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Determinant of Intra-OIC Trade; Policy or Exchange Rate

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Although there has been steady increase in intra-OIC trade, defined as intra-OIC imports as a share of total imports of OIC countries, in last few years, recent literature on intra-OIC trade shows that OIC membership has not much to contribute trade between OIC member countries. Then, what is the determinant of recent increase in intra-OIC imports from 14.4 to 17.6 between 2002 and 2006? Given the Makkah Declaration and the Ten-Year Programme of Action to increase intra OIC trade to 20% of global trade by the year 2015, this paper scrutinizes the determinant of intra-OIC trade by gravity modeling for the time period of 1995-2007. The data used herein is in real terms. Unlike recent literature, four important international trade determinants, tariff, proxy for trade facilitation & liberalization and depreciation of real exchange rate, together with depreciation of US dollar against Euro are included to the model. As for reference to border puzzle problem in recent intra-OIC trade literature, inclusion of these variables is argued to mitigate the omitted variable bias in the model.

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Given the significant or insignificant positive extra-OIC dummy variable of the model, the result confirms the trade creation but not diversion effect of OIC membership through trade liberalization and facilitation efforts. This, together with Terms of Trade improvement of OIC member countries, boosted OIC imports from both imports from OIC countries and non-OIC countries. Hence, it is argued that recent increase in intra-OIC trade is likely to be product of opposite effects of oil price surge and Euro appreciation rather than trade diversion effect of OIC membership. That is, depreciation of US dollar against Euro has negative and oil price surge has positive effect on intra-OIC imports as a share due to dominance of five countries in the statistics. On the other hand, this study appreciates the initiatives for the Trade Preferential System for OIC member countries and trade cooperation activities. Besides, this study stresses on the necessity of the intra-trade oriented trade facilitation measures such as Mutual Recognition Agreement and Unified Rule of Origin Cumulation System for enhancing intra-OIC trade in accordance with the 2015 target.

I. Introduction

The relationship among human development, income growth and trade flows is more than a simple economic theory. Trade Finance, Trade Facilitation, Capacity Building, Strategic Product Development and Trade Promotion efforts increase trade flows and income growth is greater with more cross border trade. Frankel and Romer (1999) show that one percent point increase in the trade to GDP ratio leads to increase GDP per capita by at least 0.5 percent. Likewise, Islamic Development Bank (2006), Policy Committee Paper No.3 indicates that among IDB countries those trade more are likely to achieve higher economic growth as well as higher human development and lower human poverty. As per

GDP growth contribution, trade (net exports of merchandise goods) on average contributed 0.72 percentage point (or about 11 percent) to the overall growth of IDB member countries during the last decade.

In myriads of other literatures one can easily get strong evidence for correlation between international trade and economic performance. If not in many other issues, economists tend to agree on merits of boosting international trade. A survey by Alston, Kearl and Vaughan (1992) in 1990 shows that in the USA more than 90 per cent of economist agrees that trade barriers in terms of tariffs and import quotas reduce trade and over all standards of living.

The OIC member countries, albeit constitute approximately 20% of world population, merely account for 6.2% of world exports and 5.8% of world imports.[1] Likewise, intra-OIC trade is not in the desired level as evidenced from many literature and policy briefs. Studies of Ekholm, Torstensson and Torstensson (1996), Al Atrash and Yousef (2000), Amin, Hamid and Saad (2005), Makdisi, Fattah and Liman (2005) and Nugent and Miniesy (2006) which focus on the MENA region show the existence of tariff and non-tariff barriers, lack of trade related services as well as trade information and impediments to trade cooperation as the main causes of relatively small intra-regional trade.

When compare to intra-OIC trade with developed world, the volume of intra-OIC trade still, albeit improved in last few years and in better shape than many other regional integrations, is taught to be meager. Table-1 and Table-2 compare several regional organizations' intra-trade levels for 2000 and 2006.

[1] The Center for Advanced Researches and Studies on Islamic Common Market database

Table-1 Percentage (2000)

Imports from	AMU	ASEAN	CIS	COMESA	ECO	ECOWAS	GCC	SAARC	UDEAC	OIC	WORLD
AMU	3.52	0.63	0.05	0.50	3.14	0.61	2.50	0.11	0.14	13.07	100
ASEAN	0.05	3.17	0.02	0.04	0.41	0.46	3.51	0.18	0.00	7.77	100
CIS	0.004	0.13	10.76	0.02	18.22	0.23	1.81	0.17	0.00	20.45	100
COMESA	0.60	2.26	0.04	0.35	2.18	0.01	5.39	0.33	0.01	11.49	100
ECO	2.47	1.54	2.66	0.21	5.51	0.23	6.99	0.41	0.03	17.81	100
ECOWAS	1.23	0.83	0.00	0.10	0.56	11.96	4.27	0.29	0.21	19.46	100
GCC	0.14	2.71	0.01	0.66	2.39	0.01	8.67	0.88	0.00	16.01	100
SAARC	0.28	4.94	0.16	0.22	3.09	0.21	20.72	0.66	0.02	29.91	100
UDEAC	0.97	0.52	0.00	0.09	0.79	12.88	0.50	0.29	1.06	17.06	100
OIC	1.06	2.30	0.64	0.38	2.51	0.82	5.54	0.40	0.04	13.74	100

Source: IDB 2008 Key Economic Indicators, Statistical Monograph No.28

Table-2 Percentage (2006)

Imports from	AMU	ASEAN	CIS	COMESA	ECO	ECOWAS	GCC	SAARC	UDEAC	OIC	WORLD
AMU	3.39	0.71	0.09	0.70	4.45	0.32	3.40	0.11	0.11	14.38	100
ASEAN	0.12	5.07	0.02	0.05	0.44	0.61	4.48	0.07	0.06	10.95	100
CIS	0.002	0.14	6.37	0.02	11.32	0.16	1.42	0.06	0.00	13.08	100
COMESA	1.40	1.93	0.03	1.19	2.47	0.02	9.12	0.30	0.01	18.16	100
ECO	1.81	1.76	3.07	0.24	7.48	0.21	6.95	0.90	0.02	18.97	100
ECOWAS	0.90	1.23	0.01	0.11	0.84	8.63	1.74	0.44	0.26	13.93	100
GCC	0.23	2.42	0.16	0.76	3.49	0.03	7.92	0.98	0.00	16.52	100
SAARC	0.46	5.04	0.57	0.44	2.40	0.16	21.45	0.50	0.03	30.36	100
UDEAC	1.69	1.11	0.00	0.42	1.74	10.12	1.16	1.24	3.43	19.85	100
OIC	1.02	2.60	0.90	0.63	4.06	0.76	6.84	0.57	0.06	17.58	100

Source: IDB 2008 Key Economic Indicators, Statistical Monograph No.28

Hence, increasing intra-OIC trade, with the dismantling of trade barriers, has emerged at the forefront of the trade agenda of OIC Countries. It was in 1997 when the OIC Summit gave priority to increase intra-OIC Trade in Tehran.

In 7-8 December 2005, the Third Extraordinary Session of the Islamic Conference produced "Makkah Declaration". There, Ten Year Plan of Action, setting target of achieving 20% trade among OIC Countries by the year 2015 has been adopted.[2]

Although all the parties agree to boost intra-OIC trade, there is a confusion regarding to definition of intra-OIC trade. World Bank and IMF definition for intra-trade includes both exports and imports while OIC organs (IDB and ICDT) definition includes imports or exports alone. In this paper, intra-OIC trade definition is referenced to OIC organs' definition and imports is taken for calculation.

1.2. Objective of the Study

This research aims to find/evaluate determinants of intra-OIC trade. Specific emphasize is given to tariff, trade facilitation & liberalization and depreciation of real exchange rate, together with depreciation of US dollar against Euro. Besides, this research aims to elaborate and provide insight on target of the Makkah Declaration and the Ten-Year Programme of Action to increase intra OIC trade 20% of global trade by the year 2015.

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[2] Defined as intra- OIC trade over total trade of OIC countries. Resolution I.2, under Economic Cooperation of the OIC Ten-Year Programme of Action, called for expanding the scope of intra-OIC trade to raise it to 20% of the overall trade volume during the Ten-Year Programme period.

1.3. Methodology

The determinant of intra-OIC trade shall be examined with an econometric model namely, traditional gravity model where bilateral trade between two countries is positively related to economic sizes and negatively related to geographic distance. Data set is designed in balanced panel structure.

Anderson and van Wincoop (2003) has argued the estimation of traditional gravity model suffer from omitted variable bias as equations do not have a theoretical foundation. Recent research on intra-OIC trade excluded the effect of bilateral applied tariff rate as independent variable for intra-OIC trade. This, together with the effect of real exchange rate as well as improvement in trade facilitation & liberalization level of countries, might give rise to omitted variable bias in gravity model estimation. This research, unlike other intra-OIC trade publications, aims to show effect of price level between importing and exporting country through inclusion of relative depreciation of real exchange rate as well as depreciation of USD against Euro into the econometric model as determinant of intra-OIC trade. Note that, independent variable envisioned to be the real imports of OIC countries from the rest of the world, that is both member and non-member countries. Based on the result of econometric model, charts and figures are provided. Another econometric model so as to show the above mentioned causality might be the subject of a further study.

1.4. Structure of the Paper

The paper is organized as follow: Section II goes through efforts for increasing intra-OIC trade. Section III presents a review of the recent

intra-OIC trade literature using gravity model approach as well as theoretical literature on gravity modeling. Section IV introduces the model specification, variables, the methodology and expected signs. Section V presents the results of the regressions. The final chapter concludes with some policy suggestions.

II. Effors for Increasing Intra-OIC Trade

The role of international organization in promoting international trade has been the subject of many studies. Rose (2004) concluded that a being WTO member has no significant role to promote international trade. Kim (2006) re-estimated, by excluding oil, agriculture and textile sectors, the model used by Rose and shows that WTO does, actually, promote international trade. Subramaniam and Wie (2003) modified the same sample, specification of the gravity model and the definition of WTO membership. They showed that WTO membership increases a country's international trade. In his recent study, Gani (2007) argues, from the evidence of gravity model estimation, that being OIC member country has positive or non-significant effect on bilateral trade.

As a matter of fact, being a member of an organization alone does not explain more trade if there is no initiative from the side of this organization to enhance intra trade. Hence, it is worth to mention OIC initiative to enhance intra-OIC trade at this stage.

2.1. The Role of OIC to Increase Intra-Trade

After the United Nations, the Organization of the Islamic Conference (OIC) is the second largest inter-governmental organization with a membership of 57 states spread over four continents. It was in 1970 when Islamic Conference of Foreign Minister (ICFM) decided to establish a

permanent secretariat, headed by a secretary general, in Jeddah in their meeting in Saudi Arabia.[3]

Since than there has been many initiatives among member countries in economic and trade cooperation under OIC umbrella. The resolutions of the Makkah Summit in 2005, however, is a milestone in accelerating trade cooperation efforts with mandate to increase intra-OIC trade 20% by 2015. Accordingly, along with the Ten-Year Programme of Action specific duties has been assigned to the several OIC affiliates:[4]

a) Islamic Development Bank – IDB (Jeddah)
b) Statistical, Economic and Social Research and Training Center for Islamic Countries (SESRIC) (Ankara)
c) Islamic Center for the Development of Trade ICDT (Casablanca)
d) Islamic Chamber of Commerce and Industry ICCI (Karachi)

Above mentioned entities have been carrying out several projects under pivotal role of COMCEC agenda related to economic and trade cooperation among OIC member countries. For instance, Islamic Development Bank (IDB) has prepared feasibility works for Medium Term Trade Financing and implemented it. Besides, IDB has executed the COMCEC projects for Export Credit Insurance, Islamic Clearing Union System with Investment Warranty Scheme. Islamic Center for the Development of Trade (ICDT) located in Casablanca is in full charge of Trade Information Network of the Islamic Countries (TINIC) and it is in cooperation for Trade Preferential System (TPSOIC) projects with Islamic Development Bank.[5] SESRIC undertook the renewal of the

[3] OIC webpage accessed on 27 June 2008 at http://www.oic-oci.org/oicnew/page_detail.asp?p_id=52

[4] Third Session of the Extraordinary Islamic Summit Conference December 7-8, 2005

[5] As of 12 JuIy, Islamic Development Bank inaugurated its ows trade information facilitation system which will be overlapping with existing ICDT trade information activities (Reference to report of "Trade Information Facilitation Meeting" held in Tunisia, 9-10 July 2008 and author's own experience in the meeting).

most important strategic document of COMCEC Plan of Action. It is again SESRIC which prepared the inventory of the decisions taken regarding the economic and trade cooperation within the framework of OIC.

With the focus on trade creation rather than trade diversion and in cooperation with COMCEC, a number of policy measures have been identified to implement these measures which includes trade development, promotion of non-reciprocal market access to the LDMCs to enhance their trade as well as setting-up of sub-targets for trade for the individual member countries in various regions based on their trade potential.

2.2. The Role of Islamic Development Bank[6]

One should note the pivotal role and contribution of Islamic Development Bank for promoting intra-OIC trade. IDB embarked on operations within the framework of the Ten Year Action Program and established, accordingly, International Islamic Trade Finance Corporation with stipulated capital is envisaged to be 3 billion dollars and its subscribed capital to be 500 million dollars. 47 OIC member countries as well as six finance corporation has signed the agreement. ITFC is expected to be arm of IDB with a mandate to enhance intra-OIC trade with 5 prongs strategy including trade finance, trade facilitation, trade promotion, capacity building and strategic product development. Indeed, trade finance business is not something new to IDB. Since its commencement IDB has provided US$27 billion by the end of the year

[6] The author's own experience with International Islamic Trade Finance Corporation (ITFC) and Progress and Achievements under the Organization of Islamic Conference Ten-Year Programme of Action, Submitted to the 24th Session of the COMCEC Follow up 13 – 15 May 2008, Antalya, Turkey.

1428H for financing trade among Islamic countries. With the inception of ITFC all trade windows of the Bank would be combined under one entity so as to create synergy for embarking many initiatives for enhancing intra-OIC trade under Ten Year Action Program.

2.2.1 Trade Preferential System (TPS):

The IDB is very keen on cooperating with the COMCEC in the development of Tariff Preferential Scheme for OIC (TPS-OIC) through Trade Negotiating Committee (TNC) on the Tariff Preferential Scheme and its outcome in the form of a Protocol on Preferential Tariff Scheme for TPS – OIC (PRETAS). PRETAS, an agreement with tariff reduction rates, has been developed. TPS-OIC is targeted to be established by 1st January 2009. As a next step cooperation for the Rules of Origin of Goods and removal of Non-tariff Barriers, shall be completed under Trade Negotiating Committee (TNC) agenda.

2.2.2 Cooperation with the IDB Member Countries:

In order to enhance intra-OIC trade IDB has signed Memoranda of Understanding (MOUs) with Malaysia and Turkey. This MOUs are expected to boost close cooperation and co-financing. Similar MOUs are expected to be signed with other member countries and institutions as well.

2.3.3 Capacity Building Initiatives

The Trade Cooperation and Promotion Programme (TCPP) of the ITFC/IDB actively engages in capacity building of the chambers of commerce and industry and export promotion organizations of member

countries. Among many of its contributions are very recent Global Islamic Trade Forum in Kuwait, Roundtable on Cotton Industry in West African OIC member countries in Morocco, and the 6th Conakry International Trade Fair in Guinea.

2.2.4 IDB Achievements on WTO Related Matters

Reference to Economic Cooperation of the OIC Ten-Year Programme Resolution I.3, IDB has organized activities to provide support to its member countries in the process of acceding to the WTO or contemplating thereof.[7] Basically, the IDB activities on WTO-related matters target the acceding members in order to facilitate and expedite their accession process by providing awareness among these members related to the WTO Agreements and related issues. In addition to technical assistance, IDB has conducted Workshops on WTO issues, Trade Policy Courses, Seminars, sectoral studies (on Agriculture, Investment, Services, Trade-related Aspects of Intellectual Property Rights, and ECommerce), and consultative meetings in conjunction with the last six WTO Ministerial Conferences especially for those member countries acceding to the WTO.

III. Literature Review

3.1. The Literature on Gravity Model

The Gravity model for trade flows, first introduced by Tinbergen (1962) and Poyhonen (1963), has been many times applied to uncover the determinant of bilateral trade flows. Since the name reveals, the model is

[7] Resolution I.3, under Economic Cooperation of the OIC Ten-Year Programme of Action, called for supporting OIC Member States in their efforts to accede to the World Trade Organization (WTO), and promote concerted positions between the Member Sates within the WTO.

derived from Newtonian Physics Theory explaining the attraction between two objects positively on the masses and negatively by distance. As per the gravity model of international trade, bilateral trade between two countries is positively related to economic sizes and negatively related to distance. Distance stands as proxy for the transportation cost while the GDPs stands as proxy for economic sizes in terms of market size and production capacity.

The gravity model, defined within the notion of "Increasing Returns", assumes that countries specialize in different product categories.[8] Demand is assumed to be homothetic and identical across countries and firms pursuit monopolistic competition.[9]

Anderson (1979) and Bergstrand (1985) derived the gravity equation based on CES form utility and Armington assumption of differentiated goods by location of production. With the homogenous goods, Frenstra et al. (1998) derived a gravity equation from a reciprocal-dumping model of trade. Based on the assumption of increasing returns technology, Keith (2003) derived the model from demand function on Dixit and Stiglitz model of monopolistic competition between differentiated and symmetric firms. There are some other studies such as Eaton and Kortum (1997), Evenett and Keller (1998), Haveman and Hummels (2004) in which complete and incomplete specialization are taken into account.

With increasing return to scale and in differentiated product framework, Helpman (1987) justified the gravity equation. Deardoff (1995) justified

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[8] Feenstra, R.C. (2004). Advanced international trade: Theory and evidence. New Jersey: Princton University Press, Page 144.

[9] Harrigan, J. (2001). Specialization and the volume of trade: Do the data obey the laws? NBER Working Papers 8675, pp.31.

gravity equation from standard trade theories including Ricardian and Heckscher-Ohlin models. Bergstrand (1985) also examined theoretical foundations of gravity models in the previous studies related to monopolistic competition.

Bergstrand (1989) stressed the effect of GDP per capita on bilateral trade. Higher GDP per capita is to be associated with easy cross border trade and better transportation infrastructure which are at the end facilitate trade. Besides, he argued that higher income countries' consumers tend to demand superior perceived foreign products. Hummels and Levinsohn (1995) argue the existence of factors other than increasing return to scale accounting for empirical success of gravity equation. To study intra-industry trade Davis (1996) used the gravity model framework.

Wei (1996) defined the "remoteness index" as GDP weighted average of distance as a proxy for trade cost. Anderson and van Wincoop (2001) and Helpman (1987) put light on possible "dispersion index" such as price levels, relative distances, language dummies and border dummies which makes, together with GDPs, gravity model work. Anderson and van Wincoop (2003) developed a theoretical gravity model for solving the McCallum (1995) border puzzle.

3.2. The Literature on Intra-OIC Trade; Gravity Model Approach

Generally, the empirical work on OIC member countries has been of a descriptive nature. There are, however, some researches on intra-OIC trade employing gravity modeling.

Bendjilali (1997) examined the relationship between exports of goods and services among OIC member countries and the main macroeconomic

variables. The result of econometric analysis, traditional gravity modeling, showed that inter OIC trade is positively affected by the size of their economies, the extent of IDB trade financing, their joint participation in regional integration schemes, and negatively affected by transportation and communication costs as proxy for the distance.

Atrash and Yousef (2000) by employing the Tobit procedure rather than ordinary least square, suggested that intra-Arab trade and Arab trade with the rest of the world are lower than what would be predicted by the gravity equation, suggesting considerable scope for regional - as well as multilateral - integration. The results also suggested that intra-GCC and intra-Maghreb trade are relatively low while the Mashreq countries exhibit a higher level of intragroup trade.

Islamic Development Bank (2006), Policy Committee Paper No.3 indicates that trade contribution to growth has shown increasing trend over time due to greater trade openness of member countries.[10] The contribution of intra-trade (net intra-exports of merchandise goods) in member countries' growth was positive in the case of oil exporting countries while it was negative in non-oil member countries and LDMCs. Regression results suggest that a ten percent increase in trade volumes of IDB member countries would improve their real per capita GDP growth by 0.2 percentage points.

Mohd. Amin, R., Hamid, Z., and Md. Saad, N. (2005) investigated the extent of economic integration among five members of the Leauge of the Arab States namely, Egypt, Jordan, Saudi Arabia, Sudan and Syria, by empirically testing the nature of intra-trade activities in the grouping. The gravity model is used in the scaled and unscaled forms for the

[10] Islamic Development Bank (2006). Policy Committee Paper No.3. Trade and development: a case of IDB member countries.

period of 1991 to 2002 in both panel and yearly estimation. The result indicated that the failure of integration measures undertaken. The article recommended tariff reduction and the provision of better infrastructure to increase intra-trade activities among LAS members.

Makdisi, Fettah and Liman (2005) show the importance of trade openness on economic growth of many countries by using cross-country regressions. They show that the effect of trade openness in case of MENA countries is smaller. In another study by Nuget and Miniesy (2006) MENA countries are found to be trading less than predicted by the way of the gravity model.

Very recently, Ghani (2007) used traditional and theoretical augmented gravity models to analyze the effect of being the member of OIC on trade with OIC and non-OIC member countries. He measured the effect of OIC membership as a residual after taking large differences in geography, culture, participation in regional and international organizations, history, institutional and governance quality of the country and incidence of conflict into account. The author shows that, by using traditional gravity model, the effect of OIC membership is not positive. However, theoretical gravity model, based on the Anderson and van Wincoop (2003) insight for solving the McCallum (1995) border puzzle, suggested positive or non-significant OIC effect.

4. Model Specification

4.1. The Model Specification

The rudimentary gravity equation is augmented by including specific variables to fulfill the objectives of this study. The functional form employed for this research is as follows:

$$IMP^{ijt} = F_t(GDP^{it}, GDP^{jt}, DIST^{ij}, TARIFF^{ijt}, DEXR^{jt})$$

IMP stands for real imports of OIC member countries from the rest of the world. Together with real exchange rate, applied tariff is taken into account as explanatory variable. Dummy variable for import of OIC member countries from non-OIC countries and border effect have also been included. Natural logarithms of the variables are taken. Hence, real imports of OIC countries from non-OIC and OIC countries are expressed in a log-linear form:

$$LnIMP^{ijt} = \beta_0 + \beta_1 LnGDP^{it} + \beta_2 LnGDP^{jt} + \beta_3 LnDIST^{ij} + \beta_4 Ln(100 + TARIFF^{ijt}) + \beta_5 LnTO^{it} + \beta_6 ApEXR^{jt} + \beta_7 BORD^{ij} + \beta_8 COMCOL^{ij} + \beta_9 SMCTRY^{ij} + \beta_{10} LnFXUSDEUR^{ij} + \beta_{11} EXTRA\_OIC^{ij} + e^{ijt}$$

where superscripts i and j stands for the importer (an OIC member country) and exporter respectively and *t* donates years.

In this model, dependent variable is real imports of OIC member countries from rest of the world for the period of 1995-200&. Dependent variable, IMP^{ijt} , is the real imports of country *i* from *j* at time *t*. GDP^{it} and GDP^{jt} are real Gross Domestic Products at time *t* for country *i* and *j*. $DIST^{ij}$ stands for the weighted distance between two countries. [11]

[11] The distance data used herein is the weighted distance of country i's and country j's big cities. The basic idea is to calculate distance based on big cities of two countries. Hence inter-city distances are weighted by the share of the city in the overall country's population. The general formula developed by Head and Mayer (2002) used for calculating distances between countries i and j is:

$$d_{ij} = \left(\sum_{k \in i} \left(pop_k / pop_i \right) \sum_{l \in i} \left(pop_l / pop_j \right) d_{kl}^{\theta} \right)^{1/\theta}$$

where popk designates the population of agglomeration k belonging to country i. The parameter θ measures the sensitivity of trade flows to bilateral distance dkl. The distance used in this paper

$ApEXR^{ijt}$ is appreciation of country *i*'s real exchange, includes both relative nominal exchange rates and price levels, in year *t*. $TARIFF^{ijht}$ is weighted tariff rate of country *i* imposed on product imported from country *j* in year *t*.[12] It is difficult to get a quantitative measure for trade facilitation and liberalization. Recently, World Economic Forum released a very relevant data with the Global Enabling Trade (ETI) Report in June 2008 on that regard.[13] However, data is not provided for all OIC member countries for the time period of 1995-2007. Hence, trade openness index is used as a proxy for a country's level of trade liberalization and facilitation. TO^{it} , Trade openness index is measured as percentage of trade to GDP.[14] Herein, membership to other regional organizations such as ECOWAS or the effect of Generalized System of Preferences are not included since the tariff variable captures their main

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calculation sets θ equal to -1, which corresponds to the usual coefficient estimated from gravity models of bilateral trade flows. The main motivation to use weighted distance is to capture the effect of big cities rather than pure distance between two capital cities (CEPII manual.).

[12] This variable denotes weighted average tariff rate in the percent ad valorem term which is specific to the trading partners, product categories and year and includes the lowest applicable rates as well as all available preferential rates. Bilateral trade values are used as weight. To avoid log zero in case tariff level is zero, 100 is added.

$$LnTARIFF^{ijht} = Ln(100 + TARIFF^{ijht})$$

[13] The ETI focuses on four trade-enabling issues: (1) market access, (2) border administration, (3)transport and communications infrastructure and (4) business enivironment. The market access index measures the extent to which
the policy and cultural framework of a country welcomes foreign goods into the country. The border administration index assesses the extent to which administration at the border facilitates entry to a country. Once inside, transport and communications infrastructure index measures whether the country has the requisite infrastructure to facilitate the movement of goods from border to destination. Finally, the business environment index considers the overarching regulatory and security environment impacting the transport business in the country.

[14] Note that using this indicator as a representation of openness may be misleading. Even when this indicator has a relatively small value, it does not necessarily imply high trade barriers. It may, in fact, be caused by a large proportion of GDP being created by non-traded activities and other factors.

effects on imports. $\boldsymbol{BORD^{ij}}$ is a dummy variable**.** If country *i* and *j* shares a common border the dummy variable gets the value of 1, zero otherwise. Likewise, $\boldsymbol{COMCOL^{ij}}$ is a dummy variable. If country *i* and *j* had a common colonizer the dummy variable gets the value of 1, zero otherwise. If country *i* and *j* are used to be part of same country, the dummy variable of $\boldsymbol{SMCTRY^{ij}}$ gets the value of 1, zero otherwise. L$\boldsymbol{nFXUSDEUR^{t}}$ stands for value of one US dollar against Euro. Main objective of including this variable is to show the effect of depreciation of US dollar. Euro alone, not SDR, is preferred since the Euro area traditionally be one of the main partner of OIC member countries. Besides, valuation of SDR includes US dollar itself and the portion of US dollar in SDR has changed for the time period, 1995 to 2007, of this study.[15] Note that, synthetic euro exchange rate values before its

[15] SDR is International reserve assets created by the International Monetary Fund and allocated to its members to supplement existing reserve assets. They represent each holder's assured and unconditional right to obtain other reserve assets, especially foreign exchange. IMF cannot allocate SDRs to itself but receives them from members through various financial transactions and operations. Entities authorized to conduct transactions in SDRs are the Fund itself, participants in the Fund's Operations Division for SDRs and Administered Accounts, and prescribed "other holders". The SDR can be used for a wide range of transactions and operations, including the acquisition of other members' currencies, the settlement of financial obligations, the making of donations, and the extension of loans. SDRs may also be used in swap arrangements and as security for the performance of financial obligations. Forward as well as spot transactions may be conducted in SDRs. The SDR is the unit of account for the Fund. The value of the SDR is determined daily by IMF on the basis of a basket of currencies with each currency assigned a weight in the determination of that value. In the derivation of the SDR value, the currencies of the basket are valued at their market exchange rates for the US dollar, and the US dollar equivalents of each of the currencies are summed to yield the rate of the SDR in terms of the US dollar.

On January 1, 1996, the SDR valuation basket weights were 39 per cent for the US dollar, 21 per cent for the deutsche mark, 18 per cent for the Japanese yen, and 11 per cent each for the French franc and pound sterling. On January 1, 1999, the currency amount of deutsche mark and French francs were replaced with equivalent amounts of euros, based on the fixed conversion rates between those currencies and the euro, announced on December 31, 1998 by the European Council. The weights in the SDR basket were changed to US dollar, 39 percent; euro, 32 percent (in replacement of the 21 percent for the deutsche mark and 11 percent for the French franc); Japanese yen, 18 percent; and pound sterling, 11 percent. As of January 1, 2001, the SDR valuation basket weights are the sum of the values of the amount of each currency in the following amounts: US dollar, 45 per cent; euro, 29 per cent; Japanese yen, 15 per cent, and pound sterling, 11 percent (UNSTAT Definition). http://unstats.un.org/unsd/cdb/cdb_dict_xrxx.asp?def_code=130

introduction has been calculated by geometrically weighting the bilateral exchange rates of the twelve euro area countries.[16]

One variable as proxy for trade creation & diversion effect of the OIC is introduced. $EXTRA\_OIC^{ijt}$ is dummy variable taking the value of 1 for the observations if country *j* (country of origin) is not a member of OIC in year *t*.[17] This dummy variable captures the change in exports of third countries to the OIC members. Hence, if there is decrease in exports of third countries it should be interpreted as trade diversion and vice versa.

4.2. The Data

Real imports of OIC member countries are collected from WITS (World Integrated Solution Database). Weighted distances, border dummy, common colonizer and same country dummy were collected from CEPII database. Real exchange rates index of importing country, Gross Domestic Products, together with consumer price indexes and exchange rates, are obtained from World Development Indicators Database. Depreciation of real exchange rates of importing country is calculated by the author. Weighted average of applied tariff rates, in which imports values used as weight, were derived from the Trade Analysis and

[16] Bank of England calculation. Since 11 May 1999, the Bank of England has published a daily effective trade-weighted exchange rate index for the euro area. It is also compiled on the basis developed and used by the IMF. The weights reflect the pattern of trade between the euro-area as a whole and countries outside the euro area. (Trade between countries within the euro-area is excluded, so the weights are based solely on extra euro-area trade). Sterling has the biggest weight, with the US dollar the next largest.

The index is calculated by weighting together the individual exchange rates for the 12 euro-area currencies against non-euro area currencies. So it represents an effective index for the 12 euro area currencies as a group. This permits the index to be calculated prior to 31 December 1998, using "synthetic" euro exchange rates. These are calculated by geometrically averaging the bilateral exchange rates of the original 11 euro-area currencies using "internal weights" based on the country shares of extra euro-area trade.

[17] All countries of destination, importers, in this model are OIC members.

Information System (TRAINS).[18] Depreciation of US dollar against Euro is derived from Bank of England.[19]

4.3. Expected Signs of Coefficients

Gravity models explain bilateral trade by trading countries' economic sizes and distance. Accordingly, as GDPs of trading countries increase, trade among them is expected to increase while increase in distance between trading partners are associated with decrease in trade. Hence, coefficients of gross domestic products of both importing and exporting countries are expected to be positive while coefficient of distance should be negative. As tariff imposed by importing country is expected to decrease exports, tariff coefficient should be negative. Basically, it is assumed that the more open a country is to trade, the higher will be the level of trade facilitation. Hence, trade openness, proxy for trade facilitation and liberalization, would be positive. Meanwhile, a real appreciation of importing country's currency would positively affect the flow of commodities to importing country. Hence, coefficient of appreciation of real exchange rate is expected to be positive. Dummy

[18] Please refer to WITS for the formula. http://withs.worldbank.org

[19] On 31 December 1998, in accordance with Article 1091 (4) of the Treaty establishing the European Community, the irrevocable conversion rates for the euro were adopted by the EU Council. This was upon a proposal from the Commission of the European Communities and after consultation with the European Central Bank. The euro conversion rates took effect at 00:00 (local time) on 1 January 1999 (1 January 2001 for Greek Drachma).

In compliance with the legal framework for use of the euro, the irrevocable conversion rate for the euro for each participating currency is the only rate to be used for conversion either way between the euro and the national currency unit, and for conversions between national currency units.

Prior to 1999, a synthetic euro exchange rate has been calculated by geometrically weighting the bilateral exchange rates of the (then) eleven euro area countries using "internal weights" based on the country shares of extra euro-area trade.

variable for border is expected to be positive as countries sharing a border are expected to trade more. The coefficient of common colonizer variable is also expected to be positive since the presence of people speaking same languages, sharing similar culture and even measurement scales would make positive contribution to trade. We expect that the coefficient for value of US dollar against Euro to be positive if appreciation of dollar against Euro increase the imports of OIC member countries.

EXRTA_OIC approximates the change in exports from third countries to OIC members as a result of OIC efforts in enhancing international trade including trade facilitation and liberalization efforts. Hence, if there is a decrease in exports from third countries to OIC members, this dummy should be negative. On the other hand, if the exports from third countries increased this variable should be positive.

5. Results Anlaysis

5.1. Test Results for the Traditional Gravity Model

Before including the additional variables in the model we conduct the regression for the traditional gravity model. Imports of OIC countries depend on the economic sizes of their GDPs, GDPs of partner countries, distance and dummy variables aforementioned.

The results of cross-sectional pooled OLS estimation (see Table-3) clearly support the gravity model. Coefficient of both exporter and imports GDPs are positive and significant while the effect of distance is negative. Unexpectedly, the results of Model-1 shows that sharing a common land border is insignificant. Barry et al. (2004) employed the

gravity model for analyzing the impact of China's growth on 13 Asian countries' exports. And, they, similar to result of Model-1, found that sharing a common border is not significantly different from zero. The reason is argued to be relatively small trade of bordering countries in the region compared to their total trade with the rest of the world.

Table-3: Regression result for the traditional gravity model

	Model-1	Model-2
Log Real GDP of Importer	0.232*	0.332*
	(0.013)	(0.025)
Log Real GDP of Exporter	0.365*	0.472*
	(0.012)	(0.024)
Log Weighted Distance	-0.681*	-0.470*
	(0.036)	(0.061)
Log Weighted Tariff		-0.186*
		(0.040)
Appreciation of Importer's Real FX		1.276*
		(0.179)
Increase in Importers Trade Openness		0.244*
		(0.078)
Non-OIC Exporter	0.209*	0.246*
	(0.059)	(0.087)
Border	0.187	0.990*
	(0.198)	(0.320)
Common Colonizer	0.177*	0.551*
	(0.065)	(0.093)
Number of Observations	7267	2989
R2	0.783	0.790

Source: Calculate by the author, Regressand: Log real import (OIC countries) Intercept is suppressed, Standard errors in the parenthesis
*Values are significant at 5% level

Anderson and van Wincoop (2003) argued that traditional gravity equations suffer from omitted variable bias. As a matter of fact, appreciation of importer's real exchange rate, incorporating relative exchange rate and price level, tariff, improvement in trade facilitation are very significant determinant of international trade. Exclusion of them is likely to lead omitted variable bias in the model. Hence, in Model-2, results with inclusion of these variables are also provided. Border effect turns to be positive and significant as expected. Though inclusion of these variables as the determinants of trade is crucial, it is not easy to find data especially on tariff. Consequently, this decreases the number of observations.

After a concise focus on the importance of above mentioned possible omitted variable, the regression model for the determinant of OIC countries' imports is run with inclusion of those variables. One would, from Table-4, realize that the result of OLS and random effect supports each other while they somehow contradict with the result of fixed effect in the model. The coefficient for real GDP of importer, contrary to expectations, turned to be negative and insignificant with fixed effect estimation. But, note that Hausman test support to random effect calculation.

The coefficients of the other variables turn to be as expected. However, being once a same country appears to have negative impact on exporting to OIC countries. Given the positive and significant coefficient of common colonizer variable, one may argue that OIC countries those used to be part of same country tends to trade less given the other determinants of their imports. This might be attributed to hostile feelings aroused in the process of getting independence or separation of the previously shared country.

Table-4: Regression result for the determinant of OIC countries' imports

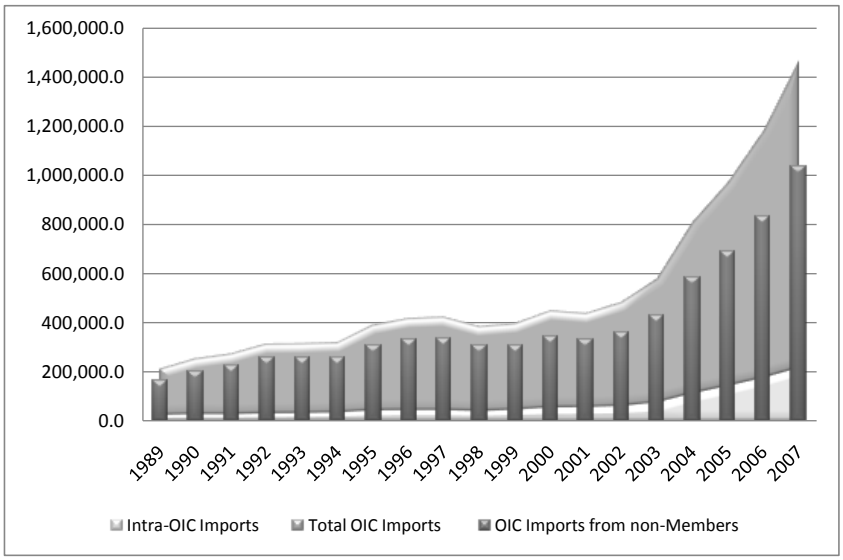
	OLS	Fixed Effect	Random Effect
Log Real GDP of Importer	0.380*	-0.163	0.424*
	(0.027)	(0.563)	(0.038)
Log Real GDP of Exporter	0.495*	0.860*	0.523*
	(0.025)	(0.394)	(0.034)
Log Weighted Distances	-0.413*		-0.433*
	(0.060)		(0.087)
Log Weighted Tariff	-0.169*	-0.197*	-0.186*
	(0.040)	(0.048)	(0.039)
Increase in Importer's Trade Openness	0.255*	0.903*	0.233*
	(0.077)	(0.587)	(0.106)
Appreciation of Importer's Real FX	0.735**	1.930*	1.556*
	(0.433)	(0.521)	(0.386)
Border Effect	1.266*		1.237*
	(0.327)		(0.504)
Common Colonizer	0.554*		0.643*
	(0.092)		(0.140)
Same Country	-1.866*		-1.871*
	(0.557)		(0.878)
Value of USD against Euro	0.841*	0.785*	0.775*
	(0.287)	(0.260)	(0.235)
Non-OIC Exporter	0.266*		0.952
	(0.087)		(0.128)
Number of Observations	2989	2989	2989
R2	0.147	0.043	0.145

Source: Calculate by the author, Regressand: Log Real Imports of OIC Countries , Intercept not reported, Standard errors in the parenthesis

* Values are significant at 5% level

** Values are significant at 10% level Prob>Chi2=0.754

Figure-1: OIC Imports in US$ Million



Source: Based Calculated by the author based on Data provided by Islamic Development Bank Economic Policy and Statistic Division

On the other hand, the coefficient for non-OIC exporter is, albeit positive, turns to be insignificant with random effect calculation contrary to OLS estimation by which the same coefficient turn to be significant and positive. Given these estimation at least it is possible to argue that being non-OIC country, given the applied tariff, distance, etc., exporting to OIC is not unfavorable. As a matter of fact, Figure-1 shows not only the strong growth in intra-OIC imports but also strong growth in OIC imports from non-OIC countries in recent years. In his recent study, Ghani (2007) found, with theoretical gravity model, positive or non-significant OIC membership effect for trade of OIC countries. That is, there exist evidences to argue that OIC is not trade diverting itself in the present context according to this calculation. Exports to OIC countries increased for both OIC and non-OIC countries in the time period.

Gundogdu (2007) had similar conclusion in assessing the effect of ASEAN trade facilitation measures on intraregional trade in East Asia. He figured out that for the time period from 1997 to 2004, imports of ASEAN member countries increased from both ASEAN member countries and non ASEAN East Asian countries due to the improvement in trade facilitation measures and removal of non tariff trade barriers under AFTA regional integration.

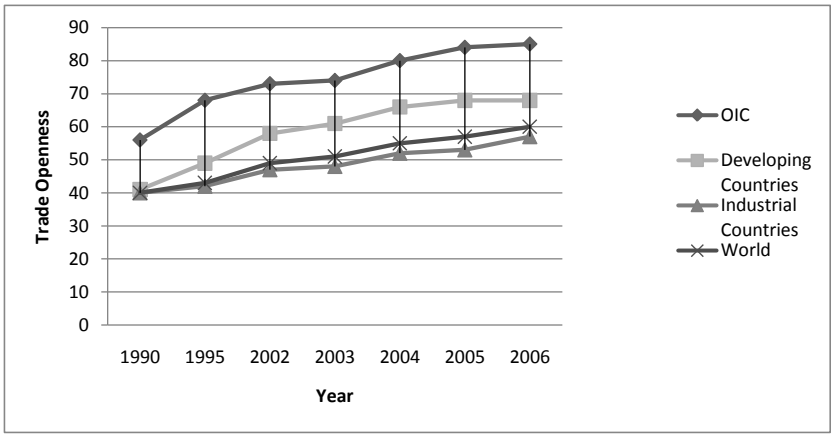
Very often regional free trade agreements come with not only tariff reduction, quota derogation but also trade facilitation measures including implementation of Single Windows, cooperation in standard and conformity assessment leading to Mutual Recognition Agreements (MRA), harmonization of tariff nomenclature, custom valuation and procedures.[20]

Once these measures being implemented all parties exporting to the region get benefits (Gundogdu 2007). However, note that due to their nature some trade facilitation measures are more intra-trade friendly. For example, MRA and Rule of Origin Cumulation System as compared to Single Windows and harmonization of tariff nomenclature, though all enhance trade of a country, is more intra-trade promotion oriented since it favors only the participating countries while others favors all trading partners. [21] Figure-2 shows that OIC member countries have experienced higher trade openness level used as proxy for trade

[20]The Single Window System as a trade facilitation idea enables international traders to submit regulatory documents such as custom declarations, import-export permit, certificate origin, etc. at a single location and/or single entity with electronic processing.
A mutual recognition agreement (MRA) is an international agreement between two or more countries to recognize one another's conformity assessments test for goods including quality control. Recently the term is applied to agreements on the recognition of professional qualifications in ASEAN. Refer to Gundogdu (2007) for more details.

[21] Cumulation rule allows products originating in the other member countries of a regional integration agreement not to be regarded as non-originating when used in a processing in one of the other member countries.

Figure-2: Growth of trade openness as a proxy for trade facilitation & liberalization



Source: Calculated by the author based on IDB 2008 Key Economic Indicators, Statistical Monograph No.28

facilitation & liberalization herein, than industrialized countries since 1990. These can be attributed the dominance of oil trade of OIC countries as the index is a measure of trade over GDP. However, recent widening of the trade openness level between OIC countries and Industrial countries can possibly be attributed the trade facilitation and liberalization efforts. These improvements came as a part of requirement of participation into regional economic integration or unilateral efforts.

For example, Turkey implemented massive trade facilitation and liberalization efforts in late 1990s due to EU Custom Union Requirement. Tunisia unilaterally benchmarked Singaporean Single Window of TradeNet to improve its custom efficiency.[22] Guinea's,

[22] Jayanta, R., Shweta, B. (2005). Key issues in trade facilitation, summary of World Bank/EU workshops in Dhaka and Shanghai in 2004. World Bank Policy Research Paper 3703.

Table 5: Openness of OIC Economies in Categories

	1990	1995	2002	2003	2004	2005	2006
SSA	51	63	65	69	72	74	78
MENA	56	62	68	70	77	82	85
Asia	61	79	86	81	86	89	85
CIT	37	77	88	91	95	95	93
LDMC	45	57	62	62	64	63	61
Non-LDMC	57	70	75	76	82	86	87
OIC	56	68	73	74	80	84	85
Developing Countries	41	49	58	61	66	68	68
Industrial Countries	40	42	47	48	52	53	57
World	40	43	49	51	55	57	60

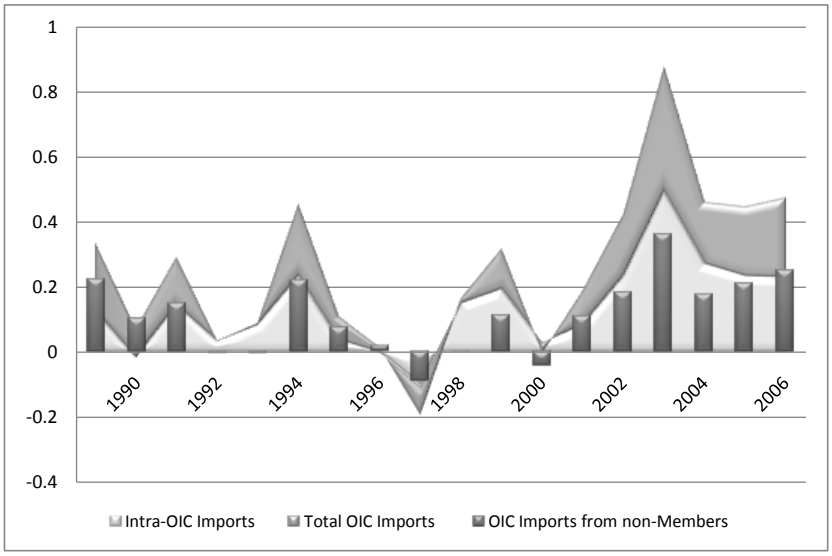
one of OIC's sub-Saharan member country, MFN applied simple (11.9 percent) and weighted (12.5 percent) tariff averages were below the regional average. As a member of the Economic Community of West African Countries (ECOWAS), Guinea has adopted the group's Common External Tariff (CET), and as a result Guinea's tariffs decreased from their earlier levels.[23] Cernat (2001) argued that Regional Trade Agreement (RTA) formation might have increased trade with both regional and third countries in the case of South-South RTAs after puzzling with net trade creation effect of African RTAs. He emphasized on the effect of trade facilitation measures came along with tariff reduction for explaining net trade creation effect of African RTAs.

Then, how can one explain the recent increase in intra-OIC trade as a share of total imports given that OIC itself is, according to result analysis, not trade diverting and improvement in OIC member countries

[23] Islamic Development Bank Economic Policy Brief No: 69

trade facilitation & liberalization efforts as well as Terms of Trade (TOT) improvement probably boosted not only OIC exports but also non-OIC exports to OIC countries? Figure-3 shows the recent growth in both intra-OIC imports and imports from non-OIC countries. One would see that recent increase in intra-OIC trade as a share of total OIC imports, from 14.4 per cent in 2002 to 17.6 per cent in 2006, comes from surpassing growth rate of intra-OIC imports over imports from non-OIC countries. Both rates are positive but magnitude of former is higher than later.

Figure-3: Growth of OIC Imports



Source: Calculated by the author based on Data provided by Islamic Development Bank Economic Policy and Statistic Division

According to the result of OLS, Fixed Effect and Random Effect estimation, from Table-4, OIC countries tends to imports more in *real terms* with appreciation of US Dollar against Euro. Then, recent Euro

appreciation against US Dollar obviously has negative effect on real intra-OIC imports. On the other hand, this negative effect on real terms has not turn to be materialized in nominal terms because of the fact that the recent increase in oil prices against US dollar has, at least, not negative effect on import capacity of oil exporting OIC member countries such as Saudi Arabia, UAE. Besides, member countries like Turkey, mainly use US dollar for their imports transaction and their foreign exchange earning are, mainly, in Euro.[24] This phenomenon is also tractable from the recent Terms of Trade (TOT) improvement. Over all OIC terms of trade index has improved from 93 in 2001 to 112 in 2005.[25]

Table 6: The share of big OIC economies in intra-OIC trade and TOT*

	Intra Exports	Total Exports	Intra Exports	Total	TOT in 2001	TOT in 2005
UAE	**19,535**	**139,353**	**11.8%**	**11%**	**93**	**143**
Turkey	**14,984**	**85,142**	**9%**	**6.7%**	**98**	**101**
Saudi	**31,032**	**208,867**	**18.7%**	**16.5%**	**106**	**182**
Malaysia	**11,839**	**160,556**	**7.1%**	**12.7%**	**100**	**102**
Indonesia	**10,707**	**103,964**	**6.5%**	**8.2%**	**94**	**60***
%						
Contribution	**53.1%**	**55.2%**	**53.1%**	**55.2%**		

** In 2006, total intra-OIC merchandise exports is 165,820; total OIC merchandise exports is 1,263,283 in US $ million ; in 2000 TOT index is 100; in 2004 Indonesian TOT is 105.*

Source: Based on IDB 2008 Key Economic Indicators, Statistical Monograph No.28,

[24] Refers to the author's experience with Turkish Exporters Union in supervising Inward Processing Licenses.

[25] Source: IDB 2008 Key Economic Indicators, Statistical Monograph No.28

This kind of details are important because Indonesia, Malaysia, Saudi Arabia, Turkey and United Arab Emirates represent a significant – more than 50 per cent - of the overall intra-OIC exports of the 57 OIC member economies. While the sub-Saharan member countries constitute the meager part of the total OIC GDP and trade. But, in the present context of the model it could only be argued that appreciation of US dollar against Euro affects imports of OIC countries from both OIC and non-OIC countries. However, intra-OIC trade is defined as a ratio of imports of OIC countries among themselves over their total imports from world. Then how can we search for evidence from the same dataset for the significant effect of appreciation of US dollar against Euro on this ratio? One method would be looking at the effect of appreciation of US dollar against Euro on imports of OIC countries from non-OIC countries. If it is insignificant, then it would be argued that appreciation of US dollar against Euro affects OIC imports from OIC countries. In that purpose, a proxy variable is created by multiplying dummy variable of non-OIC exporter and variable of value of US Dollar against Euro. As Table-7 shows that the proxy variable turns to insignificant for both Random Effect and OLS estimations.[26]

Figure-4 show that intra-OIC imports and exports used to exhibit similar patterns and very close percentages before 1998. The difference between intra-OIC imports and exports widened after 1998. Since 1998, then the Council of European Union set the conversion rates for its members' currencies based on market rate on 31 December 1998, one would discern a pattern change in intra-OIC trade as well.

[26] Fixed Effect estimation is not possible as data set is based on country pairs.

Table 7: The Effect of Euro/USD exchange rate on non-OIC Exports to OIC

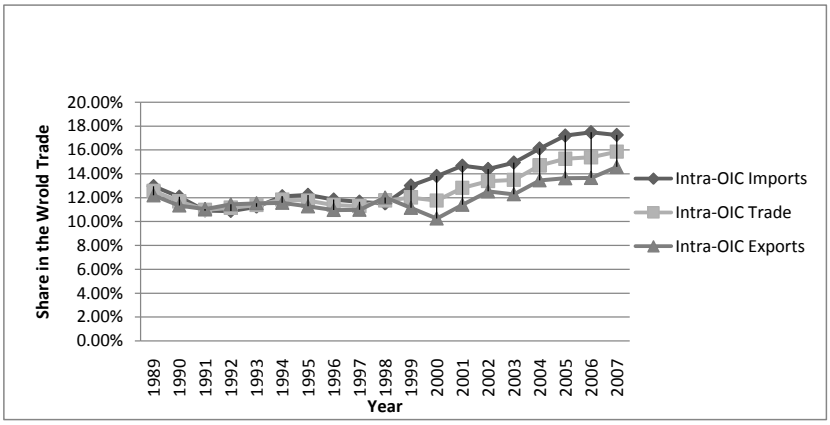
	OLS	Random Effect
Log Real GDP of Importer	0.386*	0.427*
	(0.027)	(0.037)
Log Real GDP of Exporter	0.499*	0.525*
	(0.024)	(0.034)
Log Weighted Distances	-0.455*	-0.463*
	(0.061)	(0.089)
Log Weighted Tariff	-0.170*	-0.183*
	(0.040)	(0.039)
Increase in Importer's Trade Openness	0.263*	0.238*
	(0.077)	(0.103)
Appreciation of Importer's Real FX	0.733**	1.556*
	(0.432)	(0.385)
Border Effect	1.296*	1.237*
	(0.326)	(0.504)
Common Colonizer	0.595*	0.668*
	(0.092)	(0.141)
Same Country	-1.961*	-1.921*
	(0.556)	(0.878)
Value of USD against Euro	0.369	0.548
	(0.542)	(0.446)
Non-OIC Exporter	0.297*	0.189 (0.130)
	(0.092)	
The Proxy	0.639	0.312
	(0.631)	(0.521)
Number of Observations	2989	2989
R2	0.149	0.147

Source: Calculate by the author, Regressand: Log Real Imports of OIC Countries, Intercept not reported, Standard errors in the parenthesis

* Values are significant at 5% level

** Values are significant at 10% level

Figure-4: Trends in Intra-OIC Trade Indicators (1990-2007)



Source: Calculated by the author based on Data provided by Islamic Development Bank Economic Policy and Statistic Division

These evidences seem to be more than coincidence for the role of USD/Euro exchange rate on intra-OIC trade. Following from Figure-4, intra-OIC exports experienced decrease in 1999 and 2000 while intra-OIC imports improved for the same period. However, both ratios have been improving alongside the recent Euro appreciation. This contradicts with positive and significant variable of the value of US Dollar against Euro on OIC imports in real terms. Then there must be another dynamic, which surpass the negative effect of recent Euro appreciation, for increase in intra-OIC imports as a share of OIC imports from the world.

How about the effect of oil?

Table-8 presents data on the intra-OIC oil exports/imports by SITC's (Rev.3) 1-digit commodity level for 2005. The impact of oil to intra-OIC trade statistic is obvious from the table.

Table 8: Intra-OIC Oil Trade, 2005 *

	From Intra-OIC (US$ million)	From the World (US$ million)	% in intra-OIC trade	Share of intra-OIC oil trade in world oil trade
	(1)	(2)	(3)	(4)
Imports	38,923.7	79,047.2	36.7	49.2
Exports	31,763.9	452,888.9	27.8	7.0

* Fuels, Lubricants, and related materials; SITC's (Rev.3) 1-digit commodity level

Source: Comtrade database

Column (3) shows the Intra-OIC oil imports (exports) over intra-OIC total imports (exports). Column (4) shows the OIC oil imports from (exports to) OIC countries over OIC oil imports from (exports to) world. One would easily discern the discrepancy between intra-OIC imports and intra-OIC exports as a share of world trade due to OIC countries dominance in the oil export business. Figure-4 has already shown this obvious discrepancy after 1998. Accordingly, one would argue that the main reason behind recent increase in intra-OIC imports as a share of world import is oil price increase. However, this argument can not explain whole phenomenon without Terms of Trade (TOT) improvement of OIC countries and the effect of exchange rate. In very simple form, recently both intra-OIC imports and OIC imports from the world have increased but magnitude of intra-OIC imports growth is higher than that of imports from the world.

Assume a world where only OIC countries are oil exporters and amount of oil exported is constant over the time. Also assume that OIC countries imports, together with oil from other OIC countries, only cars from the rest of the world in Euro and number of cars imported is constant over the

time. These assumptions are made based on the result analysis of the econometric model. Recall from the econometric model that appreciation/depreciation of Euro has no effect on real OIC imports from non-OIC countries so constant number of imported car becomes a slightly reasonable assumption.

Table-9 shows that intra-OIC imports has increased from 14.4% to 24.3% as the oil price increase from 60$ to 114$ while Euro/USD exchange rate is intact. 24.3% intra-OIC retreated to 17.6% as the Euro appreciates to new level of 1.5$. As you may recall, we started this paper with the inquiry of recent increase in intra-OIC imports from 14.4 to 17.6 per cent between 2002 and 2006.

Table 9: Intra-OIC Imports Scenario

Oil Price in USD (A)	Euro/USD Exchange Rate (B)	Car price in Euro (C)	84,400 unit OIC Imports from OIC Countries (A)*84,400=(D)	1000 cars OIC imports from the rest of the world (C)*1000=(E)	Intra-OIC Imports in % (D/D+E)
60	1	30,000	5,064,000	30,000,000	14.4%
Oil Price 114$; 1 Euro is 1$					
114	1	30,000	9,633,000	30,000,000	24.3%
Oil Price 114$; 1 Euro is 1.2$					
114	1.5	30,000	9,633,000	45,000,000	17.6%

Source: Compiled by the author

VI. Policy Recommendation and Conclusion

This paper shed a light on determinant of intra-OIC trade in a way to contribute the realization of the Makkah Declaration and the Ten-Year Programme of Action to increase intra-OIC trade to 20% of global trade by the year 2015. The findings of the estimations, the time period of 1995-2007, indicate that OIC member countries has started to trade more and more with each other and the rest of the world. This can partly be attributed to their unilateral efforts as well as requirement of membership to regional free trade areas such as COMESA, ECOWAS, etc. in dismantling the inherent trade barrier and tariff reduction.

In that regard, there are still substantial trade facilitation improvements opportunities exist in eliminating trade barriers among OIC member countries, reducing red tape, improving infrastructure, reducing financial constraints. However, according to the estimations herein, these kinds of efforts, for sure to be encouraged to generate more income growth, would not only boost intra-OIC trade but also enhance OIC countries trade with non members as they will make trading easier for all parties once implemented. That is, they are not expected to divert trade. Accordingly, in order to achieve the 2015 target, there should be more endeavors on intra-trade oriented trade facilitation measures such as Mutual Recognition Agreement, cooperation in unified rule of origin by developing an OIC cumulation system. Developing a full implementation of the Protocols on Preferential Tariff Scheme and Framework on OIC Trade Preferential System (OIC-TPS) is also very crucial to pave the way for intra-OIC trade target.

However, stressing too much on 20% target might result in shutting our eyes to the truth. As a matter of fact, this target can be achieved by

improvement in couple of big OIC economies trade among each other given their dominance in intra-OIC trade statistics as well as trend in USD/Euro exchange rate and oil price surge. Given the dominance of oil in OIC trade statistics targets also should be set for non-oil trade. From developmental aspect more attention should be given to enhancing trade of small OIC economies especially in sub-Saharan Africa through trade financing, project development in trade facilitation such as building single windows in their customs, capacity building, trade cooperation and strategic product development. The target of 20% should be subdivided for country grouping such as Least Developed Member Countries and Sub-Saharan African Member Countries so enhancing intra-OIC trade would be more meaningful in developmental aspects.

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