

An Empirical Analysis of Determinants of Malaysia's Export to OIC Countries in Africa

YUSUF, Hammed Agboola^{a*}, Irwan Shah Zainal Abidin^b and Normizan Bakar^b

School of Economics, Finance and Banking, Universiti Utara Malaysia, Kedah, Malaysia

Abstract

Exports play A vital role in achieving sustainable growth, employment, output, Investment and improve the balance of payment position of Malaysia economy. As one of the key performer in terms of contribution to OIC countries. Malaysia has introduced several trade policy and reforms designed to promote the export flow between Malaysia and other OIC countries in African. However, Malaysia's share at global trade was very impressive as compared to other OIC countries in African. Given the fundamental role of exports in the economy, it was Crucial to identify the plausible factors that determine export flow between Malaysia and Other OIC countries in African. Thus, this paper uses gravity model to investigate the determinants of exports between Malaysia and African countries that are members of OIC. The Poisson-maximum likelihood estimation techniques were used for the study, and this covered the period of 1985- 2015. The research found that export flow between Malaysia-OIC countries in African are determined by distance, Per capita GDP, GDP similarities, common colony, GDP, population, real exchange rates. The research further observed that the degree of openness of an economy was not significant. The findings of this study revealed that Malaysia policymakers should formulate trade policies and reform that will enhance economic growth and development through an export promotion with African countries that are member of OIC.

Keywords: Malaysia, Exports, Determinants, Gravity Model, Trade, and OIC Countries

1. INTRODUCTION

There is general agreement that exports play a significant role in achieving sustainable growth and development in the middle and low-income nations. Promoting exports will serve as a tool to reduce the balance of payment problem, improved the terms of trade, creation of more employment opportunities thus reduces the effect of external shocks on local economy (Jordaan and Eita, 2007).

Several policies to promote exports has been regularly pursued by different countries with the doctrine of comparative advantage theory by which a country will focus on the production of goods and services in which its capable of producing competitively. There will be more availability of commodities, at a reduced price, rises in quantity demanded, more expansion in the market, rise in the level of income and employment, as well as achieving both internal and external economies of scale. Thus, enhance economic growth and development in the host nation (Chen et al., 2011). Additionally, several studies conclude that exports promotion have a positive and significant contribution to the growth and development of many nations. These studies include (Balassa, 1985; Chow, 1987; Feder, 1983; Krueger, 1990; Ram, 1987; Sengupta and Espana, 1994; Tyler, 1981; Ullah et al., 2009; Vohra, 2001; Ozturk and Acaravci, 2010a; Acaravci and Ozturk, 2012; Uddin et al., 2013).

The Daraisami (2004) observed that in line with the new growth theories context: exports can inspire the growth of economies through numerous channels such as an increase in capital equipment and supply of raw materials through an increase in exports. Therefore, enlarge high level of productivity within the economies. Exports permitted developing countries to have access to better technology and developed the country in the form of personified capital goods.

Also, exports expansion has encouraged raise in the production of goods and services produced in an economy utilised adequately for consumption. (Muhammad and Mafizur, 2014). Globally, among the vastly growing economies in the world, Malaysia growth performance was impressive.

In fact, from 1990 -2013, Malaysia GDP growth rates were 6.3 percent per annum with increase income per capita from (USD 380 – USD 10304) ranged between 1970-2013 (World Bank 2014). Similarly, based on the table above Malaysia has a high level of rapid expansion in exports to OIC countries compare to other countries in African. It was observed that Malaysia total export was USD 17200 in million 1985, USD \$83500 in million 1995, USD \$112000 in million 2000, USD \$162,000 in million, 2005, USD \$22000 in million 2010, USD \$21000 in million 2015 and USD \$199,000 in million, 20016 respectively (World Bank, 2017). These tremendous rises in Malaysia exports were consistent from 1985 -2016.

Table 1
Total Export between Malaysia and the selected OIC member countries
(Unit of analysis is USD in Million)

Countries	Series	1985	1990	1995	2000	2005	2010	2015	2016
Algeria	Export	13700	14500	10900	23100	48700	62000	38800	37000
Cameroon	Export	2730	2250	2060	2160	3390	4100	5550	5530
Cote d'Ivoire	Export	3260	34200	4590	4370	8530	12600	12500	11800
Djibouti	Export	..	244	195	193	288
Guinea-Bissau	Export	1403	242	296	805	117	169	295	333
Mali	Export	237	420	529	664	14400	2440	2860	2870
Morocco	Export	3820	7410	8850	10400	19300	30000	34500	3520
Nigeria	Export	5020	10900	10200	2400	35500	93200	51100	..
Niger	Export	298	367	333	320	565	1270	1230	..
Mozambique	Export	1270	205	333	644	2330	3200	4770	3830
Sudan	Export	7138	499	687	1960	5090	13000	7950	9390
Tunisia	Export	2700	5350	8100	8490	14500	22200	17500	16900
Uganda	Export	484	312	679	660	1280	3460	4880	4500
Malaysia	Export	17200	32800	83500	112000	162000	222000	210000	199000

Source: World bank data Indicator 2017

2. LITERATURE

Abidin Hasseb and Islam, (2016), examined the determinants of Malaysia- Association of South Asian Nations exports. Five ASEAN Countries was selected in their studies, and these include Vietnam Singapore, Philippine, Thailand and Indonesian. The period for the panel data covered between 1990 to 2013.the result of the study found that the size of the economies, rates of exchange bilateral distance size of the population are the potential significant determinants of Malaysia-ASEAN exports. The study, therefore, recommended that Malaysia government should provide several policies that will improve the level of economic growth through promotion of exports among the ASEAN Nations

Similarly, Abidin, Bakar & Sahlan, (2013), Based their analyses on exports determinants between Malaysia and the OIC member countries from 1997 to 2009 using gravity model. Their result reveals that the economic sizes, the degree of openness of an economy, the rate of exchange and level of inflation are significant determinants of exports among these countries. Other studies that are similar on OIC countries include the work of Hassan (2009), investigates the performance of economies within the frame of OIC Countries using gravity model and findings revealed that there is the existence of trade creation among the eight bigger countries.

Again, Gundogdu (2009) Used gravity model to investigates intra-OIC trade within the period of 1995-2007 and his findings revealed that increase in trade among the OIC Countries and others part of the World is based on each OIC countries efforts and necessities to achieve a free trade zone among their members through removal of trade barriers and reduction in the rate of tariffs will improve trade relationship. Similarly, Karimi-Hosnijeh (2008) analyse bilateral trade flows among Iran and Organization of Islamic Conference countries. The data year covered the period 1998 to 2005, and the results found that similarities in culture and economies between the OIC member countries have positively and significantly impacted on bilateral trade flow on their agricultural products. Hence, OIC countries have a potential capacity to imports less from non-member countries and exports more to non-members countries.

Maamor and Abdullahi (2016) examined the relationship between financial development and economic growth in the long run in 4 OIC countries namely Malaysia, Jordan, Saudi Arabia and Kuwait. The study used panel unit root test and Padroni Co-integration approach between the periods of 1990-2012. The study revealed that economic growth and financial development are positively related in the long run which conformed to supply leading hypothesis. The study concludes that among the four OIC countries examined their government should improve financial developments through an increase in income which will boost investments does enhance economic growth in the long run.

Bakar, Abidin, and Haseeb (2015) Investigated the impact of Macroeconomic factors such as TRGDP, GDP, and CPI on exports performance between Malaysia and OIC Member countries from 1997 – 2012. The study used panel unit root test, Kao co-integration test, FMOL test and panel ECM found that TRGDP, ER, and GDP has a positive influence on exports in the short-run and exchange rate and TRGDP have a positive impact on exports. The study recommended that Malaysia government policies should be concentrates on both TRGDP and exchange rates by facilitating rises in exports rivalry in the short run.

Abidin and Haseeb, (2017) empirically examine bilateral trade relationship between Malaysia and Gulf cooperation council (GGC) using annual panel data. The study covered the period of 1985- 2015 and the primary objectives of their study are to investigate the determinants of bilateral trade relationship and trade performance between Malaysia and GCC countries. The result revealed that bilateral distance, per capita GDP and exchange rates, are the key determinants of the bilateral trade relationship between Malaysia and GCC countries and the study concludes that inadequate capital and cultural disparities are the major setback for Malaysia to expand their business with GCC countries.

Karamuro and Karukuza (2015) investigated determinants of exports performance in Uganda with the use of gravity model. The panel data used for the study covered the period of 1980 – 2012. The result found that GDP of the importer's countries GDP per capita, GDP of Uganda, exchange rates, common language disparities in GDP Per capita, of Uganda and others trading partners has a positive impact and significant on Uganda exports flow. However, Uganda's per capita GDP and the bilateral distance between Uganda and others trading partners have negatively affected the flow of exports to Uganda. Hence the study recommends that Uganda' government should formulate proper trade policy to achieve economic growth through stimulations of export.

Schenk and Theeuwes [2002] studied the determinants of export development in the Netherlands. Their research discovered that the relationship between Dutch export development and inward foreign direct investment was positive. This research also observed that exports owned by domestic companies are less than exports owned by Dutch occupant companies that belong to foreign companies. The study found a positive relationship between inward foreign direct investment and the Dutch export development and the findings further exposed that the turnover of the company that belongs to foreign ownership has a more substantial export of 60% while companies that belong to private ownership tend to export 40% of their turnover.

Kumar (1998) Examined the factors that determine the exports growth in developing nations. The research found that the effect of real GDP was positive and significant on the volume of export flow. The study also observed that increase in the level of production is a major source of the increase in export meanwhile excess output can be utilized at the international markets. However, factors that promote exports trade Guangdong province was investigated by

Chen and Liu [2007). The result found that the major contribution to the volume of export growth was GDP, followed by the rates of average wages of labour, the rate of exchange, and lastly the capital stock per capita.

3.0 METHODOLOGY

The study will use gravity model approach which was design with simple illustration but also classifies as a major factor inducing bilateral trade 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 trade in economics so far (Frankel and Rose, 2002). The basic derivation of gravity model is stated below

3.1 The Gravity Model

The gravity model was designed as a background for traditional gravity model and nothing than to link it with economic theory. The gravity model is mostly used in international trade to predict the level of the trade relations between countries and this approach was develop by Newton's Law of Universal Gravitation. "The Newton's gravity model has stated that the magnetism between two objects in the universe is directly proportional to the product of their size and inversely proportional to the distance between them". By definition

$$T_{ij} = K \frac{\beta_i \beta_j}{D_{ij}} \dots \dots \dots (1)$$

In T_{ij} = is the imports of country i from country j, K is the gravitational constant; β_i is the Economies mass of the country i and j represents economies mass of country β_j . D denote bilateral distance between country i and j. The transformation of the equation (1) above with natural log is a bilateral trade of i and j.

$$\ln T_{ij} = \theta + \alpha \ln \beta_i + \delta \ln \beta_j - \lambda \ln D_{ij} + U_t \dots \dots \dots (2)$$

3.2 MODEL SPECIFICATION

The gravity model of export flow between Malaysia and African countries that are a member of OIC depends on the balance of the forces, and this is specified in the stochastic form.

$$\begin{aligned} \ln export_{ijt} = & \alpha_1 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 \ln POP_{it} + \beta_4 \ln POP_{jt} + \beta_5 \ln DGDPPC_{ijt} + \beta_6 \ln SGDP_{ijt} \\ & + \beta_8 \ln DIST_{ijt} + \beta_9 \ln RER_{ijt} + \beta_{10} \ln TOP_{ijt} + \beta_{12} OIC_{ijt} \\ & + u_{ijt} \dots \dots \dots (3) \end{aligned}$$

Where;

- $Export_{ijt}$ = Total trade (country *i*) and country *j*
- GDP_i = Gross Domestic Product of country *i*,
- GDP_{jt} = Gross Domestic Product of country *j*,
- POP_{it} = Population Growth of country *i*
- POP_{jt} = Population Growth of country *j*
- $DGDPPC_{ijt}$ = Gross domestic products per capita of country *i* and *j*
- $\ln SGDP_{ijt}$ = Similarities in GDP between country *i* and *j*
- $DIST_{ijt}$ = Bilateral distance between country *i* and *j*
- RER_{ijt} = Real effective exchange rates between country *i* and *j*
- TOP_{ijt} = Trade openness between country *i* and *j*
- OIC_{ijt} = Organisation of Islamic Conference Countries *i* and *j*

3.2.1 DATA SOURCE

The study efforts to investigate exports d determinants between Malaysia and OIC Countries in African using gravity model and Poisson-maximum likelihood estimation techniques. The period of study covered 1985 – 2015. The data for the study were retrieved from different sources, such as World Bank, International Monetary Fund (IMF) and World governance indicator (WGI)

Table 2 regression Result of export model
The Poisson pseudo-maximum likelihood estimation Results (1985-2015)

Variables	Coeff	PPML T-test
Distance	-0.011***	-4.24
Openness	-0.024	-0.92
Gdpppc	-0.015***	-0.46
Gdp sim	0.186**	2.27
Comcol	6.456***	5.34
Population J	3.350***	5.50
Reer	-2.925**	-2.08
GDPi	2.197***	3.94
GdpJ	0.0405	0.77
Population i	-6.877**	-2.32
OIC ij	0.106*	1.60
Joint sg test	-7.88	
Constant variable	118.94***	
Main variables	2387.35***	
Adj R		

Note ***, ** and * represent the significant level at 1%, 5% and 10% level respectively

Distance (0.011) bilateral distance was found to be negative by (0.011) statistically significant at 1% level under PPML results and gravity model. This is consistency with theoretical expectation. The findings supported transportation cost hypothesis which argues that cost of transportation is a key determinant of exports flows from Malaysia to OIC countries in African. These findings aligned Oridi (2011), Abidin, et, al, (2016) and Yusuf, Abidin and Bakar (2017).

The GDP per capita income (GDPPC) was negative and statistically significant at 1% level by 0.02 under PPML. The result showed that reduction in the level of exports flow by one unit was due to decline in GDP Per capita of other OIC Countries in African. GDP similarities coefficients were 0.19 and statistically significant at 5%. This show the relativities in the size of the economies are very important in the analysis of the trade.

Common colony. The coefficient of the common colony was found positive by 6.55 and statistically significant at 1%. This implies an improvement in exports flow from Malaysia to African countries that are a member of OIC countries was also due to influences of common colonization among the OIC countries. This study aligned with Olofin et al., 2012. GDP the coefficient of Malaysia was found positive by 0.05 and highly significant as expected. This indicated that 1% increase in the size of Malaysia GDP would tend to 2.2% increase in bilateral exports to OIC countries in African. However, Malaysia exports flow to OIC countries in African can be enhanced if most of the African countries that are a member of OIC countries sustain high rates of economic growth. Additionally, the coefficient of exchange rates was found negative and statistically significant. This suggests that an appreciation in exchange rate by 1% will lead to 2.93 falls in Malaysia African exports to OIC countries. This study is inline (Chua and Sharma 1998).

4.0. CONCLUSION AND POLICY IMPLICATIONS

4.1. Conclusion

This study has examined the determinants of Malaysia's exports to OIC countries in African. A gravity model of trade and dynamic Panel technique was used to estimate PPML regression result. The dataset for the study covered from 1985 to 2015. The results from the instrumental variables of PPML exports model result disclosed that Malaysia's exports to OIC countries in African are determined by Malaysia's GDP, importer's GDP, importer's GDP per capita income of both Malaysia and African countries that are member of OIC, GDP per capita difference between Malaysia and OIC trading partners in African region, real exchange rate, population growth of both Malaysia and OIC countries in African, and common colony had a positive and statistically significant impacts on Malaysia - African exports. The study further showed that the changes that exist from Organization of Islamic conference countries to organization of Islamic Cooperation had a significant positive effect on Malaysia's exports to OIC. On the other hand, bilateral distance between Malaysia and its trading partners countries in African had a negative and statistically significant impact on Malaysia's export flow to OIC countries in African.

4.2. Policy Implications

The study highlights the factors that determine Malaysia's exports flow to OIC countries in African. The factors that have a positive impact on Malaysia's exports should be encouraged. The study shows that being member of OIC countries has a significant positive effect on Malaysia's exports. The study also, recommends that in order to enhance Malaysia's export flow to OIC countries in African, the process of economic integration among the OIC Countries should be deepened. This will boost Malaysian economic growth through embracing exports promotion to African region particularly OIC countries among them.

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