Inter-Arab Trade and The Potential Success of AFTA

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ABSTRACT

Trade among Arab countries has been very weak despite previous efforts to engage into different forms of regional economic integration. Using the flexible framework provided by the Gravity Model, the paper gives an order of magnitude of the main factors often presented in explaining the weakness of inter-Arab Trade. The results of the model together with several indicators about export profiles, trade correspondence, and revealed comparative advantage, are used to examine the prospects of increased inter-Arab trade following the liberalization of trade envisaged under the newly established Arab Free Trade Area (AFTA). We are able to establish a tentative list of commodities that represent opportunities for expanded trade as well as a list of partner countries'that have higher chances of benefiting from trade liberalization under AFTA. We argue that although the possibilities for expanded inter-Arab trade are real, the realization of these possibilities requires, among other things, the improvement of transport links among Arab countries and the de-linking of political from economic relationships between the latter countries.

1. INTRODUCTION:

Trade among Arab countries (ACs) has been consistently weak in spite of several efforts to engage into different forms of regional economic integration. The most important attempts to achieve Arab economic integration were the agreement of 1953 on Transit Trade, the Common Market attempt of 1964, and the agreement of 1981 on the facilitation and development of trade, all signed under the auspices of the Arab League. These attempts, in addition to about 135 bilateral trade-related agreements, were not capable of stretching inter-trade beyond its peak of 10 percent of the total trade of ACs.

In 1994, the intra-trade of ACs as percentage of their total exports was around 8.3 percent. This rate compares unfavorably with the corresponding rates of many regional groupings from both Developed and Developing countries. The latter ratios were 69.9 percent for APEC, 61.7 percent for EU, 47.6 percent for NAFTA, and 11.6 percent for EFTA. For regional groupings from the Developing countries these rates were 18.2 percent for MERCOSUR (Latin America), 12.0 percent for UEMOA (West Africa), and 21.2 percent for ASEAN (South-East Asia).[1]

These rates are not strictly comparable across groupings. Difference in the degree of development, size, and weight in international trade of the different countries of the groupings, explain to a great extent the observed variation between these regional groups. This can be said, however, the extent of Intra-Arab trade is arguably weaker than what it should have been given the common historical, religious, social, cultural, and language characteristics shared by these countries.

Many factors were presented to explain the weakness of Intra-Arab trade and the obvious failure of previous Arab regional agreements to stimulate trade among Arab countries. These factors range from mere economic factors, such as difference in economic systems, similarity of production structure and traded goods, lack of adequate transportation infrastructure compounded by distance, overprotection, heavy reliance on trade taxes, the lack of convertibility of Arab currencies, lack of market information, weakness of marketing strategies, and poor competitiveness of products.

[1] These figures are derived from the UNCTAD (1997): Handbook of International Trade and Development Statistics.

Other factors are of an institutional nature. These include colonial links or the moral commitment to a well established partner (North African Arab countries to Europe, and Middle Eastern countries to the U.S. and Europe), the poor preparation of and lack of commitment to the regional agreements, the lack of adequate trade financing schemes at the regional level, the low quality of bureaucracy, and lengthy trade-related procedures. Last but not least, trade among Arab countries is very sensitive to political events and relationships among these countries.

These impediment factors notwithstanding, Arab leaders have unanimously taken the decision, during their summit of June 1996 in Cairo, to revive the 1981 agreements and create an Arab Free Trade Area (AFTA). The unanimous decision bears witness to the commitment of Arab countries to reinforce trade among each other as a means of facing the fierce competition in international markets entailed by a rampant globalization.

The agreements of AFTA which came into effect January 1, 1998, entailed the elimination of non-tariff barriers and the reduction of tariff rates on goods traded among ACs by an average of 10 percent a year, over a period of ten years. Although, the general feeling is that AFTA has been well prepared for and unambiguously committed to, many suspect that most of the factors that are behind the failure of previous agreements are still present. Arguably, this minimizes the chance of a breakthrough in inter-Arab trade.

This paper presents an objective evaluation of the potential for success in AFTA agreements based on a model accounting for most of the dimensions involved in explaining Intra-Arab trade flows.

Section 2 presents an overview of the main characteristics of Arab countries' trade. Section 3 presents and estimates a model for Arab bilateraltrade. Based on the results of the model, section 4, assesses the potential success of AFTA and points to the commodity groups where the agreements establishing AFTA are likely to be more effective than others. Areas where future Intra-Arab trade should be stimulated are also discussed. Finally, section 5 concludes.

2. CHARACTERISTICS OF ARAB COUNTRIES'TRADE:

Making an assessment of AFTA and evaluating the likelihood of its success requires an assessment of the characteristics of ACs trade. Table 1 (see appendix)[2], indicates the destination of ACs' exports in 1995 and compares them with that of group's average and the average for all developing countries as well as the average values for exports of ACs during the 1990s. The share of ACs' exports going to industrial countries has been declining steadily during the 1990s (from 54.5 to 48 percent) while the share of their exports going to developing countries has been increasing (from 40 to 46 percent), making the split among industrial and developing countries more even than that observed for all developing countries combined (54 percent going to industrial and 43 going to developing countries).

Of the industrial countries, ACs lean more towards the European Union (EU) with the Maghreb countries revealing stronger dependence on the EU. While the figures in general support the recent trend towards EU-Mediterranean partnerships, one is somewhat puzzled by the case of Jordan (with less than 5 percent of its exports in 1995 and during the period of 1990-95 going to the EU). As for other industrial countries, ACs exports to Japan are quite similar to the average of developing countries while they fall short of the developing countries' average exports to North America.

As far as developing countries are concerned, it is interesting to note that while the shares of ACs' exports going to the main developing regions given in the table have not changed significantly during the 1990s, they have been consistently below the developing countries averages to Asia, Europe and the Western Hemisphere and above averages to Africa and the Middle East.

Table 2, which is similar in structure to table 1, gives information on the sources of imports of ACs. Overall the shares of imports coming from industrial and developing countries are quite similar to those of developing countries. ACs, however, exceed developing countries significantly on average in their dependence on the EU, the Middle East, (the rest of) Europe and Africa as sources of their imports. They, however, do not depend on other regions as much as the rest of

[2] For all statistical tables, referred to in the text, see appendix at the end of the paper.

developing countries do. Here again, EU's partners (except Jordan!) depend more heavily on the EU as a source for their imports.

Table 3 gives the commodity composition of the exports of ACs for the period 1984-1995. It is clear that ACs' exports are dominated by minerals and fuels (SITC3) accounting, on average, for more than one third of their total exports. On average, Kuwait, Morocco, Tunisia, UAE and to a lesser extent Egypt, Jordan, Oman, Qatar and Bahrain show a relatively diversified set of exports. Some of these countries such as Kuwait and Tunisia have turned the structure of their exports around during the past ten to fifteen years while others such as Egypt, Morocco and Jordan have maintained the same structure of exports.[3]

Table 4 reveals also that resource-rich countries like Saudi Arabia, Algeria and Libya have remained rather heavily concentrated on crude petroleum and/or natural gas. This clearly limits these countries' capacity to engage in mutually beneficial bilateral trade in the region. We should also note that while the exports of other resource-rich countries are still significantly based on mineral fuels, they have started to develop some capacity for exporting in other categories, such as chemicals and manufactured goods (rubber, cork, paper, nonmetallic materials and nonferrous metals).

Using the UN Comtrade Database, we calculated the export concentration ratios for ACs, using the share of the three leading commodities in total exports at the two-digit SITC (revision one). Table 4 gives the export concentration ratios as well as the top three SITC two-digit categories of exports, for selected years. For example, in 1984, the export concentration ratio of Algeria was 99.12% and the three top categories of exports were categories SITC33 (Petroleum and Products), SITC34 (Gas Natural and Manufactured) and SITC51 (Chemical Elements and Compounds). Table 4 generates similar conclusions to Table 3, with Morocco, Kuwait, Tunisia, Qatar, UAE and Egypt showing more export diversification than others.

Recognition of true export performance and potential (i.e. comparative advantage) is in principle not possible without ample information about pre-trade relative prices. However, to have a feel for the pattern of comparative advantage and, therefore, export potential of ACs, we use Balassa's Revealed Comparative Advantage (RCA) which measures the country's export share of a given commodity in its total trade relative to the export share of that commodity in total world trade. The RCA index is defined by

[3] For a detailed description of the evolution of the composition of Arab trade, see Zarrouk (1992).

$RCA = (X_{ik} / X_{il})/(X_{wk} /X_{wt})$
where X refers to the value of exports, k a commodity, t to total exports, and i and w are the given country and the world, respectively.

An RCA value equal to one indicates that the country's export performance is equal to the world average in the given commodity and, therefore, the country's actual performance (i.e. its export share) does not reveal any deviation from its expected performance (i.e. the world export share). RCA values greater than unity imply that the country's share of exports in a given commodity is disproportionately large and the country is, therefore, revealed to have comparative advantage in the commodity.

Using data from the UN Comtrade Database at the SITC two-digit level (Revision 1), we calculated RCA indices for ACs for the period 1984-1995. Table 5 gives the average values of the RCA indices of ACs for all two-digit commodities.

Table 6 summarizes the performance of ACs and' reveals their export potentials. The table indicates that a number of ACs seem to have export potential in a number of categories, with Morocco, Kuwait, Egypt and Tunisia standing out as better performers relative to the rest. These countries don't just have revealed comparative advantage in many commodity groups, but they also rank more consistently among countries with relatively high RCA values when compared with the rest. A quick count of the third column of Table 6 reveals that in 37 out of the 61 commodity groups classified at the two-digit level, at least one country has advantage. In 11 out of the 37 commodity groups, ACs have four or more advantages relative to world averages.

Table 7, reveals that the structure of imports is quite similar to most developing countries with relatively heavier concentration on SITC categories 5 to 8 (chemicals, manufactured goods, machinery and transport equipment, and miscellaneous manufactures). The average share in ACs' imports of the latter categories were, 10, 20, 30, and 9 percent, respectively. It should also be noted that like many developing countries food accounts for more than 10 percent of imports, making almost all ACs net importers of food.

The analysis so far seems to imply the existence of reasonable opportunities for enhancing the competitive positions of ACs and for increasing mutually beneficial trade among them. Actual intra-Arab trade has not realized those benefits yet. Table 8, reveals that the share of inter-Arab trade has expanded in the last half of the 80's but decreased during the early 90's. The share of inter-Arab trade in 1995 was about the same as that of 1984 (7.7 percent). The same can be said about the share of inter-Arab exports in total exports and the share of inter-Arab imports in total imports of ACs, respectively. The latter shares have remained relatively stable during the sample period considered.

Table 9 provides the commodity composition of inter-Arab imports and exports over selected years. The composition of inter-Arab trade is not very similar to that of ACs' total trade. This may be explained by the similarity of production and trade structure of most ACs. On the other hand, table 9 reveals that mineral fuels, manufactures, chemicals and food represent the most important goods in inter-Arab trade with increasing shares of manufactures and chemicals.

3. MODELLING ARAB BILATERAL TRADE FLOWS:

Empirical models of international trade have addressed three aspects namely, commodity composition, direction, and volume of trade. Theoretical models, on the other hand, have been overwhelmingly directed toward the issue of the commodity composition of trade based on the different sources of comparative advantages be they difference in technology, factor endowments, tastes, economies of scale, or barriers to trade.

The lack of a "Comprehensive International Trade Theory", let alone the complexity of the ones available, were such that empirical models had to tackle either, specific aspects that are closely linked to a particular theory, or many aspects at the same time, with the risk of being of "dubious theoretical heritage". Some of the well known reviews'[4] of the empirical studies addressing specific aspects related to a particular theory, reveal that many of these studies are flawed, testing hypotheses that are easily rejectable'[5], loosely connected with the theory at hand, and inconclusive.

[4] See for instance, Leamer (1989) and Deardorff (1984).

[5] Leamer, op. Cit. gives the examples of purchasing power parity and factor price equalization.

In contrast, some of the most successful empirical models of international trade have been hybrid in nature, borrowing from different bodies of theory. The Gravity Model (GM), which appeared in the early sixties[6] and justified by Linnemann (1966), has been one of the most successful empirical models explaining bilateral trade flows among countries. Many authors have tried to rationalize GM through sound theoretical frameworks. These include the works of, among others, Anderson (1979), Bergstrand (1985, 1989, 1990), and Deardorff (1995). These studies show that GM can be derived from variates of Hecksher-Ohlin, product differentiation, and monopolistic competition theory. Therefore, GM cannot be used to lend support to any particular theory, but as a tool to model different aspects of bilateral trade flows. Deardorff (1984, 1995) explains the success of GM by the fact that it can be derived from about any plausible model of trade, and for portraying empirical regularities and patterns of trade that are not easily predictable by available trade theories.[7]

According to GM, by analogy to the law of gravitational attraction in Physics, trade, $\mathbf{T_{ij}}$ (attraction) between two countries i and j (objects), is proportionately related to their respective levels of GNP Yi and Yj (masses), and the distance separating them, $\mathbf{D_{ij}}$:

$$\mathbf{T_{ij}} = \frac{\mathbf{Y_i Y_j}}{\mathbf{D_{ij}}}$$

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[6] See Tinbergen (1962) and Poyhonen (1963) as cited in Deardorff (1995).

[7] For instance, he argues that trade in high weight-to-value products (like cement) cannot be explained by traditional trade theories. Besides, patterns of trade related to economies of scale are unpredictable in the sense that more than one pattern of trade can be consistent with a given vector of factor endowments and technological characteristics.

This crude version has been augmented by many other explanatory variables facilitating or hampering trade among countries. These include the level of development, population size, membership to a preferential trade area or customs union, adjacency, protection, factor endowments, commodity composition of trade, economic proximity, exchange rate risk and variability, and price variables.[8]

Generally speaking, the variables entering into GM can be classified into one or more of the following 3 categories:

- Variables describing the potential supply of the exporting country.
- Variables describing the potential demand of the importing country.
- Friction variables: variables describing the resistance to trade.

Among the variables used to depict potential supply are the level of GNP, GNP per capita, population size, and the resource or factor supply of the exporting country. The first four variables indicate the economies of scale effect, while the last variable indicates the factor endowment effect.

Factors affecting the potential demand include, GNP, GNP per capita, population size, adjacency, and trading-bloc membership. Other variables, such as the degree of correspondence between exports and imports of partner countries, and the difference between their GNP per capita are also used as proxies for the existence of potential demand.[9]

Finally, trade resistance variables include, as pointed by Linnemann (1966), natural and artificial variables. Natural variables pertain mainly to the cost of transportation related in turn to the weight, bulk, value, physical characteristics, distance to be traversed, mode and speed of transport, character of the route, existence of competing cargoes, time of shipments; of the commodities to be traded. Since not all the latter variables are readily available, distance between partner countries has very often been used as a proxy for transportation costs. Distance is also used to approximate the effect of the "psychic distance" or the degree of knowledge of the partner country's market.

[8] In addition to the references cited above, see for instance, Frankel et al. (1995), Van Beers (1995), Balassa and Bauwens (1987), Thursby and Thursby (1987), Balassa (1986), and Learner (1989, 1988, and 1974).

[9] Arguably, demand is more diversified at higher level of development i.e. GNP per capita.

Artificial variables pertain to trade impediments such as tariffs, non-tariff barriers, and foreign exchange restrictions. Institutional as well as political factors would also be included under the same heading of artificial variables.

With regards to the mathematical specification used for GM, most empirical works have relied on the overwhelmingly successful log-linear form. In fact, some of the studies previously mentioned have provided a rigorous foundation for the log-linear form. Sanso et al. (1993) have, on the other hand, explored the possibility of deriving GM from a more general functional form using Box-Cox transformations.

In this paper, we use the log-linear form to estimate bilateral import flows among Arab countries over the period 1984-1995, to give an order of magnitude for the impact of the main factors often advanced in explaining the weakness of Intra-Arab trade.[10]

The equation to be estimated is as follows:[11]

$$\text{Log}(M_{ij}) = \beta\beta_1\text{Log}(GNP_i * GNP_j) + \beta_1\text{Log}(GNP_i * GNP_j) + \beta_3\text{Log}(DISTANCE_{ij})$$

$$+ \beta_4\text{Log}(INEQGNPC) + \beta_5 PARTNER + \beta_6 COSINE_{ij} + \beta_7 POLFACT$$

$$+ \beta_8\text{Log}(XRC_i) + \beta_9\text{Log}(M_{ji}) + \beta_{10} ATFD81 + \beta_{11} BORDER + CONSTANT$$

M_{ij}: Flow of imports of country j from country i, in millions of U. S. dollars.

GNP: Gross National Product of country i or j in millions of U.S. dollars.

GNPC: GNP per capita in milli ns of U. S. Dollars.

DISTANCE: Distance in kilometers between the capitals of countries i and j.

BORDER: Dummy variable taking the value of unity if i and j share a common border and zero otherwise.[12]

PARTNER: Dummy variable taking the value of unity if i and j are members of GCC or AMU and zero otherwise.

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[10] Arab countries, excluding Palestine, are: Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon Libya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, and Yemen.

[11] Frankel et al. (1995) and Cyrus (1996) followed a closer specification.

[12] GCC stands for the Gulf Cooperation Council formed in 1981 grouping Bahrain, Kuwait, Qatar, Oman, Saudi Arabia, and the United Arab Emirates. AMU stands for the Arab Maghreb Union formed in 1989 and grouping Algeria, Libya, Mauritania, Morocco, and Tunisia.

INEQGNPC: Measure of GNP per capita inequality between countries i and j.[13]

POLFACT: Dummy variable taking the value of unity in case of border closing, political disagreement or event affecting normal diplomatic and commercial relations between countries i and j.

COSINE: Measure of trade correspondence between the export structure of country i and the import structure of country j.[14]

XCR: Export Concentration Ratio of country i measured as the share of the three most important commodities in the total value of its exports.

ATFD81: Dummy variable taking the value one if both countries, i and j, have signed the Arab Trade Facilitation and Development agreement of 1981, and zero otherwise.

$\mathbf{M}_{ji}$: Flows of imports of country i from country j, in millions of U. S. dollars.

It should be pointed out that the value of exports f?om country i to country j is used to approximate the value of imports of country j from country i. This is done in order to control for discrepancies between the two values attributed to distortions in domestic policies and differences in recording and classification systems.[15]

[13] Balassa (1986), Balassa and Bauwens (1987), and Bergstrand (1990) used tlfis measure of inequality. For a given variable x it is given by: 1+[xlog(x)+(l-x)log(l-x)l/log(2). It has the advantage of depicting relative rather than absolute inequality and falls between zero and one.

[14] The cosine measure indicates the cosine of the angle between the export vector of country i and the import vector of country j and is given by: $COSINE_{ij} = \sum_k E_{ik} M_{jk} / \sqrt{\sum_k E_{ik}^2 . \sum_k M_{jk}^2}$. where E_{ik} stands for exports of commodity k by country i and M_{jk} for imports of commodity k by country j .

[15] In principle, the two values should be equal except for the cost of freight and insurance. However, large discrepancies between the two figures were recorded for ACs.

As mentioned earlier, one of the most important factors explaining the empirical success of GM is that it includes several stylized facts about international trade. One of these facts is that large countries tend to trade with each other more proportionately than small countries do. In the estimation equation mentioned above, income enters multiplicatively: GNP_i,* GNP_j . The sign of this coefficient is expected to be positive, reflecting the fact that trade increases with the respective sizes of the trading countries.

Similarly, the level of development of the trading countries, as portrayed by the product of their GNP per capita, should result in higher trade opportunities. This stems from the empirical observation that demand tends to be more diversified at higher levels of development. It follows that the sign of the coefficient of GNP_i * GNP_j should also be positive. The sign of the distance variable, as a proxy for transport cost, is expected to be negative. The dummy variables BORDER, PARTNER, ATFD81, test the extent to which regional considerations such as geographical adjacency and trading-bloc membership, affect inter-Arab trade. The coefficients of these respective variables could be either positive or negative.

In order to test the validity of the argument attributing weakness of interArab trade to political factors, we have constructed a dummy variable based on a recollection of events such as border closing, boycott, and other political events believed to have affected normal trade relations between pairs of Arab countries over the sample period. The coefficient of this variable, POLFACT, is expected to be negative.

The variable INEQGNP, reflects the relative difference in the per capita income of partner countries.[16] This variable can be used to test two different and competing trade "theories" namely, Linder's theory and the Hecksher-Ohlin (H-O) theory. Linder argues that pairs of countries with similar incomes per capita tend to have close tastes. On the other hand, countries with the same taste tend to trade with each other and vice-versa. This is due to the fact that in the case of a pronounced difference in tastes, it is costly to tailor a new product just to fit the local demand of the partner country. In contrast, one of the possible interpretations of H-O theory is that countries with substantially similar per capita incomes tend to have the same factor endowments, produce the same goods, and, therefore, to trade very little with each other. Therefore, Linder's and H-O theories imply different signs for the coefficient of INEQGNPC: negative in the case of Linder's and positive in the case of H-O's.

The COSINE variable is an indicator of the degree of correspondence between the export structure of the exporting country and the import structure of the importing country, and an indicator of the expected intensity of trade between a pair of countries or region.[17] The values of this variable range between zero and one. A value close to zero reflects an absence of trade potential, whereas a value close to one indicates full correspondence between the exports of the supplying country and the imports of the demanding country. The coefficient of this variable is expected to be positive. If it is, in addition, significant, it indicates that the exporting country is able to convert its export potential into effective trade. The calculation of the COSINE variable is based on data classified at the SITC two-digit level. Partial COSINE indicators are also computed for the nine different SITC one-digit commodity categories. These are used, as explained below, for the estimation of GM for the latter categories.

[16] This variable was used as a test for Linder's thesis in among others, Thursby and Thursby (1987), Hoftyzer (1984), and Blejer (1978).

[17] Van Beers and Biessen (1995) is among the very few studies incorporating the COSINE variable into GM.

The incorporation of the reverse trade, M_{ji}, reflects the presence of reciprocity in trade among Arab countries. Country j will import from country i only if the latter will import from the former. Furthermore, the higher the value of trade in one direction the higher it will be in the other direction. This represents an additional stylized fact about international trade in general. Besides, it can be interpreted as a safeguard against the possible default by the importing country to pay its dues for reasons related to exchange rate shortage, the eruption of political disturbances and the like. The sign of the coefficient associated with this variable is expected to be positive.

Finally, XCR or the export concentration ratio, is an indicator of the effect of the economic structure of the exporting country on trade. Arguably, the higher the value of XCR, the less diversified the economy of the exporting country, and therefore, the lower the export potential in terms of meeting the demand for a wide range of commodities. In principle, the coefficient of this variable is expected to be negative except for commodities that represent a high share in a country's exports.

Data on bilateral trade were obtained from the Arab Monetary Fund and the United Nations Commodity Trade Statistics. Data on other general variables such as GNP and GNP per capita, were obtained from the World Bank's World Development Indicators. The Arab Union of Land Transport kindly provided data on distances between Arab countries. Authors based on various sources computed the rest of the variables.

The choice of the time period was dictated by the unavailability of trade data for most Arab countries before the early eighties, let alone its classification according to major categories of commodities notably, according to the United Nations' Standard International Trade Classification System (SITC). Even in the period considered, 1984-1995, data were not available for all the countries and all the years. Furthermore, several countries such as, Comoros, Djibouti and Somalia had to be excluded from the sample altogether.

Many studies have pointed to the fact that the impact of erogenous variables on trade flows tend to vary across commodity classes.[18] For this reason, separate estimation equations were used for aggregate non-oil commodity trade, and the trade for the different commodities as classified in the first revision of the United Nations' SITC system, respectively.

Tables 10 and 11 report the results based on panel data estimation of the pooled Arab bilateral trade flows for the period 1984-1995. Estimates are derived from the Variance Components method

[18] See for instance, Hentschel (1992).

to take into account the heterogeneous nature of trade among the different pairs of countries, and Yhe flows of trade in the two directions for the same pair.[19]

Table 10 gives the estimation of GM for total and non-oil Arab bilateral trade. The estimation results for total commodity bilateral trade, show that the coefficients of the main variables in the GM equation: GNP, GNP per capita, DISTANCE, PARTNER, BORDER, and the "reciprocity" variables are significant and have the expected signs. A one percent increase in the GNP of one of the trading partners would increase the flow of exports by 0.25 percent[20]; a one percent increase in distance would cause a reduction of exports by 0. 37 percent; a one percent increase in trade in one direction causes a 0. 17 percent increase in trade in the other direction; partner countries members of either GCC or AMU tend to trade 2.53 times as much as non-member countries;[21] and countries sharing the same borders tend to trade 1.67 times as much as countries not sharing a border.

The coefficient of INEQGNPC shows that trade among Arab countries is not based on difference in factor endowments. The negative sign indicates to a certain extent that trade is rather based on difference in the pattern of demand across Arab countries. Political factors affect negatively normal trade relations between any pair of countries by 1.23 percent with respect to the situation where those factors are not present. The export concentration ratio does not seem to affect in any significant way total bilateral trade flows. The Arab agreements on trade development and facilitation , signed by most Arab countries, did not have any significant impact on total bilateral trade flows among Arab countries. Finally, the statistical insignificance of the coefficient of the cosine variable points to the fact that ACs have not been able to convert their export potential into effective trade.

Table 10 also provides the estimates of GM for non-oil products. The signs and the significance of most of the coefficients are the same as for total commodity trade. This is said, the effects of distance, difference in development level, political factors, reciprocity, and membership to the agreement on trade development and

[19] Only the variance components (or random effect) method is used. The fixed effect method subtracts the individual means for each variable and uses the transformed variables in the regression. As a result, many variables that are constant over the sample period, such as DISTANCE, could riot be identified.

[20] This number was obtained as follows: (0.41+0.09)/2. 0.09 being the coefficient of GNPC in the GM equation for total commodity trade.

[21] This number was obtained as follows: 2.53=exp(O.93). Similar procedure was followed for coefficients attached to dummy variables.

facilitation, have become more pronounced for non-oil commodity trade. The effect of membership to either GCC or AMU turns out to be weaker for non-oil commodities. The few variables' coefficients that have changed signs, have remained statistically insignificant.

Table 11 shows the results of the GM estimation for the different SITC one-digit categories of Arab commodity trade. The GNP coefficient estimates are all positive and significant except for animal and vegetable oils and fats (SITC4). All GNP per capita coefficients turn out to be negative and insignificant, except for miscellaneous manufactures (SITC 8) where the coefficient is significant. This shows that inter-Arab trade does not increase with the level of their development.

Distance is the most significant variable affecting inter-Arab trade. The distance coefficients are overwhelmingly negative and significant except for commodities that are not readily perishable such as, Beverages and Tobacco (SITCI), and animal and vegetable oils and fats (SITC4), or commodities for which transportation links are well established such as mineral fuels (SITC3).

Relative difference in GNP per capita can affect trade either way. This variable affects positively trade in food and live animals (SITCO), crude materials (SITC2), mineral fuels (SITC3), miscellaneous manufactures (SITC8), and commodities not classified by kind (SITC9). For the rest of the commodities, the impact of per capita GNP difference is rather negative. For the first categories, SITCO, SITC2, SITC3, SITC8, and SITC9, inter-Arab trade is supply driven (A la H-0), whereas for the rest of the categories trade is rather demand driven (5 la Linder).

Membership to either GCC or AMU has, in general, a positive impact on bilateral trade flows. This effect is significant in the cases of trade in beverages and tobacco (SITCI), manufactured goods (SITC6), machinery and transport equipment (SITC7), and miscellaneous manufactures (SITC8). The estimation results also show that ACs are not converting their bilateral trade potential into effective trade except

in beverages and tobacco (SITCI), @imals and vegetable oils (SITC4), and miscellaneous manufactures (SITC8).

Political factors are found to affect negatively inter-Arab trade. Interestingly, trade in mineral fuels (SITC3) is the less influenced by political events. Unlike what is expected, economic structure does not seem to affect negatively trade in any significant way. In fact, trade in beverages and tobacco (SITCI), and mineral fuels (SITC3), is rather stimulated by the degree of export concentration. Reciprocity is found to be an important determinant of Arab bilateral trade. ACs signatories of the ATFD agreement do not trade more with each other than non-signatory countries, except in miscellaneous manufactures (SITC8). Not surprisingly, this shows that ATFD did not contribute a great deal in the stimulation of inter-Arab trade, except for miscellaneous manufactures (SITC8). Finally, adjacency, unlike typical results of GM, does not seem to contribute to Arab bilateral trade. This can be due to the fact that neighboring countries tend to have the same factor endowments and, hence, the same structure of trade. Besides, neighboring countries are more likely to be influenced by political factors such as border closing.

4. INTER-ARAB TRADE: LOOKING INTO THE FUTURE:

In June 1996, the Arab leaders meeting during the Cairo summit, have instructed the Economic and Social Council of the Arab League to take the necessary measures to form the Arab Free Trade Area (AFTA).[22] As pointed out in the introduction, the agreements establishing AFTA entailed, mainly, the progressive reduction of tariff rates by a yearly average of ten percent over a period of ten years. In addition, the agreements called for the elimination of nontariff barriers and the exchange of trade information, proposed guidelines for dispute settlements and the definition of rules of origin, and allowed for the special treatment of less developed ACs. AFTA agreements also called on ACs to cooperate in other trade-related economic activities, and established a complex system of implementation follow-up institutions and procedures.

[22] For details about AFTA, consult for instance, the execution program for AFFA from the General Secretariat of the Arab League, and Al-Shibani (1997).

Broadly speaking, AFTA is to a great extent the continuation of the 1981 agreements on Arab Trade Facilitation and Development (ATFD) grouping, prior to the formation of AFTA, 18 ACs, or more precisely, all ACs except Algeria, Comoros, Djibouti, and Mauritania. In fact, AFTA, was formed to make up for the several shortcomings attached with previous agreements. Among the important improvements with respect to previous agreements, AFTA is overwhelmingly committed to and well prepared for, has involved both private and public sectors, has entailed a progressive liberalization of trade of all commodities and not according to a pre-specified list,[23] and is reinforced by strong implementation follow-up mechanisms and institutions.

Although not enough time has elapsed since the AFTA agreement entered into effect, we would like to assess, based on the results of section 3 and the characteristics of ACs' trade, the main categories of commodities the trade of which AFTA is expected to be more successful in stimulating than others.

In examining the prospects of increased inter-Arab trade, we will look into the export profiles of the different Arab countries and the degree of its correspondence with respect to the imports of the latter countries using the cosine measure defined earlier in the paper. Trade potential is also assessed based on the degree of similarity between ACs' RCA.[24]

In order to assess the trade potential of individual Arab countries with the rest of ACs, we have computed average cosines of selected countries with the rest of ACs. Table 12, presents these measures for the years 1984-1995, and computes an overall average for each country over the sample period. Table 12 reveals a relative disparity between the selected countries. Arab markets look more promising for countries like Kuwait, Oman, Egypt, Tunisia, and Morocco, given the higher values of their respective cosine with the rest of ACs. Not surprisingly, these countries are showing relatively more diversified export profiles than others (table 4), and rank on top of ACs with respect to the number of commodities in which they have an RCA (table 6). This would make the latter countries the biggest potential gainers out of AFTA.

To give an idea about potential trading partners of individual countries, we have also computed, bilateral cosine indices for selected pairs of countries for the

[23] Countries were allowed to send list of commodities that they feel should be exempted from the agreement.

[24] Yeats (1995) followed a similar path of analysis, using RCA, for Middle-Eastern countries.

year 1994. Table 13, reporting these figures, show that for instance, Algeria, Jordan, Oman, and Qatar have great export potential toward Morocco; Bahrain and Kuwait toward Saudi Arabia, Egypt and Morocco toward Tunisia, and Tunisia toward Kuwait.

Table 14, presents an overview of inter-Arab trade prospects based on the previous tables. Column one of this table presents the three-top export commodities in total exports of selected countries; column two, lists the commodities in which countries have RCA; and the last column presents a list of the best potential partner countries based on the values of the bilateral cosine variable presented in table 13.

Since, AFTA encouraged ACs to move faster than the prescribed pace for the reduction of tariffs, each country should locate potential partner(s) to engage into mutually beneficial trade liberalization. The list of potential partners presented in table 14 indicates countries that could gain from the liberalization scheduled under AFTA and beyond.

Based on the RCA of several ACs, table 15 establishes a list of commodities at the two-SITC digit level that could assume importance in a more liberalized inter-Arab trade, such that the one envisaged under AFTA. The table shows that priority in liberalization, if any to be given, should be to manufactured goods (SITC6) and crude materials except fuels (SITC2), that are already assuming leading positions in ACs' exports after mineral fuels (SITC3).

The analysis that we conducted above is only hypothetical looking at interArab trade prospects on the ground of potentiality. Nevertheless, future interArab trade might remain low, even if AFTA's agreements are fully implemented, for the many reasons mentioned earlier.

The results of section 3, have shown that higher transportation costs caused by, among other reasons, a lack of transport links among ACs, can preclude trade potential from materializing. In fact, the GM estimation results reported in table 11, clearly show that the distance factor is very detrimental to trade in manufactured goods (SITC6) and crude materials (SITC2) in which Arab non-oil trade is the more promising. This obviously calls for proper investment in transportation

infrastructure and the establishment of regular links by land, air, and sea. Privatization of trans-continental/country transport and the shipping business at the country level, and the establishment of inter-Arab transportation companies and financing schemes at the regional level, could be very beneficial in this regard.

Political factors were also found to be detrimental to inter-Arab trade notably, for the two categories mentioned above. De-linking political from economic ties can mitigate the effect of this factor. This can be achieved if the predominant role of the government in trade and trade policy (tariff and non-tariff barriers as well as exchange control) is reduced.

Many other impediments that explain to a great extent the weakness of inter-Arab trade were presented in the introduction and need not be repeated at this level. To alleviate the negative impact of these impediments, ACs need to undertake appropriate economic reforms notably by following sound macroeconomic policies, liberalizing trade, locking themselves into international agreements liberalizing trade, reforming their tax and financial systems, encouraging private sector's initiative, overhauling trade-related procedures and the attached bureaucracy, assuring transparency of trade information and its availability to the business sector world-wide, and adopting active marketing strategies and market exploration. The last two recommendations on information and marketing require the development of a modem telecommunication sector capable of assuring proper links with the rest of the ACs and the rest of the World, notably through the World-Wide Web: the Internet.

Inter-Arab trade may also remain at the present low levels due to inefficient production and low quality of products. Realizing the static benefits of inter-Arab trade namely, trade creation and trade diversion effects, requires a substantial increase in the competitiveness of products that would come about by adapting new technologies and production methods, and adoption of international norms in product quality.

At the regional level, reinforcing the established Arab-trade insurance and financing schemes available through, the Inter-Arab Investment Guarantee Corporation and the Arab Monetary Fund, is also equally important.

5. CONCLUDING REMARKS:

In this paper inter-Arab trade has been analyzed and modeled. ACs rely heavily in their trade, especially Maghreb countries, on the EU. While, their exports are split evenly between industrial and developing countries, the former predominantly supplies imports. ACs barely trade with each other. The common average share, over the period 1984-1995, of inter-Arab trade in total trade, inter-Arab imports in total imports, and inter-Arab exports in total exports, is about 8.6 percent.[25] On the other hand, export and import composition of Arab trade, reveal a heavy concentration in minerals and fuels (SITC3) for exports, and chemicals, manufactured goods and other miscellaneous manufactures, and machinery and transport equipment, for imports.

In order to assess the determinants of inter-Arab trade and give an order of magnitude of the main factors often advanced to explain the weakness of interArab trade, we have estimated a GM using pooled data on Arab bilateral trade over the period 1984-1995. The model was estimated at three levels: total commodity trade, non-oil commodity trade, and commodity trade classified according to the SITC one-digit level.

The estimation results reveal that inter-Arab trade is positively affected by the size of the trading countries, whether they are members of either GCC or AMU, and whether trade in the other direction is taking place. On the other hand, transportation costs, as proxied by distance between trading partners, and political factors are found to be important deterrents to inter-Arab trade. This calls, as pointed out in section 4, for the development of transport links between ACs, and the de-linking of political from economic and commercial relations among ACs. The results have also shown that adjacency and membership to ATFD do not contribute in any significant way in the stimulation of inter-Arab trade. Trade among ACs is not systematically based on differences in resource endowments, as would H-O's theory suggest. In many cases, trade is found to be based on differences in the structure of demand. Finally, the

[25] Based on inter-Arab trade figures of table 8.

estimation results show that, except for very few commodity categories, trade potential among ACs has not been converted into an effective one.

In section 4, using several indicators about export profiles, indices of trade correspondence, and revealed comparative advantage, we have examined the prospects of increased inter-Arab trade notably, within the umbrella of AFTA that calls for a progressive liberalization of trade between Arab countries. We were able to present a tentative list of commodities that represent opportunities for expanded trade as well as a list of partner countries that have higher chances of benefiting from the trade liberalization program envisaged under the AFTA agreements.

We have shown that possibilities for expanded Arab trade under AFTA agreements are real. However, the realization of these possibilities requires much more than the lifting of tariff and non-tariff barriers. Improvement of transport links, de-linking political from commercial ties between ACs, implementation of various general and sectoral reforms, encouragement of private initiative, improvement of competitiveness, and reinforcement of regional initiatives of financing and insuring trade, are also equally important.

The paper can obviously be extended in several directions. Data have been the most important determinant of the level of aggregation, period and country coverage, and the analysis of Arab bilateral trade. The availability of ample data at the three and four-digit levels of SITC, could enable us to derive more accurate measures of trade correspondence, RCA, and export structure. This in turn should lead to more specific recommendations regarding opportunities for expanded inter-Arab trade. The same type of data could also have made possible the analysis of intra-industrial trade among ACs. This analysis should enable us to have a more accurate assessment of the cost of

trade liberalization, whether under AFTA or otherwise. Since the cost of liberalizing trade within the same industry does not involve a great deal of resource re-allocation across industries as it would in the case of across-the-board liberalization, it matters a great deal whether liberalization involves commodities in the same industry or in different ones.

Trade data were not also available for all the countries and years. Therefore, our conclusions apply more to countries for which ample data were available. With regards to the model used in the estimation of the determinants of inter-Arab trade, several variables such as trade protection and commodity-specific prices, were not

available. The inclusion of the latter variables in GM could have enabled us to compare how bilateral trade flows respond to price variables (commodity prices and tariff rates) as compared to non-price variables such as political factors. This, for instance, could reveal to what extent the reduction of tariff rates under AFTA would be successful in expanding inter-Arab trade. In addition, absence of price data has precluded us from computing appropriate income and price elasticities for the demand for imports of the different conunodities, differentiated by country of origin as suggested by Armington (1969).[26] The latter framework could have also enabled us to compute elasticity of substitutions across commodities 'and/or countries, hence establishing the relative competitive position of each country with respect to the rest of the countries.

Finally, it would also be crucial to determine the effect of the easier market access for Arab products under the World Trade Organization (WTO) agreements, signed by many ACs, and the EU-Mediterranean partnership establishing a free trade area by the year 2010 between the EU and countries located on the Mediterranean Sea including few ACs, on the potential success of AFTA. The free market access provided under WTO and EU-Med can divert Arab products even further away from Arab markets. Measuring the extent of this diversion effect is another step forward toward the accurate assessment of the potential success of AFTA.

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[26] See Allen and Whitley (1994) for a brief survey and the properties of such models.

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APPENDIX

Table 1 : Destination of Arab Countries' Exports in 1995 (% of total exports)

From \ To	Industrial Countries	Of Which			Developing Countries	Of Which					Other Countries n.i.e.
		EU	Nafta	Japan		Africa	Asia	Europe	Middle East	Western Hemisphere	
1 Algeria	87.0	67.5	18.2	0.8	13.0	2.2	0.6	7.4	0.2	2.6	0.1
2 Bahrain	5.6	1.3	1.1	2.8	19.0	1.0	12.1	2.7	3.1	0.0	0.0
3 Comoros	93.9	72.7	18.2	0.0	6.1	2.2	1.3	0.7	0.0	1.8	0.0
4 Djibouti	8.2	7.5	0.0	0.0	91.8	77.4	3.4	0.1	10.9	0.0	0.0
5 Egypt	63.1	45.8	15.4	1.3	35.1	3.7	8.7	6.4	16.0	0.4	0.0
6 Iraq	0.6	0.2	0.0	0.2	99.4	0.0	0.8	1.7	96.9	0.1	0.0
7 Jordan	9.3	4.7	1.2	1.1	73.2	3.6	22.7	3.3	43.2	0.4	0.0
8 Kuwait	47.9	13.4	11.8	0.6	52.1	2.2	45.6	0.8	1.3	2.3	0.0
9 Lebanon	31.8	22.8	3.7	1.1	66.4	4.2	3.2	11.7	46.8	0.6	0.0
10 Libya	84.2	81.0	0.0	0.0	15.8	5.0	2.1	6.6	1.7	0.4	0.0
11 Mauritania	87.0	57.7	1.2	28.0	12.4	11.5	0.7	0.1	0.0	0.1	0.0
12 Morocco	73.7	63.0	3.9	5.3	25.7	4.8	10.2	2.8	5.6	2.3	0.0
13 Oman	41.1	2.6	5.6	32.1	58.9	3.3	50.1	0.0	5.4	0.0	0.0
14 Qatar	61.6	1.3	2.5	54.3	35.4	1.1	28.3	0.0	6.0	0.0	0.0
15 Saudi Arabia	54.0	18.4	16.4	17.2	45.9	2.5	31.5	2.6	7.1	2.2	0.0
16 Somalia	14.2	14.0	0.0	0.0	85.8	1.4	2.9	0.4	81.2	0.0	0.0
17 Sudan	42.8	30.4	4.0	6.6	57.1	1.4	24.9	5.9	24.8	0.1	0.0
18 Syria	58.8	57.0	1.6	0.2	38.7	2.9	0.3	14.8	20.5	0.1	0.0
19 Tunisia	81.0	78.5	1.2	0.3	15.7	4.4	3.2	2.5	5.2	0.5	0.3
20 United Arab Emirates	45.3	3.8	1.8	37.8	40.3	1.9	26.6	0.9	10.6	0.2	0.0
21 Yemen	13.7	1.1	0.3	12.3	85.6	3.8	61.8	0.2	11.1	8.6	0.0
AVG AC 95	47.8	30.7	5.1	9.6	46.4	6.7	16.2	3.4	18.9	1.1	0.0
AVG Developing Country 95	54.10	21.14	20.83	9.97	43.30	1.90	27.40	6.50	2.90	4.60	0.10
Average AC 94	50.64	30.80	6.91	11.19	43.47	5.40	13.78	2.52	20.95	0.83	0.01
Average AC 93	50.94	31.41	6.86	11.77	43.47	5.34	12.76	2.80	21.57	0.98	0.01
Average AC 92	52.39	32.56	7.42	11.45	42.04	6.25	12.64	2.93	19.45	0.75	0.04
Average AC 91	53.76	35.70	6.88	9.93	40.94	4.43	11.74	5.03	19.02	0.71	0.01
Average AC 90	54.51	37.26	7.63	12.38	40.03	5.14	9.95	6.65	16.75	1.52	0.02

Source : Direction of Trade Statistics Yearbook, 1997, IMF.

Table 2 : Destination of Arab Countries' Imports in 1995 (% of total imports)

From / To	Industrial Countries	Of Which			Developing Countries	Of which					Other Countries n.i.e.
		EU	Nafta	Japan		Africa	Asia	Europe	Middle East	Western Hemisphere	
1 Algeria	83.1	66.2	12.4	2.7	16.6	3.2	2.9	7.3	1.1	2.0	0.4
2 Bahrain	32.6	18.9	7.2	3.1	58.4	1.0	7.0	3.7	45.2	1.5	0.0
3 Comoros	67.4	65.2	0.6	1.9	32.6	25.0	5.5	0.5	0.9	0.8	0.0
4 Djibouti	42.5	38.3	3.5	5.6	55.7	10.0	32.2	1.1	10.8	1.6	0.0
5 Egypt	65.0	47.6	23.8	3.3	29.7	1.6	11.5	9.9	3.9	2.9	0.4
6 Iraq	14.9	6.2	0.0	0.0	85.1	0.5	4.5	31.3	48.8	0.0	0.0
7 Jordan	49.5	72.6	20.9	7.8	49.1	0.6	15.0	8.0	22.7	2.9	0.0
8 Kuwait	82.1	47.4	22.6	9.7	17.9	0.3	11.5	3.4	1.5	1.2	0.0
9 Lebanon	68.2	48.0	10.8	3.0	31.3	1.1	10.1	11.7	6.1	2.2	0.2
10 Libya	75.0	67.8	1.0	4.3	24.2	7.8	4.5	7.4	3.2	1.3	0.8
11 Mauritania	70.6	57.2	7.8	5.0	24.1	8.5	14.6	0.3	0.2	0.6	0.0
12 Morocco	67.7	60.3	9.0	1.6	32.3	5.1	4.7	8.5	9.7	335.9	0.0
13 Oman	54.7	27.9	7.0	15.8	45.2	0.3	13.3	0.9	29.7	1.0	0.0
14 Qatar	75.6	75.9	12.2	14.3	24.0	0.2	8.5	1.8	12.5	0.9	0.0
15 Saudi Arabia	72.1	29.5	22.5	7.7	27.4	2.1	14.6	3.1	5.2	2.4	0.2
16 Somalia	14.5	10.3	3.7	0.4	77.2	44.6	12.7	0.1	13.5	6.4	0.1
17 Sudan	37.2	29.3	3.8	2.5	62.8	4.2	14.3	6.0	38.2	0.1	0.0
18 Syria	46.5	29.6	6.1	3.8	38.4	0.9	5.3	22.5	7.4	2.4	0.1
19 Tunisia	79.9	70.3	5.9	1.8	17.6	3.6	2.6	6.1	4.0	1.2	0.1
20 United Arab Emirates	53.0	32.8	8.5	8.5	45.8	0.7	36.5	2.5	5.4	0.7	0.0
21 Yemen	36.1	23.4	8.0	4.0	63.2	2.7	20.7	5.3	30.8	3.7	0.0
AVG AC 95	56.58	44.03	9.39	5.08	40.89	5.90	12.02	6.73	14.32	17.70	0.11
AVG Developing Country 95	58.70	23.79	17.21	14.32	39.80	1.50	23.60	6.50	4.00	4.00	0.10
Average AC 94	58.84	40.64	9.05	6.00	38.59	5.19	11.38	5.95	14.29	17.52	0.13
Average AC 93	61.40	42.40	9.78	6.61	36.50	4.95	10.39	5.97	13.61	13.48	0.10
Average AC 92	61.46	41.91	9.47	7.22	35.80	4.60	11.44	6.54	11.83	12.71	0.12
Average AC 91	62.70	43.85	9.40	6.46	34.52	4.23	10.30	6.60	12.00	12.51	0.14
Average AC 90	64.57	45.82	8.61	6.25	32.17	3.30	9.31	5.79	12.41	10.24	0.27

Source : Direction of Trade Statistics Yearbook, 1997, IMF.

Table 3 : Average Commodity Composition of Arab Exports By One-Digit SITC Category (%)

(1984 - 1995)

COUNTRY	SITC0	SITC1	SITC2	SITC3	SITC4	SITC5	SITC6	SITC7	SITC8	SITC9
Algeria	0.15	0.10	0.27	97.55	0.01	1.07	0.64	0.15	0.08	
Bahrain	0.98	0.21	1.03	0.03	0.82	12.10	71.72	7.53	5.44	0.38
Comoros										
Djibouti										
Egypt	6.99	0.07	8.21	44.38	0.04	2.82	31.15	0.30	6.03	0.04
Iraq										
Jordan	9.46	0.29	51.83	0.02	0.19	28.24	6.48	0.74	2.74	0.40
Kuwait	5.31	0.14	4.06	10.23	0.42	31.48	11.39	28.90	8.80	0.21
Lebanon										
Libya	0.26	0.01	0.16	96.61	0.01	3.13	0.38	0.02	0.02	
Mauritania										
Morocco	24.95	0.20	18.88	2.78	0.23	19.56	8.77	3.74	20.88	0.01
Oman	7.67	0.38	0.83	48.61	0.18	0.85	5.96	26.44	3.78	5.31
Qatar	0.48	0.06	0.96	29.16	0.02	49.80	15.54	0.04	3.98	0.03
Saudi Arabia	0.13		0.23	95.26		4.12	0.23	0.01	0.12	
Somalia										
Sudan	19.84	0.03	74.47		3.57	0.07	1.99		0.02	0.04
Syria	5.90	0.08	11.59	76.64		0.72	2.25	0.78	1.91	0.03
Tunisia	6.08	0.41	1.95	22.46	4.48	12.71	8.29	7.25	36.19	0.26
United Arab Emirates	4.19	1.63	8.30	4.61	0.13	3.90	38.83	6.52	31.89	
Yemen	78.69		19.35	0.45	0.24	1.11	0.16			
Average	11.40	0.28	13.48	37.77	0.79	11.45	13.58	6.34	8.70	0.67

Source : Computed by Authors based on the U.N. Comtrade Statistics.