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Possibility of Trade Integration among Selected Islamic Countries

By:
Seyed Komail Tayyebi*
&
Mozhgan Moallemy**

Abstract

Undoubtedly, one of the major goals of developing countries is to achieve a higher rate of economic growth. To meet this, according to the progressive process of international convergence and globalization, incorporating internationally in trade is a basic means in today agenda of such countries. In addition, since developing countries are often faced with a long way for the completion of trade liberalization as a necessary condition for globalization, regional co-operations are very effective to integrating national economies with the global economy. Regionalization, therefore, is the most popular type of integration that can have various effects on economic conditions, comprising rises in trade flows, economic welfare improvements, scale of economies, and a more growth among members of a block.

Accordingly, this paper makes efforts to explore the role of economic co-operations among about twenty selected Islamic countries. It conducts the hypothesis in which the more trade integration among the countries; the more trade flows will be realized. A "Trade Gravity Model (TGM)" is thus specified and can then estimate by econometric methods, illustrating how trade integration can create aforementioned impacts. As well known, the model is also reliable to consist of several qualitative variables that explain roles of a variety of scenarios such as the conduction of a possible regional economic integration, etc.

Overall, the estimation results lend support to a growing literature both theoretical and empirical that regional economic tightness has substantially led rises to trade flows of potential integrated Islamic nations.

Keywords: Globalization, Trade Integration, Economic co-operations, Regionalization, Trade Gravity Model, Islamic Countries.

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* - Ph.D. Faculty of Administrative Sciences and Economics Department of Economics University of Isfahan, IRAN, 81746.
**- Ph.D. student in economic, University of Isfahan.

1- Introduction

During 1990s, efforts had being made of regionalization around the world. The new wave of regionalization was generally as a result of European Countries' successes in implementing the European Common Market and then European Union (EU). In principle, EU has become a good sample of integrating countries reaching higher rates of economic growth, larger shares in both international trade and world production process. The importance of this matter led powerful economies like the US and Japan to make some responsiveness in this regard. The US, which was criticizing regionalization and usually following trade liberalization through mutual talks for bargaining, changed its policy towards the adoption of regionalization. Ultimately, this country and Canada as well as Mexico signed the agenda of NAFTA(1) in 1992.

The history of economic cooperation among Islamic countries is back to September1969, when Islamic leaders gathered in Rabat to participate in first meeting of the OIC. During the meeting, foreign Ministers of Islamic countries agreed the foundation of' General Secretary of OIC. At the present time, most Muslim Countries (in Middle East, East Asia and North Africa) are also members actively in several cooperation blocks such as ACC(2), ECO(3), GCC(4), and CAEU(5) etc. However, Countries are found, Lebanon for example, not to be a member of any cooperation organization, while Mauritania is participating in seven economic integration plans. In addition, some of them have strong economic relationships with non-Islamic countries rather Islamic ones. All these reveal the fact that there is no a unique and harmonized arrangement among these countries to follow up their own current and future integration strategies. To achieve advantages of integrating programs in the favor of today globalization, collaboration of all Islamic countries in an economic theme should be thus a necessity.

To examine the effects of possible trade integrating amongst Moslem countries, this paper arranges six sections. In Section 2, it will discuss the

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1- North America Free Trade Agreement.
2- Arab Cooperation Council.
3- Economic Cooperation Organization.
4- Golf Cooperation Council.
5- Council of Arab Economic Unity

concept of integration available in the literature. A short look at is made to various conditions and some economic and social characteristics of sampling Islamic countries in Section 3. To find a theoretical framework for trade integration, Section 4 will specify a trade gravity model, while the model is estimated by the econometric methods and then estimation results are analyzed in Section 5. A few scenarios of integration are conducted in this section according to estimates obtained. Finally, Section 6 will summarize concluding remarks.

2- A Theoretical Discussion of Economic Integration

On theory, economic integration is basically defined as a larger economic unit than a set of smaller national economies included. Hence, trade restrictions are properly given up and, on the other hand, collaboration in trade, monetary and fiscal activities are promoted among members of an integration block.

The theory of economic integration expresses that common wealth countries make efforts to combine trade liberalization strategies with protective policies, to minimize trade restrictions amongst themselves accompanied by conducting discriminative policies for non-members. After integration, trade transactions followed by a decrease in costs and resources reallocation will result in an increase in products, trade and then economic welfare for members. In Shagi's words (1987): "economic integration relies upon economic transaction promotion and unification of resources of two or several isolated systems that leads to a rise in the capability of the larger integration system".

Integration moves gradually towards a global reality, so that all countries around the world are trying to omit or reduce trade obstacles, to reach finally a global regionalization. GATT and now WTO are involved in conjunction with such activities. In fact, regionalization stands for liberalizing economic activities in such a way of trade, investment and ... among partners in a region. Therefore it can be claimed that "regional integration" is an introduction to the global integration so-called "globalization".

Economic integration comprises various stages, so that each stage is more complete than pervious ones, where more obstacles are removed respect to former stages to ease more trade and economic co-operation amongst countries (Gurler, 2000). "Preferential Trade Arrangement" (PTA) is the most primary

sort of economic integration, while "economic union" is the most complete version that members follow up the conduction of joint monetary and fiscal policies.

Many studies are found in the literature that has fused particularly on impacts of trade regionalization. Soloaga and Winters (1999), for instance, examine "the second wave of regionalism" that began in early 1990s and led to new PTAs in different blocks. Accordingly, they are concerned with nine PTAs that have been crucially expanded during the last decade. In their research, Soloaga and Winters (1999) compare trade models before and after the wave of regionalism over 1980-96, to investigate its effect on blocks' trade flows through results of estimating such models.

Zarzo so and Lehmann (2000) have an investigation on main determinants of trade flows between European Union (EU) and Mercousur members. They use a trade gravity model to explore how specified factors play their roles in trade flows during the 1988-96 periods. Their results indicate that potential exports for Mercousur have bee predicted more than their real exports in 1996, but different values for ears before that.

Tayyebi and Tavakoli (2000) discuss that international competitiveness of nations is one of prerequisites for globalization. In their point of views, globalization will result in an international competitiveness among nations throughout convergent tastes and preferences, joint ventures and common markets. Such competition is going on with sever intensity among the industrial countries, on one side, and between the latter groups and the newly industrialized nations in Asia, on the another side. Though admitting the minimal transaction shares of developing (including Islamic) countries on the stage of the economy, nonetheless, there are potentials with decisive impacts on the merging process of the national economies of these countries with the global trade.

3- Economic Indicators in Selected Islamic Countries

Muslim countries can be classified into three general groups. The majority of first group is contained of Asian countries such as Bangladesh, Indonesia, Malaysia, Iran, Turkey, and Pakistan. Of most important integration blocks included this group can be referred to Association of South East Asian Nations

(ASEAN), and Economic Co operation Organization (ECO). The second group is devoted to African countries involving Benin, Cameroon, Chad, Mali, Senegal, and Nigeria, for example. Arab countries like Egypt, Bahrain, Jordan, Kuwait, Libya, Morocco, rose in the classification of the group. Gulf Co operation Council (GCC) acts as an integration block in the frame of this group.

Islamic countries around the world capture 23 percent of total world surface, which include about one third of the world population. The GDP share of these countries respect to the world GDP in 1998 was only 4.2 percent. In addition GDPs per capita of Islamic countries was suffering from a diminishing rate over the 1990-1998 periods (World Bank, 1999). Table1 summarizes some important economic indicators of selected Muslim countries. According to data represented by the table, some of such countries are involved in the class of low and middle income one. Further, some countries experienced a very high growth rate of inflation (two-digit) on average during the last decade (1990-98). Algeria, Iran, Lebanon, Turkey and Yemen faced a two-digit growth rate, Turkey with highest, during 1990-98, while Jordan, Morocco, Saudi Arabia (with the lowest) enjoyed a low rate of inflation over the period. As Table1 shows, countries like Lebanon, Djibouti and West Bank and Gaza were benefiting from a higher rate of GDP growth on average, but Sudan was suffering from a negative average growth rate of GDP (-1.9%).

Table 1: Economic and Social Development Indicators for some Islamic Countries

	GNP per capita in $	GNP (ppp) at current $	Inflation 1990-98	GDP 1998 in million $ in 1998	Average GDP growth 1990-1998
Algeria	1550	4380	21.4	45.8	1.2
Bahrain	7660	13700		6.2	5.6
Djibouti				0.7	6.5
Egypt	1290	3130	9.7	82.7	4.2
Iran	1770		32.5	93.5	4.0
Iraq				79.5	0.7
Jordan	1520	3230	3.3	7.4	5.4
Kuwait				25.2	4.1
Lebanon	3560	6150	24	16.2	7.7
Libya				35.1	.9
Mauritania	410	1660	5.9	1	4.2
Morocco	1250	3120	3.8	36.1	2.1
Oman				14.2	2.5
Qatar				10.5	4.5
Saudi Arabia			1	128.9	1.6
Somalia					
Sudan				10.3	-1.9
Syria			8.9	16.2	5.9
Tunisia	2050	5160	4.8	20.1	4.4
Turkey	3160		79.3	189.9	4.1
UAE	18220	19720		46.5	4.1
West Bank and Gaza				4.3	17.3
Yemen	300	740	24.2	5.2	3.8
Comparator Regions	1250				
Low and Middle Income	990	3150			3.3
East Asia and Pacific	4890	3400			8.1
World		6200		28854	2.4

Source: World Development Indicators, 1999; World Development Report, 2000; World Economic Outlook, 1999; International Financial Statistics, 1997 and 1999; Unified Arab Economic Report, 1997 and 1999.

As pointed out by Table1, there has been a big gap in GNP per capita amongst Muslim countries during the aforementioned period. GNP per capita in some oil-exporting countries such as Bahrain and UAE was higher than that of the world, while it was very low in Mauritania and Yemen (410 and 300 in US$, respectively).

The available data reported by Table2 also indicates that almost 90 percent of the trade transaction volumes of the OIC member states were conducted with the non-member countries. Accordingly, 10.7 percent of the overall industrial exports of OIC members were conducted inside and the remaining 89.3 percent, with outside the OIC. The relevant data show that the total share of these countries' industrial constitutes about 4 percent of the world industrial exports.

Table2: Commodity Transactions among OIC Member countries (1995) (in m US$)

	OIC Trade with the World	Trade with Non-members	Intra-group Trade
1. Total Exports	348362	313921 (90.1)	34440.7 (9.9)
1.1 Industrial Goods	122463	109401.4 (89.3)	13062.1 (10.7)
2. Total Imports	353702	317156.6 (89.7)	36545.4 (10.3)
2.1 Industrial Goods		189221.7 (92.9)	14522.6 (7.1)

Source: OIC, Islamic Centre for Development of Trade, Annual Report 1996/97.

Based upon another report for 1995 represented the World Bank, there were only 3 Islamic countries, namely, Malaysia, Turkey and Egypt that played an active role among the 30 world countries which took the majority part of the global commercial services exchanges in the recent years. Among the three mentioned countries, Turkey by creating numerous incentives for the foreign investors, has given a high priority to foreign investments. This country accomplished about US$ 2 billion investment inside and outside the country in 1994, while the figure concerning the accomplished FDI in its neighbor Iran amounted only to US$ 40 million from 1993 to 1997 (Tayyebi and Tavakoli, 2000).

4- The Empirical Model

In this paper, we use a gravity model to estimate the effects of integration among Islamic countries on volume of trade flows. Trade gravity models were first applied to international trade by Tinbergen (1962) and Poyhonen (1963). Since then, the gravity model has become a popular instrument in empirical foreign trade analysis. The model has been successfully applied to flows of varying types such migration, foreign direct investment and more specifically to international trade flows. According to this model, exports from country i to country j are explained by their economic sizes (GDP or GNP), their population, direct geographical distances and a set of dummy variables incorporating some kinds of institutional characteristics common to specific flows. In other words, the important advantage of the gravity model is using of different scenarios considering integration amongst trade partners.

The gravity model will be estimated in this paper, explains trade between a country i , the exporter, and a specific trading partner j , the importer, that is specified as follows:

$$Ln\ Xij = ß_0 + ß_1\ Ln\ Y_i + ß_2\ Ln\ Y_j + ß_3\ lin + U_{ij} \qquad (1)$$

Where, Ln denotes variables in natural log, Xij is the values of export from country i to country j and vice versa. Moreover, Y_i (Y_j) are the Gross Domestic product of exporter (importer). In principal, a high level of income in the exporting country indicates a high level of production that increases the availability of goods for export. Therefore we expect $ß_1$ indicating income elasticity of exporter to be positive. The coefficient of Ln Y_j , $ß_2$, is also expected to be positive, since a high level of income in the importing country suggests higher imports. lin denotes Linder variable and U_{ij} is the error term. According to Linder's trade model, the unsimilarities in economic structures decrease, the trade flows between countries increase. In principal, the Linder variable is calculated by equation 2:

$$lin = Ln\ ((Yp_i - Yp_j)^2) \qquad (2)$$

Where, Yp_i (Yp_j) are GDP per capita of exporter (importer). The closer the GDP per capita in two countries, the greater the value of bilateral trade between them. Therefore, the coefficient of lin variable is expected to be negative.

To investigate the effects of formation of trade integration or sub-blocks, the basic model was first extended with a set of dummy variables that capture their effect on volume of trade flows.

Now, we explain four scenarios considering possibility of trade integration among selected Islamic countries. Because of shortage of data about Muslim countries, 17 cases of them (that is; Malaysia, Morocco, Syria, Jordan, Algeria, Bahrain, Egypt, Iran, United Arab Emirates, Turkey, Pakistan, Oman, Indonesia, Tunisia, Saudi Arabia, Nigeria and Niger) has been chosen to consider following scenarios:

A- Scenario I: Implementation of Integration among all Muslim Countries

In this scenario, a dummy variable (Dum1) considers integration among all Islamic countries. The Dum1 takes the value one if both countries i and j are of Islamic countries and zero otherwise.

B- Scenario II: Formation of Integration among the Middle East, Iran, Pakistan and Turkey

This scenario investigates the implementation effects of sub-block among some Islamic countries. Therefore, Dum2 takes the value one if both countries i and j will be in this group and zero otherwise.

C- Scenario III: Investigation of Integration between Muslim Countries and European Union

In this scenario, Dum3 variable takes the value one when both countries i and j belong to European Union or Islamic countries. It takes zero otherwise.

D- Scenario IV: Implementation of Sub-block among GCC and its North Neighbors

To consider the influences of trade integration among members of Gulf Co-operation Council, Pakistan, Iran and Turkey, Dum4 will be added to equation

(i). Therefore, the Dum4 takes the value one when exporter and importer belong to mentioned countries and zero otherwise.

In the next section, the equation (1) and above scenarios will be implemented.

5- Estimation results

As previously explained, it is possible to estimate the behavior of trade flows by specifying appropriately a trade gravity model, by which the impacts of integrating trade among blocks are predictable. This section uses cross-section data available for selected Islamic countries for year 1998, to estimate the gravity model specified in the stochastic form of equation (1) by the Least Squares method. The number of total cross-section observations used is 1118 that stands for export flows from country i to country j, vice versa. More specifically, 17 of all Islamic countries are chosen where their trade transactions are not only flows between themselves domestically, but also comprise their major non-Islamic partners. In principal, the justification of such partners selected is based upon the availability of values that are up to US$ 100 millions.

An estimated specification of the model is as follows:

$$\underset{}{\text{Ln}\,\hat{X}_{ij}} = \underset{(-15.95)}{-10.2} + \underset{(18.4)}{0.61\ \text{Ln}\,Y_i} + \underset{(13.4)}{0.43\ \text{Ln}\,Y_j} + \underset{(7.09)}{.13\ \text{lin}} \qquad (3)$$

$$\bar{R}^2 = .33 \qquad DW = 1.5$$

Where $\text{Ln}\,\hat{X}_{ij}$ denotes the fitted variable of Ln X_{ij}. As represented by equation (3), estimation results are overall reliable and applicable.

According to the number of observations being very large, the value of determination coefficient (.33) is justifiable, so that about 33 percent of trade changes of these countries are explained by the variables present in the model. Incomes elasticities of both group i and group j are highly significant and affect positively the variable of trade flows. The interpretation of such elasticities implies that one percent increase in GDP of all both exporting and importing countries will lead to a rise in their trade flows by .61 and .43 percent, respectively. The estimated coefficient for the Linder variable is also statistically

significant at the 99% confidence level. It reveals the fact that this unexpected result explains structural unsimilarities amongst this group of Islamic countries and their partners as well.

To examine the effects of trade integration among sampling Islamic countries as well as the implementation of their trade integrating sub-blocks on the volume of trade flows, the paper will conduct four scenarios as discussed previously in section 4. Table 3 summarizes estimated results arising from conducted scenarios, obtained by the OLS method.

Table 3: Estimation results*

Coefficient	Scenario I	Adjustment of Dum1	Scenario II	Scenario III	Scenario IV
$ß_0$	-7.13 (-8.92)	-5.73 (-7.79)	-11.78 (-17.13)	-9.39 (-13.46)	-11.02 (-16.9)
$ß_1$	.52 (14.59)	.52 (14.47)	.67 (19.58)	.58 (17.01)	.64 (19.33)
$ß_2$	.34 (9.54)	.35 (9.62)	.49 (14.7)	.41 (12)	.46 (14.3)
ß3	.098 (5.17)	–	.13 (6.98)	.13 (7.29)	.13 (6.8)
Dum1	-0.761 (-6.37)	–	–	–	–
Dum11	–	-.04 (-6.74)	–	–	–
Dum2	–	–	.91 (5.71)	–	–
Dum3	–	–	–	-.32 (-3.07)	–
Dum4	–	–	–	–	.98 (5.24)
$\bar{R}^2$	.35	.33	.35	.33	.35
DW	1.52	1.48	1.55	1.5	1.54

*- Values in parentheses are t-statistics

A- Scenario I: Implementation of integration among all Muslim countries

Due to the results reported by table 3, the estimated coefficient for dummy variable, Dum1, shows that the volume of trade flows is 53.2%[(1)], substantially less than that of the main gravity variables (namely, Y_i and Y_j) would predict it. That is, the actual volume of trade flows is about 53.2 percent less than its potential value provided Islamic countries become integrated. Results in terms of this scenario conduction also indicates that estimated income elasticities for both exporting and importing countries are respectively 0.52 and 0.33, a little bit less than previous results. According to this scenario, the coefficient of Linder variable captures significantly unexpected value by 0.098, in such a way it still explains the existence of unsimilarities among Islamic countries and their partners even though they move towards integration them. Under this scenario process, however, if the dummy variable dum1 is composed across the slope of Linder variable, it will result in the adjustment of differences when Islamic countries make relations of integration among themselves. The coefficient value of this new variable (Dum1 * lin) shown in column 3 of table 3, is about -0.05, which means one percent increase in the removal of unsimilarities would cause a 0.05 percent improvement in trade flows of integrated Islamic countries.

B- Scenario II: Trade Integration among Middle East, Iran, Pakistan and Turkey

On the basis of estimation results, formation of this sub-block would play an important role in trade transaction of countries which included it, so that trade integration among mentioned countries would increase the volume of their trade flows by 148 percent. In the other words, estimated coefficient of Dum2 denotes that the volume of trade flows is 1.48 times more than that of the main gravity variables would predict it. Moreover, the results indicate that income elasticities in accordance with the scenario conducted for exporting and importing countries are .67 and .49, respectively. The coefficient of the Linder variable is positive and statistically significant, still.

1- This value is calculated on the basis of ((e (- 0.76)-1)*100) where e denotes the Neperian number. 0.76 is value for the coefficient of Dum1 directly obtained from estimates.

C- Scenario III: Investigates Integration between Muslim countries and European Union

Under results of this scenario, the actual volume of trade flows is about 27.4 percent less than its potential value of Islamic countries' trade flows with European Union. Furthermore, the coefficient of the Linder variable implies structural differences between Islamic countries and European Union. Income elasticities of both exporting and importing countries are significant at 99% confidence level and indicates that one percent increase in GDP of both exporting and importing countries will be result in a rise in their trade flows by .58 and .41 percent, respectively.

D- Scenario IV: Implementation of Sub-block among GCC and its North Neighbors

The results of this scenario are similar to that of scenario II. These results reveal that the fact that trade integration among GCC, Pakistan, Iran and Turkey would has the crucial impacts on the volume of their trade flows, so that implementation of mentioned sub-block will lead to a rise in their trade flows by 163.8 percent. In the other words, the coefficient of Ḋum4 shows that the volume of trade flows is 1.64 times more than that of gravity variables would predict it. On the basis of estimated coefficients of $ß_1$ and $ß_2$, any one percent increase in GDP of both exporting and importing countries will be result in their trade flows by .64 and .47 percent, respectively.

6- Conclusions

The paper applied the gravity model to 17 Islamic countries for 1998 year. The impacts of integration among Muslim countries and formation of some sub-blocks were captured by dummy variables that reflected these effects.

In summary, the results are as follows:

1- The actual volume of trade flows among all Islamic countries is about 53.2 percent less than its potential volume. Moreover, as the structural differences among Muslim countries decrease, their trade flows would go up.

2- Formation of a sub-block among Middle East, Iran, Pakistan and turkey would play an important role in their trade transactions.
3- Muslim countries' trade activities with European Union are about 24.7 percent less than those of main gravity variables would predict them.
4- The results reveal the fact that trade integration among GCC members and their north neighbors would have the crucial impacts on their trade flows, so that implementation of mentioned sub-block will lead to a rise in their trade flows by 163.8 percent.

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