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MALAYSIAN EXPORTS TO MIDDLE EASTERN ASIAN COUNTRIES: TRENDS AND THE ROLE OF TRADE AGREEMENTS

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ABSTRACT

Malaysia's remarkable economic performance during the past three decades is partly due to the country's successful export sector. Nonetheless, the growth of emerging economies necessitates change in the structure of Malaysia's export sector. With slow economic growth in its primary trading partners, there is a pressing need for Malaysia to change its current export structure, which relies heavily on western industrialised countries as export destinations. By doing so, Malaysia can diversify its economy through agreements with new export destinations with which it currently has low bilateral trade. This paper aims to examine the trends of Malaysia's exports to Middle Eastern Asian Countries (MEACs) that are similar to Malaysia in that MEACs are also Islamic countries. Proposing MEACs as Malaysia's new main export destinations, this study will examine the probable impact of various trade agreements signed between MEACs and other countries on Malaysian exports to MEACs. Applying panel data analysis, this study observes that trade agreements between MEACs and other countries do not exert negative effects on Malaysian exports to MEACs.

Keywords: exports, gravity model, Malaysia, Middle Eastern Asian countries

INTRODUCTION

Malaysia, together with Thailand and Indonesia, was well known for its remarkable economic performance in the early 1990s, before the 1997 economic crisis halted its impressive growth (Elliott & Ikemoto, 2004). By following the East Asian Development model (EADM, see Baek, 2005; Freeman & Hew, 2002), Malaysia successfully transformed its economy from an agriculture-based economy (or a low-income economy) into an industry-based economy (also known as a value-added-based economy and currently referred to as a middle-income economy). In the EADM, the most important element is "openness" or "economic liberalisation."[1] Malaysia's openness to international trade (and international capital) has led to rapid economic growth for the past three and a

half decades, which has contributed to declines in poverty rates and income inequality. Several studies have confirmed the vital role trade played in promoting growth in Malaysia, such as those by Ghatak, Milner and Utkulu (1997), Khalafalla and Webb (2001), Thangavelu and Rajaguru (2004) and Chandran and Munusamy (2009).

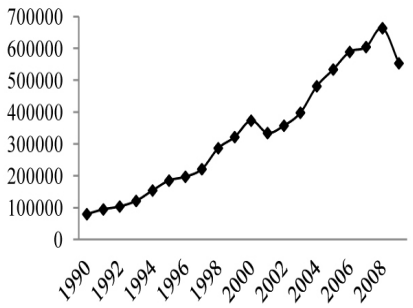

Figure 1(a). Malaysian exports (in million of RM)

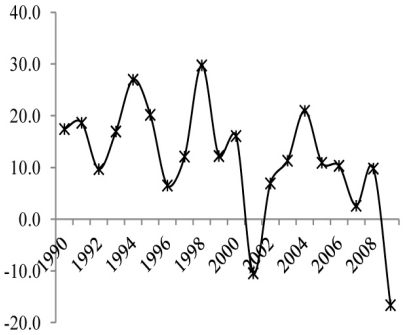

Figure 1(b). Malaysian export growth (in %)

Source: World Development Indicators (World Bank, 2012)

Malaysia's exports since 1990 have been growing as shown in Figure 1(a). From 1990 to 2009, there were only two periods when Malaysia recorded a negative growth rate or drop in exports. The decline in 2001 is primarily explained by the US economic slowdown. As the US is among the top three Malaysian export destinations, any stagnation in US incomes will affect demand for Malaysian exports. This, to a certain extent, contributed to slower economic growth in Malaysia. The decrease in Malaysian exports in 2009 could be due to the influence of an economic slowdown in European economies, combined with a natural disaster that occurred in Japan, which is also among the top three Malaysian export destinations. In a nutshell, Malaysia's economic growth has been inextricably linked with the expansion of its external sector. Thus, a contraction of the external sector is likely to have a large impact on the prospects for Malaysia's economic growth. It is important for Malaysia to diversify its export destinations to mitigate the adverse impact of the country's heavy dependency on a few countries, such as the US. We suggest here that Middle Eastern Asian countries (MEACs), which has received less attention in past literature, are potentially desirable export locations for Malaysia. This is in line with Malaysia's aspiration to have higher level of trade with MEACs. Recently, Malaysia's Prime Minister Najib Abdul Razak inaugurated the "Invest Malaysia 2011" forum, the main function of which was to motivate Gulf investors to invest in Malaysia. In January 2011, a framework agreement on economic, commercial,

and technical cooperation between Malaysia and the Gulf Cooperation Council (GCC)[2] was sealed in Abu Dhabi (Abdurabb, 2011). This initiative/agreement is expected to induce both trading partners to work together, not only to spur investment but also to produce growth in trade through the removal or reduction of customs barriers, the encouragement of contact between business sectors, and the establishment of economic, trade, and investment partnerships (Abdurabb, 2011).

Despite these efforts, there has been a somewhat unimpressive track record of Malaysian exports to MEACs. Table 1 shows Malaysian exports to MEACs as a percentage of total Malaysian exports. Except for the UAE, Malaysia's ties with other MEACs can be described as negligible. Its ties with Iraq, Kuwait, and Lebanon are very weak. Therefore, the objective of this study is to examine the MEACs as a new focus for Malaysian exports. In particular, this study attempts to identify the major factor(s) that can be used as policy tools to further promote MEACs as export destinations for Malaysia. To do this, we will introduce some specific references to the role of the signing of trade agreements between MEACs and other countries in the world during the period under study.

Table 1
Malaysian exports to MEACs (as a percentage of total exports)

	1995	1998	2001	2004	2007	2008	2009
Iraq	0.02	0.04	0.04	0.05	0.01	0.10	0.10
Jordan	0.18	0.12	0.08	0.27	0.05	0.28	0.10
Kuwait	0.09	0.09	0.07	0.09	0.10	0.19	0.10
Lebanon	0.03	0.04	0.03	0.03	0.03	0.05	0.06
Oman	0.05	0.06	0.11	0.06	0.09	0.16	0.10
Qatar	0.01	0.04	0.03	0.04	0.17	0.12	0.35
Saudi	0.4	0.38	0.39	0.38	0.41	0.53	0.52
Syria	0.07	0.06	0.06	0.12	0.09	0.09	0.11
Turkey	0.30	0.41	0.42	0.31	0.51	0.41	0.30
UAE	0.93	0.88	0.94	1.23	1.67	1.89	1.81
Yemen	0.11	0.13	0.06	0.09	0.13	0.17	0.13

Source: Own calculations, based on information taken from the Asian Development Bank (2010) and the United Nations Conference of Trade and Development (2011).

There are a substantial number of trade agreements that have been signed or are under negotiation between MEACs and countries other than Malaysia. Could these various trade agreements cause an increase in exports from Malaysia to MEACs? The merits of trade agreements, particularly free trade agreements (FTAs), have been debated for a long time. With FTAs, there are two possible

opposing outcomes, trade diversion and trade creation. The first possible outcome is that trade diversion will lead to FTA members resorting to higher-cost producers and thus losing efficiency gains. The contrary outcome is that, apart from depending on the initial economic structure, particularly the tax structure, among FTA members, these trade agreements will usher in more economic progressiveness and, hence, greater prosperity (Burfisher, Robinson, & Thierfelder, 2001). Thus, trade agreements between MEACs and countries other than Malaysia are expected to have a trade-diverting impact on Malaysian exports to MEACs.[3] This is our main interest as the country's economic growth depends on the survival and expansion of its firms. To have policies that better support the export sector, an understanding of the factors that may affect the export performance of firms is vital.

The organisation of this study is as follows. The next section will briefly highlight the background of Malaysia and MEACs. The structures of MEACs could be of particular interest as they will provide insights about the potential levels of trade between Malaysia and MEACs relative to the existing amounts. While the role of trade agreements between Malaysia and MEACs cannot be tested here as they are still under negotiation, the implications of trade agreements between MEACs and countries other than Malaysia could explain why trade between Malaysia and MEACs remains low to this day. A review of methodology and subsequently the model specification are provided in the third section, followed by discussion of the findings in the fourth section. The last section concludes.

ECONOMIC BACKGROUND

The U.S. has been one of Malaysia's largest trading partners for several decades, as highlighted in Table 2. In 2000, Malaysia's exports to the US were approximately 21% of Malaysia's total exports. This amount ranked Malaysia as the 12th largest US major trading partner. Trade between the US and Malaysia is primarily comprised of assembled electrical goods and manufactured electronic products[4]. Whether Malaysia's status as a major trading partner of the US is due to the growing strength of domestic entrepreneurs is a critical question that needs to be addressed. Rather than domestic entrepreneurs exporting huge amounts of products to the US, it could be that multinational corporations (MNCs) from the US (or even from other developed countries) have re-exported their products made in Malaysia to their home country.[5]

For the past two decades, Japan has been the third-largest Malaysian trading partner (Yusoff, 2005), with exports dominated by electrical and electronic equipment, machinery, and mineral fuels. While mineral fuel exports are to be

expected, as Japan has a scarcity of natural resources, the other categories could have features similar to the US case. Because there are many Japanese MNCs operating in Malaysia to exploit natural resources and the cheap supply of labour, we can expect that Malaysia's ability to penetrate the Japanese market might be due to the presence of Japanese MNCs rather than competitive Malaysian companies.

Among the ASEAN countries, Singapore has consistently been Malaysia's largest trading partner and is Malaysia's second-largest trading partner of any country, after the US (Department of Statistics Malaysia, 2010). Despite a percentage of total Malaysian exports, Singapore was Malaysia's largest export destination in 2009, surpassing the US, in second place, and China, which appeared for the first time as the third-largest Malaysian export destination. The main products exported to Singapore are electrical and electronic equipment, machinery, metals, and mineral fuels. Some of these were for Singaporean domestic consumption and the remainder were re-exported. The combined East Asian economies, such as Japan, China, Hong Kong, and South Korea, represent the largest trading partner of Malaysia.

Table 2
Top 10 Malaysian export destinations

	1990	1995	2000	2003	2006	2009
USA	4986.10 [17]	15312.80 [21]	20161.60 [21]	20539.50 [20]	30190.50 [19]	20388.60 [12]
Singapore	6752.83 [23]	14960.40 [20]	18050.10 [18]	16522.60 [16]	24743.90 [15]	24571.90 [15]
Japan	4505.54 [15]	9198.69 [12]	12780.20 [13]	11221.70 [11]	14241.10 [09]	15008.10 [09]
China	619.19 [02]	1889.09 [03]	3028.16 [03]	6810.02 [06]	11646.10 [07]	16840.40 [10]
Thailand	1032.75 [04]	2868.10 [04]	3550.29 [04]	4615.31 [04]	8501.78 [05]	8099.18 [05]
Hong Kong	933.59 [03]	3941.10 [05]	4440.08 [05]	6783.79 [06]	7947.03 [05]	7812.31 [05]
Korea	1359.52 [05]	2015.23 [03]	3234.91 [03]	3039.35 [03]	5805.92 [04]	6204.96 [04]
Netherlands	774.63 [03]	1781.39 [02]	4108.38 [04]	3430.60 [03]	5849.27 [04]	6026.88 [04]
Australia	493.63 [02]	1121.90 [02]	2425.60 [02]	2613.74 [02]	4553.36 [03]	6040.19 [04]
India	477.89 [02]	820.70 [01]	1924.59 [02]	2533.82 [02]	5128.62 [03]	6099.78 [04]

Note: Figures in [ ] denote percent of total exports.
Source: Asian Development Bank (2010)

How large is the market for Malaysian exports in the MEACs? To show this, we present the MEACs' demand for imports in Table 3. The MEACs' import demand has increased, ranging from more than twofold (or 2.48%) in the case of Lebanon to approximately 63 times (or 63.9%) in the case of Iraq between 1995 and 2010. These findings demonstrate a huge potential market for exports from Malaysia in the MEACs. Success in penetrating MEAC markets could provide a strong buffer for the Malaysian economy (via stable exports) in the event of an economic slowdown in the West (European countries and the U.S.). For the purposes of this study, MEACs were chosen for two reasons: (1) the region is an area with many Muslim people and (2) they are relatively financially rich compared to other parts of the world, such as Africa and South Asia. Although only a few MEACs (i.e., Iraq and Turkey) have a population that is larger than Malaysia, some MEACs might have a higher Muslim population than Malaysia as the majority of the population in those countries are Muslim[6]. The figures for GDP per capita (GC) show that the bulk of MEACs are able to exert a sufficiently strong demand for Malaysian exports. Combined with relatively high population in some MEAC countries, these figures mean that MEACs should surely be a target market for Malaysia's exports in the future. The formation of Malaysia-MEAC FTAs could be a good strategy to penetrate MEAC markets.

Table 3
Import demand of MEACs (IM), GDP per capita (GC), and population (PO)

		1995	2000	2005	2010
Bahrain	IM	3679	4634	9339	10143 [2.75]
	GC	11.5	12.4	14.7	NA
	PO	559	638	724	1261
Iraq	IM	665	13210	23532	42500 [63.9]
	GC	NA	1.0	0.6	0.7
	PO	20904	24313	27598	32030
Jordan	IM	3696	4597	10455	15262 [4.13]
	GC	1.7	1.7	2.1	2.5
	PO	4195	4797	5411	6047
Kuwait	IM	7790	7156	15803	22366 [2.87]
	GC	21.0	19.4	24.7	NA
	PO	1627	1940	2264	2736
Lebanon	IM	7278	6227	9327	18078 [2.48]
	GC	4.6	4.6	5.1	6.7
	PO	3462	3742	4052	4227
Oman	IM	4249	5039	8970	18160 [4.27]
	GC	7.5	8.7	9.7	NA
	PO	2232	2264	2429	2782

(*continue on next page*)

Table 3 (*continued*)

		1995	2000	2005	2010
Qatar	IM	3398	3252	10061	21978 [6.46]
	GC	NA	30.0	32.2	NA
	PO	501	590	820	1758
Saudi Arabia	IM	28085	30237	59510	97077 [3.46]
	GC	9.0	9.4	9.4	9.4
	PO	18491	20045	24041	27448
Syria	IM	4709	3815	10862	16908 [3.59]
	GC	1.2	1.2	1.3	1.5
	PO	14171	15988	18484	20446
Turkey	IM	35707	54150	117000	186000 [5.21]
	GC	3.7	4.1	4.9	5.4
	PO	58864	63627	68143	72752
UAE	IM	20984	35009	80814	170000 [8.10]
	GC	23.3	23.2	24.0	NA
	PO	2348	3033	4069	7511.69
Yemen	IM	1817	2326	5400	9700 [5.34]
	GC	0.5	0.5	0.5	NA
	PO	15148	17723	20648	24052

Notes: Figures in [ ] denote a ratio relative to the value in 1995. Import demand is in millions of USD, GDP per capita is in thousands of USD and population is in thousands. Source: United Nations Conference of Trade and Development Statistics (2011) and World Development Indicators (World Bank, 2011).

Although the majority of people of Malaysia and the MEACs share a similar religion, Islam, the volume of trade between Malaysia and the MEACs is not very impressive.[7] Table 1 demonstrates this finding. Therefore, this study will focus on the potential adverse impacts of trade agreements between MEACs (either collectively or individually) and countries other than Malaysia on Malaysian exports to MEACs. Table 4 provides a summary of trade agreements signed between individual MEACs and non-Malaysian countries as well as the volume of trade that occurred. The US is the main country with which most MEACs have trade agreements. With the exception of Iraq, all countries recorded an upward trend in imports, implying that bilateral trade agreements might be exerting a strong impact on promoting trade between the signing countries. Whether (bilateral) trade agreements have an effect on the volume of imports of MEACs from their FTA-linked trading partner is subject to further research. It is important to note here that signing a trade agreement does not mean that the agreement is an FTA. For instance, the trade agreements signed between Kuwait and China are not FTAs. The first of these was the Agreement on Trade in 1980, followed by the Agreement on Promotion and Protection of Investment in 1985,

the Agreement on Establishing Joint Economic and Trade Committee in 1986, the Agreement on Avoiding Double Taxation in 1989, and finally, the Agreement on Economic and Technical Cooperation in 1989.[8] We strongly believe that although no FTA has been mentioned as being specifically negotiated and signed by both countries, they are heading towards developing an FTA in the long term.

Table 4
Trade agreements and imports (in million USD)

Trade agreement		Imports of MEAC from selected partner		
MEAC	Selected partner & year	Before	During	After
Bahrain	USA in 2004	324.15 in 1999	403.41 in 2004	833.99 in 2007
Iraq	USA in 2008	2144.22 in 2007	3652.40 in 2008	2720.70 in 2010
Jordan	USA in 2001	357.65 in 1999	395.94 in 2001	547.58 in 2007
Kuwait	USA in 2004	986.80 in 2002	1358.04 in 2004	2418.24 in 2007
Lebanon	Canada in 1998	54.54 in 1997	35.12 in 1998	69.76 in 2007
Oman	USA in 2006	348.41 in 2003	763.31 in 2006	1430.69 in 2008
Qatar[a]	India in 2009	451.11 in 2006	631.56 in 2009	647.62 in 2010
Saudi Arabia[a]	Belgium in 2001	415.95 in 1999	505.10 in 2001	615.74 in 2003
Syria	Turkey in 2007	486.42 in 2005	634.54 in 2007	798.80 in 2008
Turkey	Chile in 2009	176.45 in 2004	200.38 in 2009	311.70 in 2010
UAE	Morocco in 2001	5.84 in 1999	8.69 in 2001	14.61 in 2003
Yemen	China in 2008	440.55 in 2006	790.71 in 2008	1283.58 in 2010

Note: [a] Saudi Arabia concluded a bilateral trade agreement with Malaysia in 2000, whereas Qatar did so in 2009. Except for Lebanon, in which the year 2007 has been chosen because it was the year when the volume of imports started to bounce back, the years for the remaining countries were chosen for the sake of convenience as the trend was positive in those years.

METHODOLOGY

Review of Theories and Empirical Studies

The gravity model has long been gaining acceptance among researchers since the pioneering work performed by Tinbergen (1962) and Pöyhönen (1963). Although it fits well with regression techniques, the gravity model is not well grounded or supported by any theory. This criticism has been made by Deardorff (1984) and Frankel, Stein, and Wei (1995), who argue that gravity has very limited theoretical foundations. Several researchers later attempted to provide possible theoretical explanations for what has made the gravity model a powerful tool in investigating bilateral relationships.[9] Among the first explanations are the works by Anderson (1979), Helpman and Krugman (1985), and Bergstrand (1985). Recently, we noted studies by Polak (1996) and Feenstra, Markusen, and Rose (1998). They provided further support to help justify and validate the use of the

gravity model and give it a more solid theoretical grounding. Whereas the majority of those studies tried to find links between the gravity model and existing trade theories, Polak (1996) placed more emphasis on the role of distance. In short, gravity has been proven to be well grounded and consistent with the various existing trade theories.

In terms of empirical analysis, Sousa, Martínez-López, and Coelho (2008) reviewed 52 studies published between 1998 and 2005. Among the observations, they outlined the following: (i) the use of control and moderating variables in export performance studies has increased and (ii) more studies have started to include the external environment in their models, including domestic market characteristics.[10] Martinez-Zarzoso and Nowak-Lehmann (2003) investigated the implications of intensified trade agreements in two economic blocs (Mercosur in Latin America and the European Union) on trade between Latin American countries and European countries. Pooling five members of Mercosur and 15 European countries and utilising a panel data approach, Martinez-Zarzoso and Nowak-Lehmann (2003) found that, apart from standard variables, several additional variables, such as infrastructure, income differences, and exchange rates, play a significant role in explaining bilateral trade flows between countries in two different economic blocs. In addition, the significant bloc dummies imply that belonging to one of the two preferential arrangements may foster trade. Sun and Reed (2010) evaluated agricultural trade creation and trade diversion in several FTAs, such as the ASEAN-China Preferential Trade Agreement, EU-15, EU-25, and the Southern African Development Community Agreements. Using a Poisson pseudo-maximum-likelihood (PPML) estimator, Sun and Reed (2010) found that various trade agreements have statistically significant trade-creating effects. Additionally, Sun and Reed reported the possibility for FTAs to have different effects given different time frameworks.

Empirical Model

Derived from Newton's gravitational theory, the basic gravity model relates bilateral trade (*BT*) to the size (*Y*) of two trading countries (*i* and *j*) and the distance (*DIS*) between the two. It can be expressed as follows:

$$BT_{ij} = f\left(Y_i, Y_j, DIS_{ij}\right) \tag{1}$$

It is standard practice that a country's gross domestic product (*GDP*) is used to proxy *Y*. Originally, *DIS* is assumed to represent (or to be represented by) the physical distance between the two trading partners. This measurement, however, is only valid for a cross-sectional study. At least two possible measurements have been suggested in the literature to capture distance. The first is a dummy of

sharing the same border (in which trade between the two countries will incur minimal costs of transportation). Similarity in language and culture may be another indirect measurement for *DIS* as this affects the cost of conducting trade across the border. The second measurement is the cost of transportation itself. Equation (1) is too simple to capture complex trade relationships between the two trading countries. Hence, the use of a gravity model is frequently consistent with standard models of international trade (Anderson & van Wincoop, 2003), and extended to incorporate other factors perceived as having an effect on bilateral trade relationships. One interesting area where gravity models have become very popular is the use of dummy variables to capture specific factors possibly affecting the trading behaviour of two countries. These may include commonality issues (e.g., language, border, landlocked, island, or culture; see Anderson & van Wincoop, 2003; Okubo, 2004; Papazoglou, Pentecost, & Marques, 2006; Melitz, 2007, among others), events (e.g., economic crises, natural disasters, or political change; see Papazoglou et al., 2006), economic policy (e.g., liberalisation and deregulation; see Pacheco-López, 2005) and regional factors (e.g., belonging to certain regions, such as ASEAN; linkages through certain trade agreements, such as NAFTA; or belonging to certain bodies, such as the EURO currency union; see Kucera & Sarna, 2006; Lee, Park, & Shin, 2008). In our case, we have followed the standard gravity model specification but modified the model somewhat by including population (*POP*), exchange rate (*ER*), and trade agreement (*TA*).[11] Therefore, after replacing bilateral trade (*BT*) with bilateral exports (*EXP*), the augmented version of equation (1) will become:

$$EXP_{i,t} = \alpha_0 + \alpha_2 GDP_{i,t} + \alpha_3 GDP_{j,t} + \alpha_4 POP_{i,t} + \alpha_5 POP_{j,t} + \alpha_6 DIS_{ij,t} + \alpha_7 ER_t + \alpha_8 TA_{jt} + \varepsilon_{it} \quad (2)$$

where:

EXP = Malaysia's exports to each MEAC
GDP = gross domestic product (*i* = Malaysia, *j* = each MEAC)
POP = population (*i* = Malaysia, *j* = each MEAC)
DIS = distance from Malaysia to each MEAC
ER = real exchange rate between Malaysia and its MEAC trading partner
TA = trade agreements signed between MEACs and other countries

Instead of estimating equation (2), considering the short time-span of our sample, we decided to follow Baldwin and Taglioni's (2006) argument that estimating both trading partners' GDP separately is possible, but very often not rewarding. Baldwin and Taglioni (2006, p. 6) also argued that it is impossible to use averaging bilateral trade flows to determine which nation is the origin and which is the destination and, thus, it is not possible to separately measure the

coefficients for the origin and destination of GDP variables. Therefore, the common practice in the literature is to use the product of the GDP values for the two nations. Consistent with numerous studies, such as Greenaway and Milner (2002), Brun, Carrère, Guillaumont, and de Melo (2005), and Lee, Park, and Shin (2008), our model, which is expressed in log form, is as follows:

$$\ln EXP_{ij,t} = \beta_0 + \beta_1 \ln(GDP_{i,t} * GDP_{j,t}) + \beta_2 \ln(POP_{i,t} * POP_{j,t}) + \beta_3 DIS_{ij,t} + \beta_4 \ln ER_{ij,t} + \beta_5 \ln TA_{j,t} + \eta_t \quad (3)$$

The GDP for the exporting country (in our case, Malaysia) could represent production capacity, whereas the GDP for the importing country (in our case, MEACs) may reflect the size of the market, which represents the potential demand for imports. A larger GDP for an exporting country implies a larger production capacity and therefore an expectation of a higher export capacity because of economies of scale (Sohn, 2005). On the other hand, a larger GDP for an importing country signifies potentially larger demand for imports. In a nutshell, an increase in a pair of GDPs is expected to increase the volume of bilateral trade (in our case, Malaysia's exports to MEACs). Thus, *we hypothesise that GDP will have a positive impact on bilateral trade between Malaysia and MEACs*.

With regard to population, a larger population implies demographic pressure that creates a large domestic demand, which is expected to inhibit exports in an exporting country. Conversely, it is expected to increase the demand for imports in an importing country (Papazoglou et al., 2006). In short, *we hypothesise that the combination of a pair of trading countries' populations (POP) will significantly affect bilateral trade*.

Distance represents trade resistance factors or trade barriers that may impede trading activities, such as transport costs, delivery time, cultural unfamiliarity, and market access barriers. Early studies that utilised the gravity model tended to apply physical distance as a proxy but, recently, several new methods have been created to measure distance. The most commonly used proxy is transportation cost. It is now generally well accepted that relative, rather than absolute, distance matters for calculating trade resistance. Sohn (2005) and Papazoglou et al. (2006) argued that distance may be represented by "psychological distance" between trading countries, instead of kilometres. In other words, firms in exporting countries may prefer to trade with neighbouring countries for cultural or historical reasons because, to a certain extent, this will lower the cost of doing business. Therefore, *we hypothesise that distance will negatively affect bilateral trade*.

With regard to the nominal exchange rate, the lower the nominal value of an exporting country's products (or if the exchange rate is depreciated), the cheaper imported products will be in the eyes of foreign importers. Consequently, the exporting country will enjoy higher demand for its products abroad. Thus, *we hypothesise that real exchange rates will have a negative impact on bilateral trade*.

When writing about the impact of a trade agreement on bilateral trade, Carrère (2006) outlined two advantages of the gravity model in gauging the impact of trade agreements. First, the model represents a relevant counterfactual to isolate the effects of a (regional) trade agreement. If the sample of countries is appropriately selected, the gravity equation suggests a "normal" level of bilateral trade for the sample. Then, dummy variables can be used to capture the "atypical" levels resulting from a regional trade agreement. Second, with the correct introduction of dummy variables in the model, one can isolate the trade creation and trade diversion effects of an RTA. In our case, because we want to investigate the impact of a trade agreement on bilateral trade when the trading partner has formed any type of trade agreements with other countries, we expect that an exporting country will face lower import demand from a trading partner that has trade agreements with other countries. Therefore, it is hypothesised that increased *TA* of importing countries with other countries will reduce the amount of demand from the existing exporting countries. *TA* will be proxied by the dummy of *TA* between each MEAC and countries other than Malaysia during the period of study. In addition, to be more reflective of the real situation of import scenario due to trade agreements between MEACs and other countries, we also introduced another proxy for trade agreements: the import volume from the signing trading partner, excluding Malaysia[12]. The signing trading partners are listed in Table 4. To have a consistent hypothesis, such as the one we use for the dummy proxy, we further modify the second proxy as follows, to check the remaining demand available for imports from Malaysia:

$$TA = 1 - \frac{\text{Imports}}{\text{GDP}} \tag{4}$$

To recap, *we hypothesise TA will negatively affect Malaysian exports to MEACs*.

Estimation Procedure

In light of the limited extent of our sample, we will use panel data analysis to gauge the impact of trade agreements on bilateral trade between Malaysia and MEACs. We will start by estimating the model with an assumption that all

countries are homogeneous and proceed with pooled OLS specifications. As the countries in our study are unlikely to be homogeneous, ignoring the heterogeneity element will certainly distort the estimates. To avoid this, we estimate the model by using the panel cross-fixed effect to account for potential country-specific effects of importance. Time might also be a vital factor in determining the behaviour of bilateral exports, so we will also conduct a panel time-fixed effect analysis to determine if time has any impact. Later, we will compare the results of fixed effects with the results of random effects.

As there is a potential endogeneity issue in our model, we offer two other methods to mitigate this problem. The first method is to follow the steps of Bénassy-Quéré et al. (2007), by regressing the two highly correlated variables and treating the residual as the new variable for the dependent. To illustrate this, assuming X and Y are highly correlated, we regress X on Y as follows:

$$X_t = c_0 + c_1 Y_t + \varepsilon_t \tag{5}$$

We will then instrument the original X with lagged ε.

Data Collection

This study covers the period from 1996 to 2009. The data are taken from several sources, such as UNCTAD Statistics (United Nations Conference of Trade and Development Statistics [UNCTAD], 2011), the World Development Indicators (World Bank, 2011), and the World Trade Organization (2011). For trade agreements, we create two proxies. Firstly, we construct dummy by upon identifying any trade agreement taken place during the period under study and secondly, by constructing a formula as shown in equation (4). The 12 MEACs are listed in Table 3.

RESULTS AND DISCUSSION

Correlation Analysis

Table 5 presents the correlation analysis of the variables under study.

Table 5
Correlation analysis

	ln*EXP*	ln*GDP*	ln*POP*	ln*DIS*	ln*TA*	ln*ER*
ln *EXP*	1.0000					
ln *GDP*	0.7482	1.0000				
ln *POP*	0.3553	0.4870	1.0000			
ln *DIS*	0.4012	0.3219	0.1398	1.0000		
ln *TA*	0.3186	0.1952	–0.1766	0.4227	1.0000	
ln *ER*	–0.2731	–0.2265	0.3731	0.0090	–0.3015	1.0000

EXP and *GDP* are highly correlated (74.82%), implying either high *EXP* will lead to high *GDP* or vice versa. There is abundant evidence proving the export-growth nexus. The negative correlation coefficient (–27.31%) between *ER* and *EXP* is also as predicted. The highest correlation among the explanatory variables is 42.27%, found between *DIS* and *TA*, which is within the acceptable range of less than 50%. The positive association between *DIS* and *EXP* (40.12%) is surprising as they are perceived to have a negative correlation. A plausible explanation could be that because some MEACs are relatively rich countries, their citizens can afford to buy expensive imported goods and are not very concerned about the cost of obtaining the goods.

Regression Analysis

The results of the regression analysis are provided in Table 6. We start with the basic model, which assumes all countries or pairs are homogeneous. In the next stage, we conduct a panel fixed effect analysis to control for the fact that it is impossible for all countries (or pairs) to be homogeneous. We present the results of the cross-fixed effect, but we also tested the remaining competing models, such as the time-fixed effect, cross- and time-fixed effect, and the random effect. As observed with the second model of the cross-fixed effect, the results of F-statistics (fixed effect) and the Hausman test lend support to the superiority of the cross-fixed effect model over the others. Therefore, the discussion below primarily refers to Model 2, *a* and *b*, or the cross-fixed model unless stated otherwise.

Table 6
Regression analyses [Dep. Var. = ln EXP]

	Basic		Cross-fixed	
	Model 1a	Model 1b	Model 2a	Model 2b
Constant	–48.948	–31.651	–62.860***	–1.992
	[–3.402]	[–1.308]	[–7.009]	[–0.243]
ln *GDP*	0.632***	0.050	1.698***	1.554***
	[8.662]	[0.285]	[8.620]	[8.341]
ln *POP*	0.103*	0.056	0.544	–0.783*
	[1.664]	[0.733]	[1.529]	[–1.910]
ln *DIS*	1.744*	1.453	–0.856***	–0.647***
	[1.673]	[0.931]	[–2.760]	[–5.785]
ln *TA*	0.082	0.056*	–0.080	0.719
	[0.622]	[3.960]	[–0.964]	[0.956]
ln *ER*	–0.068**	–0.065**	–0.003	–0.377
	[–2.533]	[–1.995]	[–0.045]	[–0.731]
		Model criteria		
R^2	0.610	0.640	0.976	0.996
Adjusted-R^2	0.598	0.620	0.973	0.995
S.E. of reg.	0.792	0.747	0.324	0.323
F-statistics	50.722***	32.069***	388.60***	1320.7***
(Overall model)	(0.000)	(0.000)	(0.000)	(0.000)
F-statistics	-	-	166.06***	117.23***
(Fixed-effect)			(0.000)	(0.000)
Hausman test	-	-	14.987***	15.637**
(Random-effect)			(0.004)	(0.023)

Notes: Asterisks **, **, and **** denote significance at 1%, 5%, and 10%, respectively. Figures in [ ] stand for *t-values* and figures in ( ) represent *p-values*. The difference between model *a* and model *b* lies on the different proxies used for TA. Dummy variable is employed for model *a* and imports from other countries is utilised in model *b*.

Consistent with many studies, as mentioned in the methodology, this study found that *GDP*, or *SIZE,* played the most significant role in explaining the behaviour of Malaysia's exports to MEACs, with the coefficient of more than one, implying that export volume is very sensitive to changes in income level. Regarding the positive sign, the results are robust across the specification, 1.698 in Model 2a and 1.554 in Model 2b, although the results seem a bit low in the basic model, 0.632 and 0.05, respectively. Another consistent finding is the negative impact of *DIS* on exports. This was significant and positive in Model 1b but it transformed into a significant negative impact in the remaining two models, –0.856 in Model 2a and –0.647 in Model 2b. While the negative impact is consistent with predictions in other studies that *DIS* will increase costs and, thus, will lower the level of Malaysia's exports to MEACs, the positive impact seems to contradict the literature (theoretical and empirical). One way to explain this phenomenon could be that, as some MEACs are relatively rich, their citizens do not really care about having to pay high prices to obtain certain imported products. Nevertheless, as few countries under MEACs are classified as rich, when we

controlled for country-specific variations, we started to obtain negative findings, which is consistent with past studies. Regarding *TA*, which is a variable that is of interest to us, all four models suggest that the impact is insignificant. This is a bit surprising but can easily be explained if we refer back to Table 4, in which the figures do not show that trade improves because of *TA*. In other words, despite various trade agreements signed by MEACs with many countries, those agreements did not seem to immediately increase trade volumes. Hence, trade agreements between Malaysia and individual MEACs that remain under negotiation should be carefully analysed to ensure they are really likely to trigger improvements in bilateral trade between Malaysia and MEACs.

CONCLUSION

This study has examined the trends and the role of trade agreements between MEACs and countries other than Malaysia and investigated the likely impact of trade agreements on Malaysia's exports into MEACs. For the period from 1996 and 2009, we conducted a panel data analysis to gauge the implications of trade agreements with 12 MEACs as target trade partners of Malaysia.

This study observes a very low volume of exports from Malaysia to each MEAC. Considering this group of MEACs consists of some oil-rich countries, MEACs should be a prime target of Malaysian exports in the future. Increasing exports to these countries will allow Malaysia to diversify its export destinations and therefore, cushion the external shock effects of lower growth in its current top export destinations, such as the US, Japan, Singapore and China.

On the threat of trade diversion due to trade agreements signed between each MEAC and other countries, the results of our regression analyses reveal that there is no threat of trade agreements diverting MEACs' demand for imports from Malaysia. On one hand, this is a positive result for Malaysia, but on the other, this also implies something very important that requires serious evaluation and planning. As part of Malaysian efforts to improve bilateral trade with each MEAC, apart from Saudi Arabia and Qatar, Malaysia has initiated several trade agreements (Abdurabb, 2011) with the expectation that they will eventually increase Malaysian exports to the MEAC region. As our results do not generally support this intuition, Malaysia should be required to design a trade agreement in a way that could ultimately induce higher bilateral trade between Malaysia and MEACs. To be specific, trade agreements should be designed to reduce transportation costs, as the major challenge for increasing Malaysian exports to the MEACs comes from their high transportation costs. Malaysia and the MEACs are located far away from each other, and the exports are generally low end products.

NOTES

1. These two terms – openness and liberalisation – convey distinctly different meanings. But the authors assume that they carry the same meanings in this study.
2. The GCC consists of Saudi Arabia, Qatar, Kuwait, Oman, Bahrain and the UAE.
3. Palestine and Iran are excluded due to lack of data.
4. Readers may wish to refer to the further information on the Malaysia External Trade Development Corporation (MATRADE) official website: http://www .matrade.gov.my/en/foriegn-buyers-section/69-industry-write-up-products/557-electrical-a-electronics
5. Although this is not our main point of focus, we highlight the issue here to raise a pressing issue relevant in the context of exports. This has an impact on long-term Malaysian economic growth and its development path.
6. The percentage of Muslim in Malaysia is approximately 60%.
7. We test the implications of Halal development on Malaysia's exports to MEACs in our separate paper, which is available upon request.
8. For further information, please refer to the website of the Embassy of The People's Republic of China in the State of Kuwait. The website was retrieved in October 2011 from http://kw.china-embassy.org/eng/sbgx/t580302.htm.
9. So far, gravity has been used to study not only trade but also other areas, such as foreign direct investment.
10. These are two out of ten observations from past studies.
11. There are several studies, such as Greenaway and Milner (2002), Sohn (2005), Kucera and Sarna (2006) and Lee, Park, and Shin (2008). However, they used GDP per capita rather than population in their studies to reflect the purchasing power of the two trading partners. We tested our model by using both GDP per capita and population, and we found no significant difference in the regression results, which are available upon request. This result is in line with Brun, Carrère, Guillaumont, and de Melo (2005), who tested for both.
12. We also tested this by using full import volume after deducting the amount of imports from Malaysia. The results are available upon request.

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