

An Assessment of Trade Costs in OIC Countries



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Abstract:

Enhancing the intra-OIC trade is one of the key targets of the OIC Ten Year Program of Action as well as new COMCEC strategy. Despite the great importance given to the issue, there is no serious technical document evaluating the progress achieved and prospects for further development. In this respect, this study aims to conduct an in-depth analysis on trade costs and link them with the developments in intra-OIC trade as an initial step towards more comprehensive technical studies. In this respect, the study analyzes trade costs in OIC countries in descriptive manner and also estimates the decomposition of trade costs in OIC countries through empirical analysis. Thereby, it aims to contribute to identification of the major barriers for the expansion of trade within the OIC region.

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1. INTRODUCTION

Since the initiation of the General Agreement on Trade and Tariffs in 1947, a dramatic fall in tariffs, quotas and other non-tariff barriers has been observed in the world trading system. Particularly in manufacturing goods, significant reductions were observed in tariff rates. Substantial improvements in transport and logistics over the years have also contributed to the fall in trade costs around the world. However, international trade remained more costly than domestic trade. This is not only due to costs of transporting goods to far distances, but also at-the-border and behind-the-border costs that can be reduced by appropriate policies. This fact accordingly shifted the attention from reducing policy barriers to promoting trade facilitation.

OIC countries have equally benefited from this transformation, albeit at varying levels depending on their transport infrastructure, composition of export goods and their distance to export markets. The current 57 OIC countries are dispersed over a large geographical region and at different levels of economic development. The mixed nature of the group of the OIC countries reflects high levels of heterogeneity and divergence in the economic structure and performance of these countries. This also reflects the great potential for trade between the member countries. Partial utilization of this potential has already produced visible benefits and the share of intra-OIC trade continuously increased over the last decade, hitting its highest level in 2012 and accounting for 18.2% of total OIC trade.

Enhancing the intra-OIC trade is one of the key targets of the OIC Ten Year Program of Action as well as new COMCEC strategy. Despite the great importance given to the issue, there is no serious technical document evaluating the progress achieved and prospects for further development. In this respect, this study aims to conduct an in-depth analysis on trade costs as an initial step towards more comprehensive technical studies. In this respect, the study will analyze the trade costs in OIC countries in descriptive manner and also estimate the decomposition of trade costs in OIC countries through empirical analysis. Thereby, it aims to contribute to identification of the major barriers for the expansion of trade within the OIC region.

This study utilizes a new global data set of bilateral trade costs prepared jointly by the World Bank and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) based on trade and production data, covering 202 countries for the time period 1995-2011. According to the World Bank and UNESCAP research, trade costs are influenced to varying degrees by distance and transport costs, tariff and non-tariff measures, and logistics. The data also stress the importance of supply chains and connectivity constraints in explaining the higher costs and lower levels of trade integration observed in developing countries.

The rest of the paper is organized as follows. Next section provides brief information on the main components of trade costs. Then

Trade costs include all costs incurred in getting a good to a final user other than the marginal cost of producing the good itself: **transportation costs, policy barriers, information costs, contract enforcement costs, costs associated with the use of different currencies, legal and regulatory costs, and local distribution costs.**

recent developments in intra-OIC trade and a short discussion of trade policy in OIC countries are provided in section 3. Average trade costs are discussed in comparative manner in section 4. Before concluding, section 5 conducts an empirical analysis to estimate the decomposition of trade costs.

2. COMPONENTS OF TRADE COSTS

Direct evidence on border costs shows that **tariff barriers** are now low in most countries, on average **less than 5% for rich countries**, and with a few exceptions are on average **between 8% and 12% for developing countries**.

Trade costs broadly include all costs incurred in getting a good to a final user other than the marginal cost of producing the good itself: transportation costs (both freight costs and time costs), policy barriers (tariffs and nontariff barriers), information costs, contract enforcement costs, costs associated with the use of different currencies, legal and regulatory costs, and local distribution costs (wholesale and retail) (Anderson and van Wincoop, 2004). Therefore, in an increasingly globalized and networked world, trade costs matter as a determinant of the pattern of bilateral trade and investment, as well as of the geographical distribution of production and they are an important determinant of a country's ability to take part in regional and global production networks (Arvis et al., 2013).

Transport costs are mainly determined by infrastructure, distance and commodity characteristics. Higher distance and poor infrastructure are associated with an increase in transport costs. Infrastructure is an important determinant of transport costs, especially for landlocked countries. Improved transportation with greater speed and reliability played a major role not only in trade growth over the past decades, but also in reorganizations of global networks of production. Studies examining customs data consistently find that transportation costs pose a barrier to trade at least as large as, and frequently larger than, tariffs (Hummels, 2007).

Policy barriers are restraints imposed by governments on the free movement of goods and services that seek to distort the pattern of trade between countries. The most common barriers to trade are tariffs and quotas. Tariffs as a tax on imports raise the price of imported goods relative to domestic goods. Quotas, on the other hand, are applied to reduce the quantity of a product that is imported. Another common barrier to trade is an export subsidy, which is designed to support domestic producers with more competitive prices in international markets. In addition to import quotas and export subsidies, there are many other forms of non-tariff barriers to trade, including rules of origin, special licenses, unreasonable standards for the quality of goods, bureaucratic delays at customs, export restrictions, countervailing duties, sanitary and phyto-sanitary measures, etc. Direct evidence on border costs shows that tariff barriers are now low in most countries, on average less than 5% for rich countries, and with a few exceptions are on average between 8% and 12% for developing countries (see Figure 7 in the next section).

Producers need to conduct market research in order to locate opportunities in other markets. In this context, **information costs** are

another aspect of trade costs where costs incur while traders search for suitable trading partners and communicate with them to negotiate the terms of the transaction. Moreover, they need to ensure their goods conform to quality standards and other regulations in foreign markets as well as locate suitable trading partners and organize transportation and distribution. A wide range of empirical studies have used proxies, such as internet mass, communication costs, common language, to try and capture the importance of information costs, communication costs and links between countries and found significant results in explaining bilateral trade and trade costs.

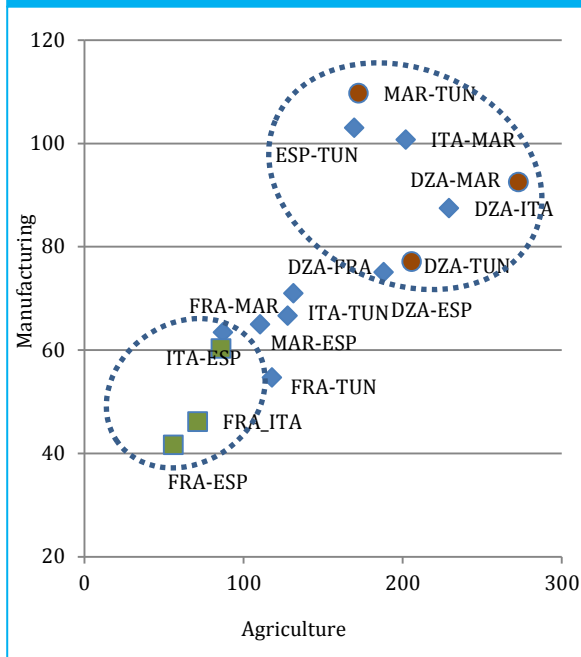
Firms also seek security in making and **enforcing contracts** and resolving disputes in their commercial relationships. Good enforcement procedures enhance predictability in commercial relationships and reduce uncertainty by assuring investors that their contractual rights will be upheld promptly by local courts. When procedures for enforcing commercial transactions require too much time and effort or when contractual disputes cannot be resolved in a timely and cost effective manner, such forms of insecurity will limit trade. For example, Anderson and Marcouiller (2002) show that imperfect enforcement and other forms of insecurity reduce the international trade of Latin American countries by as much as their tariffs. Improvements in contract enforcement would stimulate the gains from trade. In any case, there will be some costs related to contract enforcement. However, it is difficult to assess the significance of contractual insecurity as opposed to other transactions costs. Imperfect enforcement impedes trade similarly to tariffs.

Costs associated with the use of different currencies may also be substantial. Exchange rate risk increases transaction costs and reduces the gains to international trade. Exchange rate uncertainty discourages firms from selling in foreign markets due to a lack of price transparency. Firms will need to incur additional cost by hedging the risks associated with exchange rate fluctuations. On the other hand, monetary unions extensively improve the economic environment in which firms operate, mainly through elimination of transaction costs and exchange rate uncertainty and increase in price transparency. Greater nominal exchange rate stability, lower transaction costs, and price transparency reduce information costs and thereby enhance competition and increase international competitiveness of enterprises (Bagci, 2013).

Legal and regulatory costs and local distribution costs are other components of total trade costs. Therefore, in contrary to common perception on the relevance of tariffs for trade costs, special efforts should be made to facilitate trade through reducing various barriers to trade that limit the flow of goods across borders. For example, as shown in Figure 1, three OIC countries in North Africa have significantly higher costs among themselves compared to the countries at the European side of the Mediterranean. Despite geographical proximity, common language, cultural similarities and other favorable factors, bilateral trade costs for Maghreb countries tend to be higher than the bilateral trade costs for EU countries as well as the bilateral trade costs between Maghreb and EU countries. Here comes the importance of trade facilitation. If policies are not designed in a way to facilitate trade between countries, despite other

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Figure 1: Comparison of Bilateral Trade Costs for Maghreb Countries (2009)

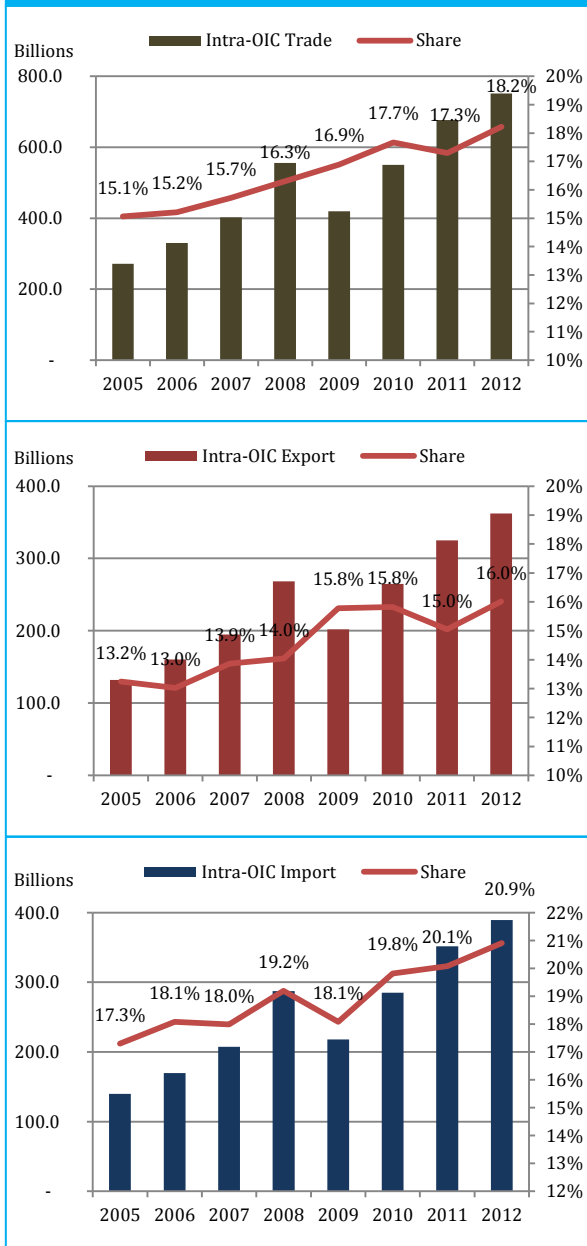


Source: WB-UNESCAP Trade Costs Database

supportive conditions, bilateral trade will not increase due to relatively high trade costs. This is clearly proven at the European side of the Mediterranean.

3. INTRA-OIC TRADE AND TRADE POLICY

Figure 2: Intra-OIC Trade, Volume and Share in Total Trade



Source: IMF DOT Database

After witnessing a sharp fall in 2009, total merchandise trade among the OIC countries rebounded to \$752 billion in 2012 and broke a new record (Figure 2, top). This increase was in line with the improvement in trade all over the world, but OIC countries as a group showed relatively stronger upturn compared to the world average. From 2005 to 2012, the share of intra-OIC trade in OIC total trade continuously increased, except a slight fall in 2011. Intra-OIC trade hit its highest level in 2012 and accounted for 18.2 per cent of total OIC trade.

Similar patterns are observed in the cases of both intra-OIC exports and imports. Since 2005, intra-OIC exports significantly increased from \$132 billion to \$362 billion, whereby the share of intra-OIC exports in total OIC exports increased only 2.8 percentage points and reached 16 per cent in 2012. (Figure 2, middle). In 2011, although intra-OIC export was at its highest level of \$325 billion at that time, its share in total exports of OIC countries witnessed a decline of 0.8 percentage points, falling to 15 per cent. In 2012, with the increase in total intra-OIC exports to \$362 billion, the share of intra-OIC exports in total exports of OIC countries increased to 16 per cent.

Likewise, intra-OIC imports increased constantly over the last four years and reached to \$389 billion in 2012 compared to \$218 billion in 2009 and \$140 billion in 2005, corresponding to an increase of its share in total OIC imports from 17.3 per cent in 2005 to 20.9 per cent in 2012 (Figure 2, bottom).

Figure 3 shows the list of top 10 member countries in terms of intra-OIC exports. In 2012, 78.5 per cent of the intra-OIC exports were undertaken by only 10 OIC countries. United Arab Emirates took the lead with \$65.6 billion, or 18.5 per cent of the total intra-OIC exports, followed by Turkey and Saudi Arabia, with \$55.2 billion and \$46.3 billion, respectively (Figure 3, left). Together with Malaysia (\$25.1 billion) and Indonesia (\$23.1 billion), these five countries accounted for 60.7 per cent of the total intra-OIC exports. Iran, Kuwait, Egypt, Syria and Pakistan were also among the top 10 OIC countries in intra-OIC exports.

Some OIC countries with relatively lower *volumes* of intra-OIC exports reported higher *shares* of intra-OIC exports in their total exports. For instance, despite low trade volumes in absolute terms, around 96.4 per cent of Somalia's exports went to OIC countries in 2012. The share of intra-OIC exports reached 94.3 per cent in 2012 (from 67.6 per cent in 2011) in Syria, 93.6 per cent of total exports in Djibouti, 79.1 per cent in Sudan and 70.4 per cent in Kyrgyz Republic. Syria was the only country to enter the top 10 list both by volume and share of intra-OIC exports. Tajikistan, Jordan, Afghanistan, Lebanon and Togo were also among the top 10 countries with the highest shares of intra-OIC exports in their total exports (Figure 3, right).

During the period 2006-2012, total intra-OIC export increased 127 per cent. At individual country level, it decreased in only one country, namely Brunei Darussalam, at a rate of 60 per cent. On the other hand, three countries reported an increase in their intra-OIC exports over 1000 per cent, namely Albania (1010%), Sierra Leone (1098%) and Mozambique (1819%). Excluding these outliers, distribution of growth rates of all OIC countries is depicted in Figure 4. Clearly, the growth of intra-OIC trade is not driven by individual performances of few countries. Most countries have contributed to the growth in intra-OIC trade. What's more, 43 countries were within the range of one standard deviation from the average growth rate.

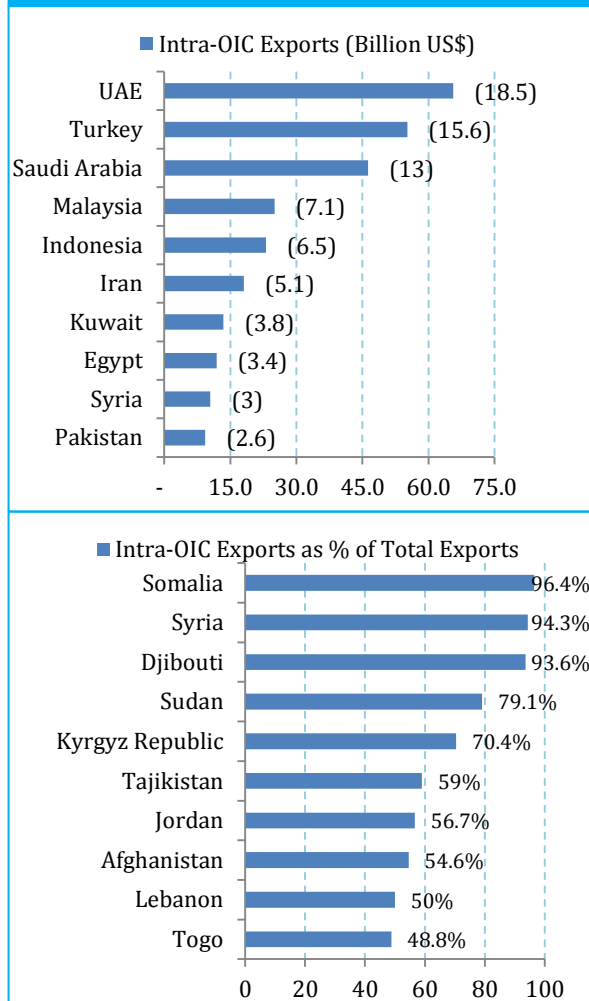
Structure of Intra-OIC Trade

The structure of intra-OIC trade evolved over the years towards more non-fuel primary commodities and less mineral fuels (Figure 5). The share of once most vibrant export commodity group, mineral fuels, decreased from 28 per cent in 2005 to 21.9 per cent in 2012. The shares of medium and high technology intensive manufactures as well as resource-intensive manufactures are also decreased. The share of non-fuel primary commodities increased from 18.6 per cent in 2005 to 31 per cent in 2012. During this period, while the share of low technology intensive manufactures slightly increased from 8.7 per cent to 10 per cent, medium and high technology intensive exports decreased 2.3 and 2.6 percentage points, respectively. Mineral fuels and primary commodities together accounted almost 53 per cent of total intra-OIC exports in 2012 (Table 1). Therefore, these findings indicate that efforts should be made to reduce the high reliance on mineral fuels and non-fuel primary commodities, which do not involve any technological intensity. Moreover, technology transfer and adoption should be promoted with targeted policies to increase the shares of more technology intensive commodities. This is required for better long-term growth prospects and increased competitiveness in international export markets.

As another experiment, the share of these commodity groups in intra-OIC trade can also provide important insights. In this regard, Figure 6 shows the trend in the share of a specific commodity group exported by OIC countries to only OIC countries in their total exports to world in that specific group, or more specifically, $s_{jt} = \frac{\sum_{i=1}^{57} x_{ijto}}{\sum_{i=1}^{57} x_{ijtw}}$,

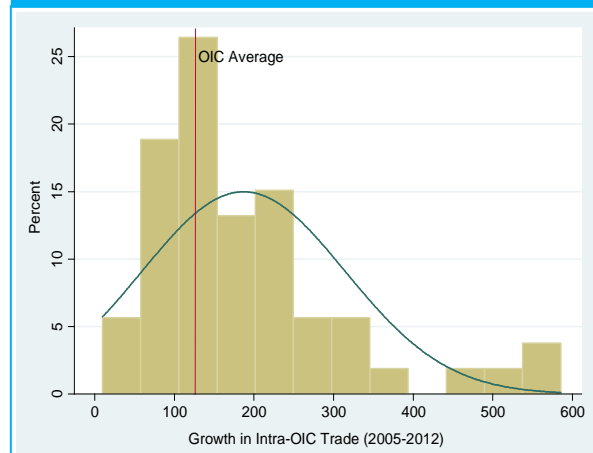
where x_{ijto} is the export from country i in commodity group j at year t to OIC countries and x_{ijtw} is the export from country i in commodity group j at year t to the world. Table 2 provides the related statistics on these shares. Accordingly, it is observed that only 3 to 7 per cent of mineral fuels exported by OIC countries go to other OIC countries. So the bulk of mineral fuels are exported to non-OIC countries. On the other hand, around 38 per cent of all low skill and technology intensive manufactures is exported among OIC countries. Again almost 27 per cent of non-fuel primary commodities go the markets of other OIC countries. Although intra-OIC export is characterized mainly by mineral fuels and other primary commodities, these figures clearly highlight that a significant share of manufactured products exported by OIC countries go to other OIC countries.

Figure 3: Top 10 Intra-OIC Trade Exporting Countries, 2012 (Billion USD, % of Total)

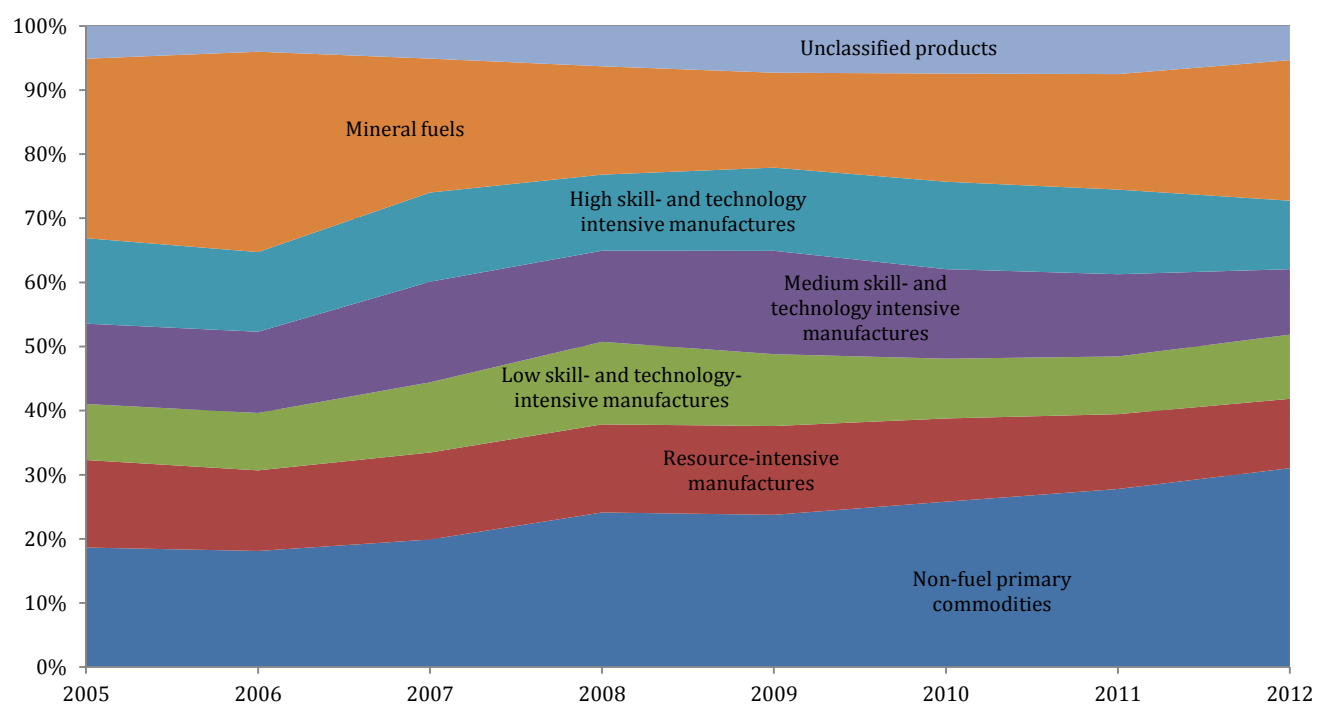


Source: IMF DOT Database

Figure 4: Distribution of Growth Rates in Intra-OIC Export



Source: IMF DOT Database

Figure 5: Structure of Intra-OIC Export (2005-2012)


Source: UN COMTRADE Database

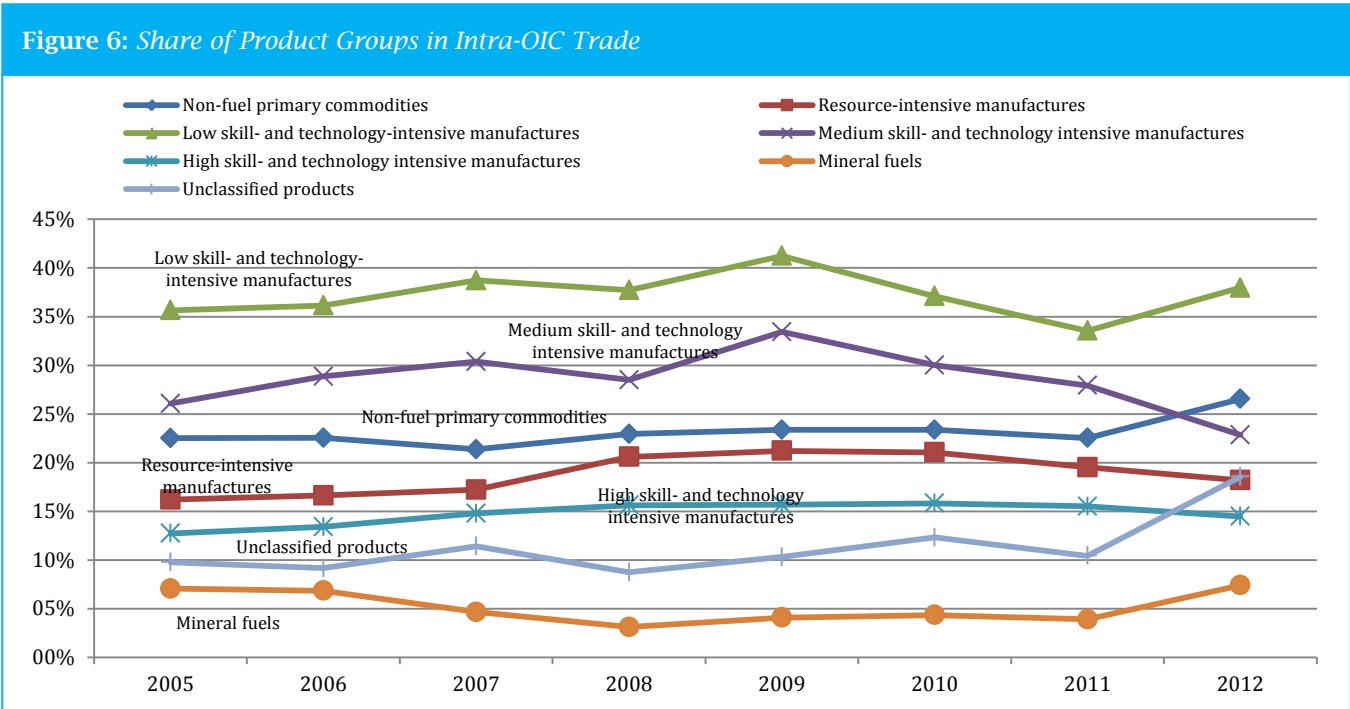
Trade Policy

Countries commonly use trade policy measures, which include tariffs and non-tariff barriers to discourage the importation of foreign products, together with industrial policy measures, in order to spur industrial growth and economic diversification. Accordingly, support measures for particular sectors, combined with tariff and/or other trade measures aim to protect them from foreign competition on the

Table 1: Structure of Intra-OIC Export (2005-2012)

	2005	2006	2007	2008	2009	2010	2011	2012
Non-fuel primary commodities	18.6%	18.1%	19.9%	24.1%	23.7%	25.8%	27.8%	31.0%
Resource-intensive manufactures	13.7%	12.6%	13.6%	13.7%	13.9%	13.0%	11.7%	10.8%
Low skill- and technology-intensive manufactures	8.7%	9.0%	10.9%	12.9%	11.2%	9.3%	9.0%	10.0%
Medium skill- and technology intensive manufactures	12.5%	12.7%	15.7%	14.2%	16.1%	14.0%	12.8%	10.2%
High skill- and technology intensive manufactures	13.3%	12.4%	13.9%	11.9%	13.0%	13.6%	13.2%	10.7%
Mineral fuels	28.0%	31.3%	20.9%	16.9%	14.8%	16.9%	18.0%	21.9%
Unclassified products	5.1%	4.0%	5.1%	6.3%	7.3%	7.4%	7.5%	5.3%

Source: UN COMTRADE Database



Source: UN COMTRADE Database

domestic market and boost their export performance at the same time. Such trade policies affect economic activity and well-being not only in the country enacting these policies but in their partner countries as well.

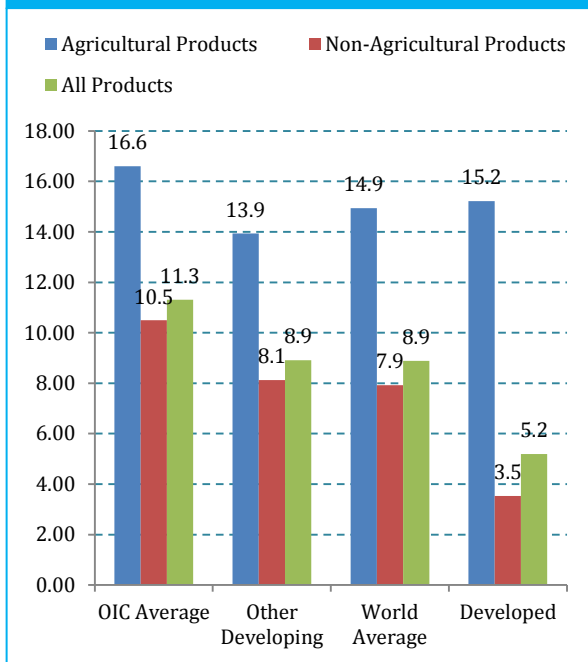
Countries commonly use trade policy measures, which include tariffs and non-tariff barriers to discourage the importation of foreign products, together with industrial policy measures, in order to spur industrial growth and economic diversification. Accordingly, support measures for particular sectors, combined with tariff and/or other trade measures aim to protect them from foreign competition on the domestic market and boost their export performance at the same

Table 2: Structure of Intra-OIC Export (2005-2012)

	2005	2006	2007	2008	2009	2010	2011	2012
Non-fuel primary commodities	22.5%	22.5%	21.4%	22.9%	23.4%	23.4%	22.5%	26.6%
Resource-intensive manufactures	16.2%	16.6%	17.2%	20.6%	21.2%	21.1%	19.5%	18.2%
Low skill- and technology-intensive manufactures	35.7%	36.1%	38.7%	37.7%	41.2%	37.1%	33.5%	38.0%
Medium skill- and technology intensive manufactures	26.1%	28.9%	30.4%	28.5%	33.4%	30.0%	27.9%	22.9%
High skill- and technology intensive manufactures	12.7%	13.4%	14.8%	15.6%	15.7%	15.8%	15.5%	14.5%
Mineral fuels	7.1%	6.9%	4.7%	3.1%	4.1%	4.4%	3.9%	7.4%
Unclassified products	9.8%	9.2%	11.4%	8.8%	10.3%	12.3%	10.4%	18.6%

Source: UN COMTRADE Database

Figure 7: Average Tariff Rates



Source: World Tariff Profiles, WTO/ITC/UNCTAD.

time. Such trade policies affect economic activity and well-being not only in the country enacting these policies but in their trade partner countries as well.

Figure 7 compares the average level of protectionism applied in OIC countries with the averages of world and other major economies on most-favoured nation (MFN) tariffs¹ in 2012. It also presents average tariff rates for agricultural and non-agricultural products. On aggregate, by applying an average of 11.3% tariff rate, OIC countries reveal a more protectionist picture when compared to the world average of 8.9% and average of developed countries 5.2%. This ratio more than triples the tariff rates applied by the United States. Traditionally, agricultural products enjoy higher protectionism. In these products, OIC countries remained the most protectionist group with 16.6% tariff rates, which is higher than the world average of 14.9 per cent and average of other developing countries 13.9%.

While trade policy measures are important elements of industrial policies in promoting the competitiveness of domestic industries, careful analyses should be made to measure the effectiveness of such restrictive policies for the welfare of the country in the long-term. If not properly regulated, such measures may harm the majority of the people, without significantly contributing to the overall well-being of the country.

4. AVERAGE TRADE COSTS IN OIC COUNTRIES

On average, trade costs between 1995 and 2010 have fallen around **20% in developed countries. In OIC countries, it decreased only around 9%**, which is still better than the performance of other developing countries.

Until recently, overall estimates of bilateral trade costs were not available and the applied international trade literature has commonly been using gravity model to identify the sources of trade costs. The seminal work of Anderson and van Wincoop on the determinants of trade costs estimated the overall trade costs based on the assumptions on the likely components of the total costs. For developed countries, the authors found 170% trade costs, consisting of 21% transportation costs, 44% border-related trade barriers, and 55% wholesale and retail distribution costs ($2.70=1.21*1.44*1.55$).

Recently, the World Bank and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) prepared jointly a new global data set of bilateral trade costs based on trade and production data, covering 202 countries for the time period 1995-2011. According to the World Bank and UNESCAP research, trade costs are influenced to varying degrees by distance and transport costs, tariff and non-tariff measures, and logistics. The data also stress the importance of supply chains and connectivity constraints in explaining the higher costs and lower levels of trade integration observed in developing countries.

¹ In current usage, MFN tariffs are what countries promise to impose on imports from other members of the World Trade Organization (WTO), unless the country is part of a preferential trade agreement (such as a free trade area or customs union). This means that, in practice, MFN rates are the highest (most restrictive) that WTO members charge one another.

Based on this new dataset, Figure 8 shows the average trade costs for different country groups over the period 1995-2010.² In order to avoid any potentially misleading aggregation, the averages are calculated by using the bilateral trade costs with 20 largest export partners for each country. As it is evident, although tariffs in many countries are now at historical lows, overall trade costs remain high. Average trade costs tend to exhibit higher trade costs particularly in developing countries. OIC countries, on average, display even higher trade costs. In 2010, trade costs in OIC countries (177% ad valorem) were on average two times higher than those in developed countries (89% ad valorem).

Converting ad valorem equivalents to index numbers makes it possible to see the rate at which trade costs have evolved over time in different country groups. Figure 9 shows that, on average, trade costs have fallen most quickly in developed countries (around 20%). They have fallen considerably more slowly in OIC countries and decreased only around 9 per cent to 90.9 in 2010, which is still better than the performance of other developing countries. The fall in trade costs of other developing countries accelerated in 2010 and index number decreased to 91.7.

Finally, Figure 10 shows the average trade costs in OIC countries in agriculture and manufacturing sectors separately. On average, agricultural products tend to exhibit significantly higher trade costs and it did not decrease over the period under consideration, which is consistent with the continued existence of major policy barriers. There was only a modest decrease in manufacturing from 183 per cent ad valorem to 171 per cent ad valorem. This dynamic needs to be addressed by policymakers in OIC countries if there is an aspiration to deepen their countries' integration into the global economy.

Figures 11-13 compare the development of bilateral trade costs for agriculture, manufacturing and all commodities, respectively, between different country groups. As depicted in Figure 11, during much of the period under consideration, trade costs between OIC countries in agricultural products are slightly lower than their trade costs with other country groups. In 2010, average bilateral trade costs between OIC countries were 317 ad valorem, whereas it was 327 and 332 between OIC-developed countries and OIC-other developing countries, respectively. On the other hand, trade costs in agricultural products between developed countries were constantly below the costs between OIC and its partner groups and it fell to 210 in 2010.

In terms of manufacturing products, average trade costs among the OIC countries remained around 250 during the period under consideration and this figure was very close to the average trade costs between OIC and developed countries (Figure 12). There is a clear upward trend in the trade costs between OIC and other developing countries, which increased from 277 in 1995 to 317 in 2009. Trade costs among developed countries have been constantly

² Data for 2011 are available for only few country pairs. Therefore the year 2011 has been omitted in calculating the averages for different country groups.

Figure 8: Average Trade Costs, 1995-2010

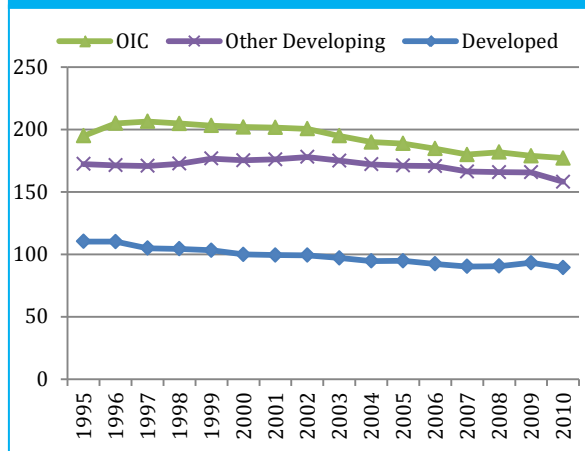


Figure 9: Average Trade Costs, 1995=100

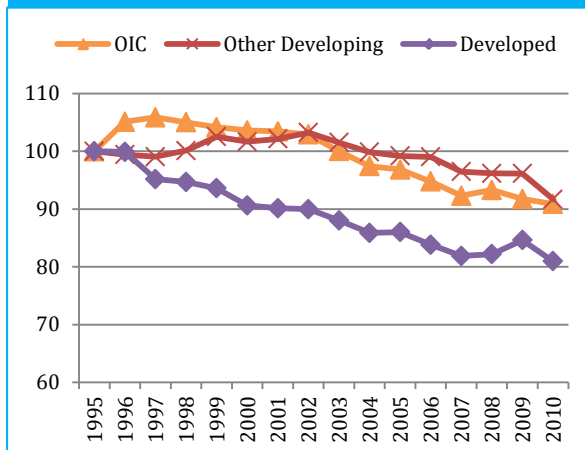
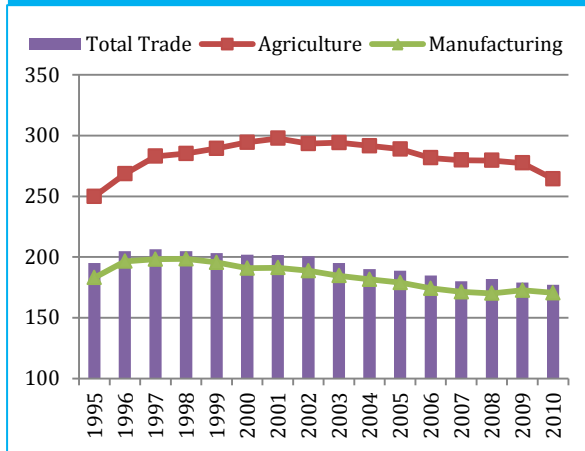


Figure 10: Average Trade Costs in OIC Countries



Source for Figures 8-10: WB-UNESCAP Trade Costs Database

Figure 11: Average Bilateral Trade Costs in Agriculture

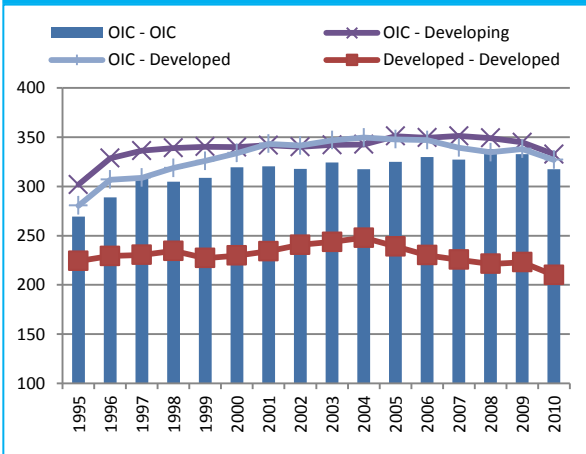


Figure 12: Average Bilateral Trade Costs in Manufacturing

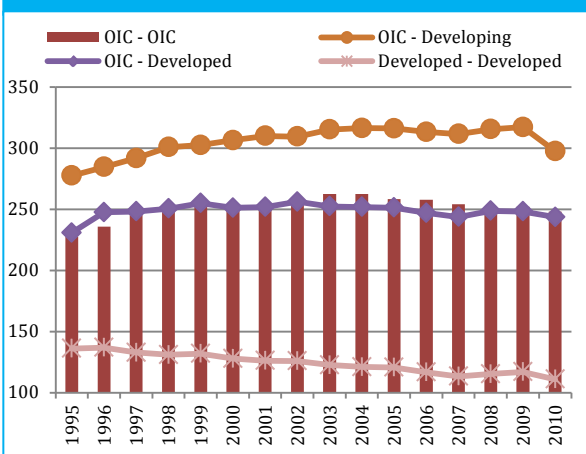
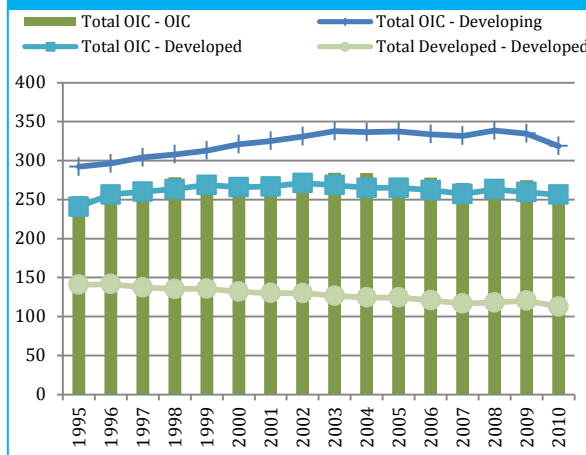


Figure 13: Average Bilateral Trade Costs in All Industries



Source for Figures 11-13: WB-UNESCAP Trade Costs Database

falling during the same period and it fell to 111 in 2010 from its level of 136 in 1995.

In terms of manufacturing products, average trade costs among the OIC countries remained around 250 during the period under consideration and this figure was very close to the average trade costs between OIC and developed countries (Figure 12). There is a clear upward trend in the trade costs between OIC and other developing countries, which increased from 277 in 1995 to 317 in 2009. Trade costs among developed countries have been constantly falling during the same period and it fell to 111 in 2010 from its level of 136 in 1995.

Finally with regard to all products, a similar picture is observed as in the case of manufacturing products (Figure 13). Parallel movements are observable in the averages of trade costs among the OIC countries and between OIC and developed countries, which fluctuated around 260. Average costs in developed countries follow a declining trend throughout the period under consideration and fell from 141 in 1995 to 113 in 2010.

Table 3 summarizes the bilateral trade costs between different country groups for the year 2010. For all group pairs, agricultural products are the most costly item in trade. Even among the developed countries, 1 unit worth of agricultural product incurs additional 2.1 unit costs until it gets to final consumer. This is only 1.1 in manufactured items for the same country group. For the OIC countries, average trade cost in agricultural products is 3.2 more than the unit value of that product. This number is around 2.5 for manufacturing products. Trade among OIC countries are less costly compared to trade between OIC and other developing countries, but it is very close to trade between OIC and developed countries. Trade between other developing countries and developed countries is on the other hand less costly than trade between OIC and developed countries.

It is also worth to see the country pairs within OIC community with relatively low and high trade costs. As depicted in Figure 14 for 2005, trade between Senegal and Mali is the least costly one. It costs only 0.58 more to deliver a 1-unit product to a final consumer between these countries. They are followed by Burkina Faso-Togo (0.6), Qatar-Bahrain (0.65), Malaysia-Indonesia (0.66), Saudi Arabia-Jordan (0.7), Kazakhstan-Kyrgyz Republic (0.72), Kuwait-Bahrain (0.76), Saudi Arabia-United Arab Emirates (0.76), Guyana-Suriname (0.79) and Syria-Lebanon (0.79). With regard to the country pairs with highest trade costs within OIC community, trade between Chad and Saudi Arabia is estimated to be the costliest one within OIC. It will cost 13.6 units more to deliver a 1-unit product to final consumer between these countries. They are followed by Yemen-Uganda (9.2), Cote D'Ivoire-Sudan (8.9), Uganda-Benin (8.1), Malaysia-Burkina Faso (7.6), Albania-Saudi Arabia (7.1), Mozambique-Morocco (6.9), Jordan-Brunei (6.9), Iran-Uganda (6.8) and Senegal-Mozambique (6.8).

As it is evident, countries with lowest trade costs usually share a common border as well as certain cultural resemblances. However, there are also countries at relatively smaller distance but with high

trade costs, mostly in sub-Saharan Africa. This clearly highlights that although distance is a critical factor in affecting the trade costs, other barriers to trade can also have substantial impact on trade costs.

Various trade policy measures and trade costs are likely to have some implications on the export market diversification of OIC countries. In this context, Figure 15 depicts the shares of different country groups for the period between 2005 and 2012. While intra-OIC export has increased around 3 percentage points, export of OIC countries to developed countries increased around 10 percentage points. Congruently, the share of other developing countries in total exports of OIC countries decreased around 13 percentage points. Higher trade costs to other developing countries and relatively lower trade costs to developed countries may have played a major role in this transformation.

Given the relative importance of trade costs in shaping trade structure of OIC countries, an empirical analysis is conducted in the next section to find out the main components that have impact on trade costs. With this, it will be easier to draw some policy recommendations on which critical areas of trade costs there will be a need for intervention to reduce it in OIC countries.

Table 3: Trade Costs between OIC, Developed and Other Developing Countries (2010)

	OIC		
	Agriculture	Manufacturing	Total
OIC	317.4	248.3	261.1
Other Developing	332.6	297.6	318.6
Developed	327.1	243.6	256.3
	Developed		
	Agriculture	Manufacturing	Total
OIC	327.1	243.6	256.3
Other Developing	289.0	219.9	229.6
Developed	210.0	111.1	112.6

Source: WB-UNESCAP Trade Costs Database

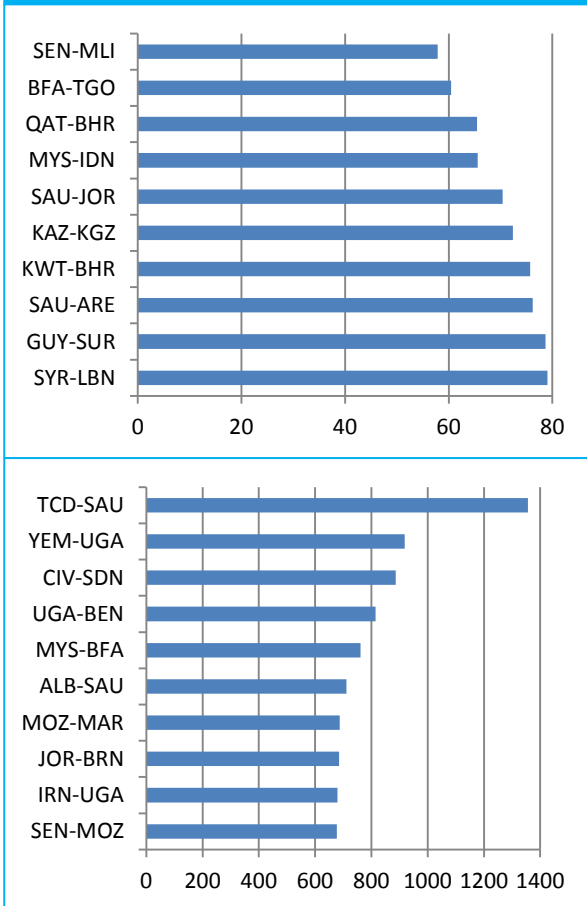
5. DECOMPOSITION OF TRADE COSTS

The analysis in the previous sections provides only limited information on trade costs. An in-depth analysis is needed to understand the factors that contribute to the levels of trade costs observed among the OIC countries. Main components of trade costs are highlighted in section 2. In this section, an econometric estimation will be carried out in order to analyze the relative significance of each component. Accordingly a wide range of variables related to policy preferences as well as natural factors will be included to the estimation. The overall approach will be similar to that of Arvis et al. (2012).

The data provided by the World Bank and UNESCAP on trade costs are not balanced. Therefore, in order to maximize the number of observation, the data for the year in which the highest number of observation are available is chosen, and that year is 2005. With respect to control variables, as highlighted in section 2, there are various observable components of trade costs. Transportation costs rely mainly on distance and technology. In order to capture this kind of costs, distance, common border as well as logistics performance index and air connectivity index have been included to the estimation. As policy barriers, tariffs and entry costs (starting a business) are added to the estimation to capture costs associated with tariff and non-tariff barriers. Information costs are also considered as an important component of trade costs. Accordingly, common language indicators, both official and ethnological, are included. Contract enforcement and other legal barriers are captured

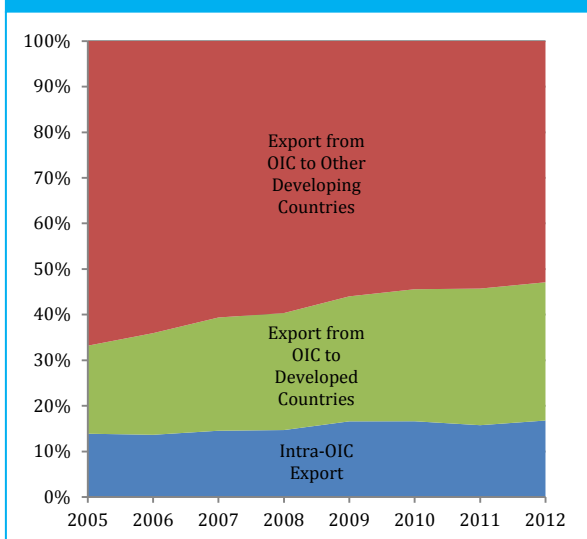
Distance remains one of the most significant factors in explaining trade costs among OIC member countries. **One standard deviation increase in distance** is associated with **0.25 standard deviation increase in trade costs.**

Figure 14: Lowest and Highest Bilateral Trade Costs between the OIC Member Countries, 2005



Source: WB-UNESCAP Trade Costs Database

Figure 15: Share of Country Groups in Intra-OIC Trade



Source: IMF DOT Database

with a dummy variable on common legal origin. Different currencies are also linked with higher trade costs. Therefore, a dummy variable for countries sharing a common currency is included. Regulatory costs are captured with the number of documents to export, which shows the degree of red tape for exporters. Finally, dummy variables for countries having regional trade agreements and for landlocked countries are considered to have important impact on trade costs. The details of data and sources are provided in Table 4.

Since trade costs data are a bilateral geometric average, following Arvis et al. (2012), independent variables that are uni-directional are transformed by taking the geometric average of the two directions. Consequently, only one direction for each bilateral pair is retained.

The following equation is then estimated by using OLS:

$$\ln(\text{trade costs}_{ij}) = b_1 + b_2 \ln(\text{distance}_{ij}) + b_3 \ln(\text{tariff}_{ij}) + b_4 \ln(\text{entry}_{ij}) + b_5 \text{docs}_{ij} + b_6 \text{border}_{ij} + b_7 \text{lang_of}_{ij} + b_8 \text{lang_ethno}_{ij} + b_9 \text{comleg}_{ij} + b_{10} \text{currency}_{ij} + b_{11} \text{RTA}_{ij} + b_{12} \ln(\text{ACI}_{ij}) + b_{13} \ln(\text{LPI}_{ij}) + b_{14} \text{landlocked}_{ij} + e_{ij}$$

The regression is estimated for trade costs in all products as well as in manufacturing and agricultural products separately. The findings are presented in Table 5. Robust standard errors are calculated to measure the level of significance due to suspect of heterogeneity. Column 1 of the table shows the results for all products. Accordingly, larger distance, higher tariff rates and entry costs as well as being landlocked tend to increase trade costs. On the other hand, sharing common border, common currency, regional trade agreements, better air connectivity and logistics performance are all factors leading to lower trade costs among the OIC countries. One would also expect negative impacts of common languages and common legal origin, but apparently their impacts are captured by other variables included into the regression.

With regard to manufacturing products, same indicators have significant impact in same direction as in the case of all products, except documents to export as a proxy for red tape. Tariff rates are again found to have significant effect. When it comes to agricultural products, distance, tariff rates and red tape are all again found to be significant components of trade costs. On the other hand, common border and regional trade agreements are the factors that lead to lower trade costs in agricultural products.

Among the thirteen independent variables, six of them are time-varying variables, therefore policy relevant indicators. Other factors like distance or being landlocked only explain the natural barriers to trade. However, among these variables, some of them can also be considered policy relevant indicators, such as common currency, common legal origin and even common official language. Since these indicators hardly change over time, they are not considered to be policy-relevant indicators within the context of this study.

In order to compare relative contributions of different factors to overall trade costs, and to come up with some policy recommendations, standardized regression coefficients (betas) are calculated. These coefficients show the change in standard deviations of the dependent variable due to a standard deviation change in each control variables. In this way, the relative strength of a control variable in affecting the total trade costs will be able to be measured. The results are presented in Table 6.

Table 5: Estimation Results

	Total	Manufacturing	Agriculture
Distance	0.163+	0.227+	0.188+
	(5.980)	(8.172)	(4.627)
Tariff Rates (Applied)	0.113**	0.125**	0.157***
	(2.261)	(2.174)	(2.615)
Entry Costs	0.066***	0.049**	0.040
	(2.939)	(2.057)	(1.379)
Documents to Export (Number)	0.176*	0.068	0.308**
	(1.810)	(0.630)	(2.319)
Common Border	-0.357+	-0.340+	-0.158**
	(-5.129)	(-4.384)	(-2.004)
Common Language (Official)	0.044	0.055	0.009
	(0.716)	(0.849)	(0.105)
Common Language (Ethno.)	-0.059	-0.039	0.018
	(-1.027)	(-0.632)	(0.232)
Common Legal Origin	-0.002	0.008	0.020
	(-0.047)	(0.193)	(0.425)
Common Currency	-0.402+	-0.426+	0.018
	(-4.751)	(-4.423)	(0.175)
Regional Trade Agreement	-0.218+	-0.218+	-0.159**
	(-4.050)	(-3.789)	(-2.122)
Air Connectivity	-0.160*	-0.155*	0.032
	(-1.864)	(-1.706)	(0.301)
Logistics Performance	-0.883+	-0.899***	-0.180
	(-3.516)	(-3.097)	(-0.532)
Landlocked	0.206+	0.237+	0.036
	(4.766)	(4.936)	(0.542)
Constant	4.416+	4.070+	3.364+
	(7.845)	(6.569)	(4.311)
r²	0.487	0.514	0.360
N	571	510	293

Note: Numbers in parenthesis are t values. Significance levels are indicated as follows: * p<0.10, ** p<0.05, *** p<0.01, + p<0.001

Table 4: Data and sources

Variable	Definition	Year	Source
Trade Costs	Estimates of trade costs between countries I and j.	2005	World Bank and UNESCAP
Distance	Great circle distance between the two principal cities of countries i and j.	-	CEPII
Tariff	Geometric average of unity plus the trade-weighted average effectively applied tariff applied to i to j's exports and by j to i's exports.	2005	TRAINS
Entry Costs	Geometric average of the cost of starting a business in country i and country j.	2005	Doing Business
Documents to Export	Geometric average of number of document required for export in country i and country j.	2005	World Bank
Common Border	Dummy variable equal to unity if countries i and j share a common land border.	-	CEPII
Common Language (Official)	Dummy variable equal to unity if countries i and j share a common official language.	-	CEPII
Common Language (Ethno.)	Dummy variable equal to unity if countries i and j share a common language (ethnographic basis).	-	CEPII
Common Legal Origin	Dummy variable equal to unity if countries i and j were colonized by the same power.	-	CEPII
Common Currency	Dummy variable equal to unity if countries i and j have a common currency.	-	CEPII
RTA	Dummy variable equal to unity if countries i and j are members of the same RTA.	2005	De Sousa (2012)
ACI	Geometric average of country i's and j's scores on the Air Connectivity Index.	2007	World Bank
LPI	Geometric average of country i's and j's scores on the Logistics Performance Index.	2007	World Bank
Landlocked	Dummy variable equal to unity if one of the countries i and j is landlocked.	-	CEPII

Larger distance, higher tariff rates and entry costs as well as being landlocked tend to increase trade costs. On the other hand, **sharing common border, common currency, regional trade agreements, better air connectivity and logistics performance** are all factors leading to lower trade costs among the OIC countries.

Table 6: Estimation Results - Standardized Regression Coefficients

	Total	Manufacturing	Agriculture
Distance	0.250+	0.331+	0.378+
Tariff Rates (Applied)	0.101**	0.110**	0.173***
Entry Costs	0.129***	0.094**	0.094
Documents to Export (Number)	0.076*	0.028	0.170**
Common Border	-0.190+	-0.169+	-0.124**
Common Language (Official)	0.040	0.049	0.010
Common Language (Ethno.)	-0.053	0.035	0.020
Common Legal Origin	-0.002	-0.007	0.022
Common Currency	-0.205+	-0.199+	0.012
Regional Trade Agreement	-0.178+	-0.173+	-0.171**
Air Connectivity	-0.096*	-0.089*	0.021
Logistics Performance	-0.182+	-0.180***	-0.047
Landlocked	0.183+	0.199+	0.034

When trade costs in all industries are considered, policy related indicators are all significant. Distance remains one of the most significant factors in explaining trade costs among OIC member countries. One standard deviation increase in distance is associated with 0.25 standard deviation increase in trade costs. Similarly trade with landlocked countries increases trade costs by 0.18 standard deviation. Higher cost of starting a business and tariff rates are the other factors that increase trade costs among OIC countries by more than 0.1 standard deviation. Common border, common currency, regional trade agreement and logistics performance including air connectivity are the factors that reduce the trade costs among OIC countries.

Except red tape indicator, the same variables have statistically significant impact on trade costs in manufacturing products. Distance, tariff rates and trading with landlocked countries are even bigger contributors of trade costs in manufacturing products. Sharing a common border and common currency, on the other hand, reduce trade costs within OIC countries. Better logistics performance and connectivity with partner countries again help to shrink trade costs.

The beta coefficients for agriculture show that trade costs are particularly sensitive in relative terms to geographical proximity, tariff rates, red tape, common border as well as regional trade agreements. Non-tariff barriers play a significantly more role in agricultural industries, but such barriers are not easy to capture. An

indication of the importance of non-tariff measures is the noticeably lower R2 for agricultural products as compared with manufactured goods, which indicates that a significant part of the variation in trade costs is being driven by factors outside the model, surely including various types of non-tariff measures.

Evidently, the findings suggest several policy recommendations for OIC countries to reduce trade costs and promote intra-OIC trade. Important ones can be summarized as follows. First and foremost, tariff and non-tariff barriers should be reduced. They significantly contribute to trade costs among OIC countries. Regional trade agreements are also found to positively contribute to the reduction of trade costs. In this context, already initiated Trade Preferential System for OIC countries (TPS-OIC) should become operational to reduce trade barriers and improve regional integration.

Another factor in increasing trade costs in OIC countries is higher costs of starting a new business. If exporting companies are not able to cost-effectively establish offices in partner countries, their ability to compete in these markets will be negatively affected and they will be discouraged to enter these markets. Therefore, special efforts should be made to reduce costs of starting a new business and all related entry costs to facilitate trade among the OIC countries.

Being a critical factor in trade, logistical infrastructure in OIC countries is not sufficiently developed. This in turn significantly increase trade costs and makes the firms that wish to export relatively uncompetitive compared to the firms that export from countries with relatively well developed logistical facilities. Air connectivity also facilitates the movement of people and goods in a relatively shorter period of time. If countries are connected with many destinations, their communication, delivery and other formalities in terms of export will be much easier and a facilitating factor in trade. Therefore, logistics infrastructure in OIC countries should be developed to facilitate trade among OIC countries as well as with other partners.

Significant barriers are also observed in official formalities. Such formalities typically include customs declarations, applications for import/export permits, and other supporting documents such as certificates of origin and trading invoices. Higher number of documents required for export, being used as a proxy for such formalities, not only discourage exporters, but also open the door for bribery and corruption. Therefore, all the formalities related to export should be transparent and easy to submit. In this context, the implementation of a single window system should be promoted to facilitate trade which enables international traders to submit regulatory documents at a single location and/or single entity.

There are also natural barriers to trade, which are not easy to address. For example, landlocked countries constantly face challenges with regard to accessibility to international markets. Advanced transportation modalities can help to improve this accessibility, but such modalities require large amount of investments. Particularly small landlocked developing countries lack such resources. However, through other trade facilitating activities,

Common currency reduces trade costs through elimination of transaction costs and exchange rate uncertainty as well as increase in price transparency. However, **establishing common currency areas is a challenging task requiring a highly developed level of economic integration.**

cost of trade from such countries can be reduced and their integration to international markets can be supported.

Common currency can naturally reduce trade costs through elimination of transaction costs and exchange rate uncertainty as well as increase in price transparency. However, establishing common currency areas is a challenging task requiring a highly developed level of economic integration. While it appears to be a hard-to-achieve target for OIC countries, any progress towards this direction will definitely improve socio-economic integration among OIC countries.

CONCLUDING REMARKS

This study provides a brief account of trade costs in OIC countries. After shortly discussing the recent developments in intra-OIC trade, it tries to understand the role of trade costs in the development of intra-OIC trade. Additionally, this study makes an empirical assessment on the main elements of trade costs that have impact on the trade of OIC countries.

It is generally observed an upward trend in intra-OIC export since 2005, but there is even a stronger trend in exports from OIC to developed countries. Descriptive analyses on trade costs show that trade costs in OIC countries are higher than developed and other developing countries. Trade costs among OIC countries are lower than trade costs between OIC and other developing countries, but significantly higher than trade costs between OIC and developed countries. This paper argues that much of the changes in the geographical distribution of exports of OIC countries can be attributed to the changes in trade costs.

The findings on the decomposition of trade costs reveal that as also put by Anderson and van Wincoop (2004), the “death of distance is exaggerated”. Distance remains the largest contributor of trade costs. Aside from constantly falling trade-policy barriers and transport costs, trade costs continue to remain large. The findings also indicate that direct policy instruments (tariffs and the tariff equivalents of quotas) are less important than other policies (transport infrastructure investment, regional trade agreements and common currency).

World trade takes place increasingly in parts and components, with each country specializing in particular stages of a good's production sequence. A key feature of this vertical specialization is that imported inputs are used to produce a country's export goods, which also reflects an international division of labour. An important driving force for growing vertical specialization has been trade barrier reduction. Despite several re-export and border crossings, reductions in trade barriers yield a multiplied reduction in the cost of producing a good sequentially in several countries. In order to be able to take larger share in this form of production and trade, it is required to

have efficient and fast transport and trade mechanisms in place in addition to appropriate factors of production.

Assuming the process of vertical specialization will continue, understanding the source and nature of trade costs remain crucial. However, the analysis and policy implications for trade costs are more complex than for traditional trade barriers such as tariffs or quotas. Moreover, some behind-the-border trade costs may involve intangible factors such as concerns about security or they may be constant instruments of national political debates. Such concerns and debates should be underpinned with firm understanding of the nature and consequences of trade costs. Various measures of trade facilitation can naturally be recommended, such as simple rules and procedures, operational flexibility, fair and consistent contract enforcement, standardisation of documents and electronic data requirements, and Single Window System. This requires strong political willingness and commitment, with participation of private sector as well.

Trade costs can be reduced unilaterally, regionally or multilaterally, either by further reducing traditional trade barriers or by taking effective trade facilitation measures. Achieving global agreement has been difficult, despite the inclusion of trade facilitation in multilateral trade negotiations. However, much progress has been achieved by national measures. On the other hand, there has been substantial progress in regional agreements, most obviously in Europe. By introducing Trade Preferential System (TPS-OIC) OIC countries are also targeting to reduce trade barriers among the OIC countries. However, they require stronger commitment and willingness to promote trade among them.

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