the variables which is actually confirmation of contemporaneous correlations rather than significant causal relations. Therefore, initially before getting into any econometric application, the non-stationary (trend) in variables requires to be taken out. Either by regressing the variable on time or it can be captured by introducing a deterministic time trend as one of the repressors in the model if the trend in a variable is trend deterministic. On the other hand, it is not perfectly predictable if trend is not deterministic (stochastic). To nullify the trend and make it stationary, the variable needs to be differenced.

By combining time series and cross-sectional data, panel unit root test produces increasing strength and allowing heterogeneity across cross section. Consider the following equation:

$$\Delta X_{it} = \alpha_i + \beta_i X_{i,t-1} + \sum_{k=1}^{n_i} \rho_{ik} \Delta X_{i,t-k} + \varepsilon_{it} \quad (3.9)$$

Here Δ represents first difference, X_{it} represent series for Malaysia in prevailing panel, t represents period of time, n_i represent the number of lags and ε_{it} represents distributed random variables, $i=1 \dots N$ and $t=1 \dots T$

From early investigation, for particular time series data, the unit root test were experienced with various complications, such as Phillips and Perron (PP) test and Augmented Dickey Fuller test (ADF), and other different test. Such a major complication is, against the alternative of stationary, the existence of low power of the series, especially small

sample size cases. In compared with time series, Panel unit root test produce numerous benefits. It diminishes multicollinearity between the two repressors, enhance the amount of degree of freedom and produces massive number of point data. In addition, an asymptotically followed normally distributed and more powerful test statistics is provided by panel unit root test. This investigation will have followed by panel unit root IPS, LLC and MW test (Maddala & Wu, 1999; Levin, Lin & Chu, 2002; Im, Pesaran & Shin, 2003)

Depend on averaged individual Augmented Dickey Fuller statistics, the IPS statics formulated by:

$$t_{\text{bar}_{nt}} = \frac{1}{N} \sum_{i=1}^N (t_{iT}) \quad (3.10)$$

Here, t_{iT} obtained from equation (3.20) (country specific ADF regression) which represents ADF t statistic for nation I. Im, Pesaran and Shin test indicate , the t statistic should be normally distributed asymptotically according to the null hypothesis of non-stationary and the fundamental challenge here to identify that the t statistic is asymptotically distributed. As well, no Serial correlation of residual and t_{iT} are independent and should follow an identical distribution according to the hypothesis. Under IPS, group mean t – bar statistic is as follows:

$$Z_{t\text{bar}}^a = \frac{\sqrt{N}[t_{\text{bar}_{NT}} - E(t_{iT})]}{\sqrt{\text{Var}(t_{iT})}} \quad (3.11)$$

In the case of serially correlated in the residuals, normalized t – bar statistic can be transformed to the following form:

$$W_{t\text{bar}}(\rho, \beta) = \frac{\sqrt{N}[t_{\text{bar}_{NT}} - N^{-1} \sum_{i=1}^N E[t_{iT}(\rho_i, 0)/\rho_{i=0}]]}{\sqrt{N^{-1} \sum_{i=1}^N \text{Var}[t_{iT}(\rho_i=1, 0)/\rho_{i=0}]}} \quad (3.12)$$

As N and T tends to infinity and N/T tends to k and k is a finite positive constant, so a standard normal distribution is followed by $W_{tbar}(\rho, \beta)$ statistics.

Maddala and Wu (1999) recommended for a test, where unit root in every cross-sectional unit is based on the combination of p-values of the test-statistic. The authors further added that various complications still exist in IPS test, though the root across the units with the expectation of homogeneity is relaxed in IPS tests. Maddla and Wu statistic can be obtained as follows:

$$P_{MW} = \lambda = -2 \sum_{i=1}^N \ln \pi_i. \quad (3.13)$$

$$Z_{MW} = \frac{\sqrt{N\{N^{-1} \lambda - E[-2 \ln(\pi_i)]\}}}{\sqrt{Var[-2 \ln(\pi_i)]}} \quad (3.14)$$

According to independent cross-section unit hypothesis, PMW test follows a chi square distribution with $2N$ degree of freedom and p-statistics of the unit root tests is π_i . Choi (2001) has proposed a standardized statistic for higher values of N , which is as follows:

$E[-2 \ln(\pi_i)] = 2$ and $Var[-2 \ln(\pi_i)] = 4$, according to a unit root null hypothesis. As a result, $MW(N-1\lambda)$ statistic is reduced average and Chi statistic is the centred. Under the null hypothesis when N tends to infinity and with an independent and identically distributed p-values, then the ZMW statistics converges to $N(0, 1)$.

Breitung (2000), demonstrated that, if there are existence of individual trends, IPS test is not robust. The experiment is sensible to the specific deterministic trends. Christopoulos and Tsionas (2004) explores that, compared with IPS, MW test has benefit as the value of MW test not rely on particular lag length in the individual ADF regressions. Compared with IPS test, MW test has robustness (Maddala & Wu, 1999).

H_0 : Particular series consists of a unit root

H₁: Particular series is stationary.

3.5.2 Panel Co-integration

After confirmation that all the variables are in same order of direction meaning data are either I (1) or I (0), then we need to proceed for co-integration test for the establishment of the long-run association between the variables, as two non-stationary variables that have a linear conjunction is considered to be co-integrated. By applying panel co-integration tests which are Pedroni and Kao, panel co-integration tests. , we can make panel co-integration analysis. To establish the presence of co-integration among the variables, Pedroni applied seven separate experiments. By considering that the order of integration is I (1), this investigation considers panel co-integration analysis. The panel co-integration can be established as follows:

$$X_{it} = \alpha_i + Y_{it}\beta + \omega_{it} \quad (3.15)$$

Here, i and t represent cross sectional and time series factor ($i = 1, \dots, N$ and $t = 1, \dots, T$) respectively, individual constant term defined by α_i , slope coefficient is represented by β s, stationary distribution is ω_i and for all i the integrated process of order I (1) is represented by X_{it} and Y_{it} . For panel co-integration experiments, Kao (1999) developed two Dickey Fuller and Augmented Dickey Fuller models. The tests equation is as follows:

$$\omega_{it} = \rho\omega_{it-1} + V_{it} \quad (3.16)$$

$$\omega_{it} = \rho\omega_{it-1} + \sum_{j=1}^p \varphi_j \Delta\omega_{it-j} + V_{it} \quad (3.17)$$

From Eq (3.17), ω_{it-1} is achieved.

The null hypothesis, $H_0: \rho = 1$ and

The alternative hypothesis, $H_1: \rho < 1$ is applied here.

Four Dickey-Fuller-model statistics is suggested by Kao (1999). Whereas the remaining allow for endogeneity, the initial two Dickey-Fuller statistics model depends on the assumption of appropriately exogenous with the regressors in regard to the error terms.

Pedroni (1999, 2004) expanded two groups of experiments for panel co-integration analysis by including several explanatory variables in the model which follows his residual-based panel co-integration in Pedroni (1995). One group is on the basis of within dimension procedure that consider, panel- ρ and panel- t and another is on the basis of between dimension strategy that take into account, group- ρ and group- t . Common time factors and heterogeneity across exports considered by within-dimension-based statistics and in contrary, the residuals of unit root tests for each export flows in the panel is related to average of the individual autoregressive coefficients which is based on the between dimension statistics. Parametric of ADF t -statistic and non-parametric Phillips-Person ρ -statistics is further extended to panel- t statistic and panel- ρ statistic respectively. Moreover, within-dimension-based statistics is extended to between-dimension-based statistics also known as group mean approach. In comparison with Pedroni (1999). Larsson et al. (2001) anti Kao (1999), Gutierrez (2002) identified group mean approach is more robust than others.

Out of these seven statistics, four are based on pooling, what is referred to as the “Within” dimension and the last three are based on the “Between” dimension. Both kinds of the tests focus on the null hypothesis of no cointegration. Out of the total seven statistics, four statistics that include Panel PP-statistic, Panel ADF-statistic, Panel v -Statistic, Panel ρ -Statistic are within dimension based and Group PP-statistic, Group ADF-statistics and Group ρ -statistics are within dimension-based. However, the distinction comes from the specification of the alternative hypothesis. For the tests based on “Within”, the alternative

hypothesis is $\rho_i = \rho < 1$ for all i , while concerning the last three test statistics which are based on the “Between” dimension, the alternative hypothesis is $\rho_i < 1$, for all i . The finite sample distribution for the seven statistics has been tabulated by Pedroni via Monte Carlo simulations. The calculated statistic tests must be smaller than the tabulated critical value to reject the null hypothesis of absence of cointegration. In the case of panel statistics (within dimension-based), the first-order autoregressive term is assumed to be the same across all the cross sections, while in the case of group panel statistics (between dimension-based) the parameter is allowed to vary over the cross sections. If the null is rejected in the panel case, then the variables function is cointegrated. On the other hand, if the null is rejected in the group panel case, then cointegration among the relevant variables exists for at least one of the sectors. The statistics are distributed, in the limit, as standard normal variables with a left-hand rejection region, with the exception of the variance ratio statistic.

In this investigation, we adopt both a within-dimension-based statistic and as well a between-dimension-based statistic recommended by Pedroni (1999, 2004), for establishing co-integration association between the variables. Fundamentally, for analysing, no co-integration of null hypothesis against the variable are co-integrated of alternative hypothesis, it utilizes four within dimension-based panel unit root tests (panel statistic) and three between dimension-based panel unit root tests (group panel statistics). For the between dimension-based panel unit root tests, the parameter is allowed to vary over the cross-section whereas, for within dimension-based panel unit root tests, AR (1) (first-order autoregressive) is assumed to be the same for each cross section.

H_0 : There is no co-integration among the variables.

H_a : Variables are co-integrated.

3.5.3 Kao Cointegration Test

In his paper Kao (1999) describes two tests under the null hypothesis of no cointegration for panel data. One is a Dickey-Fuller type test, and another is an Augmented Dickey-Fuller type test. For the Dickey-Fuller type test Kao presents two sets of specification. In the bivariate case Kao consider the following model:

$$Y_{it} = \alpha_i + \beta x_{it} + e_{it}, \quad i=1...N \text{ and } t=1.....T \quad (3.18)$$

Where, $y_{it} = y_{it-1} + u_{it}$ and $x_{it} = x_{it-1} + \varepsilon_{it}$

α_i are the fixed effect varying across the cross-section observations, β is the slope parameter, y_{it} and x_{it} are independent random walks for all i . The residual series ε_{it} should be I(1) series. Now Kao define a long run covariance matrix of is given by $w_{it} = (u_{it}, \varepsilon_{it})'$ is given by

$$\Omega = \lim_{T \rightarrow \infty} \frac{1}{T} E \left(\sum_{t=1}^T w_{it} \right) \left(\sum_{t=1}^T w_{it} \right)' = \Sigma + \Gamma + \Gamma' \Xi \quad \begin{bmatrix} \alpha_{0u}^2 & \alpha_{0u\varepsilon} \\ \alpha_{0u\varepsilon} & \alpha_{0\varepsilon}^2 \end{bmatrix} \quad (3.19)$$

Where,

$$\Gamma = \lim_{T \rightarrow \infty} \frac{1}{T} \sum_{k=1}^{T-1} \sum_{t=k+1}^T E(w_{it} w_{it-k}') \Xi \quad \begin{bmatrix} \Gamma_u & \Gamma_{u\varepsilon} \\ \Gamma_{u\varepsilon} & \Gamma_\varepsilon \end{bmatrix}$$

$$\Sigma = \lim_{T \rightarrow \infty} \frac{1}{T} \sum_{t=1}^T E(w_{it} w_{it}') \Xi \quad \begin{bmatrix} \alpha_u^2 & \alpha_{u\varepsilon} \\ \alpha_{u\varepsilon} & \alpha_\varepsilon^2 \end{bmatrix}$$

The Dickey-Fuller test can be applied to the estimated residual using

$$e_{it} = \rho e_{it-1} + v_{it}$$

Now the null and alternative hypothesis may be written as

$$H_0 : \rho = 1 \text{ and } H_a : \rho < 1$$

The OLS estimate of ρ is given by

$$\hat{\rho} = \frac{\sum_{i=1}^N \sum_{t=2}^T e_{it} \dot{e}_{it-1}}{\sum_{i=1}^N \sum_{t=2}^T e_{it-1}^2}$$

Further calculation for Dickey-Fuller, Kao shows the following statistics

$$DF^*_{\rho} = \frac{\sqrt{NT}(\rho-1) + 3\sqrt{N\alpha_v^2/\alpha_{0v}^2}}{\sqrt{3+36\alpha_v^4/(\alpha_{0v}^4)}} \sim N(0,1) \quad (3.20)$$

$$DF^*_t = \frac{t_{\rho} + \sqrt{6N\alpha_v/(2\alpha_{0v}^2)}}{\sqrt{\alpha_{0v}^2/(2\alpha_v^2) + 3\frac{\alpha_v^2}{(10\alpha_{0v}^2)}}} \sim N(0,1) \quad (3.21)$$

Where,

$$t_{\rho} = \frac{\rho-1(\sqrt{\sum_{i=1}^N \sum_{t=1}^T e_{it-1}^2})}{s_e}, s_e^2 = \frac{1}{NT} \sum_{i=1}^N \sum_{t=2}^T (e_{it}^* - \rho e_{it-1}^*)^2, e_{it}^* = y_{it-1}^* - \alpha_i^* - \beta^* x_{it}^* \text{ and}$$

$$\beta^* = \frac{1}{N} \sum_{i=1}^N \sum_{t=1}^T \frac{1}{T^2} (x_{it}^* - \bar{x}_i^*)^2$$

In the case of strong exogeneity and no serial correlation ($\sigma_u^2 = \sigma_{9u}^2 = \sigma_v^2 = \sigma_{0v}^2$), the test statistics become

$$DF_{\rho} = \frac{T\sqrt{N}(\rho-1) + 3\sqrt{N}}{\sqrt{10.2}} \sim N(0,1) \quad (3.22)$$

$$DF_t = \sqrt{1.25t_{\rho}} + \sqrt{1.875N} \sim N(0,1) \quad (3.23)$$

These tests do not required estimate of the long-run variance-covariance matrix. For the Augmented Dickey-Fuller test, estimated residual is

$$\dot{e}_{it} = \rho e_{it-1} + \sum_{j=1}^p \varphi_j \Delta e_{it-j} + v_{itp}$$

Under the null of no cointegration, the ADF test take the from

$$T_{ADF} = \frac{(\rho-1)[\sum_{i=1}^N (e_i^* Q_i e_i)^{1/2}]}{s_v} \quad (3.24)$$

Further calculation Kao shows the following statistics

$$ADF = \frac{t_{ADF} + \sqrt{6N}\alpha_v / (2\dot{\alpha}_{0v})}{\sqrt{\sigma_{0v}^2 / (2\dot{\alpha}_v^2 + 3\dot{\alpha}_v^2 / (10\dot{\alpha}_{0v}^2))}} \sim N(0,1) \quad (3.25)$$

For estimation of long run parameter when we obtain the estimates of w_{it} and $\dot{w}_{it}$ then we get,

$$\dot{\Sigma} = \begin{bmatrix} \dot{\alpha}_u^2 & \dot{\sigma}_{u\epsilon} \\ \dot{\alpha}_{u\epsilon}^2 & \dot{\sigma}_{\epsilon}^2 \end{bmatrix} = \frac{1}{NT} \sum_{i=1}^N \sum_{t=1}^T (\dot{w}_{it} \dot{w}_{it}) \quad (3.26)$$

$$\dot{\Omega} = \begin{bmatrix} \dot{\alpha}_{0u}^2 & \dot{\sigma}_{0u\epsilon} \\ \dot{\alpha}_{0u\epsilon}^2 & \dot{\sigma}_{0\epsilon}^2 \end{bmatrix} = \frac{1}{NT} \sum_{i=1}^N \left[\frac{1}{T} \sum_{t=1}^T \dot{w}_{it} \dot{w}_{it} + \frac{1}{T} \sum_{j=1}^i \overline{w_{jl}} \sum_{t=j+1}^T (\dot{w}_{it} \dot{w}_{it-j} + \dot{w}_{it-j} \dot{w}_{it}) \right]$$

where $\dot{w}_{it}$ is a weight function or a kernel

3.5.4 FMOLS (Fully Modified Ordinary Least Square) and DOLS (Dynamic Ordinary Least Square)

The utilization of conventional pooled least squares approach may contribute to spurious estimates, if there is occurrence of co-integration association between dependent and independent variables, because of the issues of serial correlation and endogeneity. To eliminate these issues, Panels Dynamic least square (DOLS) and Fully Modified Least Square (FMOLS) techniques are effective methods. A method of removing serial correlation influence is a Panel FMOLS model, by utilizing a nonparametric transformation to residuals which are achieved from co-integration regression. To obtain long-run parameters for considering the lead and lagged estimates of variables, a parametric method Panel DOLS is used. To establish a regression without the need to take differences of the co-integrated variables, Panels DOLS and FMOLS methods are efficient technique. Therefore, it is appropriate to examine without loss of any data of dependent and independent variables.

Moreover, Ordinary Least Square follows an asymptotic distribution and depends on nuisance parameters resulting from endogeneity of the regressors and serially correlated error terms. Fully modified Ordinary least square estimator is recommended by Phillips and Hansen (1990), Phillips (1995) and Pedroni (1995, 2000) to resolve these obstacles. The authors argued that the asymptotic bias and nuisance parameter dependency associated with co-integrating vector estimation while the non-centred bias arises from the serial correlation in the error term. The asymptotic distribution of the Ordinary Least Square influenced through the kernel estimators of the Nuisance parameters in FMOLS technique. The method is problematical particularly in quite extremely inadequate sample size, though this non-parametric method is a sophisticated method to handle with nuisance parameters.

By considering the a panel co-integrated system, where $i=1, \dots, N$ members

$$Y_{it} = \mu_i + \beta x_{it} + v_{it} \quad (3.27)$$

$$X_{it} = x_{it-1} + \varepsilon_{it} \quad (3.28)$$

Suppose equation (3.27) is a co-integrated panel model, where $i=1, \dots, N$, and with asymptotic covariance matrix Ω_i vector error process $\varepsilon' = (v_{it}, \varepsilon_{it})'$ is stationary. Therefore, with a co-integrating vector β , x_i and y_i variables are supposed to be co-integrated for each portion of the panel, if the integrated of order of y_{it} is one. Assume that x_i is not co-integrated with each other which is a m dimensional vector of regressors, So, by making a partition in the vector error process $\varepsilon' = (v_{it}, \varepsilon_{it})$, one element become a a scalar series and the other portion become m dimensional vector of the differences in the regressors $\varepsilon_{it} = x_{it} - x_{it-1} = \Delta x_{it}$. Then the covariance Matrix will be

$$\Omega_i = \begin{bmatrix} \Omega_{11i} & \Omega_{21i} \\ \Omega_{12i} & \Omega_{22i} \end{bmatrix} \quad (3.29)$$

From covariance matrix, the scalar long run variance of the residual v_{it} can be defined as Ω_{11i} and among the residual ε_{it} , the $m \times m$ dimensional long run covariance is Ω_{22i} . In between the residual v_{it} and each of the ε_{it} , Ω_{21i} is an $m \times 1$ vector that provides the long run covariance.

For investigating the asymptotic features of estimators, regarding the degree of dependency across both the time series, T and cross-sectional dimensions N , here the consideration has been taken into account through the same contribution made by Pedroni (1995), as T , grow large within these dimensions.

Particularly, Phillips and Durlauf (1986) and Park and Phillips (1988) applied, the circumstances of the multivariate functional central limit theorems for the time series dimension, hold for each portion of the panel as the time series dimension becomes large. Therefore, a multivariate functional central limit theorem is satisfied by vector error process ε'_{it} and T convergence to $T \rightarrow \infty$.

$$\frac{1}{\sqrt{T}} \sum_{t=1}^T \varepsilon_{it} \rightarrow B_i(r, \Omega_i) \quad (3.30)$$

Thus, equation 3.30, holds for any given member, i , of the panel, here, with asymptotic covariance Ω_i , over the real interval $r \in [0, 1]$ the Brownian motion is defined by $B_i(r, \Omega_i)$ which is hold for any given member, i , of the panel. This Process established an extensive category of stationary ARMA procedure by placing less constraint on the temporal dependency and heterogeneity of the error process. For individual members of the panel it as well produces a unique type of serial correlation structure. Particularly, across individual members, the asymptotic covariance matrix Ω_i varies and is expressed by Ω_i equivalent to the

$$\lim_{T \rightarrow \infty} E[T^{-1} (\sum_{t=1}^T \varepsilon'_{it}) (\sum_{t=1}^T \varepsilon'_{it})] \quad (3.31)$$

$\Omega_i = \Omega_i^0 + \Gamma_i + \Gamma_i'$ is decomposed from the covariance matrix Ω_i . Here, Ω_i^0 and Γ_i are the simultaneous covariance and weighted aggregate of auto covariance's respectively. Between y_{it} and x_{it} , the endogenous recompose outcome is captured by the off-diagonal terms of these individual Ω_{21i} matrices that as well allowed to differ within individual portions of the panel. Based on a triangularization of this asymptotic covariance matrix, several of the estimators will be useful to perform.

More precisely, by applying this lower triangular matrix of Ω_i as L_i , the relation will be as regards:

$$L_{11i} = (\Omega_{11i} - \frac{\Omega_{21i}^2}{\Omega_{22i}})^{1/2}, L_{12i} = 0, L_{21i} = \frac{\Omega_{21i}}{\Omega_{22i}^{1/2}}, L_{22i} = \Omega_{22i}^{1/2} \quad (3.32)$$

According to Newey & West (1987), the asymptotic covariance matrix estimation is established on the basis of any one of a number of consistent kernel estimators.

Here, the individual specific means represent by $\hat{x}_i$ and $\hat{y}_i$. Traditional panel Ordinary Least Square with co-integrated relationship produces nuisance parameters combined with the serial correlation structure of the data. Phillips and Hansen (1990) and Phillips (1995) explained that the bias originates from the endogeneity of the I(1) regressors and the non-centrality bias arises from serially correlated regression errors. They recommend for improving the single-equation estimation non-parametrically for obtaining median-unbiased and asymptotically normal estimation in order to eliminate the second-order bias.

From equation (1) for the coefficient β , a panel FMOLS estimator is given bellow:

$$\beta_{NT}^* - \beta = (\sum_{i=1}^N \hat{L}_{22i}^{-2} \sum_{t=1}^T (X_{it} - \hat{X}_i)^2 \sum_{i=1}^N \hat{L}_{11i}^{-1} \hat{L}_{22i}^{-1} (\sum_{t=1}^T (X_{it} - \hat{X}_i)^2 v_{it}^* - T \hat{y}_i) \quad (3.33)$$

$$v_{it}^* = v_{it}^* - \frac{L_{21i}}{L_{22i}} \Delta X_{it}, \hat{\gamma}_i = \Gamma_{21i}^* + \tilde{\Omega}_{21i}^0 - \frac{L_{21i}}{L_{22i}} (\Gamma_{21i}^* + \tilde{\Omega}_{21i}^0) \quad (3.34)$$

Here $\hat{L}_i$ represent a lower triangular decomposition of as Ω_i which already ascertained in equation (2). As a consequence, at rate of $T\sqrt{N}$, the estimator converges to its true value β_{NT}^* . The distribution is as follows:

$$T\sqrt{N} (\beta_{NT}^* - \beta) \rightarrow (0, v) \quad (3.35)$$

as $T \rightarrow \infty$ and $N \rightarrow \infty$ $v = 2$ iff $\hat{x}_i = \hat{y}_i = 0$ else 6

It is implied from the proposition, the corresponded asymptotic distribution can be corrected of the nuisance parameters combined with any member specific serial correlation structure in the data, if appropriate corrections are made to the estimator. For both, the standard situation without intercepts at the same time for the fixed effects model with heterogeneous intercepts, FMOLS method is asymptotically unbiased. For both the x_{it} univariate, the size of the variance is differing only, for standard case it equal to 2 and 6 with heterogeneous intercepts case. Specifically, specific values of v is a function of the dimension of m , if x_{it} is just m -dimensional vector and specific values for v will not depend with the associated t -statistics.

Phillips & Hansen (1990) concluded that, over the cross-sectional dimension, these unit root distributions are being averaged. So rather than, in terms of unit root asymptotic, this estimator is distributed normally. A normal distribution of the estimator can be achieved through this averaging process with a variance dependency on the moments of the fundamental Brownian motion function that represent the attributes of the integrated variables.

Adjusted serial correlation statistic is given by:

$$(\sum_{t=1}^T (X_{it} - \bar{X}_i)^2 v_{it}^* - T \hat{\gamma}_i) \quad (3.36)$$

A vital benefit produced by the between-dimension based estimators can be concluded, with the existence of heterogeneity of the co-integrating vectors, it also provides greater flexibility for pooled data case. The equation for between-dimension FMOLS estimator can be established as follows:

$$\hat{\beta}_{GFM}^* = N^{-1} \sum_{i=1}^N \hat{\beta}_{FM,i}^* \quad (3.37)$$

Here, the traditional FMOLS estimator is represented by $\hat{\beta}_{FM,i}^*$, which placed in the panel to the i_{th} portion. As well for the between-dimension based estimator the related t -statistics formulated by:

$$t\hat{\beta}_{GFM}^* = N^{-1/2} \sum_{i=0}^N t\hat{\beta}_{FM,i}^* \quad (3.38)$$

In which,

$$t\hat{\beta}_{FM,i}^* = (\hat{\beta}_{FM,i}^* - \beta_0) (\hat{\Omega}_{11i}^{-1} \sum_{t=1}^T (x_{it} - \bar{x}_i)^2)^{1/2} \quad (3.39)$$

3.5.5 Panel DOLS Model

In contrary, to the nonparametric procedure implemented by Phillips and Hansen, Dynamic ordinary least square is developed based on parametric regression with leads and lags of the first difference of as regressors initially by Saikkonen (1991). By augmenting the co-integrating regression to control for the endogenous feedback effect, Pedroni further expanded a between-dimension group-mean panel DOLS estimator. Panel Dynamic Ordinary Least Square panel estimator can be defined by following equation:

$$Y_{it} = \alpha_i + X_{it}\beta_i + \sum_{j=-p}^{j=p} C_{it} \Delta X_{it-p} + V_{it}. \quad (3.40)$$

Here C_{it} coefficients represent the differences of lead and lag and p_i and $-p_i$ represents lead and lag values. C_{it} coefficients produce an unbiased estimate by accounting for the serial correlation and endogeneity problem. Therefore, co-integrated with endogenous regressors even omission of variables, can produce an unbiased estimate through DOLS estimation.

Group-mean panel DOLS estimator can be established from the above regression estimators as follows:

$$\hat{\beta}_{GD}^* = (N^{-1} \sum_{i=1}^N (\sum_{t=1}^T Z_{it} Z_{it}')^{-1} (\sum_{t=1}^T Z_{it} y_{it}))_1 \quad (3.41)$$

Pedroni (2001) claimed that, there are a lot of advantages of utilizing panel Dynamic Ordinary Least Square based on between-dimension group-mean estimator over within-dimension approach. Primarily, in the between-dimension Dynamic Ordinary Least Square procedure the existence of heterogeneous co-integrating vectors provides more flexibility, at the same time, the co-integrating vectors are constrained to be identical for each nation in within dimension-based approach, as it not possible to assume that the influence of export to economic growth is the same across nations. Moreover, by defining the mean value of the co-integrating vectors, heterogeneous co-integrating vectors, point estimates produce additional effective representation. Particularly, by making a comparison with the test statistics among the between based dimension and within based dimension estimators for testing the hypothesis , for within dimension based null hypothesis $H_0: \beta_i = \beta_0$ over alternative hypothesis $H_a: \beta_i = \beta_a \neq \beta_0$, for all i 's β_a is same, in contrary, for between dimension based null hypothesis $H_0: \beta_i = \beta_0$ over the alternative hypothesis $H_a: \beta_i \neq \beta_0$, as a consequence, values for β_i are not constrained to be the same. Obviously, between-dimension estimator is more advantageous. The between-dimension estimator is formulated by following:

$$\hat{\beta}_{GD}^* = N^{-1} \sum_{i=1}^N \hat{\beta}_{D,i}^* \quad (3.42)$$

In which, traditional Dynamic Ordinary Least Square estimator is illustrated by, $\hat{\beta}_{D,i}^*$, which placed in the panel to the i_{th} portion. At the same time, from the Dynamic ordinary least square regression, by assuming the long-run variance of the residuals is:

$$\sigma_i^2 = \lim_{T \rightarrow \infty} E[T^{-1}(\sum_{t=1}^T \mu_{it}^2)^2] \quad (3.43)$$

Thus between-dimension estimator-based t -statistic will be followed by:

$$t\hat{\beta}_{GD}^* = N^{-1/2} \sum_{i=0}^N t\hat{\beta}_{D,i}^* \quad (3.44)$$

$$t\hat{\beta}_{GD}^* \text{ represent } (\hat{\beta}_{D,i}^* - \beta_0)(\hat{\sigma}_i^{-2} \sum_{t=1}^T (x_{it} - \bar{x}_i)^2)^{1/2} \quad (3.45)$$

Both between dimensions-based panel DOLS recommended by Mark and Sul (1999) and at the same time FMOLS suggested by Pedroni (1996, 2000) will be employed in this investigation and then comparison will be made within the FMOLS and DOLS.

3.5.6 Remarks

In recent decades the determinants of exports have been growing in numbers. The study will use gravity model approach which was design with simple illustration but also classifies as a major factor inducing bilateral export between two countries (Greenaway and Milner, 2002). The gravity model is one of the real models that are most successful models in empirical determinants of exports in economics so far (Frankel and Rose, 2002). Various estimation techniques have been proposed in previous works to estimate margins of trade and the gravity equation. It is essential to distinguish between models estimating the intensive, extensive and the quality margin of trade. There are two types of panels like non-stationary panels and traditional panels. Generally, non-stationary panel tests, such as Fully

modified OLS (FMOLS), Dynamic OLS (DOLS) and Generalized Method of Movement (GMM) are used if a large number of observation and time interval. Whereas, traditional panel tests like Pooled, Fixed Effect Model (FEM) and Random Effect Model (REM) are utilized if the number of observation and short time interval. Since this study contains ($T > N$) a large number of observation and long-time interval, thus, will apply non-stationary panels. Log-linear models using ordinary least squares (OLS) have long been treated as standard, estimating all three margins in a similar fashion (Eaton et al., 2004; Klenow & Hummels, 2005; Dalgin et al., 2008). Recent works cast doubt on the suitability of OLS for estimating trade flows especially in the presence of heteroskedasticity or “zeros”. In particular, the log-linearization of the DV leads to a loss of information because zero trade flows will be ignored. Taking the logs and using OLS can lead to severely biased and inconsistent estimates as shown in the works of Santos Silva & Tenreyro (2006), Gomez-Herrera (2013), and Santos Silva et al. (2014). In this thesis, the gravity model applied is based on the gravity model used by Sharma and Chua (2000) and Rahman (2003, 2009) and Abidin et al. (2014). Employing panel data analysis using a gravity model, the years estimated is in the period of 1997-2015. One of the econometric advantages in using panel data is that it allows individual heterogeneity which is not an available characteristic if time series or cross-sectional data is used (Baltagi, 2005). Using panel data would also provide more informative data, more variability, less collinearity among the variables, more degrees of freedom, and more efficiency. Furthermore, it allows the assumptions stated in the cross-sectional analysis to be relaxed and tested (Maddala & Wu, 1999). First, we employ the gravity model specification introduced by Bergstrand (1985) as a base case, in which the dependent variable export (exp) denoting the size of exports between the two countries i and j , is a function of the product of each country's GDP (GDP_i and GDP_j respectively) and of

the geographical distance between the two trading partners. Then, for our research Bergstrand's model is extended to include additional factors that may have an impact on trade between country i and j .

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

A consequence of the application of conventional OLS methods with non-stationary series may produce spurious regression. A specific panel co-integration procedure namely fully modified OLS estimator proposed by Phillips (1995) and Pedroni (2000) can be applied in this case. Since, FMOLS technique applied kernel estimators of the nuisance parameters that affecting the asymptotic distribution of the OLS estimator and which is as well non-parametric method. The autocorrelation of residuals and endogeneity problem as well captured by FMOLS technique. On the other hand, a parametric estimation procedure suggested by Kao and Chiang (2000) and Mark and Sul (2003) is Dynamic OLS, the long-run regression which is augmented by lead and lagged differences of the independent variables.

4.2 Descriptive Statistics

The summery statistics results for export, GDP per capita, trade openness, bilateral exchange rate of Malaysia and GDP per capita, trade openness of 11-TPPA countries are presented in Table 4.1 and export, GDP per capita, trade openness, bilateral exchange rate of Malaysia and GDP per capita, trade openness 15-RCEP countries are presented in Table 4.2. The results include the descriptive analysis of the variables.

Table 4.1: Summery Statistics of export, GDP per capita, trade openness, bilateral exchange rate of Malaysia and GDP per capita, trade openness of 11-TPPA countries.

Panel A: Summary Statistics

	LEXP	LGDPi	LGDPj	LOPENi	LOPENj	LEXi	REMOT
Mean	21.0053	9.7536	10.029	0.5853	-0.4204	1.1079	13.005
Median	20.6961	9.7749	10.298	0.6547	-0.5180	-0.724	13.02
Maximum	24.2285	10.201	11.354	0.790	1.48082	8.8162	15.74
Minimum	16.0331	9.3213	7.4767	0.293	-1.6736	-1.367	9.868
Std. Dev.	2.09189	0.2759	0.9240	0.160	0.73766	3.0591	1.85
Skewness	-0.1276	-0.0018	-0.8211	-0.474	0.86114	1.3290	-0.22
J.B	8.10029	15.296	23.4891	21.26	28.0637	63.578	16.39
Prob.	0.01742	0.0004	0.00008	0.002	0.00000	0.0000	0.0027
Sum	4390.10	2038.5	2096.23	122.3	-87.866	231.55	2718.
Sum Sq. Dev.	910.2	15.835	177.59	5.37	113.1	1946.5	719.5
Obs.	209	209	209	209	209	209	209

Panel B: Correlation

	LEXP	LGDPi	LGDPj	LOPENi	LOPENj	LEXi	LREMOT
LEXP	1.000	0.2202	0.4861	-0.1844	0.052	-0.134	-0.92172
LGDPi	0.220	1.00000	0.2543	-0.8884	0.072	-0.001	-0.057607
LGDPj	0.48613	0.25433	1.0000	-0.2209	0.042	-0.6991	-0.383667
LOPENi	-0.1844	-0.8884	-0.220	1.00000	-0.05	-0.0024	0.049483
LOPENj	0.05219	0.07271	0.0428	-0.0517	1.000	0.11234	0.122065
LEXi	-0.1343	-0.0014	-0.699	-0.0024	0.112	1.00000	0.119667
LREMOT	-0.9217	-0.0576	-0.383	0.04948	0.122	0.11966	1.000000

Table 4.1 reports the descriptive statistics and correlation results for the export and GDP per capita, trade openness, bilateral exchange rate of Malaysia and GDP per capita, trade

openness of 11-TPPA countries indicators (N=209) employed in this analysis, where the sample period covers from 1997-2015. The variables are defined as follows: EXP (annual export of Malaysia), GDPi (GDP per capita of Malaysia), GDPj (GDP per capita of 11-TPP countries), OPENi (openness of Malaysia, trade shares over GDP), OPENj (openness of 11-TPP countries, trade shares over GDP), EXi (bilateral exchange rate), REMOT (proxy of transportation cost). The above table displays the minimum values, the maximum values, mean values, median values and the standard deviation for all seven variables. The mean value gives an idea of the central tendency of the values of a variable. The number of observations of each variable is 209. The standard deviation and the extreme values (minimum in comparison to maximum value) give an indication of the dispersion of the values of a variable from its mean value. These statistics are useful in showing the central tendency and the dispersion of a variable.

From panel B, the correlation test, the results reveal that export of Malaysia is positively correlated with GDP of Malaysia, GDP of 11-TPP countries, Openness of 11-TPP countries and negatively correlated with Openness of Malaysia, bilateral exchange rate and remoteness.

Table 4.2: Summary Statistics of export, GDP per capita, trade openness, bilateral exchange rate of Malaysia and GDP per capita, trade openness of 15-RCEP countries.

Panel A: Summary Statistics

	LEXP	LGDPi	LGDPj	LOPENi	LOPENj	EXi	REMOT
Mean	21.144	9.7536	9.1260	0.5853	-0.5530	3.1047	823372.
Median	21.608	9.7749	8.8430	0.6547	-0.3969	2.5191	104217.
Maximum	24.227	10.201	11.354	0.7903	1.48082	8.8162	864928
Minimum	14.089	9.3213	6.6088	-0.293	-6.3924	1.1625	8999.8
Std. Dev.	2.2391	0.2757	1.2989	0.1606	1.34652	3.3875	151068

Table 4.2 continued

Skewness	-1.119	-0.0018	0.1047	-0.4745	-2.5982	0.2829	3.0443
Kurtosis	4.1128	1.6746	1.7133	1.7584	11.2565	1.6164	13.124
J.B	74.289	20.858	20.179	29.000	1130.20	26.533	1657.4
Prob.	0.000	0.0000	0.0004	0.0001	0.00000	0.0000	0.0000
Sum	6026.	2779.7	2600.9	166.81	-157.61	884.84	2.35E+
Sum Sq. Dev	1423	21.593	479.16	7.3329	514.928	3259.0	6.48E+1
Obs.	285	285	285	285	285	285	285

Panel B: Correlation

	LEXP	LGDPPCi	LGDPPCj	LOPENi	LOPENj	LEXi	LREM
LEXP	1.00000	0.277387	0.463018	-0.2413	0.15222	-0.32	-0.8884
LGDPI	0.27738	1.000000	0.263610	-0.88844	0.084547	0.035	-0.0667
LGDPIj	0.46301	0.263610	1.000000	-0.23286	0.316468	-0.590	-0.2637
LOPENi	-0.2413	-0.88844	-0.232862	1.000000	-0.08160	-0.037	0.0541
LOPENj	0.15222	0.084547	0.316468	-0.08160	1.000000	0.156	-0.1112
LEXi	-0.3202	0.035058	-0.590502	-0.03766	0.156135	1.000	0.1547
LREMOT	-0.8884	-0.066756	-0.263799	0.054183	-0.11123	0.154	1.0000

Table 4.2 reports the descriptive statistics and correlation results for the export of Malaysia and GDP per capita, trade openness, bilateral exchange rate of Malaysia and GDP per capita, trade openness of 15-RCEP countries indicators (N=285) employed in this analysis, where the sample period covers from 1997-2015. The variables are defined as follows: EXP (annual export of Malaysia), GDPi (GDP per capita of Malaysia), GDPj (GDP per capita of 15-RCEP countries), OPENi (openness of Malaysia, trade shares over GDP), OPENj (openness of 15-RCEP countries, trade shares over GDP), EXi (bilateral exchange rate), REMOT (proxy of transportation cost). The above table displays the minimum values,

the maximum values, mean values, median values and the standard deviation for all seven variables. The mean value gives an idea of the central tendency of the values of a variable. The number of observations of each variable is 209. The standard deviation and the extreme values (minimum in comparison to maximum value) give an indication of the dispersion of the values of a variable from its mean value. These statistics are useful in showing the central tendency and the dispersion of a variable.

From panel B, the correlation test, the results reveal that export of Malaysia is positively correlated with GDP of Malaysia, GDP of 15-RCEP countries, Openness of 15-RCEP countries and negatively correlated with Openness of Malaysia, bilateral exchange rate and remoteness.

4.3 Unit Root Test Results

To establish a co-integrated relationship between the variables, Unit root test is required to perform. After performing a unit root test, if all the variables are found stationary at level thus ordinary least square is suitable for establishing the relationship between the variables. On the other hand, a test of co-integration is needed if the variables got a unit root. In this investigation we used three several forms of panel unit root test, such as, Levin, Lin and Chu (2002) which is also known as LLC test, IPS test established by Im, Pesaran and Shin (2003) and Madala and WU (1999) panel unit root test which is also known as MW test Table 4.3 showed the unit root test for TPPA model, whereas Table 4.4 presented the results of unit root test for RCEP model.

4.3.1 TPPA model

At Levels and first difference with Individual Intercept and Individual Intercept and Trend the Panel Unit Root Tests results.

Table 4.3: At level and first difference with Individual Intercept and Individual Intercept and Trend the Panel Unit Root Tests results.

At level with Individual Intercept and Individual Intercept and Trend the Panel Unit Root Tests results.						
Variables	LLC		IPS		MW	
	Cons.	Cons & Trend	Cons.	Cons & Trend	Cons.	Cons & Trend
lexpij	-1.58527 (0.0565)	0.57999 (0.7190)	1.14497 (0.8739)	-0.35464 (0.3614)	13.0529 (0.9317)	25.9479 (0.2539)
lgdppci	0.83189 (0.7973)	14.0264 (1.0000)	3.82640 (0.9999)	3.17474 (0.9993)	2.74548 (1.0000)	3.19016 (1.0000)
lgdppcj	-0.24351 (0.4038)	1.15663 (0.8763)	2.42787 (0.9924)	0.73495 (0.7688)	8.61654 (0.9951)	16.9132 (0.7681)
lopeni	5.69134 (1.0000)	10.0718 (1.0000)	5.24754 (1.0000)	1.13196 (0.8712)	0.60507 (1.0000)	6.53555 (0.9994)
lopenj	-1.32298 (0.0929)	1.73632 (0.9587)	0.25576 (0.6009)	1.13969 (0.8728)	22.6517 (0.4216)	18.7598 (0.6601)
lexit	-0.73512 (0.2311)	3.70127 (0.9999)	-0.20905 (0.4172)	1.16412 (0.8778)	13.6568 (0.9132)	9.93689 (0.9869)
At first difference with Individual Intercept and Individual Intercept and Trend the Panel Unit Root Tests results.						
Variables	LLC		IPS		MW	
	Cons.	Cons & Trend	Cons.	Cons & Trend	Cons.	Cons & Trend
lexpij	-7.0438* (0.0000)	-7.25618* (0.0000)	-7.82304* (0.0000)	-7.71060* (0.0000)	102.469* (0.0000)	90.6182* (0.0000)
lgdppci	-13.654* (0.0000)	-10.8022* (0.0000)	-14.3883* (0.0000)	-10.8322* (0.0000)	175.875* (0.0000)	121.727* (0.0000)
lgdppcj	-4.7358* (0.0000)	-3.17386* (0.0008)	-5.32669* (0.0000)	-2.94732* (0.0016)	66.7378* (0.0000)	41.9801* (.0063)
lopeni	-1.258** (0.1041)	-4.80960* (0.0000)	-4.86827* (0.0000)	-5.87192* (0.0000)	62.0051* (0.0000)	68.4323* (0.0000)
lopenj	-3.1278* (0.0009)	-5.92391* (0.0000)	-3.96485* (0.0000)	-6.14822* (0.0000)	61.4823* (0.0000)	73.8087 (0.0000)
lexit	-2.5537* (0.0053)	-5.10129* (0.0000)	-5.32954* (0.0000)	-8.65141* (0.0000)	65.2774* (0.0000)	102.949* (0.0000)

(Parenthesis shows the p-values. * and ** indicate 5% and 10% significance level respectively. To select the lag lengths, the Newey-West automatic bandwidth selection was used to select the lag lengths)

From the Table 4.3 (TPPA model), it can be summarized that all the variables are non-stationary at level and accept the null hypothesis. The panel unit root tests are then utilized at first difference in order to examine the order of integration and we found from table 4.3 (TPPA model) that the panel unit root test reject the null hypothesis. Thus, it can

be concluded that all the variables are integrated at order of I (1). As this study confirmed the variables are in same order of integration, so the next step is to confirm presence of a long-run relationship between the variables by applying panel co-integration test.

4.3.2 RCEP model

Table 4.4: At Levels and first difference with Individual Intercept and Individual Intercept and Trend the Panel Unit Root Tests results.

At level with Individual Intercept and Individual Intercept and Trend the Panel Unit Root Tests results.						
Variables	LLC		IPS		MW	
	Cons.	Cons & Trend	Cons.	Cons & Trend	Cons.	Cons & Trend
lexpij	-1.59539 (0.0553)	0.61401 (0.7304)	1.05998 (0.8554)	-0.86541 (0.1934)	19.0135 (0.9397)	51.0770 (0.0096)
lgdppci	3.92167 (1.0000)	5.41989 (1.0000)	8.53225 (1.0000)	-0.93602 (0.1746)	0.49992 (1.0000)	30.2173 (0.4546)
lgdppcj	0.69401 (0.7562)	2.82131 (0.9976)	5.54624 (1.0000)	0.08575 (0.5342)	7.47588 (1.0000)	28.6863 (0.5341)
lopeni	1.74907 (0.9599)	11.8761 (1.0000)	0.37532 (0.6463)	3.16124 (0.9992)	18.1780 (0.9556)	3.21365 (1.0000)
lopenj	-1.45011 (0.0735)	1.64881 (0.9504)	-0.26616 (0.3951)	0.98908 (0.8387)	32.3233 (0.3526)	29.7475 (0.4786)
lexit	2.29497 (0.9891)	-0.28354 (0.3884)	0.11153 (0.5444)	-1.17306 (0.1204)	29.8954 (0.4710)	56.2977 (0.0025)
At first difference with Individual Intercept and Individual Intercept and Trend the Panel Unit Root Tests results.						
Variables	LLC		IPS		MW	
	Cons.	Cons & Trend	Cons.	Cons & Trend	Cons. Trend	Cons & Trend
lexpij	-8.1561* (0.0000)	-10.6580* (0.0000)	-8.42939* (0.0000)	-10.8536* (0.0000)	137.834* (0.0000)	144.996* (0.0000)
lgdppci	-17.882* (0.0000)	-13.2509* (0.0000)	-18.1848* (0.0000)	-14.0965* (0.0000)	258.627* (0.0000)	184.042* (0.0000)
lgdppcj	-5.3533* (0.0000)	-1.65509* (0.0490)	-8.67242* (0.0000)	-5.75703* (0.0000)	130.298* (0.0000)	90.8320* (0.0000)
lopeni	-9.4722* (0.0000)	-5.90117* (0.0000)	-10.4404* (0.0000)	-12.1308* (0.0000)	148.810* (0.0000)	160.584* (0.0000)
lopenj	-8.5458* (0.0000)	-8.19849* (0.0000)	-9.58648* (0.0000)	-9.92961* (0.0000)	144.781* (0.0000)	137.751* (0.0000)

Table 4.4 continued

lexit	-7.8810* (0.0000)	-7.3209* (0.0000)	-10.9835* (0.0000)	-7.93491* (0.0000)	161.204* (0.0000)	119.738* (0.0000)
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(Parenthesis shows the p-values. * and ** indicate 5% and 10% significance level respectively. To select the lag lengths, the Newey-West automatic bandwidth selection was used to select the lag lengths)

From the Table 4.4 (RCEP model), it can be summarized that all the variables are non-stationary at level and accept the null hypothesis. The panel unit root tests are then utilized at first difference in order to examine the order of integration and we found from table 4.4 (RCEP model) that the panel unit root test reject the null hypothesis. Thus, it can be concluded that all the variables are integrated at order of I (1). As this study confirmed the variables are in same order of integration, so the next step is to confirm presence of a long-run relationship between the variables by applying panel co-integration test.

4.4 Panel Co-integration Test

In the next step, we examine whether a long-run equilibrium relationship exists between the variables. Each of our variables is integrated of order one, we conducted panel cointegration test developed by (Pedroni, 1999, 2004). Seven test statistics are proposed: the panel v-statistic, panel rho-statistic, panel PP-statistic (nonparametric), panel ADF statistic (parametric), group rho-statistic, group PP statistic (nonparametric), and group ADF-statistic (parametric). The first four statistics are within dimension-based statistics and the rest are between dimension-based statistics. In his paper Pedroni (1999) describe the seven test statistics, the first of the simple panel cointegration statistics is a type of non-parametric variance ratio statistics. The second is a panel version of a non-parametric statistics that is analogous to the familiar Phillips Perron rho-statistics. The third statistics is also non-parametric and is analogous to the Phillips and Perron Statistics. The fourth statistics is the simple panel cointegration statistics which is corresponding to augmented Dickey-Fuller

statistics (Pedroni, 1999, p. 658). The rest of the statistics are based on a group mean approach. “The first of these is analogous to the Phillips and Perron rho-statistics and the last two analogous to the Phillips and Perron statistics and the augmented Dickey-Fuller statistics respectively (Pedroni, 1999, p. 658).

After the confirmation of the order of stationary, it is necessary to perform co-integration test methodology in order to examine the existence of a long-run relationship between exports of country i (Malaysia) to country j (TPPA countries and RCEP countries), GDP_i (GDP per capita) of country i (Malaysia), GDP_j (GDP per capita) of country j (11-TPPA and 15-RCEP countries), Openness of country I (Malaysia), Openness of country J (11-TPPA and 15-RCEP countries), exchange rate of country I (Malaysia) to country J (11-TPPA and 15-RCEP countries). In this investigation we used the Pedroni (1999) and Kao’s panel co-integration tests. In fact, Pedroni (1999, 2004), recommended a panel co-integration test which as well consider heterogeneity like IPS and MW panel unit root test by utilizing specific parameters that consented to differ across individual members of the sample.

Kao (1999), proposed a residual based panel co-integration test which is under the assumption of homogeneous slope coefficients exists across countries. Gutierrez (2002) expressed that, when the time-dimension of the panel is small, Kao’s tests outperform Pedroni’s tests. Table 4.7 presented the outcomes for the Kao’s panel co-integration test which as well reject the null hypothesis of no co-integration. It can be observable from the table that the t-statistics is greater than the critical value that in turn indicate that a long-run relationship exists between the variables.

4.4.1 TPPA Model

Table 4.5: presents Kao's residual co-integration tests

	Null Hypothesis	t-statistics	p-value
ADF	No Co-integration	-3.707082	0.0001*

(*, ** and *** indicate significance level at 1%, 5% and 10% respectively)

Table 4.6: Pedroni's Residual-Based Panel Co-integration Test.

Panel Co-integration Statistics (Within-Dimension)				
	Individual Intercept		Intercept and Trend	
Test Statistics	Statistical Values	P-value	Statistical Values	P-value
Panel v-statistic	0.568704	0.2848	-1.131510	0.8711
Panel ρ -statistic	1.342447	0.9103	2.731006	0.9968
Panel PP-statistic	-1.441579	0.0747***	-1.462107	0.0719***
Panel ADF-stat	-1.812750	0.0349**	-2.112531	0.0173*
Group Mean Panel Co-Integration Statistics (Between Dimension)				
Group ρ -statistic	2.377260	0.9913	3.844004	0.9999
Group PP-statistic	-1.368499	0.0856***	-5.906369	0.0000*
Group ADF-stat	-1.569972	0.0582***	-1.762311	0.0390*

(*, ** and *** indicate significance level at 1%, 5% and 10% respectively)

From Table 4.5, it is observed that the null hypothesis of no co-integration for Panel PP-statistic, Panel ADF-statistic, Group PP-statistic, and Group ADF-statistics can be rejected as the p-values is less than 5%. Out of seven statistics four statistics is significant at 5% level. Hence, with the decision of the majority we can conclude that there is exist a long-run association between the variables of the study and in the long-run the variables move towards a stable equilibrium stage (Glten Dursun et al., 2016). Therefore, following the (Pedroni, 1999, 2004) test in the series, we conclude that EXP, GDPi, GDPj, OPENi, OPENj, EXi, REMOT series shared a long-run equilibrium relationship. For robustness, we also estimated long-run relationships among the variables using another panel cointegration techniques such as Kao (1999) cointegration test. The results from this cointegration test also confirmed the existence of long-run equilibrium relationship among the variables.

Since, the Pedroni and Kao panel co-integration test demonstrate the existence of long-run relationship between the variables, further we can proceed for estimating panel co-integration vector by using Dynamic Ordinary Least Squares (DOLS), Fully Modified Ordinary Least Squares (FMOLS) and Pooled Mean Group (PMG) estimators.

4.4.2 RCEP model

Table 4.7: presents Kao's residual co-integration tests.

	Null Hypothesis	t-statistics	p-value
ADF	No Co-integration	-3.415415	0.0003*

(*, ** and *** indicate significance level at 1%, 5% and 10% respectively)

Table 4.7 presented the outcomes for the Kao's panel co-integration test for RCEP model which as well reject the null hypothesis of no co-integration. It can be observable from the table that the t-statistics is greater than the critical value that in turn indicate that a long-run relationship exists between the variables.

Table 4.8: Pedroni's Residual-Based Panel Co-integration Test.

Panel Co-integration Statistics (Within-Dimension)				
	Individual Intercept		Intercept and Trend	
Test Statistics	Statistical Values	P-value	Statistical Values	P-value
Panel v-statistic	-0.215879	0.5855	-2.264256	0.9882
Panel ρ -statistic	-1.601731	0.0546**	-.201309	0.4202
Panel PP-statistic	-31.05074	0.0000*	-61.02366	0.0000*
Panel ADF-stat	-19.35634	0.0000*	-23.59914	0.0000*
Group Mean Panel Co-Integration Statistics (Between Dimension)				
Group ρ -statistic	2.655842	0.9960	4.622546	0.9999
Group PP-statistic	-5.492803	0.0000*	-13.62162	0.0000*
Group ADF-stat	-1.919305	0.0275*	-5.237055	0.0000*

(*, ** and *** indicate significance level at 1%, 5% and 10% respectively)

From Table 4.8, it is observed that the null hypothesis of no co-integration for Panel ρ -statistic, Panel PP-statistic, Panel ADF-statistic, Group PP-statistic, and Group ADF-statistics can be rejected as the p-values is less than 5%. Out of seven statistics five statistics

is significant at 5% level. Hence, with the decision of the majority we can conclude that there is exist a long-run association between the variables of the study and in the long-run the variables move towards a stable equilibrium stage.

4.5 FMOLS and DOLS

By applying Pedroni (2004) and Kao (1999) co-integration tests, we found a long-run co-integration between GDP per capita of Malaysia, GDP per capita of both TPPA and RCEP countries, Openness of Malaysia, Openness of TPPA and RCEP countries and Exchange rate of Malaysia. The presence of long run relationship between variables can be established by these panel co-integration techniques nevertheless, these techniques do not produce the measure of this association. So that to determine the long-run slope coefficient, we employed Fully Modified OLS and Dynamic OLS for both the model.

DOLS and FMOLS estimators are suitable for panel data where the number of time periods is greater than the countries observation. Table 4.9 showed the results from FMOLS and DOLS estimator for TPPA and RCEP nations. DOLS are considered in our study, as small sample bias problem is associated with both of the OLS and Fully Modified OLS (FMOLS) and that the DOLS estimator be evident of outperforming both estimators indicated by Kao and Chiang (1997, 2000). But for robustness we estimate FMOLS estimator as well.

4.5.1 FMOLS (Fully Modified OLS) and DOLS (Dynamic Modified OLS) Results

Table 4.9: presented FMOLS and DOLS Panel co-integration test results for TPPA and RCEP countries.

Dependent variable: Exports				
	FMOLS _{TPPA}	DOLS _{TPPA}	FMOLS _{RCEP}	DOLS _{RCEP}
Variables	Coefficient	Coefficient	Coefficient	Coefficient
LGDPPCi	0.689522* (0.0000)	0.543666* (0.0000)	1.927511* (0.0000)	1.854993* (0.0000)
LGDPPCj	0.014740 (0.3460)	0.012251 (0.9455)	0.471111* (0.0000)	0.226521*** (0.0902)
LOPENi	0.397396* (0.0000)	0.345044* (0.0199)	0.261353* (0.0000)	0.371210*** (0.0855)
LOPENj	0.620953* (0.0000)	0.829546* (0.0000)	0.237580* (0.0000)	0.276523* (0.0014)
LEXij	-0.088423* (0.0004)	-0.202473* (0.0431)	-0.156444* (0.0000)	-0.209448* (0.0162)
LREMOT	-0.615163* (0.0000)	-0.618964* (0.0000)	-0.551338* (0.0000)	-0.5998* (0.0000)

(P-values in parentheses; *, ** and *** indicate level of significance at 1%, 5% and 10% respectively.)

The effect of Malaysia's GDP was found to be positive and statistically significant at the 1 percent level in all estimated models, which is in line with theoretical expectation. This result suggests that Malaysia's GDP is a key determinant of the country's capacity to export. A higher GDP means a higher production capacity which in turn translates into the ability of the economy to export more (supply side). This is consistent with the findings of Carrillo and Lee (2002) in their study of the effect of regional integration on both intraregional and intra-industrial trade in Latin America in the period 1980-1997. Using the gravity model, these authors found the exporter's GDP to be positive and statistically significant.

The effect of GDP of the importing country was found to be positive and statistically significant in RCEP estimated models. This result suggests that a higher GDP for a trading

partner country means a higher absorption capacity, implying that the trading partner country is able to import more (demand side). This is consistent with the findings of Orindi (2011). This author investigated the determinants of Kenyan exports. He applied the gravity model on a sample of 25 trading partners from 1964 -2008. According to the study results, the importer's GDP had a positive impact on the volume of bilateral trade between Kenya and its trading partners.

The effect of openness of Malaysia and 11-TPP countries and 15-RCEP countries was found to be positive and statistically significant at the 1 percent level in all estimated models. Its positive sign suggests that bilateral trade flows between Malaysia and its trading partners are related positively, the more open the country, more trade between them.

The effect of the bilateral exchange rate was found to be found to be positive and statistically significant at the 1 percent level in all estimated models. This implies that the exchange rate had a significant effect on Malaysia's exports during the period of study. The positive coefficient of exchange rate implies that Malaysia's exports depend on its currency appreciation. From the estimated results it is evident that 1% currency appreciation leads to, other things being equal, an decrease of Malaysia's exports by 0.20% for TPPA model and .21 for RCEP model.

The effect of remoteness was found to be negative and statistically significant at the 1 percent level in all models, which is consistent with the theoretical expectation. These results provide strong support for the hypothesis that transportation costs are an important determinant of trade flows between Malaysia and its trading partners. This implies that Malaysia tended to trade more intensely with neighbouring countries, where transportation costs are lower, than those that are further apart. This result is consistent with the findings

of Orindi (2011). This author assessed the role played by geographical proximity in determining Kenyan exports, and found that the geographical distance, among other factors, had a negative impact on the volume of trade between Kenya and its trading partners.

In the long-run, per capita GDP of Malaysia, Openness of Malaysia, Openness of 11-TPPA countries and Exchange rate of Malaysia are significant variables which capable of explaining the exports of Malaysia and that there exists a positive relationship between exports of Malaysia and the explanatory variables of the study.

That is, a 1% increase in Per capita GDP of Malaysia will bring about a 0.54% rise in the level of exports. In addition, openness of importer countries will contribute 0.40% of Malaysian export. Openness of Malaysia contributes 0.64% of export. In case of appreciation of Malaysian exchange rate, a decrease in export will be 0.20%.

For RCEP model, it can be summarized from table 4.11, the results of FMOLS and DOLS estimators of the existence of a long run relationship between Exports of Malaysia and GDP per capita of Malaysia, GDP per capita of 15-RCEP countries, Openness of 15-RCEP countries and Exchange rate of Malaysia are significant in all the estimators. Except, Openness of Malaysia, which is significant only in DOLS.

In the long-run, per capita GDP of Malaysia, Per capita GDP of 15-RCEP participants, Openness of Malaysia, Openness of 15-RCEP countries and Exchange rate of Malaysia are significant variables which capable of explaining the exports of Malaysia and that there exists a positive relationship between exports of Malaysia and the explanatory variables of the study.

Where, 1% expanding in Per capita GDP of Malaysia will increase 1.85% exports. In addition, 1% rise of importers countries GDP in the long-run, Malaysian export will bring

by 0.23%. Openness of Malaysia will expand its export by 0.27%. Moreover, openness of importer countries will contribute 0.37% of Malaysian export. Malaysian exchange rate found as a significant variable, 1% appreciation of Malaysia`s currency will decrease its export by 0.21%.

CHAPTER 5

CONCLUSION

5.1 Introduction

This research focuses to find out the determinants of Malaysia's export to compare between TPPA and RCEP countries Free Trade Agreement. International trade represents an important part in economic growth and development of an economy. The contribution of exports on economic growth has been increasing quickly. By taking this as a consideration, an extensive concern from the investigators to investigate the factors of exports between two countries or region. Particularly in ASEAN region Malaysia is rapid growing economy. Malaysian economic growth and development is highly dependent to its export with ASEAN members as well China, Japan, Korea, Australia and India. Moreover, currently established TPPA countries are as well a vital destination for Malaysian exports. Malaysia is the member of both RCEP countries which consists of ASEAN and its six FTA partner's countries and also TPPA countries. Consequently, explore the determinants of Malaysia – RCEP countries and Malaysia –TPPA countries exports performance and find out which RTA produce more benefit for Malaysia is the key purpose of this investigation. To investigate the determinants, prominent international trade methodology, gravity model has been applied by using panel data of Malaysia and other RCEP and TPPA nations for the period 1997-2015.

From the empirical estimation it is evident that the significant potential determinants of Malaysia exports during the period of study are distance, economic size of Malaysia, economic size of TPPA countries, economic size of RCEP countries, Openness of Malaysia, Openness of TPPA countries, Openness of RCEP countries and bilateral exchange rate.

Hence, this study obtained the result through the empirical analysis of the gravity model in order to make a comparison the export performance of Malaysia to TPPA and RCEP countries. Besides GDP per capita of Malaysia, GDP per capita of both importing countries (11-TPPA and 15-RCEP), Openness of Malaysia, openness of both importing countries and exchange rate of Malaysia are employed in this investigation. We analysed two separate equation, one is for TPPA countries and another is for RCEP countries and finally make the comparison to find out which Regional Trade agreement better suit for Malaysia. Over all in this investigation we estimated the TPPA and RCEP equation, since there is a fundamental complication associated with Pooled model as it is not considering the heterogeneity across countries and as well country specific influences cannot be recognized by pooled model as it assumes that all countries are same. That is why it produces a biased result. To determine the long-run coefficient of the model we applied FMOLS, DOLS.

To satisfy the assumption of FMOLS and DOLS estimator, some preceding tests are as well performed. Whether the variables are $I(0)$ or $I(1)$ meaning the order of integration and stationarity of each variable must be confirmed before proceeding to apply the FMOLS and DOLS. By applying panel unit root test suggested by Maddala & Wu (1999), Levin, Lin & Chu (2002) and Im, Pesaran & Shin (2003) we found that at level all the variables got unit root $I(0)$ and after first difference they become stationary $I(1)$. After the confirmation of the order of stationary, we perform co-integration test methodology in order to examine the existence of a long-run relationship between the variables of the study through panel co-integration test proposed by Pedroni (1999) and Kao's panel co-integration tests and we found the existence of co-integration between the variables and the null hypothesis is rejected. Finally, to determine the long-run slope coefficient, we employed Fully Modified

OLS and Dynamic OLS. The results showed that from the overall variables GDPi (GDP per capita of Malaysia), GDPj (GDP per capita of 15-RCEP countries), OPENi (openness of Malaysia), OPENj (openness of RCEP and TPP countries) and EXi (bilateral exchange rate) have significant influence on Malaysian exports.

From the empirical findings, the influence on GDP (long-run) is remarkably associated with trade performance. RCEP leads to a growth in Malaysian exports of 1.85 %. Whereas, Malaysia gains from integration with the TPPA is lesser than RCEP countries where exports grow by .54%. The results show that trade liberalization for both RCEP and TPPA countries generates substantial economic gains for Malaysia. TPPA is a slightly less preferable option than the RCEP integration.

5.2 Policy Recommendation

The two mega regional trade negotiations namely, RCEP and TPPA currently embodied competing aspects to resolve the Asia Pacific trading system. In the Asia-Pacific region, TPPA intends to focus on Free Trade Agreement quality issues by providing an impressive trade negotiation which is appropriate to all nations. On the other hand, by multilateralising existing FTAs at a further reasonable level of purpose based on the ASEAN-plus formula, RCEP offers to focus on the noodle bowl problem. That is why, the TPP and RCEP are competing schemes, which are contending to achieve the engagement of regional governments. Both of these Regional Trade Agreements possess a variety of influence on ASEAN. ASEAN become more influential as a regional institution through the contest between the China (PRC) led RCEP and the TPP. To be specific, RCEP acknowledges ASEAN centrality, although this is suitably illustrated by the China (PRC) to ignore the United States as the US doesn't have an existing Free Trade Agreement with

ASEAN. (Kassim 2012, Cheong and Tongzon 2013). In the situation of TPP, insufficient concern has been given to ASEAN centrality and particularly some ASEAN representatives are engaged in TPP agreements and ASEAN solidarity would be affected if only few members from ASEAN will join to TPPA. The two contending schemes could divide ASEAN into pro-RCEP and pro-TPP groups, some members will have dual participation (e.g. Singapore and Malaysia), while some members are particularly a representative of one. In addition, some ASEAN participants consider the two negotiations from an economic viewpoint, while some members of ASEAN view from a security angle, indicated current maritime conflicts with the China (Panda 2014).

But by withdrawing US economy from TPPA make China to play alone in the battle field in the East Asia, South East Asia and Asia pacific region. As a consequence, TPPA may become less attractive within the participant nations. From the analysis and as well from economic view, RCEP is certainly desirable, as it does not involve policy compromises (for instance, investment, intellectual property and agriculture) in a collection of conscious sectors. World Trade Organization Plus-form of liberalization possess significant costs for low income nations, and as a consequence most of the early Free Trade Agreements comprising China and Association of South East Asian Nations members have not focused on these arguments in a precise technique (Dent 2010). However, these types of broader liberalisation may provide considerable advantages if their costs can be concentrated – not only for a particular participant, as well by assisting to deeper regional achievements for example the ASEAN Economic Community or APEC's Bogor objectives.

Another concern of ASEAN centrality, as ASEAN members have formally accepted that ASEAN will be the "hub" within which existing Free Trade Agreements will be multilateralised, and its achievement would cement the bloc's situation at the centre of the

regional economic composition in much the same manner the ASEAN Regional Forum has done for security matters (Petri and Plummer, 2014). On the other hand, in purely economic terms (by excluding the US), the Asia-Pacific participation model of the TPP is possibly less engaging and it arguably undermines the central position ASEAN keeps in the regional trade system. This takes place at a moment when the doctrine of ASEAN centrality is taking place under conflict – because of internal divisions within participants, an inadequate track-history in handling with security Mega-Regional Trade Arrangements in the Asia-Pacific considerations, and the inclination of more-regional members to establish deeper regional organizations for example, the East Asia Summit (Amador 2010). Thus, it is the challenge of how significant ASEAN centrality is to its participant countries, and whether they are responsible to let the situation of the bloc affect their trade policy outcomes? Considerably, the membership of Vietnam, Singapore and Malaysia in TPP negotiations is suggestive of an intra-ASEAN department on this affair.

To promote the economic growth and development through exports promotion with RCEP countries, the findings of this investigation contribute lucid and comprehensive range of policies for Malaysian government.

5.3 Limitation of the Study

Since this research studies the determinants of Malaysia`s export and compared the analysis of the TPPA sand RCEP Free Trade Agreement but most of the previous research tended to choose either TPPA or RCEP countries in examining economic growth. Therefore, it limited the scope of the literature review for this research. Furthermore, it is a challenge to compare the results of this research with other studies, as most studies on export and trade openness tend to focus on one country rather than a group of countries.

Besides that, there are many data that are rather difficult to obtain, and the sample size become small, especially in CLMV countries. Additional research on the following topics will help to shape and enhance the research on this topic.

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