

**Testing the Relationship between Trade and Migration
flows: Case Study of Egypt with European Union and Arab
Countries**

by

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Introduction

The relationship between trade and migration has attracted the attention of academics and policy makers extensively. The complexity of the relationship and the desire to understand whether there is a trade creating effect for migrants has recently attracted a lot of attention. This study aims at investigating the relationship between trade and migration for Egypt. The study tries to answer a number of questions including the main question which is whether there are trade creation effects for Egyptian emigrants or not? And whether such effects differ when the destination of emigrants changes (EU or Arab countries). Further, the study analyses the trade-migration relationship and tests whether the type of product traded affects the magnitude of trade creation, showing whether network or preference effects are the main drivers of this relationship.

The main question that this study tries to focus on, and where there is lack of consensus in the empirical literature that have dealt with, is what kind of relationship, if any, exists between the migration and trade patterns: are they complements or they substitute one another? We focus on the relationship between Egypt and its main migration destinations and trading partners. According to the knowledge of the authors, the studies undertaken to answer this question for the Egyptian case were rather absent with the exception of a few studies that dealt with such issue as Shafik (1992), and Nassar and Ghoneim (2003). We apply a gravity model to test for this relationship using pooled and panel data for the period 2001-2010. We also use some descriptive measures to elaborate on the trend and type of trade and migration that have prevailed between Egypt and its main partners in migration and trade in the first part of the investigation.

The study is divided into three sections following this introduction, where in *Section One* we start with a selected literature review on the relationship between trade and migration. In *Section Two* we provide an overview on the relationship between trade and migration in Egypt. In *Section Three* we run the gravity model and analyze its results. We then conclude and provide some policy implications.

Section One: Selected literature review

On the theoretical level, the relationship between trade and migration, though deeply investigated, has remained ambiguous. The conventional theoretical Heckscher-Ohlin-Samuelson model (factor-price-equalization theorem) identified a substitution type of relationship between trade and migration³ (Mundell, 1957). Changing the assumptions of the model, and especially imposing imperfect competition and increasing returns to scale instead of perfect competition and constant returns to scale or incorporating migration costs and financing constraint features, might alternate the substitution type relationship into a complementary one. The Heckscher-Ohlin model, coupled with the assumptions of the North being abundant in capital and the South abundant in labor, provides a useful analytical framework for explaining the North-South trade. Adding international labor mobility, substitution between migration and trade is attained since trade liberalization in either the North or the South leads to more trade and through the mechanism of reducing the North-South wage differential it leads to less migration.

Developments based on the Heckscher-Ohlin-Samuelson theorem showed that if some of the assumptions underlying the Heckscher-Ohlin model are changed, trade and migration may be complements. This issue was examined, for example, by Markusen (1983) and Wong (1983). Markusen (1983) showed that complementarity between migration and trade is achieved if one imposes identical factor endowments in both countries but relaxes one of the following assumptions of the Heckscher-Ohlin model: (a) constant returns to scale, (b) identical technologies, (c) perfect competition, and (d) no domestic distortions. Then, free trade does not result in factor-price equalization. By relaxing the different assumptions and especially perfect competition and constant returns to scale different results are obtained. Moreover, whether trade and migration are substitutes or complements under economies of scale and imperfect competition depends on the specific model used (see for example Schiff, 2010 and references therein), and on the variables considered including the level of tariffs applied, migration costs, skills of migrants, etc. (Schiff, 2006).

³ According to the neoclassical model, international trade will bring about equalization in the relative and absolute returns to homogenous factors across nations. In that way, international trade is a substitute of the international mobility of labor. The original proof of the factor-price equalization theorem is found in Samuelson (1948) and Samuelson (1949).

On the empirical level, economic research did not reach a concrete relationship between the two variables. The problem is mainly embedded in the large number of variables that affect such type of relationship and cannot be controlled for either because of the absence of data or given the inability of the researcher(s) to quantify them. Among such variables we can find the technological and communication revolution which has facilitated the flows of people and goods all over the world. Other factors include the protectionist type of policies against trade and/or migration flows. Starting in the 1990s, several studies have been devoted to discuss the relationship between trade and migration, especially after the pioneering work of Gould (1994) that studied the link between migration and trade using American trade data from 1970 to 1986. The work of Gould (1994) was followed by other influential studies on other countries and migrants, including Canada and Chinese migrants as in Head and Reis (1998), Rauch (2001), and Rauch and Trindade (2002). Those studies concluded that migration leads to a trade creation effect. The positive impact of migration on trade is either due to the preference channel (of immigrants for domestic products, mainly in food stuff and differentiated final products), or through the network channel which operates by reducing transaction trade costs (communication barriers due to host and home countries language proficiency; better understanding of market information of home country; and trust developed between immigrants community and traders at home, as well as through the identification of business opportunities both in origin and destination markets of the immigrants). The literature has not been clear on which of both effects is the most important in driving pro-trade effects of immigrants, with different studies applying different approaches to the issue.

In empirical terms, there are several studies that have found a significant positive impact for migration on trade. The majority of them have applied the extended gravity equation approach in capturing such effects, and most of the studies have found that migration has a more substantial positive impact on imports of the host country than on exports. Some of the most recent contributions in this literature have tried to better understand such positive relationship, where for example Foad (2010) identified that there are certain threshold for such positive impact of migration on trade to appear in data. So, if the level of migration is lower, then trade might not be profitable until a certain stock of migrants is available in the receiving country. Alternatively, if an immigrant community becomes large enough, production in the receiving country might

substitute for imports, given a higher assimilation of immigrants to local culture and life style, hence observing a substitution effects on trade. This implies that the relationship between trade and migration is not so linear and that the failure to account for these potential non-linearities in the existing literature has led to biased estimates of the true migration-trade elasticity. The same was identified by Egger et. al (2011) that have shown the existence of an upper threshold, after which the trade creation effect of immigrants stops to function. Morgenroth and O'Brien (2008) identified also that the positive trade creation effect of migration is conditional on a number of variables including, as they have shown in the case of US as a host country, the level of immigrants and their origin. Foad (2010) investigated the relationship between migration and trade within the context of Middle East North Africa (MENA) migrants to both Europe and North America. Using a gravity model, he identified that the migration-trade link is stronger for migrants to Europe, with the strongest effect for imports. Moreover, his analysis showed that the migration-trade link is stronger for differentiated goods than for homogenous and reference price goods, which is evident more in the case of Europe. He concluded that preference effect is more evident than the network effect, which is still there but mild (as trade creation effect is much higher on the exports side of MENA to Europe and North America than the imports side).

Cesi (2011) applied a gravity model analysis to a set of 17 EU countries as host countries and 10 migrant sending countries with a time span from 1997 to 2006. Cesi (2011), contrary to Foad (2009b) showed that the network effect is rather strong, especially on the immigrants trade with their home countries, increasing the exports from host country to their home country. She found little evidence for the network effect in the other direction, and for the preference effect. Murat and Psitoresi (2009) investigated the case of Italy over the period 1990-2005 for immigrants from 51 countries using a gravity model and found that migration (both emigrants and immigrants) help to enhance imports, but immigrants have no significant impact on exports. Moreover, trade volume of Italy with its historical trading partners (US and rest of EU) despite being larger, tends to be slower in terms of growth when compared with Italian trade with new trading partners. Tai (2009) applied a gravity model to the relationship between trade and migration for Switzerland over the period 1995-2000. Tai (2009) applied a multisector analysis interacting migration with the elasticity of substitution, as his analysis focused on the role of market structure arguing that it has a determinantal effect on how migration affects trade. His

findings show that Switzerland's imports are more affected by migration than its exports, and that migration is found to influence preferences more in differentiated products and impact costs in an inverted U-shape, being more intense in products with an elasticity of substitution close to 6 and less intense as this elasticity approaches 1 or 7. Ivanon (2008), using detailed data on migration and trade, identified that the different classes of immigrants have different impacts on trade and that different classes of goods are affected differently by migrants (blue collars, white collars, self employed). Requena and Serrano (2011) tested both the trade effects of immigrants and emigrants and showed that both are of equal importance and that there is no difference between differentiated and homogenous goods. Bacarreza et. al (2006) tested the impact of Bolivian migrants on Bolivian trade over the period 1990-2003 and found a significant positive impact of Bolivian migrants on Bolivian exports and imports. Qian (2007) investigated the impact of New Zealand immigrants from 190 countries between 1980 and 2005. Qian (2007) results identified a significant trade creation effects for immigrants on trade, however the empirical results suggest that immigrants from low-income countries tend to create more trade than other groups. The same positive trade creation effect of immigrants was found by Bowen and Wu (2011) who investigated a panel data for immigration in 27 OECD countries over the period 1980-2009.

However, such positive relationship, which mainly operates through preference and network effects, has not been pervasive, as some studies have suggested that migration-trade link tends to decline over time and may not exist universally, since the pro-trade effect of immigration varies across both countries and commodities. Girma and Yu (2002) investigated the impact of Commonwealth and non-Commonwealth immigrants in the UK on trade over the period 1981-1993. They found a robust trade (both exports and imports) creating effect of non-Commonwealth migrants in the UK, a negative impact for Commonwealth migrants on imports, and failed to find any significant effect for Commonwealth migrants on exports. Ramon-Munoz (2009) provided several explanations for this fading effect of migration on trade including the failure of migrants to overcome trade barriers and have better understanding of market information (network effect) or change of food and diet habits of immigrants preference effect), or adoption by immigrants for an import substitution type of policy hence replacing imports by domestic production in host countries. Other recent studies as Bettin and Lo Turco (2009),

applying a gravity model and using panel data for three year (1995, 2000, and 2005) and bilateral data for OECD countries with 212 trading partners, reached similar conclusions. They classified trade data following the Broad Economic Categories (BEC) that arranges commodities according to "end-use" classes: final consumption, intermediate consumption, and capital formation. They then aggregated the data in 2 SITC digit level. Bettin and Lo Turco (2009) reached the conclusion that migration does not have trade creation effect whether on exports or imports, and if there is any sort of trade creation effect it is mild and only existing in Northern exports to the South. Moreover, Bettin and Lo Turco (2009) reached the conclusion that migration could have a negative impact on trade by reducing it when investigating a large dataset of pool data on immigration in OECD countries. Bruder (2004), who studied the case of immigration in Germany over the period 1970-1998, found that immigration does not have a significant impact on trade. The same is true in the study of Clarke and Hillbery (2009) who conducted an analysis of the impact of immigration on trade in Australia over the period 1981-2006 using a generalized method of moments estimator that allows to estimate the elasticity of trade to migration, while at the same time allowing country level fixed effects and persistence to affect the level of bilateral trade. Clarke and Hillbery (2009) found no significant effect for immigration on trade.

Other studies used alternative methods than gravity equations where Hassan (1998) showed using an Ordinary Least Squares (OLS) model and covariance analysis that migration has had a positive impact on the exports trade of Bangladesh. Hassan (1998) identified that there exists a number of determinants that affect such relationship including the level, concentration, and composition of migrants, as well as the duration of the process of migration. His analysis, though not using the same terms, pointed out that both network and preference effects exist where the complementarity relationship was high in specific products (e.g. food products and live animals). Nassar and Ghoneim (2003) applied covariance analysis for four MENA countries (Egypt, Morocco, Tunisia, and Jordan) in terms of their trade and migration relationship with the EU as well as Gulf countries and used data available on workers' remittances as a crude proxy for the number of migrants. A correlation index for the four countries under study has been calculated between such crude proxy and their exports to the world over the period 1992-1999. The results failed to reveal any clear trend: the correlation coefficient for Egyptian workers' remittances between 1992 and 1998 and its total exports was -0.7 , whereas that of Morocco was -0.15 and

that of Jordan and Tunisia was 0.9. In other words, it was highly negative in one case suggesting substitutability, neutrality in another, and highly positive suggesting complementarity in two other cases. On a rather disaggregated and a more accurate level where some data were available from SOEPMI on the number of net foreign population in one country by their nationality a correlation index between exports of a specific country (Morocco) to another country (France and the Netherlands) and net population flows from the former country to the latter was calculated. The results obtained were as follows: -0.2 in the case of France and 0.05 in the case of the Netherlands suggesting a rather neutral relationship between trade and migration which is compared to the neutral case obtained in the aggregated crude version of the correlation index. Insel et. al (2010) tested the relationship between Turkish migrants in a number of European countries and their impact on trade using Least Squares estimation technique under the assumption of the presence of cross section heteroskedasticity and the robust standard errors for the period 1980 to 2007. They found a significant positive impact of migration on trade through preference and network effects.

In general, there is growing empirical evidence in the literature pointing towards the existence of trade creation effect of migration that is mainly channeled through network effect of migrants. The network effect is highly associated with reduction of costs concerning trade that arise either due to weak legal systems governing trade or lack of information on foreign markets and different social institutions between origin and destination countries of immigrants.

Section Two: An Overview on Migration, Remittances and Trade Trends of Egypt

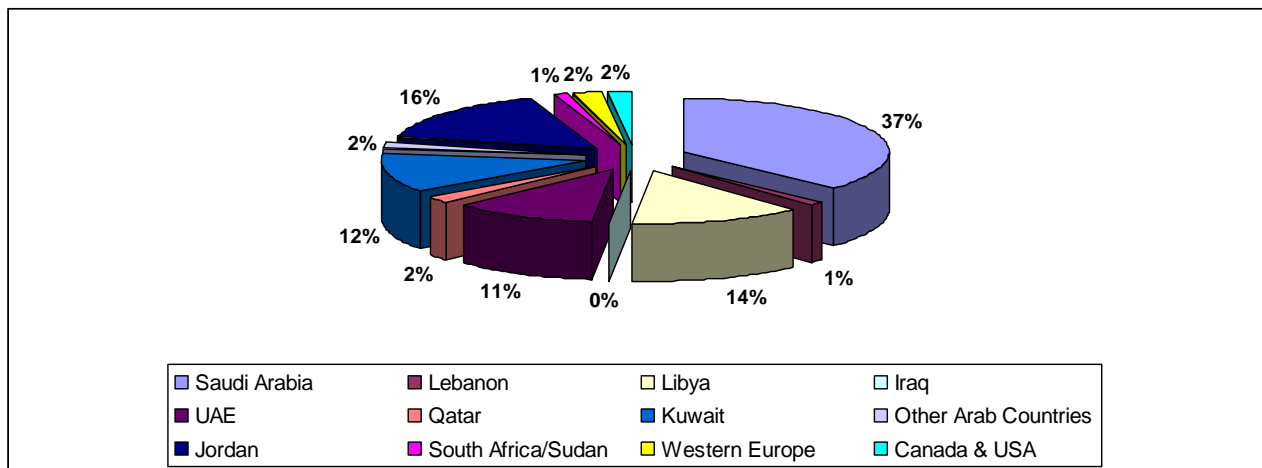
Migration

Migration in Egypt has always played a paramount role in its economic development. Egypt is one of the largest emigrating countries in the world and is one of the top 10 remittances receiving countries all over the world (World Bank, 2011). The existing figures of migrants abroad might be underestimated due to under registration of Egyptian migrants abroad especially in Europe as reported by some studies (de Hass, 2007), hence implying the existence of high tendency of irregular migration. Emigration has not followed a smooth increasing trend where the trend of emigration has experienced several fluctuations and set-backs, especially in the 1990s, as a result of external economic and political reasons. Egyptian emigration could be perceived as a long lasting phenomenon. Several phases of this phenomenon could be distinguished. Before 1971, emigration from Egypt was subject to many legal restrictions; this fact has limited the number of emigrants where only professionals, could migrate permanently to the US, Canada, Australia and Western European countries. Starting 1971, both “permanent” and “temporary” emigration was authorized. This step, accompanied by the soaring oil prices and increasing demand for migrant labor in Gulf countries, triggered massive emigration from Egypt to Saudi Arabia, Iraq and the other Gulf states as well as to Libya. The statistics⁴ reveal that the number of Egyptian emigrants was around 70 thousand after 1973 war, and this number continued to follow an upward trend to reach 1.4 million in 1976, increasing to 3.28 million in 1983. However during the second half of

⁴ It is worth noting that data on Egyptian migration could be drawn from different sources; among these are the Central Agency for Public Mobilization and Statistics (CAPMAS), Ministry of Manpower and Emigration, Ministry of Interior, and consular offices. Discrepancies of data from these different sources are a result of a number of factors; CAPMAS data on migration are actually estimates that are driven based on CAPMAS census data, hence they include a margin of error. Concerning consular records, the main limitation of data provided by these records is that they are of voluntary nature where individual migrants are free to register their arrival and cancel their registration upon departure; therefore, many migrants don't simply register themselves. In addition, many migrants do not inform the consular offices of any subsequent migration, so that, migrants may move to a third country without notifying their consulates. Also, irregular migrants refrain from registering themselves in consulates (Zohry, 2009). Other sources for migration data include international sources such as registers of immigrants in destination countries, as well as a number of international institutions databases which includes World Bank, International Migration Organization, and Organization for Economic Cooperation and Development (OECD). However, none of the aforementioned sources converge with the other; each database reveals different estimates.

the 1980s, several factors have influenced the emigration trends in Egypt, including the end of the first Gulf war, decrease in oil prices, and adopting the policy of substituting foreign labor with nationals in the Gulf countries. Those factors have led to a significant decrease in emigrants' number to record 2.25 million in 1986 (Ministry of Manpower and Emigration, 2009). In the beginnings of the 1990s, most of the Egyptian emigrants in both Kuwait and Iraq have returned back to Egypt due to the second Gulf war; however, after the end of these circumstances, the emigrants' number increased again to reach 2.8 million in 1996, remaining relatively constant since this date till 2000, to represent around 3.9% of the Egyptian population (Ministry of Manpower and Emigration, 2009). In the meantime, Egypt is witnessing the permanence of temporary migration whereby migration towards Arab countries is becoming less temporary (and more permanent) and outnumbers permanent (long term) migration to Europe and North America. Recently a rise in migration to Europe - mostly irregular - especially to Italy and France, has been recorded Consortium for Applied Research on International Migration (2010). There is a high concentration of both temporary and permanent emigrants in few countries with Saudi Arabia being on top of receiving countries as shown in Figure 1. (IOM, 2003; Wahba, 2007).

Figure 1: Overseas Destinations of Current Migrants

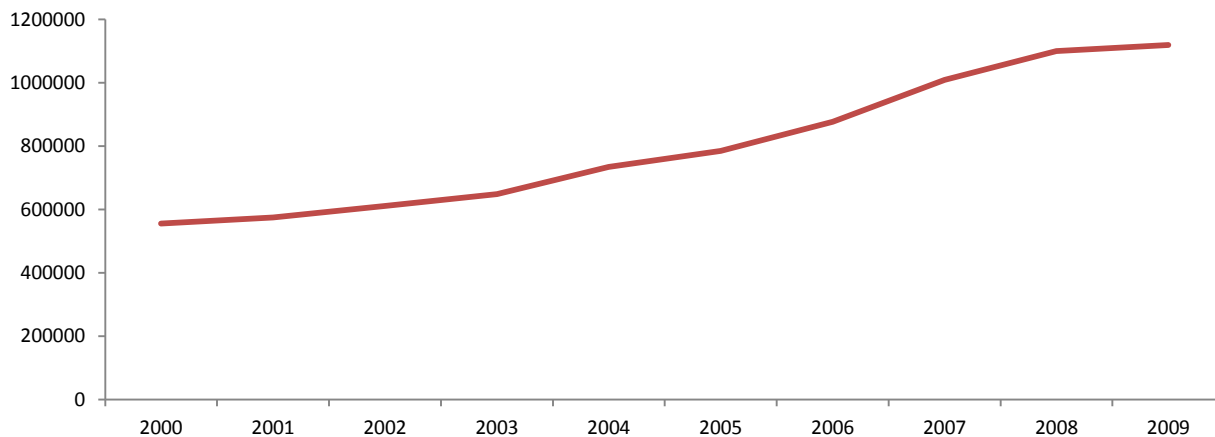


Source: Wahba, Jackline (2007), "An Overview of Internal and International Migration in Egypt", ERF Working Paper No. 703, Cairo: Economic Research Forum.

Temporary Migration

According to the Central Agency for Public Mobilization and Statistics (CAPMAS), the number of temporary migrants⁵ in 2009 recorded 1.12 million compared to 1.10 million in 2008 with an increase of 1.82% (figure 2). It is worth noting that this number has witnessed a significant increase over the period 2000-2009; increasing from 0.6 million in 2000 to 1.12 in 2009. The Arab countries are considered the most attracting destination for this kind of migrants all over the highlighted period of time, comprising more than 95% of migrants. Egypt is the largest country of origin of the migrant workers to Arab countries. In some years 10% of Egyptian labor force migrated to Arab countries (Wahba, 2005). In 2009, the Arab countries were the destination for one million emigrants representing 96.25% of total temporary migration in 2009, of whom 50.2% are located in Saudi Arabia, and 16.69% in Kuwait. Migrants to European countries represented 3.03% out of total migrants for the same year, of whom 72.2% headed for Italy, and 17.39% for Greece. Males account for 97.1% of total migrants and only 29.9% of total migrants are tertiary educated, where the majority are either graduates of vocational schools or low level education.⁶

Figure 2: Number of Egyptian Temporary Migrants over the Period 2000-2009:



Source: CAPMAS, Bulletin on Temporary Migration, 2010.

⁵ It is worth noting that the Title of “Bulletin on Temporary Migration” issued by CAPMAS changed in 2005 to be “Bulletin on Number of Contracts and Work Permissions Granted for Egyptians Abroad”.

⁶ Central Agency for Public Mobilization and Statistics (2010), Bulletin on Temporary Migration.

Permanent Migration

Regarding permanent migration, CAPMAS statistics differentiate between two types of permanent migrants; those who migrated to a foreign country with the intention of fully and permanently accommodating in that country by acquiring this foreign nationality and has applied for migration before traveling through the formal channels, and those who moved to a foreign country and turned into migrants after a period of accommodation in that country. The following statistics will treat the two types equally as permanent migrants. According to CPAMAS, these migrants have reached 4761 over the period 2000-2009, of whom 4272 resided in only three countries; namely, United States (1945), Canada (1327), and Italy (1000). This comprises more than 89% of Egyptian permanent migrants (table 1). Nevertheless, there is no common pattern for Egyptian permanent migration over the abovementioned period; number of migrants has been fluctuating to various destinations all over the world. However, number of migrants reached its peak in 2001 with a record of 764 migrants; where in 2003 this number decreased to reach only 310 migrants.

Table 1: Number of Permanent Migrants by Destination over the Period 2000-2009

Destination Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
USA	257	226	174	133	196	240	205	210	175	129	1945
Canada	152	185	137	104	118	141	126	97	126	141	1327
Italy	113	308	323	39	19	22	25	33	60	58	1000
Australia	26	22	20	19	35	49	30	36	49	40	326
New Zealand	14	10	8	6	1	..	2	3	..	4	48
Other Countries	11	..	..	..	2	..	3	3	10	1	30
United Kingdom	4	3	4	4	..	1	2	3	..	3	24
France	5	3	3	2	2	1	2	2	..	3	23
Germany	4	2	7	3	2	1	1	..	..	..	20
Netherlands	4	3	5	..	2	1	..	..	..	..	15
Austria	..	2	..	..	1	..	..	..	..	..	3
Total	590	764	681	310	378	456	396	387	420	379	4761

Source: Central Agency for Public Mobilization and Statistics, Bulletin on Permanent Migration, 2010.

Unlike temporary migration, the majority of permanent migrants are educationally qualified; those who have completed tertiary education represent around 50% of permanent migrants over the same period. In the second rank comes the segment of vocational schools graduates which comprises 40.5% of those migrants (table 2).

Table 2: Educational Status of Permanent Migrants over the Period 2000-2009

Year	Higher Education	Tertiary Education	Vocational Schools	Not qualified Educationally	Total
2000	28	243	233	32	536
2001	31	322	334	31	718
2002	31	274	323	24	652
2003	8	167	104	14	293
2004	28	200	115	14	357
2005	29	196	180	20	425
2006	23	210	124	11	368
2007	23	198	145	7	373
2008	26	213	148	21	408
2009	28	213	117	11	369
Total	255	2236	1823	185	4499

Source: CAPMAS, Bulletin on Permanent Migration, 2009.

Regarding the occupational profile of Egyptian migration, the data from CAPMAS reveals that graduates of business faculties represented more than 29% of total migrants over the period 2000-2009; 42% of them headed for the United States, and 31% in Canada. Followed by the business school graduates, came the graduates of faculty of engineering which comprised 23.8%, of whom 33% resided in the United States, and 53.7% in Canada over the same period 2000-2009.

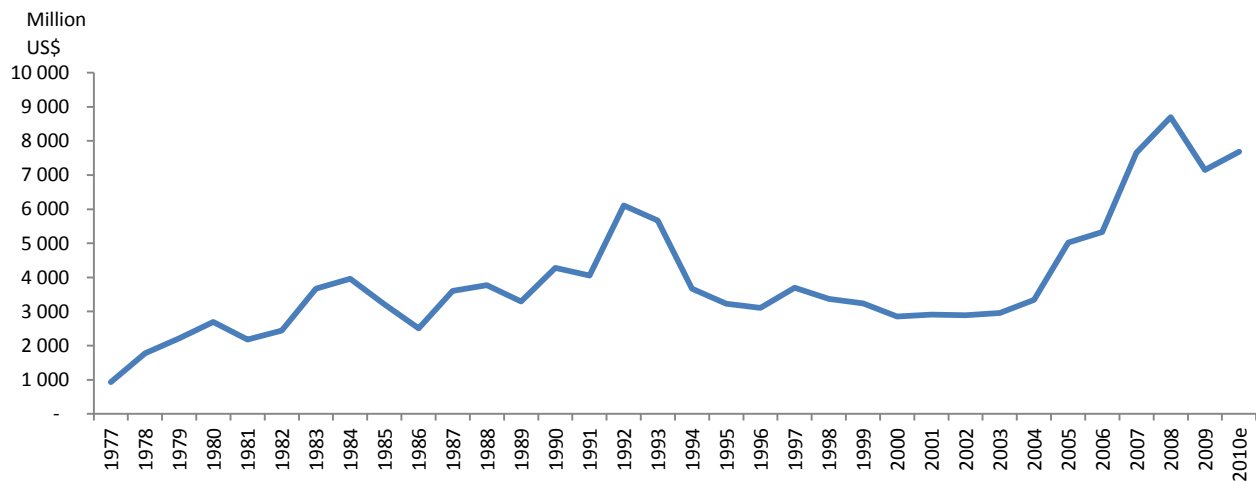
In 2009, the total number of permanent migrants reached 379 migrants; this number comprises around 270 migrants residing in US and Canada. Highlighting the characteristics of this type of migrants reveals that 36% of them fall in the age category 30-39 years; 57.72% of them were highly educated; 68.8% of them are married (CAPMAS, 2010) (for data discrepancy issue see Annex 1).

What is evident is that during the governments under the presidency of Mubarak irregular migration increased due to several political and economic reasons that have affected both Egypt and the world in general. The prospects for increasing the level of migration do not look promising from the demand side, where several Arab countries as well as many EU countries have adopted more restrictions on international migration. Security and cultural problems, besides the conventional political and economic problems of immigrants have created a lot of concern and lowered the expectations on high migrant flows from Egypt among other migrant

origin countries (de Silva and Silva-Jáuregui, 2004). As asserted by Girgis (2002), the replacement of Arab workers by Asian ones and the open unemployment among Gulf nationals have acted as major reasons behind the lessening of migration flows from Egypt, among other Arab countries to the Gulf. Moreover, the cyclical changes in world oil prices have a significant impact on the demand for Egyptian migrants especially in the Gulf countries. Such prospects of changing migration trends should be taken into consideration by the GOE and its partners when designing its migration policies (Ghoneim, 2010).

Remittances

The role played by remittances and returned migrants has always been significant in the context of economic development in Egypt. Remittances represented around 4% of Egypt’s GDP in 2009 (World Bank, 2011). Egypt is considered the 13th largest receiver of remittances in the world and the second in MENA region. It comes directly after Lebanon with a slight difference. A sharp increase could be observed in 1992, where remittances increased by more than 50% over one year due to the first Gulf war, as most of the Egyptians working in both Kuwait and Iraq have



left their jobs and returned back to Egypt (figure 3).

Figure 3: Egypt Inward Remittances Flow over the Period 1977-2010

Source: World Bank (2011), *Migration and Remittances Factbook* Data, 2011, available online at <http://data.worldbank.org/data-catalog/migration-and-remittances>

It is worth noting that remittances data, just like migration data, differs according to different sources. For example, according to the Central Bank of Egypt (CBE), remittances in 2008/2009 and 2009/2010 were US\$ 7805.7 million and US\$ 9753.4 million, respectively (table 3); however according to World Bank data remittances in 2009 and 2010 was US\$ 7150 million and US\$ 7681 million. The US ranked top among the countries from which Egyptians abroad send their remittances followed by Kuwait, United Arab Emirates and Saudi Arabia.

Table 3: Egypt Inward Remittances over the Period 2001/02-2009/10:

Fiscal Year	Remittances in Million US\$
2001/2002	3029.5
2002/2003	2976.8
2003/2004	2999.6
2004/2005	4329.5
2005/2006	5034.2
2006/2007	6321.0
2007/2008	8559.2
2008/2009	7805.7
2009/2010	9753.4

Source: Central Bank of Egypt, Annual Report, Various Issues.

The rules and regulations dealing with remittances have experienced a lot of changes. The Government of Egypt (GOE) in the 1960s used to ask emigrants to repatriate part of their earnings to the government (whereby migrants had to transfer 25% of their income for single migrant households and 10% for family households into their own bank account), a policy that proved to be unsuccessful (Collyer, 2004). The end of 1960s changed exchange rates and the beginning of 1970s to encourage remittances and the government started issuing special bonds for emigrants to attract their remittances. In fact Egypt was one of the very few countries that has liberalized its capital account in its balance of payments (even before attempts to liberalize its current account) to attract remittances. None of these policies led to significant change of pattern in using remittances in productive investments⁷ (ESCWA, 2006; Roman, 2006). The government changed its policy in the 1980s and induced migrants to send money to a foreign currency account in Egypt by offering favorable exchange rates. Also bonds for Egyptian migrants were

⁷ By productive investment it is meant in that context establishing manufacturing or services projects that yield income and create employment. Since the majority of remittances is spent on buying or constructing houses or consumption, it is argued that this does not represent productive investment from the economy's point of view.

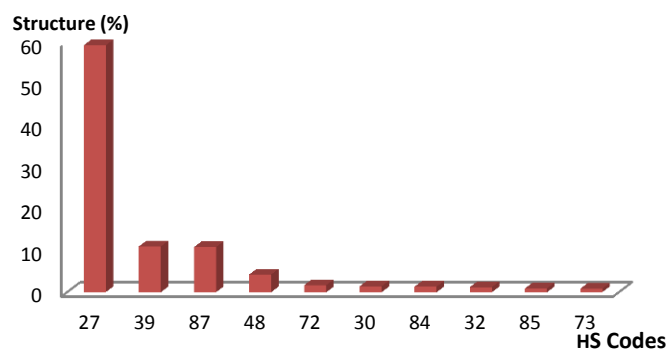
introduced. Law 111/1983 recognized some rights for Egyptians abroad, such as tax exemptions on the bank deposits of emigrants in banks operating in Egypt and the capital contributed by an Egyptian emigrant shall be treated on the basis of their enjoyment of all privileges prescribed for the foreign capital working in the same field. Since that date remittances have not been regulated by any means neither through obligations to repatriate part of the remittances back to Egypt, nor through provision of incentives for emigrants and Diaspora to send their remittances back home. An idea of taxing remittances was raised in the 1990s, but was soon abandoned as it was found to be an irrational decision (Ghoneim, 2010).

Trade Flows

According to the aforementioned major countries of destinations for Egyptian emigrants, the selected countries that have been chosen to trace their commodity exports to Egypt include three regions: i) Arab countries, mainly Saudi Arabia, Libya, Kuwait and Jordan; and ii) European countries, mainly Italy, France and Germany, and iii) US and Canada as benchmarks. However, due to data unavailability, within Arab region, Saudi Arabia and Jordan are the only available countries from COMTrade database as reporters exporting to the Egyptian market. The top 10 commodity groups Saudi Arabia exports to Egypt are shown in figure 4. It is clear that mineral fuels, mineral oils and products of their distillation commodity group is the most important import group Egypt receives from Saudi Arabia; it accounts for about 59% of total Saudi Arabian exports to Egypt (figure 4). Hence, there is a high concentration of commodity reference price imports from Saudi Arabia. We use the COMTrade database where we classify exports and imports using HS 2 digit level. Yet for the sake of analysis that will follow in section three we categorize products into homogenous, reference priced, and differentiated products⁸.

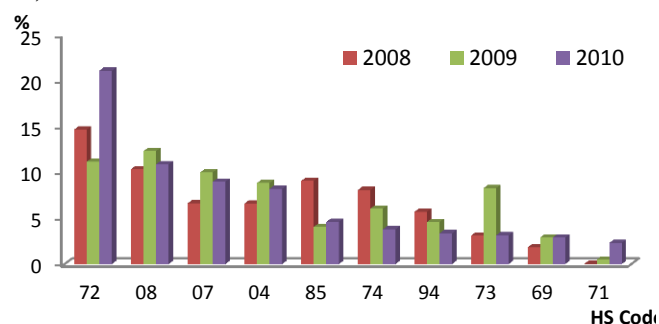
⁸ Rauch (1999) divides goods into three groups: (i) those traded on an organized exchange, (ii) those with a reference price in industry journals, and (iii) those that fail to enter the first two categories.

Figure 4: Top-10 Saudi Arabia Exports to Egypt (2007)



Source: UN, COMTrade Database, online version.

Figure 5: Top-10 Egyptian Exports to Saudi Arabia (2008-2010)



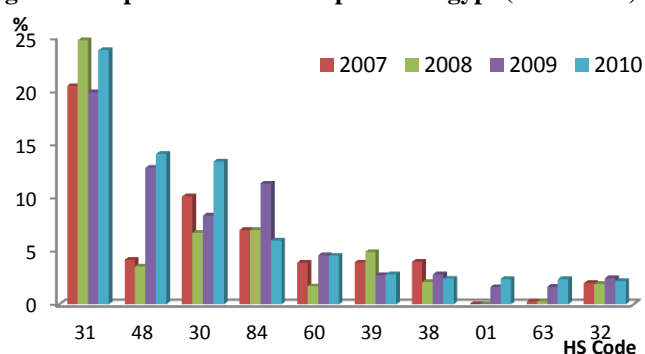
Source: UN, COMTrade Database, online version.

04	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included
07	Edible vegetables and certain roots and tubers
08	Edible fruit and nuts; peel of citrus fruit or melons
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes
39	Plastics and articles thereof
48	Paper and paperboard; articles of paper pulp, of paper or of paperboard
69	Ceramic products
71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin
72	Iron and steel
73	Articles of iron or steel
74	Copper and articles thereof
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles
87	Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof
94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included; illuminated signs, illuminated name-plates and the like; prefabricated buildings

On the other hand, the major Egyptian exports to Saudi Arabia have been concentrated in iron and steel and processed food as shown in figure 5. The share of those exports in total Egyptian exports to Saudi Arabia has remained relatively stable, whereas the share of HS 85 (electrical machinery) has declined in 2009 and 2010 compared to 2008. This implies that Egyptian exports to Saudi Arabia are concentrated in differentiated goods.

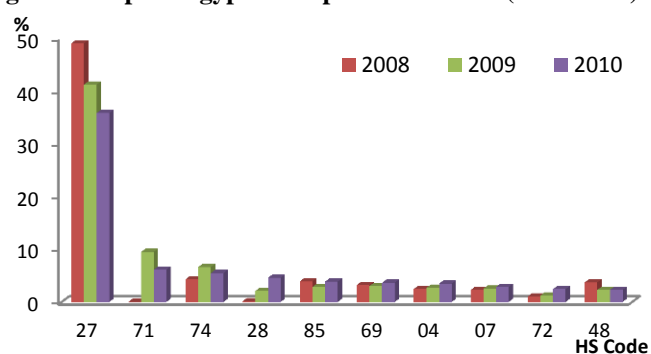
Jordanian exports to Egypt are relatively more diversified than the Saudi Arabian exports. Figure 6 shows that fertilizers account for the highest share among the Egyptian imports from Jordan. Paper and paperboard, articles of paper pulp, paper, and paperboard recently represents the second group of Jordanian exports to Egypt. Apart from its historical low ratio, the share of such products has witnessed a significant increase during the last two years. The share of pharmaceutical products has fluctuated however it still remained higher than other group of commodity products other than fertilizers and paper products. Hence, Jordanian exports to Egypt are more of homogenous and differentiated products.

Figure 6: Top-10 Jordanian Exports to Egypt (2007-2010)



Source: UN, COMTrade Database, online version.

Figure 7: Top-10 Egyptian Exports to Jordan (2008-2010)



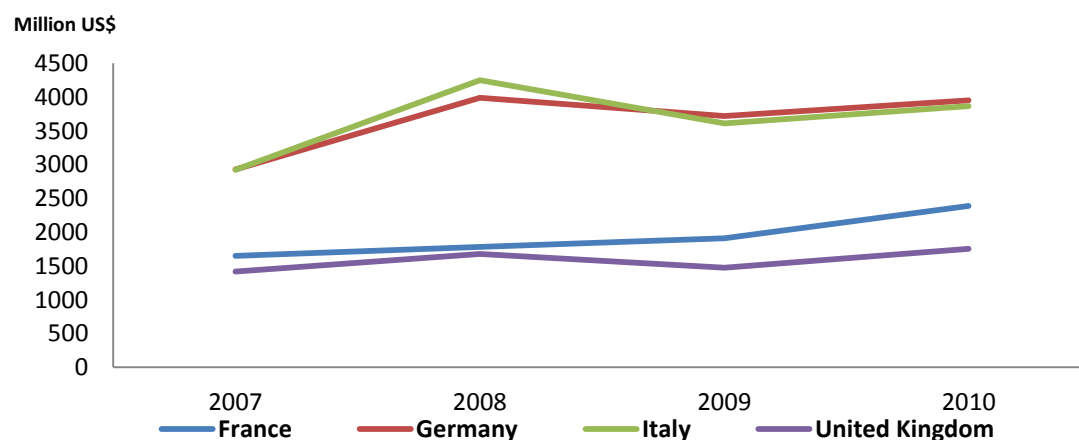
Source: UN, COMTrade Database, online version.

01	Live animals; animal products
04	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included
07	Edible vegetables and certain roots and tubers
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes
28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes
30	Pharmaceutical products
31	Fertilisers
32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks
38	Miscellaneous chemical products
39	Plastics and articles thereof
48	Paper and paperboard; articles of paper pulp, of paper or of paperboard
60	Knitted or crocheted fabrics
63	Other made up textile articles; sets; worn clothing and worn textile articles; rags
69	Ceramic products
71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal, and articles thereof; imitation jewellery; coin
72	Iron and steel
74	Copper and articles thereof
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles

Regarding Egyptian exports to Jordan there is high concentration when compared to Egyptian imports from Jordan and when compared to Egyptian exports to Saudi Arabia. The high concentration of HS 27 has declined where its share went down from 50% in 2008 to less than 40% in 2009 (figure 7). However, this decrease in the share of HS 27 could be a result of lower oil prices. Other major exports to Jordan are relatively diversified (comprising iron and steel, processed food, machinery, and chemicals). Yet, the shares of such other main products remained relatively stable. Hence, there is a tendency for Egyptian exports directed to Arab countries to be more concentrated in differentiated products, with no clear characteristics for imports from Arab countries as they include reference priced, homogenous and differentiated products.

Regarding European countries, we observe that as shown in figure 8, Italy and Germany have the highest trade values with Egypt; however, in the last two years the German exports to Egypt have exceeded those of Italy. The UK has the lowest export value among the selected group of countries.

Figure 8: Egyptian Imports from some selected European Countries (2007-2010)



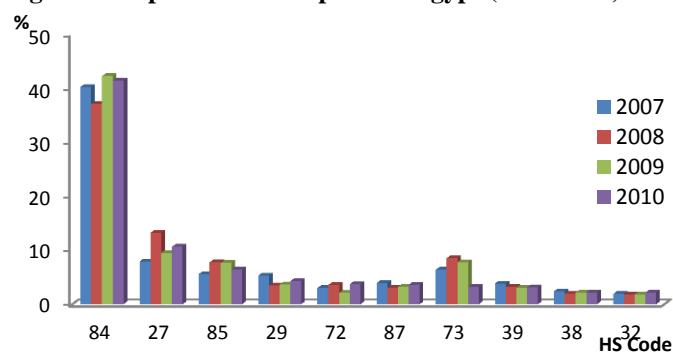
Source: UN, COMTrade Database, online version.

Figures 9, 11, and 13 reveal the most important Italian, German, and French exports to Egypt where there is high concentration in HS 84 (machinery, etc.) representing the major exports from those three countries to Egypt. Other major exports of those countries to Egypt constitute of HS

87. France major exports to Egypt constitute of cereals. Moreover, France exports to Egypt are more diversified and less concentrated compared to those of Germany and Italy. This implies that Egypt's imports from European countries are more concentrated in differentiated products.

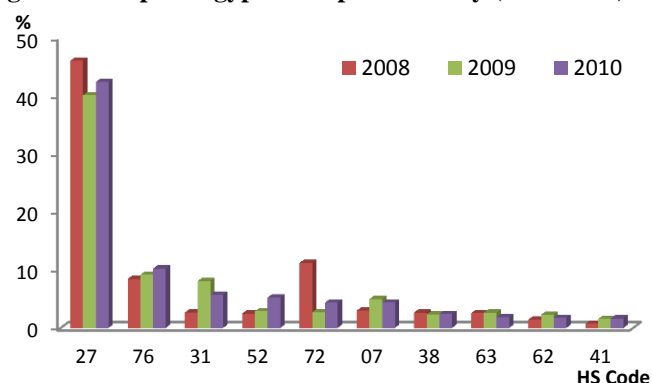
On the other hand figures 10, 12 and 14 reveal major Egyptian exports to Italy, Germany and France where the export structure is highly similar and HS 27 (mineral fuels) is the major export. Other major exports include fertilizers, edible vegetables, and iron and steel. Hence, there is high concentration of Egyptian exports to European countries in homogenous and reference priced products.

Figure 9: Top-10 Italian Exports to Egypt (2007-2010)



Source: UN, COMTrade Database, online version.

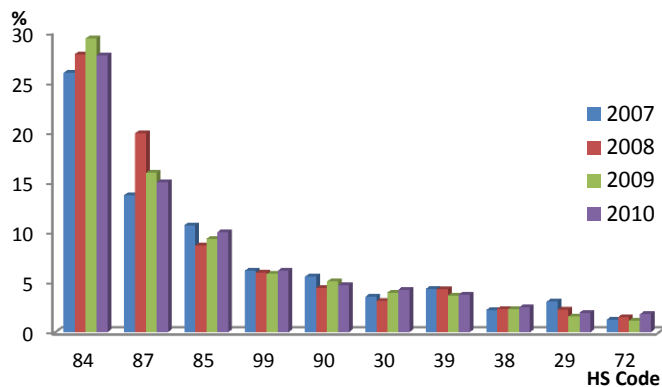
Figure 10: Top-10 Egyptian Exports to Italy (2008-2010)



Source: UN, COMTrade Database, online version

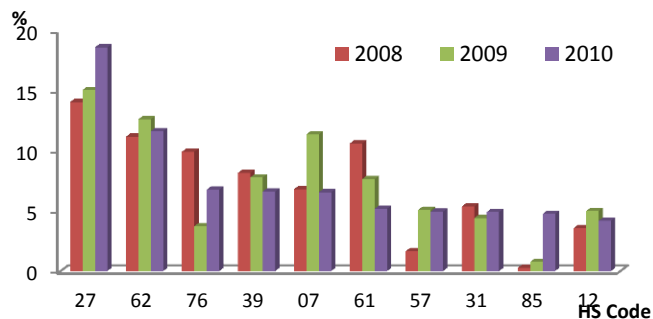
07	Edible vegetables and certain roots and tubers
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes
29	Organic chemicals
31	Fertilisers
32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks
38	Miscellaneous chemical products
39	Plastics and articles thereof
41	Raw hides and skins(other than furskins) and leather
52	Cotton
62	Articles of apparel and clothing accessories, not knitted or crocheted
63	Other made up textile articles; sets; worn clothing and worn textile articles; rags
72	Iron and steel
73	Articles of iron or steel
76	Aluminum and articles thereof
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof
87	Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof

Figure 11: Top-10 German Exports to Egypt (2007-2010)



Source: UN, COMTrade Database, online version

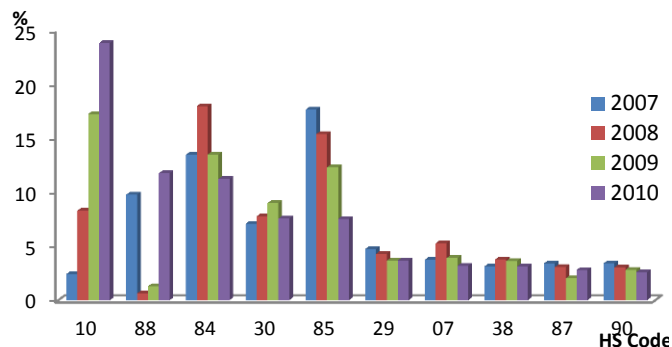
Figure 12: Top-10 Egyptian Exports to Germany (2008-2010)



Source: UN, COMTrade Database, online version

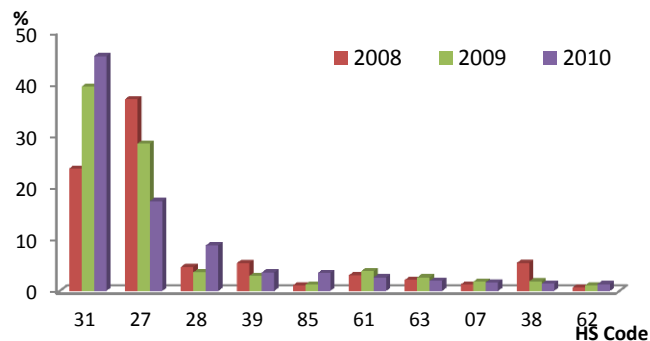
07	Edible vegetables and certain roots and tubers
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medicinal plants; straw and fodder
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes
29	Organic chemicals
30	Pharmaceutical products
31	Fertilisers
38	Miscellaneous chemical products
39	Plastics and articles thereof
57	Carpets and other textile floor coverings
61	Articles of apparel and clothing accessories, knitted or crocheted
62	Articles of apparel and clothing accessories, not knitted or crocheted
72	Iron and steel
76	Aluminum and articles thereof
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles
87	Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof
99	Commodities not specified according to kind

Figure 13: Top-10 French Exports to Egypt (2007-2010)



Source: UN, COMTrade Database, online version

Figure 14: Top-10 Egyptian Exports to France (2008-2010)



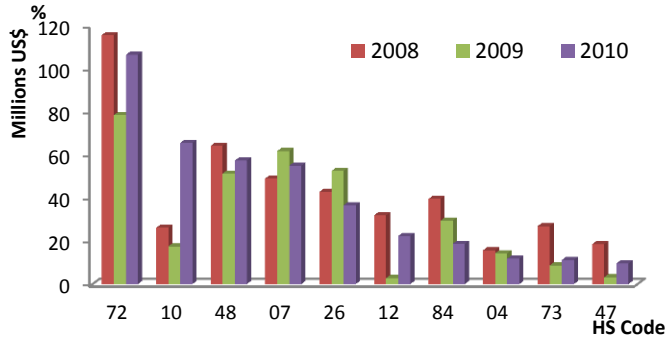
Source: UN, COMTrade Database, online version

07	Edible vegetables and certain roots and tubers
10	Cereals
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes
28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes
29	Organic chemicals
30	Pharmaceutical products
31	Fertilisers
38	Miscellaneous chemical products
39	Plastics and articles thereof
61	Articles of apparel and clothing accessories, knitted or crocheted
62	Articles of apparel and clothing accessories, not knitted or crocheted
63	Other made up textile articles; sets; worn clothing and worn textile articles; rags
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles
87	Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof
88	Aircraft, spacecraft, and parts thereof
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof

The trends of trade between Egypt and Arab countries on the one hand (at this level of aggregation) shows that that trade is more of a mixture of inter-industry and intra-industry trade, whereas on the other hand the trade with European countries (at this level of aggregation) shows that trade is of inter-industry type. Moreover, the structure of Egyptian exports to European countries is highly similar to the structure of Egyptian imports from Arab countries (reference priced and homogenous) whereas the structure of Egyptian exports to Arab countries is highly similar to Egyptian imports from European countries (differentiated products).

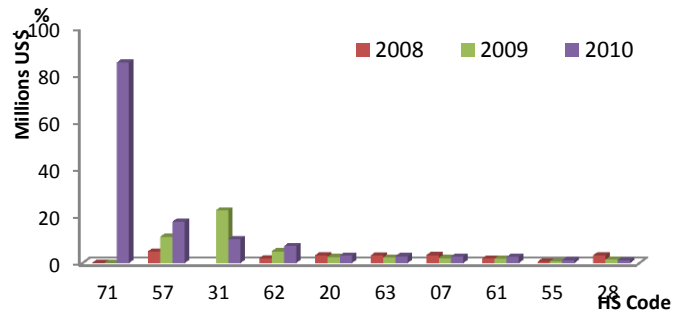
Figures 15, 16, 17, and 18 shows the main Egyptian exports and imports to and from the US and Canada revealing that type of trade with those two countries is highly similar to the one existing between Egypt and the EU countries.

Figure 15: Top-10 Canadian Exports to Egypt (2008-2010)



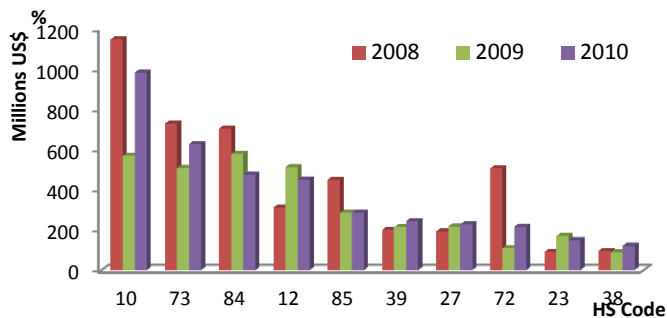
Source: UN, COMTrade Database, online version.

Figure 16: Top-10 Egyptian Exports to Canada (2008-2010)



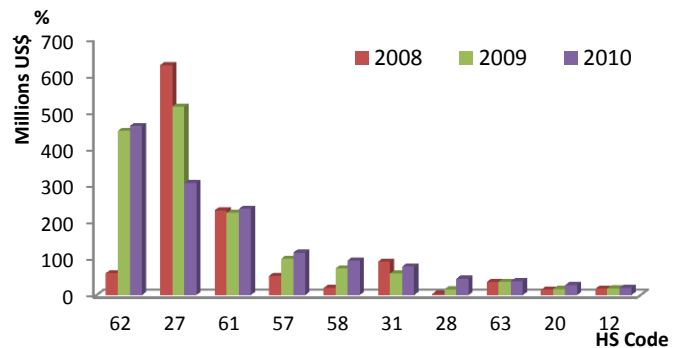
Source: UN, COMTrade Database, online version.

Figure 17: Top-10 US Exports to Egypt (2008-2010)



Source: UN, COMTrade Database, online version.

Figure 18: Top-10 Egyptian Exports to USA (2008-2010)



Source: UN, COMTrade Database, online version.

Section Three: Gravity Model Estimation

The limitations of detailed harmonized data on migrant flows from Egypt to EU and Arab countries have prevented us from using the Docquier and Marfouk (2007) database, which only contains data on migrant flows to OECD countries. Hence, we had to revert to other sources of data on migration flows where we used the Central Agency for Public Mobilization and Statistics (CAPMAS) database. However, the CAPMAS database differentiated between permanent migration (to EU and North America) that are mentioned in flows and temporary migration to Arab countries (which are mentioned as stocks). Data on migrants to EU and North America is available on yearly basis for the period 2000-2009, which is not the case for individual Arab countries, where data is available only for the aggregate of Arab countries as a region. Hence, we treat Arab countries for their migration data as one country and we aggregate the trade for the respective Arab countries, while taking distance to Saudi Arabia (the main recipient of Egyptian migrants) as a proxy to geographical distance for this group of countries. We also consider that Egypt has a border with Arab countries since Libya (the second major recipient of Egyptian migrants) is adjacent to Egypt.

We adopted the standard form of gravity model where we included the traditional explanatory variables including GDP per capita, income in Egypt and in receiving countries, distance, common language and number of migrants. The equation took the following form:

Following the literature, the model used for the study is a reduced-form gravity equation:

$$\ln(Trade_{ij,t}) = \alpha_{ij} + \beta_1 * \ln(Mig_{ij,t-1}) + \beta_2 * \ln(GNI_{i,t}) + \beta_3 * \ln(GNI_{j,t}) + \beta_4 * \ln(GNI_{i,t}/Pop_{i,t}) + \beta_5 * \ln(GNI_{j,t}/Pop_{j,t}) + \beta_6 * \ln(Dist_{ij}) + \beta_7 * Lang_{ij} + \beta_8 * Colony_{ij} + \varepsilon_{ij,t}$$

where

- $Trade_{ij,t}$ is the bilateral trade flow between country i and country j at time t
- α_{ij} represent cross-section specific heterogeneity;
- $GNI_{i,t}$ and $GNI_{j,t}$ are the Gross National Income of the two countries that trade;
- $Dist_{ij}$ is the bilateral distance between country i and country j ;

- $Lang_{ij}$ and $Colony_{ij}$ are two additional explanatory variables (mainly dummies trying to capture other measures of common language and colonial relationship between the two countries).

Our time horizon is (2001-2010) whereas the number of countries included in the equation are 14 including US, Canada, Italy France, Germany, UK, Greece, Spain, Australia, Austria, Denmark, Sweden , Netherlands, and Arab countries (counted as one group because annual data on migration stock statistics at regional level are more comprehensive than at each country individually which are available for three years only).

As evident from the equation, we apply one-year lag for migrants stock, to accommodate for any endogeneity problem, as shown by Egger (2011). Data on migrants' stock figures are collected from three main sources, namely: number of Egyptian migrants to the Arab countries was compiled from domestic sources (CAPMAS); number of Egyptian migrants in non-Arab countries was extracted from Eurostat and OECD databases. The Eurostat was used to extract data on the Egyptian immigrants in European countries; as well as other OECD (non-European) countries. OECD-International Migration Database was used to compile data on countries (Italy, Germany, and Greece) that are not available in the Eurostat database. Finally, data on Egyptian migrants to USA, Canada and France were estimated using immigration net inflows reported in OECD-International Migration Database where their immigrants stock in the base year (2000) were compiled from the World Bank 10-year migration dataset.

Data on bilateral trade has been extracted from COMTRADE database of UN for our period of study, 2001-2010. Data on GNI and GNI per capita were extracted from the World Development Indicators (WDI) provided by the World Bank for years (2001-2010). Data on other variables, including distance, common language and colonial relationship, are dummies were collected from the CEPII Institute's distance database.

We aggregated and classified the trade data at 4-digit SITC Rev.2 following Rauch (1999) where trade is divided into three main categories: (i) differentiated products; (ii) reference price; and (ii) organized (homogenous). We run several regressions with fixed effect and random effect.

Testing for multicollinearity identified that the income and per capita income suffer from multicollinearity, so we decided to drop the per capita income variable.

We run several types of regressions including pooled, pooled with dummies, pooled sectoral, panel fixed effect (sectoral and country specific), and panel random. We report a number of such regressions below (regressions 1 to 8). We do not report regression with fixed effects as following Hausman test we rejected the null hypothesis and hence random effect regressions were the most appropriate⁹. Our results showed that Egyptian migrants do have a pro-trade effect, yet not on all types of product categories, which differs in the exporting and importing vectors. The pro-trade effect of migrants is clear and significant in the case of Egyptian exports and imports, suggesting the presence of mixed preference and network effects. By types of products, Egyptian migrants do show a trade creation effect on Egyptian homogenous and exports (preference+network) and on Egyptian imports (network on net) on reference priced products. Differentiated products show some network effect on net, with increasing imports arriving to Egypt from the country of destination of Egyptian emigrants (growth in Egyptian imports), while homogenous goods show a clear and enormous preference effect in Egyptian exports to those receiving countries. The magnitude of the coefficient in terms of migrants creating trade of such organized exports is much higher than in other studies in the literature showing some elasticity estimates (0.98 for homogenous exports and 0.44 for reference price imports) that are considered to be extremely high when compared to the average values in the literature, that range between 0.15 and 0.50 (Genç et al., 2011), 0.10 to 0.16 (Requena and Serrano, 2011) and even lower estimates as in (Casi, 2010). Hence, when we corrected for heteroscedasticity the coefficient of general trade decreased to 0.128 (down from 0.241 in pooled regression) and that of exports to 0.285 (down from 0.251 in pooled regression) which is in line with the estimates found in the literature. This has also been the case with homogenous exports whose coefficient decreased to 0.8 and for reference price imports which decreased to 0.124. The coefficient of homogenous exports remains extremely high when compared with similar estimates in the literature, and hence in this case we should only focus on the trend of the results

⁹When undertaking the Hausman test for specific types of exports and imports we observe that fixed effect regression were the more suitable in some cases as we did not reject the null hypothesis. However, comparing the results of random and fixed effects regressions did not reveal any differences in significance and only minute differences in coefficients, hence for the sake of simplicity we reported only the random effect results.

and not the magnitude. Correcting for heteroscedasticity resulted also in making some other specific imports and exports statistically significant, where we observe that the migration effect on differentiated exports become significant with a reasonable coefficient of 0.109. This has also been the case with differentiated imports which had a coefficient of -0.336 implying a negative relationship between migration and imports and a coefficient of 0.398 for homogenous imports. The results differ when digging into details where we find that the export creation effect of migrants holds only in a specific set of countries when the regression is run on country specific with fixed effects where it holds only for three countries namely Australia, Canada and Sweden. This could be a result of the type of migrants (skills or income) implying that there are threshold effects (based on skill level (education) or income), yet our data do not allow us to investigate it. Notwithstanding, all these giant elasticities found in the country analysis warns us from taking them with their values where we should take them just as an indication, given the important bias in estimation shown by other studies when employing these type of disaggregated data (e.g. Bandyopadhyay et al., 2008).

The overall result for our case study is that the pro-trade effect of Egyptian migrants is evident in the case of Egypt for imports, through network effects, as well as in the case of Egyptian exports to destination countries of emigrants, in a more clear preference driven effect. Generally, we also observe that the trade enhancement effect is country and product specific and evident in the case of homogenous and differentiated exports (implying a preference effect endowed in Egyptian exports). The country specific effect is in line with results of Foad (2010) who highlights the relevance of such preference channel for MENA emigrants going to EU countries in leading pro-trade effects of migrants, as we have found. The trade creation effect of migrants on Egyptian imports is highly evident in homogenous and reference priced commodities implying a network effect.

Finally, the lack of significance of migrants' trade effect in the case of Arab countries observed in country specific table of results could be implying two tentative explanations. The first one is that given cultural similarity between Egypt and those countries, migrant networks would not be playing an important role, neither for the network channel, nor for the preference one. Given similarities in foodstuff supply in Arab countries, the products that Egyptians usually employ at

home are readily available in the Arab foreign markets, and hence there is no specific preference effect. Also, and due to the similar language, culture and other traditions, no network effect is neither significant, which is not the case of Egyptian emigrants to EU or North America. The second interpretation become more related to the type of migration found in Egypt, where country specific regressions point out towards positive impact for permanent migrants on trade, but not in the case of temporary migrants, the ones characterizing the Diaspora to Arab countries of Egyptians.

Regression One: Pooled

Variable	Ln(Trade)	Ln(Exp)	Ln(Imp)
Ln(Migration)	0.241*** (0.0899)	0.251** (0.114)	0.151 (0.113)
Ln(Dist)	-0.839*** (0.168)	-2.276*** (0.212)	-0.560*** (0.210)
Ln(GDP_EGY)	1.328*** (0.232)	0.818*** (0.294)	1.433*** (0.291)
Ln(GDP_PRT)	0.935*** (0.079)	1.512*** (0.099)	0.857*** (0.0989)
Language	0.166 (0.359)	0.367 (0.454)	0.473 (0.450)
Colony	-0.922** (0.389)	-0.875* (0.492)	-0.857* (0.537)
Constant	3.567* (1.987)	11.697*** (2.512)	1.558 (2.491)
Observations	396	396	396
R-squared	0.580	0.666	0.4236

Standard errors in parentheses

*** p<0.01, ** p<0.05, *p<0.1

Regression Two: Pooled Sectoral

Variable	Differentiated		Homogeneous		Reference Priced	
	Ln(Exp)	Ln(Imp)	Ln(Exp)	Ln(Imp)	Ln(Exp)	Ln(Imp)
Ln(Migration)	-0.091 (0.119)	0.152* (0.083)	0.987*** (0.206)	-0.142 (0.215)	-0.143 (0.168)	0.443*** (0.084)
Ln(Dist)	-2.299*** (0.222)	-0.363** (0.155)	-1.833*** (0.383)	-1.097*** (0.401)	-2.695*** (0.312)	-0.221 (0.156)
Ln(GDP_EGY)	1.544*** (0.308)	1.261*** (0.215)	-0.323 (0.531)	1.574*** (0.556)	1.233*** (0.433)	1.465*** (0.216)
Ln(GDP_PRT)	1.465*** (0.105)	1.082*** (0.073)	1.192*** (0.180)	1.108*** (0.189)	1.878*** (0.147)	0.381*** (0.073)
Language	1.935*** (0.476)	-1.534*** (0.332)	-2.075** (0.821)	3.134*** (0.859)	1.243* (0.669)	-0.179 (0.334)
Colony	-1.327** (0.516)	0.684* (0.361)	0.562 (0.890)	-3.061*** (0.932)	-1.861** (0.797)	-0.193 (0.362)
Constant	12.035*** (2.634)	0.578 (1.839)	8.427* (4.541)	4.561 (4.753)	14.63*** (3.702)	-0.463 (1.846)
Observations	132	132	132	132	132	132
R-squared	0.820	0.827	0.708	0.553	0.758	0.753

Standard errors in parentheses

*** p<0.01, ** p<0.05, *p<0.1

Regression Three: Panel with Random Effect

Variable	Ln(Trade)	Ln(Exp)	Ln(Imp)
Ln(Migration)	0.247** (0.116)	0.424*** (0.156)	0.088 (0.148)
Ln(GDP_EGY)	1.479*** (0.130)	1.126*** (0.182)	1.573*** (0.167)
Ln(GDP_PRT)	0.760*** (0.122)	1.036*** (0.165)	0.733*** (0.155)
Ln(Dist)	-0.572* (0.295)	-1.897*** (0.360)	-0.079 (0.367)
Language	0.751 (0.894)	0.056 (1.124)	1.499 (1.121)
Colony	-0.605 (0.683)	-0.321 (0.829)	-0.269 0.849
Constant	1.803 (2.326)	8.822*** (2.835)	-1.549 (2.896)
Observations	396	396	396
R-squared	0.581	0.652	0.432
Number of Cross-Section Observations	42	42	42

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Regression Four: Hausman-Taylor Estimate

Variable	Ln(Trade)	Ln(Exp)	Ln(Imp)
Ln(Migration)	0.299** (0.131)	0.550*** (0.185)	0.102 (0.168)
Ln(GDP_EGY)	1.471*** (0.130)	1.140*** (0.184)	1.567 (0.167)
Ln(GDP_PRT)	0.739*** (0.125)	0.938*** (0.176)	0.732*** (0.159)
Ln(Dist)	-0.615** (0.292)	-1.963*** (0.398)	-0.096 (0.360)
Language	0.502 (0.925)	-0.501 (1.278)	1.429 (1.157)
Colony	-0.638 (0.669)	-0.359 (0.910)	-0.283 (0.822)
Constant	1.851 (2.277)	8.782*** (3.100)	-1.509 (2.801)
Observations	396	396	396

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Regression Four: Regression with AR(1) Disturbance

Variable	Ln(Trade)	Ln(Exp)	Ln(Imp)
Ln(Migration)	0.169 (0.121)	0.344** (0.162)	0.042 (0.155)
Ln(GDP_EGY)	1.416*** (0.154)	1.088*** (0.212)	1.498*** (0.200)
Ln(GDP_PRT)	0.855*** (0.135)	1.195*** (0.179)	0.811*** (0.173)
Ln(Dist)	-0.553** (0.277)	-1.932*** (0.345)	-0.083 (0.349)
Language	1.038 (0.864)	0.316 (1.101)	1.626 (1.093)
Colony	-0.624 (0.638)	-0.381 (0.792)	-0.313 (0.803)
Constant	2.031 (2.193)	8.970*** (2.737)	-1.249 (2.764)
Observations	396	396	396
R-Squared	0.588	0.660	0.435
Autocorrelation Coefficient	0.357	0.317	0.371

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Regression Five: Regression with Panel-Corrected Standard Errors (Heteroscedastic)

Variable	Ln(Trade)	Ln(Exp)	Ln(Imp)
Ln(Migration)	0.127*** (0.026)	0.285*** (0.046)	0.062** (0.025)
Ln(GDP_EGY)	1.355*** (0.117)	0.815*** (0.166)	1.458*** (0.144)
Ln(GDP_PRT)	0.992*** (0.029)	1.495*** (0.054)	0.901*** (0.029)
Ln(Dist)	-0.616*** (0.064)	-2.085*** (0.065)	-0.174*** (0.046)
Language	1.156*** (0.166)	0.360** (0.182)	1.486*** (0.212)
Colony	-0.695*** (0.042)	-0.599*** (0.054)	-0.395 (0.088)
Constant	2.303*** (0.657)	10.025*** (0.971)	-1.121 (0.722)
Observations	396	396	396
R-Squared	0.5895	0.666	0.436

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Regression Six: Panel Sectoral with Random Effect

Variable	Differentiated			Homogeneous			Reference Priced		
	Ln(Trade) ^{1/}	Ln(Exp)	Ln(Imp) ^{1/}	Ln(Trade)	Ln(Exp) ^{1/}	Ln(Imp)	Ln(Trade)	Ln(Exp)	Ln(Imp)
Ln(Migration)	-0.067 (0.108)	0.135 (0.184)	-0.187 (0.124)	0.506* (0.273)	1.000*** (0.324)	0.326 (0.368)	0.266* (0.153)	0.155 (0.254)	0.141 (0.119)
Ln(GDP_EGY)	1.593*** (0.122)	1.818*** (0.209)	1.688*** (0.136)	1.429*** (0.315)	0.529 (0.372)	1.399*** (0.435)	1.409*** (0.180)	1.079*** (0.289)	1.632*** (0.154)
Ln(GDP_PRT)	0.816*** (0.113)	0.997*** (0.193)	0.743*** (0.129)	0.693** (0.288)	0.072 (0.341)	1.047*** (0.389)	0.801*** (0.162)	1.965*** (0.267)	0.399*** (0.127)
Ln(Dist)	-0.817*** (0.267)	-1.074** (0.451)	-0.555* (0.334)	-0.296 (0.648)	-2.294*** (0.767)	0.219 (0.828)	-0.590* (0.348)	-2.291*** (0.615)	0.089 (0.242)
Language	1.208 (0.814)	1.935 (1.381)	0.885 (0.997)	0.261 (2.005)	-2.252 (2.373)	1.366 (2.602)	0.931 (1.089)	0.457 (1.889)	2.179*** (0.788)
Colony	0.024** (0.617)	0.421 (1.042)	0.181 (0.777)	-1.128 (1.494)	-0.120 (1.769)	-1.018 (1.899)	-0.703 (0.798)	-1.215 (1.419)	0.023** (0.552)
Constant	6.391*** (2.102)	2.184 (3.555)	5.182** (2.643)	-3.015 (5.102)	15.189** (6.042)	-8.611 (6.508)	2.053 (2.734)	8.939* (4.845)	-1.217 (1.912)
Observations	132	132	132	132	132	132	132	132	132
R-squared	0.841	0.797	0.757	0.634	0.576	0.508	0.754	0.753	0.814

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

^{1/} The results showed significant Hausman statistics in those cases, however, the random effect estimates were reported for the standardization of presenting estimation results.

Regression Seven: Sectoral Regression with Panel-Corrected Standard Errors (Heteroscedastic)

Variable	Differentiated			Homogeneous			Reference Priced		
	Ln(Trade)	Ln(Exp)	Ln(Imp)	Ln(Trade)	Ln(Exp)	Ln(Imp)	Ln(Trade)	Ln(Exp)	Ln(Imp)
Ln(Migration)	-0.262*** (0.032)	0.109*** (0.033)	-0.336*** (0.029)	0.571*** (0.048)	0.862*** (0.110)	0.398*** (0.079)	0.071** (0.031)	-0.115 (0.083)	0.124*** (0.030)
Ln(GDP_EGY)	1.344*** (0.191)	1.523*** (0.148)	1.350*** (0.239)	1.250*** (0.177)	-0.320 (0.542)	1.493*** (0.231)	1.471*** (0.186)	1.241*** (0.270)	1.532*** (0.167)
Ln(GDP_PRT)	1.296*** (0.026)	1.366*** (0.033)	1.326*** (0.026)	0.857*** (0.037)	1.254*** (0.088)	0.839*** (0.060)	0.824*** (0.077)	1.864*** (0.109)	0.540*** (0.035)
Ln(Dist)	-0.940*** (0.037)	-1.316*** (0.075)	-0.795*** (0.055)	-0.497*** (0.119)	-2.983*** (0.143)	0.268*** (0.102)	-0.413*** (0.122)	-1.957*** (0.059)	0.004 (0.104)
Language	1.796*** (0.089)	1.748*** (0.210)	1.153*** (0.123)	-0.218 (0.362)	-2.557*** (0.409)	1.161* (0.641)	1.888*** (0.179)	1.890*** (0.337)	2.145*** (0.201)
Colony	-0.211*** (0.078)	0.111 (0.088)	-0.193** (0.083)	-1.344*** (0.147)	-1.050*** (0.208)	-0.906*** (0.213)	-0.529*** (0.094)	-0.858*** (0.149)	-0.087 (0.114)
Constant	7.158*** (1.011)	3.303*** (0.845)	6.198*** (1.279)	-2.228** (1.147)	18.144*** (2.840)	-8.722*** (1.373)	1.979 (1.220)	8.627*** (1.426)	-0.838 (0.994)
Observations	132	132	132	132	132	132	132	132	132
R-squared	0.8797	0.8131	0.8113	0.6388	0.7126	0.5106	0.7684	0.7642	0.8227

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Regression Eight: Country Specific Effect

Country/Region	Ln(Exp)				Ln(Imp)			
	Fixed Effect	Ln(Migrants)	Ln(GDP_PRT)	Ln(GDP_EGY)	Fixed Effect	Ln(Migrants)	Ln(GDP_PRT)	Ln(GDP_EGY)
Arab World	-50.76	5.56 (6.416)	-1.32 (3.625)	-0.37 (1.362)	53.00	-6.80 (5.067)	7.02** (2.867)	0.54 (1.070)
Austria	-9.16	0.38 (0.975)	1.97* (1.050)	0.33 (0.480)	-1.42	0.01 (0.771)	1.59* (0.832)	0.28 (0.382)
Australia	-565.23	56.88*** (19.027)	-3.10* (1.594)	-0.87 (0.700)	79.55	-6.99 (15.040)	0.44 (1.263)	0.45 (0.551)
Canada	-100.23	13.05** (5.076)	-5.81*** (1.889)	2.00*** (0.633)	160.23	-21.92*** (3.998)	8.64*** (1.492)	5.14*** (0.498)
Denmark	-69.58	11.74 (7.337)	-1.78* (1.050)	0.29 (0.400)	89.18	-13.41** (5.811)	1.15 (0.834)	2.26*** (0.316)
France	2.98	-2.13 (1.645)	2.36* (1.214)	1.86*** (0.593)	2.17	0.56 1.289	-0.28 (0.956)	1.51*** (0.465)
Germany	-21.12	1.53 (1.194)	1.52 (0.945)	1.17** (0.501)	-13.16	1.04 0.945	0.80 (0.746)	1.92*** (0.397)
Greece	0.38	0.27* (0.160)	0.70** (0.332)	0.85** (0.411)	-0.01	-0.16 0.127	0.65** (0.262)	1.74*** (0.326)
Italy	-3.66	-3.64* (2.125)	6.36** (2.489)	1.77** (0.766)	0.51	-1.91 1.682	2.91 (1.969)	2.21*** (0.606)
Spain	-2.50	-1.60 (1.183)	2.85*** (0.934)	1.50*** (0.408)	6.74	-2.39** 0.933	1.99*** (0.740)	1.96*** (0.325)
Sweden	-50.33	8.73** (3.508)	-2.15** (0.905)	0.50 (1.027)	-93.85	15.91*** 2.771	-1.54** (0.717)	-2.30*** (0.809)
United Kingdom	28.33	-1.05 (4.697)	0.27 (1.426)	-2.07 (5.443)	-15.97	2.23 3.728	1.18 (1.147)	-1.01 (4.294)
United States	-58.73	8.11* (4.581)	-2.47 (2.320)	-0.44 (1.024)	55.79	-8.45** 3.614	4.28** (1.836)	3.64*** (0.806)
AR(1)		-0.67*** (0.046)				-0.80*** (0.034)		
AR(2)		-0.67*** (0.046)				-0.80*** (0.033)		
Observations		340				340		
Number of Cross-Section Observations		30				30		
R-squared		0.908				0.880		

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Conclusion and Policy Implications

Policy prescriptions, especially in the South-North context do not seem to have the uncertainty in the type of relationship between migration and trade mentioned in the study so far. Policy makers

of the North seem to have rather a firm belief in the substitution type relationship between trade and migration, which contradicts with the results of the emerging literature and results of this study. This opens opportunities for a new approach of policies from the trade and migration side, with migrant networks promoting trade exchanges.

The study revealed that Egyptian migrants are able to create trade with major immigrants receiving countries in the EU. However, this is only in specific type of products and not with all countries. Hence, the study revealed that migration enhances trade between Egypt and EU countries through both preference and network effects, but with a predominant role of the former over the later channel. The type of trade enhanced by Egyptian migrants differs on the exports and imports side, where Egyptian emigrants help to enhance Egyptian homogenous and differentiated exports in the EU (clear preference channel) and European homogenous and reference price imports in Egypt (more closer to network effects and market opportunities in Egypt). This is an important finding for policy makers on both ends of the Mediterranean as it concedes an important role for migrants that has been often neglected.

To overcome the chronic economic problems faced by most of the countries in the MENA region, including Egypt, especially those related to the labor market and the unemployment problem and to make use of the trade creation effect of migration several policies need to be adopted on the local and regional levels. Such issues need to be dealt with in a comprehensive way where for example, the low rate of return on education implies that dealing with migration requires tackling other areas as education and not only employment, emphasizing that migration has many roots in the society. On the regional level, the Egyptian government should link its education and training efforts to the migrants' countries needs. For example, the readmission agreement that was signed with Italy in 2006 was accompanied by an agreement that regulates legal migrant flows to Italy, specifying a certain quota of Egyptian labor to migrate to Italy on annual basis based on the demands of the Italian labor market. Fulfilling the quota remained a challenge for the Egyptian government as finding the labor with the skills needed in the Italian market remained a problem (Ghoneim, 2010; Zohry 2009). This is in line with the results of the study which based on country specific regressions it was found that trade creation effects of

Egyptian migrants is only available in some countries implying the possibility of presence of specific skills or income threshold effects.

Digging further, on the local level, the EU and Arab migrant receiving countries need to implement a number of pivotal changes in their policies. Given the protectionist attitude towards immigrants and trade flows, the solution lies in domestic development. Hence a first step would consist of smoothing out the mismatch between job seeker profiles and market needs. Upgrading programs must be introduced to achieve the necessary competitive retraining of labor. Sectoral changes are also a must. Overvaluation of domestic currencies that resulted in misallocation of resources by favoring capital-intensive projects rather labor intensive ones should be redirected. In other words, the structure of incentives should be revised to provide the right environment for allocating resources. Finally, strengthening the entrepreneurial spirit in the educational system is needed to allow the shift toward a more diversified specialized labor force. Achieving such goals is capable of producing a labor force that is capable of meeting the challenges faced domestically to produce the right type of products that can be exported and at the same time creates the right skills needed by the hosting countries in case of migration.

On the regional level, a better coordination of migration policies and industrial planning is needed within the MENA region. This will help to achieve a better allocation of resources. Hence, the Pan Arab Free trade Area (PAFTA) project should address the migration issues and industrial planning which according to the knowledge of the authors is not included under its context or any other context. In the case of the North-South trade and migration relations, Southern countries should exert pressure to enact the movement of temporary labor to capitalize on their comparative advantage in trade in services issues even if on a temporary GATS style.

The future research agenda should address issues like the impact of national policies toward immigration and its role as an impediment to trade in services in the receiving countries. There is also more to be known about the indirect effects of migrant-importing strategies on the subsequent economic trends and trade position of these countries in selected industries. For sending areas, there is little documentation of the economic and trade consequences in countries

that have followed an explicit or implicit policy of training skilled workers for international export (e.g. the Philippines, Sri Lanka, Barbados).

Migration should be dealt with in a wider context to count for its spillovers on trade. For example, the low rate of return on education implies that dealing with migration requires tackling other areas as education and not only employment, emphasizing that migration has many roots in the society. There is also a need to establish programs that make use of returned migrants in terms of the experience they have accumulated over years, and this can further enhance trade. As argued before Wahba (2003) identified that there is a need to benefit from return migrants experience as they have positive impact on the Egyptian economy, while networks still remaining and fostering trade exchanges. Specific programs in terms of selected job opportunities and use of remittances can be established aiming at benefiting from skills of certain migrants acquired abroad. Designed programs to link Diaspora with their home community through investment and trade should be enhanced, with important bilateral gains to be exploited. There are several programs that have been designed in countries that are less developed than Egypt in this regard and have proved to be a success. The case of Diaspora from Ghana residing in Europe and how successful they were in exporting fruits from Ghana to Italy is worth following (Pandya, 2007). Role of NGOs and cooperatives is highly appreciated in this regard whether on initiated in collaboration with the government or as self-established programs.

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Denmark	66	66	61	71	58	52	51	56	45	58	47	69	700
Hungary	27	21	26	38	36	36	47	37	70	48	96	..	482
Czech Republic	..	7	5	:	41	40	48	51	67	110	97	..	466
Finland	21	10	10	25	14	27	22	40	49	50	50	67	385
Slovakia	..	..	..	1	3	13	16	20	20	23	37	..	133
Poland	..	..	..	..	..	..	..	..	6	8	82	..	96
Slovenia	2	0	1	1	4	3	4	10	4	2	12	13	56
Luxembourg	3	4	0	0	1	5	1	0	3	5	15	9	46
Lithuania	0	1	0	2	3	3	3	2	6	4	7	..	31
Latvia	0	1	2	1	1	3	1	0	0	3	4	..	16

Source: European Commission, Eurostat, Migration and Migrant Population Statistics, 2011. Available online at:

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