Halal Development and Food Exports: Evidence from Malaysia and the Middle Eastern Asian Countries

(Pembangunan Halal dan Eksport Makanan: Bukti dari Malaysia dan negara-negara Timur Tengah Asia)

Tajul Ariffin Masron
Nik Hadiyan Nik Azman
Siti Hasnah Hassan
Universiti Sains Malaysia

ABSTRACT

Exports remain an important growth engine for Malaysia, and the ability to maintain or improve the level of exports is a crucial factor to sustain and boost Malaysia's economic growth. Combined with extensive development in halal-related areas, especially in food production, Malaysia should be able to further intensify its exports, particularly to Islamic countries, such as the Middle Eastern Asian Countries (MEACs). Whether or not halal development is contributing to the expansion of exports is yet to be researched. Therefore, this study attempts to investigate the potential role played by halal development in Malaysia on its exports. Considering this is among the earlier studies examining the implication of the halal development on exports, this study limits the scope to cover the exports of Malaysia to the MEACs only. Applying panel data approach, this study found limited evidence that halal industry has played role in promoting Malaysian food exports to MEACs.

Keywords: Foods; halal; Malaysian exports; Middle Eastern Asian countries

ABSTRAK

Eksport masih merupakan pemangkin pertumbuhan bagi Malaysia dan kemampuan untuk mengekalkan atau meningkatkan tahap eksport menjadi faktor yang sangat penting dalam mengekalkan dan meningkatkan pertumbuhan ekonomi Malaysia. Mengambilkira pembangunan bidang-bidang berkaitan halal yang menyeluruh, terutamanya dalam pengeluaran makanan, Malaysia sepatutnya mampu lebih memperhebatkan eksportnya, khasnya ke negara-negara Islam seperti negara-negara Timur Tengah Asia (MEACs). Sama ada pembangunan halal menyumbang kepada pengembangan eksport adalah sesuatu yang perlu diuji. Oleh itu, tujuan kajian ini adalah untuk menyelidik potensi yang dimainkan oleh pembangunan halal di Malaysia ke atas eksport Malaysia. Mengambilkira kajian ini adalah di antara kajian-kajian awal menyelidiki implikasi pembangunan halal ke atas eksport, kajian ini menghadkan skop kajian hanya meliputi eksport Malaysia ke MEACs sahaja. Menggunakan pendekatan data panel, kajian ini mendapati kesan yang tidak begitu kukuh bahawa industri halal memainkan peranan dalam mempromosi eksport makanan Malaysia ke MEACs.

Kata kunci: Makanan; halal; eksport Malaysia; Negara-negara Timur Tengah Asia

INTRODUCTION

Trade, particularly exports, benefits a country's economic development from various aspects, ranging from improving GDP via higher economic efficiency up to technology development via product imitation (Edwards 1998; Harrison 1996; Frankel and Romer 1999; Noguer and Siscart 2005). Malaysia has adopted an open economic policy since independence, and, subsequently, has become one of the high export-dependent countries. Malaysian exports keep on growing and contribute a significant value to the Malaysian GDP, as shown in Figure 1A. Among the sectors that make a significant contribution to exports a lot are electrical and electronic

goods; however, in recent years, these have witnessed a substantial drop from 61.7 per cent in 2000 to 42.4 per cent in 2010. Another striking observation by BNM (2011) is regarding the re-emergence of commodity exports, growing from 13.3 per cent in 2000 to 22.2 per cent in 2010. This is part of Malaysia's effort to avoid over dependence on certain products only.

Similarly, the emergence of commodity exports is also accompanied by a surge in food exports, as shown in Figure 1B. Interestingly, the movement of Malaysian GDP growth and share of food exports as a percentage of merchandise exports is almost perfectly correlated except for the year 2011. The food sector can be said as has been contributing significantly to sustain the
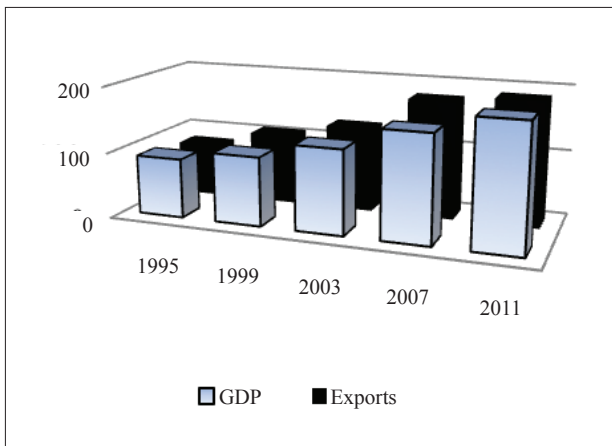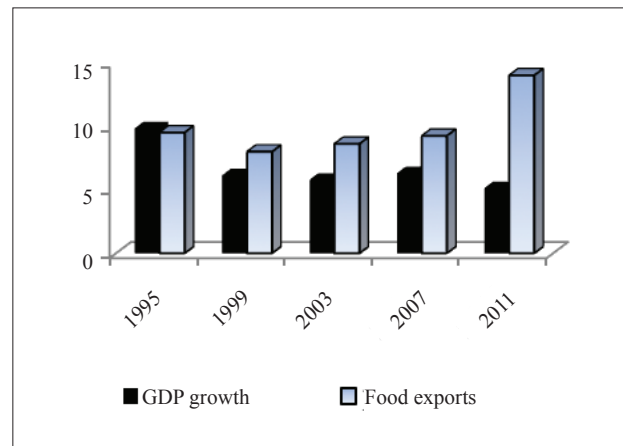
FIGURE 1A. GDP vs. Exports (in billions of USD)

FIGURE 1B. GDP growth vs. Food Exports (% of Merchandise Exports)

Source: World Development Indicators (World Bank 2013)

country's economic growth, particularly, to prevent the country's economic growth from falling further in 2011. Since exports, either total or food exports, show a high correlation with GDP performance or growth, the importance of exports is no longer debatable. In the Malaysian scenario, as the GDP increases, exports also show a positive upward trend. The converse is also true; whenever there is a drop in exports, such as during the period after 1999 (in Figure 1B), GDP also declined.

In terms of the location for Malaysian exports, the current trend demonstrates the emergence of new markets, such as China, Australia and New Zealand (BNM 2011), alongside the traditional markets, such as the USA, Japan and the EU countries. Greater diversification in the destination of Malaysia's exports is a good move to stabilize the country's economic growth. The risk of high dependence on exports is the heavy fluctuation of the exporting country's economic growth should anything happen to the importing countries. For instance, the slack performance for both GDP and exports in 2009 might be due to the crisis that struck the West. However, it could also be due to the influence of the natural disaster that took place in Japan, which is among the top three Malaysian export destinations (Masron, Nik Hadiyan & Fujikawa 2012). Hence, in order to minimize the risk of being heavily dependent on a few countries, Malaysia is in acute need of diversifying its export destinations.

The Halal logo or trademark is an important marketing tool in the global market, especially if a product is planned to penetrate Muslim segments of the population (Hassan and Hamdan 2013). The size of the Muslim market worldwide is estimated to be about 2 billion consumers, and 27.5% of this population is from Asia itself (Kettani 2010) and the market is expected to grow intensely by year 2020. This number is expected to increase dramatically by the year 2020. Certified Halal products are accepted domestically, and can potentially

gain a large segment of potential customers from international markets. Among the strategies for Malaysia is to target the market of the Middle Eastern Asian Countries (MEACs), as these countries promise a huge market potential for imports from Malaysia. Combined with the aggressive development of halal in Malaysia, the MEACs could be a prospective location for Malaysian halal products (halal is an Arabic word, referring to the permissibility to be taken by a Muslim; non-Muslims are not restricted from taking those products certified as Halal in Islam). The MEACs could offer a lucrative location for Malaysian exports for at least two reasons: (i) this region is dominated by Muslims, and (ii) they are relatively politically more stable and economically richer than the other Islamic countries across the globe, such as the African countries and ex-Russian countries. According to DagangHalal.com, the majority of MEACs are listed under the key halal Muslim markets of USD650 million, together with Algeria, Egypt, Indonesia, Malaysia and Morocco. Nonetheless, surprisingly, although the Malaysian and the MEACs generally share a similar religious belief, which is Islam, the volume of trade between Malaysia and the MEACs is not that impressive compared to Western countries. Malaysia's exports to the MEACs (as a percentage of total imports of each MEAC) are presented below in Figure 2.

Figure 2 does not demonstrate impressive ties between Malaysia and each MEAC, as the percentage of trading between Malaysia and each MEAC remains low. The UAE seems to be exceptional but with a percentage of less than 2 per cent, the volume is also still too small. Generally, Malaysia's exports to other MEACs can be described as negligible, particularly with Iraq, Kuwait, and Lebanon. Therefore, the intention of this study is to examine the MEACs as a new focus for Malaysian exports, particularly whether or not the recent extensive progression of halal development can promote further
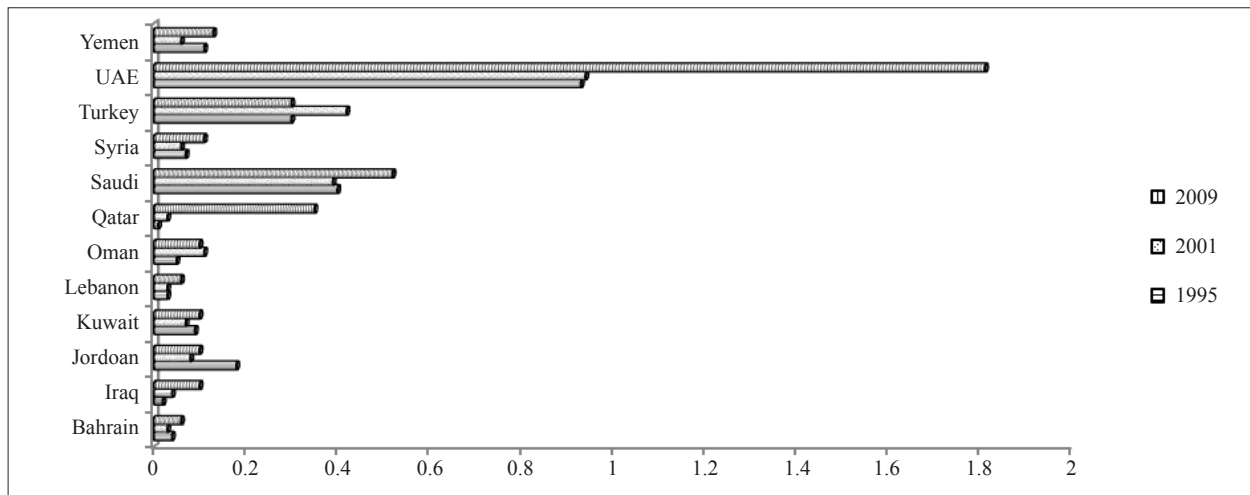
FIGURE 2: Malaysian exports to the MEACs (as a percentage of total imports of each MEAC)
Source: Own calculation based on data taken from UNCTAD (2011).

Malaysian exports. As food is the most noteworthy product that requires halal certification, we focus on the role of halal development on the Malaysian food exports.

The organization of this study is as follows: the next section is devoted to a brief economic background regarding various aspects of halal development in Malaysia. The third section reviews the related literature, which is followed by a discussion on the methodology and results. The last part is the conclusion of this study.

HALAL DEVELOPMENT IN MALAYSIA

As an Islamic country, Malaysia is currently intensifying its effort to develop Malaysia as a global hub for halal products. The halal industry shows a significant growth and suitable for both the domestic and international market (Yuhanis & Chok 2012). Currently, the halal industry is becoming one of the fastest growing global businesses across the world. The halal industry (particularly food) is pegged to grow at a rate of 29 per cent annually (Al-Harran & Low 2008).

In line with this development, the Malaysian Government is focusing on increasing halal products in making Malaysia an international halal hub. The halal companies, especially those in food processing, can depend on Malaysia's strength in halal certification, as Malaysia was the pioneer in establishing halal laws in the early 1980s and remains a force in matters relating to halal certification globally. In addition, Malaysia is positioning itself as the knowledge centre for the trade and investment promotion of halal products and services by organizing the Malaysia International Halal Showcase (MIHAS) and the World Halal Forum (WHF), as the international avenue for showcasing the halal trade (MATRADE 2011). In addition to food, the global demand for halal products and services also includes non-food products, such as

personal care products, cosmetics, pharmaceuticals, as well as services covering restaurants and hotels, banking and financing, tourism and logistics.

Tapping into this huge opportunity, Malaysia needs several halal-related institutions or governmental agencies in order to materialise the goal of becoming the global halal hub. Malaysia has established several institutions or government agencies, together with non-governmental organizations, NGOs (e.g. Muslim Consumer Group (MSG) and halal centre in several public universities) in order to focus on the development of halal standards, halal training, halal research and development (R&D), halal innovation, halal logistics, halal port services and Islamic financial services, halal production and manufacturing of halal products and services. The establishment of the Halal Development Corporation (HDC), to work closely with the Department of Islamic Development Malaysia (JAKIM), has further boosted the progression of halal development in Malaysia.

JAKIM is particularly vital as it holds the sole responsibility for issuing halal certification. In addition, HDC provides the necessary infrastructure to facilitate investment in the Malaysian halal industry (HDC 2012). The establishment of halal parks by the HDC is among the measures introduced to facilitate the growth of the industry. The establishment of halal parks is a key step towards improving the downstream production of halal products, and to provide manufacturers, both local and foreign, with the means to establish and maintain internationally accepted manufacturing process standards that incorporate both the scientific and religious requirements for ensuring halal integrity. At this stage, the HDC has established nine halal parks; nine are under development and two are planned to be built in the near future. At present, there are 28 companies operating in this halal park, which is expected to further increase in the future.

In addition, there are various supporting services established by the Malaysian Government to ensure the smooth running of the halal industry, ranging from the processing procedure to promotion and transportation. Besides the government initiatives, there is also support provided by Non-Governmental Organizations (NGOs), such as the Muslim Consumer Group (MSG), at both the national and state level, and the halal centres in several universities in Malaysia. The halal industry should cover all aspects of producing halal products (particularly halal food), such as transportation, packaging, labelling and logistics of the products (Mukhtar & Butt 2012).

There are ongoing efforts in creating Malaysia as the halal hub. Addressing this integrative approach and the continuous efforts of various halal agencies and institutions, has contributed to the positive demand for halal products from RM50 million in 2005 to RM260 million in 2010 (HDC 2012).

LITERATURE REVIEW

The demand for halal food is on the increase as Muslim consumers are creating an educated demand for halal food and products (Riaz & Chaudry 2003). The truth is that halal has become a proxy for much deeper fears and concerns about the presence of a growing and vocal Muslim population. The growth of the halal food market represents a significant potential for international companies, not only in Muslim countries but also in Western markets, such as Australia, New Zealand, Brazil and others. Among the MEACs, the Turkish Food Company has shown strong interest in acquiring a higher share of the world food market; the Turkish Standards Institute (TSE) received more than 20 applications for halal certificates from food companies. Turkey lacked a certification system until only recently when the Food Auditing and Certification Research Association (GIMDES) became the first body to issue halal certificates in Turkey (Bozkurt 2012).

In Malaysia, halal certification is divided into four main categories – food; non-food products like cosmetics, soaps, shampoo and toothpaste; restaurants and food premises; slaughterhouses and logistics. The strict procedures and standards imposed by JAKIM is a way to ensure that the products produced are purely halal. Currently, JAKIM only recognizes 57 halal certification bodies from a total of 31 countries, which is a relatively small number. Before JAKIM recognizes the halal certification bodies, it checks their system, standards, capacity, and expertise in syariah, technical knowledge, and food technology, and even witnesses how they carry out their audit to make sure that it is up to the Malaysian standards and procedures. Recently, in recognition of these standards and procedures, countries in the Middle East asked for Malaysian assistance in setting up their own halal certification body (Shahanaaz 2012). Currently,

the MEACs asked for halal certification from Malaysia for its five kitchens – Chinese, Western, cold, pastry and Malay.

Besides the halal certification being accepted among the MEACs, the halal parks pioneered by Malaysia also have a position in Pakistan. Malaysia was ready to assist its brother country Pakistan in the promotion and development of halal food. Bright opportunities exist for the promotion and development of halal food. In Malaysia, the Government implemented a certain standard to ensure the cleanliness of the food products. This effort gained recognition from the Codex Alimentarius Commission, which is responsible under the United Nations for regulation of food preparation globally, and which cited Malaysia as the best example in the world in terms of a justification for halal food. Malaysia has been regarded as the role model for the development of the world halal food industry (Musalmah 2005).

However, it cannot be firmly ascertained that Malaysian products (food) are currently accepted without question by Muslims globally due to certain issues, such as those related to halal certification by JAKIM. While Malaysia claims that its certification is sought by many, domestic and international data indicate that very few companies, even locally, come forward to apply for certification each year. Less than 1,000 companies apply each year, of which around 15-40 per cent fail or are rejected (HDC 2012). This issue should be addressed so that it does not present a major obstacle to the exporting of halal products abroad.

GRAVITY MODEL

The gravity theory was developed by Newton in the seventeenth-century, by stating that masses have a negative impact on distance (Filippini & Molini 2003). To add to this idea concerning this theory, Baldwin & Taglioni (2006) suggested a few laws of physics that confirmed the theory proposed by Newton. Basically, this study employed a gravity model in order to evaluate the relationship between two trading partners that are located far away, in this case Malaysia and each MEAC country. As the previous studies found, distance has a negative impact on exports (Obashi 2010). The longer the distance between trade partners, the higher the costs (transportation costs) that will result and indirectly lower the profit margin.

Empirically, the gravity model, which was employed by many previous studies, was found to be powerful (Obashi 2010). Gravity models have strong power in explaining the trade pattern and testing hypotheses as the aim of the empirical part of using gravity models is to test the hypothesis concerning the bilateral trade flows of Malaysia and candidate countries (Middle Eastern Asian countries). However, based on theoretical grounding, scholars, as stated by Deardoff (1998), and Frankel, Stein, & Wei (1994), suggested that it does not give very strong

justification. Nonetheless, recently, several economists have expressed support for the gravity model. Among the earlier pioneers in the gravity theoretical grounding were Tinbergen (1962), Linnemann (1966), Anderson (1979), Bergstrand (1985), Deardorff (1998), and Evenett & Keller (2002), and, more recently, Anderson & van Wincoop (2003). Despite the continuing discussions concerning these theoretical considerations, which are mostly based on microeconomic foundations and trade theories, they are also valid when exploring the changes in international trade patterns. The gravity theory has proven useful in describing social phenomena, such as population migration, flow of goods, money, and information.

How should halal development in Malaysia be positioned in terms of its impact on bilateral trade between Malaysia and each MEAC? The power of gravity model, as mentioned above, is due to its ability to handle a dummy representing the special characteristics of two trading partners. These characteristics include similarity or 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, political change and so on (see Papazoglou et al. 2006); economic policy (e.g. liberalization, deregulation, and so on (see Pacheco-López 2005) as well as regional factors (e.g. belonging to a certain region, such as ASEAN; linkage to certain trade agreements, such as NAFTA; or belonging to certain unions, such as the EURO currency union (see Kucera & Sarna 2006; Lee, Park & Shin 2008). To a certain degree, they can all be pooled into one group reflecting the additional costs that exporters have to bear, besides the intrinsic costs, such as transportation and customs duties. For instance, a similarity in language will help to smooth communications without the requirement to employ an interpreter. Sharing borders, or whether the two countries are landlocked, also implies lower costs of transportation. This is particularly true if there is a train service connecting the two trading partners, such as Malaysia and Thailand, which will further lower the cost of transportation. Similarity of cultures will ease the process of finding features suitable to include in the products to be exported, and, thus, lower the risk of being rejected by the importers. A sense of belonging, through regional trade agreements, such as the ASEAN Free Trade Area (AFTA) and the North America Free Trade Area (NAFTA), or a common currency, such as the EURO, is also expected to induce lower trading costs as trading partners are forced to reduce their barriers among the members while maintaining their barriers against non-members. Thus, under the same argument of similarity, we introduce the concept of halal. Halal is an Arabic word meaning permissible or consumable. As all selected MEACs and Malaysia are Islamic countries, this similarity will ease the process of penetrating and gaining acceptance into MEAC markets without the need to spend too much capital to explain the concept of halal. Hence, theoretically, halal development will increase confidence among Muslim consumers in the MEACs to accept and consume Malaysian exports. In short, halal by itself will induce cost saving and thus will promote bilateral trade between Malaysia and the MEACs.

METHODOLOGY

In this study, we investigate the implications of halal development on Malaysian food exports to the MEACs. As we employ the bilateral trade model, the gravity model is utilized to gauge the relationship. The basic gravity model essentially demonstrates that bilateral trade (BT) is a function of the market size (Y) of both trading countries, as well as the physical distance between the two trading countries. Mathematically, it can be shown as:

$$BT_{ij,t} = AY_{i,t}^{\alpha_1} Y_{j,t}^{\alpha_2} DIS_{ij,t}^{\alpha_3} \qquad (1)$$

Replacing BT with food exports (*FEXP*), and transforming the equation into logarithmic form (ln), will give us the following estimable equation:

$$\ln FEXP_{ij,t} = \ln A + \alpha_1 \ln Y_{i,t} + \alpha_2 \ln Y_{j,t} + \alpha_3 \ln DIS_{ij,t} + \varepsilon_t \qquad (2)$$

To strengthen our model, we add two more variables. The two additional variables are purchasing power index (*GDPPC*) and our focal variable of halal development (*HD*). A higher purchasing power 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). Justification of the inclusion of HD is provided in the previous section. Considering the short observations facing this study, instead of estimating the market size of exporting and importing countries separately, and, similarly for the purchasing power index, we estimate the combined effect of the size and purchasing power of both markets, which can be shown as follows:

$$\ln FEXP_{ij,t} = \ln A + \beta_1 \ln(Y_{i,t} * Y_{j,t}) + \beta_2 \ln(GDPPC_{i,t} * GDPPC_{j,t}) + \beta_3 \ln DIS_{ij,t} + \beta_4 \ln HD_{ij,t} + \varepsilon_t \qquad (3)$$

A summary of the measurement of each variable, as well as the data sources, is given in Table 1. The collected data are from 2004 to 2009. Although halal certification by JAKIM started a few years ago, the databank was only created recently. With a limited sample size, we proceed by applying the static effect model, which involves choosing the best model among the few competing models, such as the fixed-effect model (FEM) and random-effect model (REM). Although the pooling model is also one to be considered, very often, with a heterogeneous issue underlying the data, we predict the final model could either be FEM or REM. Therefore, the option will

TABLE 1. Summary of measurements and data sources

Variable in Equation	Measurement/Proxy	Source
1. *FEXP*: Food Exports	Total Food Exports (Malaysia to each MEAC).	UNCTAD (2012)
2. *Y*: Market Size	GDP of Malaysia and the MEACs.	World Bank (2013)
3. *GDPPC*: Purchasing Power	GDP per capita of Malaysia and the MEACs.	World Bank (2013)
4. *DIS*: Distance	Transportation Cost	Malaysian International Shipping Company (MISC)
5. *HD*: Halal Development	i. Annual no. of released halal certificates. ii. Annual no. of halal parks. iii. Annual no. of firm operating at halal parks.	JAKIM, HDC
	iv. Dummy for halal park and halal firms	Own calculation

Note: The data from MISC is obtained from one of the MISC staff. The data for halal certificates released every year is from the JAKIM database. We thank the JAKIM staff for freely emailing us the info. The number of firms is the researcher's own calculation based on the information provided in the HDC reports.

be finalized by using the Hausman test. Under the null hypothesis of orthogonality, *REM* is preferred over the *FEM*. In other words, if the Hausman test is not rejected, *REM* will be chosen instead of *FEM*.

RESULTS AND DISCUSSION

The primary objective of correlation analysis is to measure the strength or degree of linear association between the two variables (Gujarati 2003). The results of the correlation analysis are presented in Table 2. Table 2 shows a remarkable correlation between *GDP* and *FEXP*, which is 48 per cent, implying that the development of the food sector is very much dependent on the income level. In addition, it might also highlight the importance of the food sector in generating income for Malaysia, and, therefore, promoting halal could further enhance the sector to become the leading sector in the economy in the future. In respect of the bilateral relationship between *FEXP* and *HD*, the correlation coefficients show a promising result with all recording a positive relationship. The small size of coefficients is acceptable and intuitively clear as the development has only recently gained momentum and support from the Malaysian Government and the public.

The regression analysis of this study started with the basic regression analysis model, which assumes that 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 quite impossible for all countries (or pairs) to be homogeneous. We show the result of the cross-fixed effect in the second column of each model and tested a few other competing models: time-fixed effect and cross and time-fixed effect. To conserve space, the analysis results for the cross- and time-fixed effect are available upon request and report only the most superior model out of the three sub-models of the fixed effect family. However, it is worth mentioning here that the time element does not show any significant impact, which could be because of the short observation that we have, meaning that the other two models, which incorporate the time element, do not emerge as good models.

Similarly, we examine the model by using the random effect model. Finally, our task is to gauge which model fared the best among the competing models. The choice between the Pooled Model (*PM*) and cross-fixed model (*CFM*) will be evaluated using the F-statistics of the redundant test. If *CFM* is found to be superior to *PM*, in the next stage, we compare the option between *FEM* and *REM* by employing the Hausman test. As shown in Table 3, the highly significant F-statistics confirms that *CFM* fared better than *PM*. Moving on to the relative superiority between *FEM* and *REM*, the Hausman test shows that the null hypothesis cannot be rejected and that *REM* is more preferred than *FEM*. Hence, the remaining

TABLE 2. Correlation analysis

	lnFEXP	lnGDP	lnGDPPC	lnDIS	lnFIRM	lnJAKIM
lnGDP	0.48	1.00				
lnGDPPC	-0.13	0.39	1.00			
lnDIS	0.18	0.23	-0.36	1.00		
lnFIRM	0.21	0.15	0.07	0.50	1.00	
lnJAKIM	0.15	0.14	0.07	0.46	0.65	1.00
lnPARK	0.16	0.14	0.06	0.47	0.96	0.62

discussion will refer to the cross-random model, unless otherwise stated. As mentioned earlier, due to probably short observation, the time-random effect does not appear to be a crucial model.

Table 3 presents the results of the food exports model with three proxies used to represent *HD*. In the first model, *HD* is proxied by *JAKIM*, while in the second and third model it is proxied by *PARK* and *FIRM*, respectively. The estimated coefficients for GDP are significant in all models, indicating that the market size plays an important role in foods exports. The less elastic coefficient of less than one in all models justifies the low trading volume between Malaysia and the MEACs. The purchasing power variable (GDPPC) is only significant in Model 3; however, in all models, all coefficients indicate a negative impact. This could be that alongside the high income of Malaysians, the awareness about

for consuming halal foods has also been growing, and, therefore, the demand for halal products has reduced the ability to export.

Regarding the role of distance (DIS), the results are consistently insignificant in all models. With the majority of the MEACs being rich countries, most may not be too concerned about price, in which the cost of transporting the products from Malaysia is embedded. Nonetheless, a serious effort to reduce the cost of production of foods in Malaysia is crucial in order to avoid a sudden jump in food prices to be exported to the MEACs.

Moving on to our focal variable, which is halal development, currently, the cross-random model in each model does not indicate that halal development is export-promoting. lnJAKIM and lnPARK exert insignificant negative impact while lnFIRM, although showing a positive sign, the size is too small or inelastic. Several

TABLE 3. Regression Analysis

	Model 1 (JAKIM)			Model 2 (PARK)			Model 3 (FIRM)		
	Pooled	Cross-Fixed	Random effect	Pooled	Cross-Fixed	Random effect	Pooled	Cross-Fixed	Random effect
Constant	7.16	-78.38*	-46.81*	6.70	-55.70*	-40.92*	14.86	-29.89	-11.51
	(0.51)	(-6.76)	(-2.17)	(0.48)	(-3.48)	(-1.95)*	(1.08)	(-3.03)*	(-1.34)
lnGDP	0.81*	0.53	0.69*	0.81*	0.68*	0.70*	0.83*	0.47	0.76*
	(6.19)	(1.21)	(3.31)	(6.18)	(2.16)	(3.28)	(6.51)	(1.63)	(3.57)
lnGDPPC	-0.48*	2.46*	-0.21	-0.48*	1.39*	-0.24	-0.52*	1.71*	-0.37*
	(-4.12)	(4.17)	(-1.39)	(-4.11)	(3.55)	(-1.36)	(-4.54)	(2.61)	(-2.90)
lnDIS	-2.19*	1.53*	-1.95	-2.12*	0.61	-1.50	-2.76*	-0.92	-0.73
	(-2.03)	(2.06)	(-1.04)	(-2.00)	(0.57)	(-0.78)	(-2.59)	(-0.74)	(-0.62)
lnJAKIM	0.08*	-0.07*	-0.01	-	-	-	-	-	-
	(1.87)	(-11.1)	(-0.62)						
lnPARK	-	-	-	0.35*	-0.05	-0.01	-	-	-
				(1.87)	(-0.42)	(-0.06)			
lnFIRM	-	-	-	-	-	-	0.27*	0.07*	0.06*
							(2.78)	(1.85)	(2.30)
Model Criteria									
Adjusted-R^2	0.35	0.96	0.16	0.35	0.96	0.16	0.39	0.97	0.19
S.E. of Reg.	1.01	0.62	0.66	1.01	0.63	0.67	0.98	0.65	0.66
D-W Stat.	1.00	1.98	1.99	0.99	2.06	1.99	0.99	1.99	2.11
F-stat (Overall)	10.90 [0.00]*	142.80 [0.00]*	4.48 [0.00]*	12.55 [0.00]*	116.67 [0.00]*	4.47 [0.00]*	12.55 [0.00]*	159.46 [0.00]*	5.20 [0.00]*
F-Stat (redundant test)	-	10.21 [0.00]*	-	-	9.49 [0.00]*	-	-	8.46 [0.00]*	-
Hausman Test	-	-	8.77 [0.16]	-	-	7.52 [0.15]	-	-	5.55 [0.17]

Note: Asterisk (*) denotes significance, at least at the 10% critical value. Figures in ( ) stand for the t-value and figures in [ ] represent the p-value. The shaded grey area indicates the best model, which is referred to in our discussion.

TABLE 4. Regression Analysis

| Model 4 (Dummy for HPARK & HFIRM) | | |
	Pooled	Cross-Fixed	Cross-Random
Constant	-20.97 (-1.45)	-59.66** (-2.07)	-40.48** (-2.64)
lnGDP	1.00*** (8.78)	0.42 (1.42)	0.94*** (5.29)
lnGDPPC	-0.92*** (-7.62)	1.46* (1.67)	-0.83*** (-5.73)
lnDIS	-2.23*** (-2.47)	2.22 (0.92)	-0.94 (-0.76)
DHALAL	0.52* (2.19)	0.11 (0.63)	0.40** (2.66)
Criteria			
Adjusted-R^2	0.59	0.90	0.32
S.E. of Reg.	0.80	0.58	0.66
D-W Stat.	1.60	2.00	2.15
F-stat (Overall)	16.19*** [0.00]	79.14*** [0.00]	5.89*** [0.00]
F-Stat (redundant test)	-	4.37*** (0.00)	-
Hausman Test	-	-	0.19 [0.98]

Note: Asterisk *denotes significance, at least at the 10% critical value. Figures in ( ) stand for the *t-value* and figures in [ ] represent the *p-value*.

possible explanations can be provided to justify this finding. Firstly, the stringent procedures and detailed analysis relating to the halal food process – from the sourcing of ingredients to the preparation and storage of food items should be based on the Malaysian Standard MS 1500:2009. It is good to have this standard to ensure the trustworthiness of the halal certificate but it may take producers a very long time to get approval. Secondly, the halal food industry is still an infant and is primarily characterized by a low production level relative to the huge demand from the domestic and international markets. Thirdly, we believe that the actual size of halal production is not too small. According to HDC (2012), Malaysia's exports jumped from USD20 billion in 2009 to USD25 billion in 2011. If that is the case, why does the analysis not show any significant impact? The answer could be because many non-certified halal exported products are now being replaced by certified products. Hence, to argue that there is no impact may not be appropriate. Rather, we prefer to argue that, at the current stage, Malaysia is replacing non-certified products with halal-certified products that are similar. Nevertheless, the positive sign and very small negative coefficient may signal that the prospect is very bright for halal to demonstrate its significant role in promoting exports in the future.

Finally, we complement the above analysis by Table 4 running another analysis that utilized the dummy variable to represent the period of implementation of halal parks and firms. The results are similar in all aspects to the previous models but offer additional strong support concerning the role of halal development in promoting Malaysian exports to the MEACs.

CONCLUSION

This study examines the role of halal development in Malaysia in promoting Malaysian exports to the MEACs, particularly food. Covering the period between 2004 and 2009, and focusing on the 12 MEACs, this study reveals that halal development could be a good promoting factor to promote to boost Malaysia's exports to the MEACs in the future. In general the results indicate that there is a positive prospect for halal food products to demonstrate an important role in promoting exports in the near future. Halal serves as quality certification accreditation mark and becoming increasingly important in enhancing the competitiveness of companies in the global market. However this study is not without limitations, and, therefore, should be treated cautiously. Firstly, the short observation may not reveal the true picture of the role of halal development on food exports. Secondly, stiff competition from halal logo introduced by more than 20 countries in the world make it less relevant (related issues are highlighted in the following website: http://mideastposts.com). Thirdly, the proxy for halal development can be further investigated and improved, as this study serves as a stepping-stone to stimulate more researches in this area, which we believe constitutes an important segment in the Malaysian economy to support the country's future economic growth.

Since this study is relying on a very short sample size, the finding could only be treated as preliminary. Future study should focus more on designing better proxy for halal development which can offer longer observation to confirm or challenge this finding.

REFERENCES

Anderson, J.E. 1979. A theoretical foundation for the gravity equation. *American Economic Review* 69(1): 106-116.

Anderson, J.E. & van Wincoop, E. 2003. Gravity with gravitas: a solution to the border puzzle. *American Economic Review* 93(1): 170–192.

Al-Harran, S., & Low, K.C.P. 2008. Marketing of Halal products: The way forward. *The Halal Journal* January/February edition: 44-46.

Baldwin, R. & Taglioni, D. 2006. Gravity for Dummies and Dummies for Gravity Equations. NBER Working Papers No. 12516, National Bureau of Economic Research.

Bergstrand, J. 1985. The gravity equation in international trade: Some microeconomic foundations and empirical evidence. *Review of Economics and Statistics* 67(3): 474–481.

BNM. 2011. The changing structure of Malaysia's exports. www.bnm.gov.my/files/publication.

Bozkurt, H. 2012. Turkish companies' eye on USD1 trillion Halal food market. www.halaljournal.com.

Deardorff, A. 1998. Determinants of bilateral trade: Does gravity work in a neoclassical economy. In *The Regionalization of the World Economy*, edited by Frankel, J.A., 7-32. Cambridge MA: National Bureau of Economic Research.

Edwards, S. 1998. Openness, trade liberalization, and growth in developing countries. *Journal of Economic Literature* 31: 1358–1393.

Evenett, S.J. & Keller, W. 2002. On theories explaining the success of the gravity equation. *Journal of Political Economy* 110(2): 281–316.

Filippini, C. & Molini, V. 2003. The determinants of East Asian trade flows: A gravity equation approach. *Journal of Asian Economics* 14(5): 695–711.

Frankel, J. & Romer, D. 1999. Does trade cause growth? *American Economic Review* 89(3): 379–399.

Frankel, J., Stein, E. & Wei, S-J. 1994. Trading Blocs: The Natural, The Unnatural, and the Super-Natural. Center for International and Development Economics Research (CIDER) Working Papers No. C94-034, University of California at Berkeley.

Gujarati, D.N. 2003. *Basic Economics*. 4th Edition. New York: McGraw Hill.

Halal Industry Development corporation (HDC). 2012. *Halal Parks in Malaysia*. www.hdcglobal.com.

Harrison, A. 1996. Openness and growth: A time-series, cross-country analysis for developing countries. *Journal of Development Economics* 48(2): 419–447.

Hassan, S.H. & Hamdan, H. 2013. Experience of non-Muslim consumers on halal as third party certification mark in Malaysia. *Asian Social Science* 9(15): 263–271.

Kettani, H. 2010. World Muslim Population. Paper presented at The 8th Hawaii International Conference on Arts and Humanities, at Honolulu, Hawaii.

Kucera, D. & Sarna, R. 2006. Trade union rights, democracy, and exports: a gravity model approach. *Review of International Economics* 14(5): 859–882.

Lee, J.-W., Park, I. & Shin, K. 2008. Proliferating regional trade arrangements: why and whither? *The World Economy* 31(12): 1525–1557.

Linneman, H. 1966. Trade Flows and Geographical Distance, or the Importance of Being Neighbors. In *Towards Balanced International Growth*, edited by Bos, H.C. Amsterdam: North Holland.

Masron, T.A., Nik Hadiyan, N.A. & Fujikawa, T. 2012. Halal Development and Malaysian Exports to Western Asian Countries. School of Management Working Paper, Universiti Sains Malaysia, Penang, Malaysia. Available upon request.

MATRADE 2011. Government Agencies. ilmu.matrade.gov.my.

Melitz, J. 2007. North, south and distance in the gravity model. *European Economic Review* 51: 971–991.

Mukhtar, A. & Butt, M.M. 2012. Intention to choose halal products: The role of religiosity. *Journal of Islamic Marketing* 3(2): 108–132.

Musalmah, J. 2005. Halal Food Industry Deserve More Attention. www.mier.org.my.

Noguer, M., & Siscart, M. 2005. Trade raises income: a precise and robust result. *Journal of International Economics* 65(2): 447–460.

Obashi, A. 2010. Stability of production networks in East Asia: Duration and survival of trade. *Japan and the World Economy* 22(1): 21–30.

Okubo, T. 2004. The border effect in the Japanese market: A gravity model analysis. *Journal of the Japanese and International Economies* 18(1): 1–11.

Pacheco-Lopez, P. 2005. The effect of trade liberalization on exports, imports, the balance of trade, and growth: The case of Mexico. *Journal of Post Keynesian Economics* 27(4): 595–619.

Papazoglou, C., Pentecost, E.J. & Marques, H. 2006. A gravity model forecast of the potential trade effects of EU enlargement: Lessons from 2004 and path-dependency in integration. *The World Economy* 29(8): 1077–1089.

Riaz, M.N. & Chaudry, M.M. 2003. *Halal Food Production*. Bota Raton: CRC Press.

Shahanaaz, H. 2012. Malaysia: Halal cert a passport to success. www.halaljournal.com.

Tinbergen, J. 1962. An analysis of world trade flows. In *Shaping the World Economy*, edited by Tinbergen, J. New York: Twentieth Century Fund.

UNCTAD. 2011. Trade merchandise 2012. unctadstat.unctad.org.

World Bank. 2013. *World Development Indicators*. data.worldbank.org.

Yuhanis, A.A., & Chok, N.V. 2012. The role of Halal awareness and Halal certification in influencing non-muslims' purchase intention. Proceedings in 3rd International Conference on Business and Economic Research.

Tajul Ariffin Masron*
Nik Hadiyan Nik Azman**
Siti Hasnah Hassan***
School of Management
Universiti Sains Malaysia,11800 USM
Pulau Pinang
MALAYSIA

*tams@usm.my
**nikhadiyan@gmail.com
***siti.hassan@usm.my