Is There Anything Special with Intra-Arab Foreign Direct Investment?

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Abstract

The determinants of Foreign Direct Investment (FDI) inflows to Arab countries particularly vary depending on what the source country is, i.e., Arab or non-Arab countries. Estimation is conducted on a separate sample for source countries but with the same set of determinants. We found that intra-Arab FDI is much higher than what can be deduced from current empirical models. More strikingly, the determinants of Arab FDI inflows are influenced by the supplier. Human capital, quality of institutions, infrastructure and openness hardly affect intra-Arab inflows while they normally affect non-Arab inflows. Two possible explanations are proposed. One is that a large share of intra Arab FDI is provided by government or related entities which obey specific regional strategic considerations. The other is that cultural similarity allows Arab investors to use informal socio-cultural networks, and thus to be less sensitive to so-called FDI fundamental determinants than non-Arab investors.

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I. Introduction

The coexistence of relatively capital rich countries, e.g. the Gulf countries, Algeria and Libya, and capital poor ones, e.g. Egypt, Morocco, and Tunisia in the Arab world offers the possibility of beneficial exchange. Moreover, the available evidence, although scarce, points to important potential welfare gains from the capital market integration in the Arab region (Konan, 2003). Finally, recent developments in the literature suggest that after controlling for its traditional determinants, Foreign Direct Investment (FDI) between two Arab countries is higher if the countries are similar than otherwise (Guiso *et al.*, 2009). Arab countries share a number of similarities in geography, history, religion, and language.

Taken together, the above findings suggest that intra-Arab FDI could be higher than what can be deduced from prevailing empirical models. To date, however, no rigorous analysis has been able to confirm or refute that intra-Arab FDI is higher than that involving non-Arab countries. One related paper is Roberts and Almahmood (2009), but the focus was on Saudi Arabia only and the economic question was different. Our analysis allows us to see whether and which efforts are needed to foster intra-Arab FDI and to make the gains aforementioned be materalized. From an academic point of view, Arab countries offer a unique opportunity to test the predictions regarding similarity and FDI.

One main reason for the lack of such an analysis is the need to distinguish between Arab and non-Arab investors into Arab countries. Ideally, one should use data on bilateral FDI inflows. Unfortunately, adequate data on bilateral FDI inflows are not available for the region. UNCTAD is selling some bilateral FDI inflows data. However, they are only available for Morocco, Tunisia, and Saudi Arabia for the period 1995~2009 and for Egypt for the years 2001, 2002, and 2003. Moreover, Morocco, Tunisia, and Saudi Arabia are too specific to draw any meaningful recommendations.

Nevertheless, the Inter-Arab Investment Guarantee Corporation (IAIGC) publishes data for FDI flows into individual Arab countries, allowing us to distinguish between those originating from the *Arab World* and those from the *Whole World*.

We construct two samples. The first sample concerns intra-Arab FDI flows and comes directly from the IAIGC data set. This is the FDI coming from the Arab World. The second sample is based on the difference between the amount of total FDI an Arab country receives and the FDI it receives from other Arab countries. For convenience,

we call the first sample *intra‑Arab* and the second sample *extra‑Arab*. Estimation is conducted on each sample separately but uses the same set of determinants of FDI. Finally, the estimated coefficients are used together with the explanatory variables to assess whether Arab countries are receiving more or less intra-Arab FDI than what can be deduced from current empirical models.

The rest of the paper is organized in four sections. The next section reviews the literature concerning intra-Arab FDI flows. Section III assesses the importance of such flows from an international perspective. Section IV presents the empirical analysis that compares the determinants across the two samples, intra-Arab and extra-Arab flows. Section V presents our conclusions.

II. Literature Review

A. Intra‑Arab Integration and FDI Inflows

The idea of regional integration among Arab countries has been pursued for decades. Efforts to integrate regionally were started in the late 1950s, earlier than in any other developing region. All Arab states have concluded numerous agreements to reduce trade barriers on a preferential basis. Most of these have not had much of an economic impact. For a variety of reasons discussed in the literature, progress has been very slow, with frequent reversals (Sekkat 1996, and Fawzy 2003). Until the late 1990s, the exception to the rule was the 1981 Gulf Cooperation Council. Even there, it took more than two decades for members to agree on a common external tariff, the minimum necessary condition for the realization of a customs union objective (Legrenzi, 2003).

Most of the analysis on the reasons for intra-Arab integration failures focused on the level of intra-regional trade in goods. The finding that intra-Arab trade in goods is "too low" is supposed to imply that the expected benefits from regional integration would be low and, hence, the incentive to achieve such integration is weak. The findings are however contradictory. Al Atrash and Yousef (2000) concluded that intra-Arab trade is lower than predicted by the gravity equation. Abedini and Péridy (2008) examined the impact of the Greater Arab Free Trade Area (GAFTA) and found that regional trade has increased by 20% since GAFTA was implemented. Boughanmi (2008), focusing on the Gulf region, showed that in spite of the fact that the share of GCC intra-trade is too

small in absolute terms, it is actually higher than expected on the basis of underlying trade determinants.

However, such analyses are biased. They focused on the goods market only to assess the desirability of intra-Arab integration, which might be misleading. On the one hand, such reasoning involves a vicious circle: intra-regional integration fails because there is little Intra-Regional Trade (IRT) and there is a little IRT because of the absence of effective regional integration. On the other hand and more importantly, integration of the goods market is not the only form of economic integration and is not a prerequisite to other forms of integration. The successful regional integration in Europe started with a focus on the goods market, but there is no reason to adopt the same approach everywhere in the world. Hence, integration of services, labor, or capital markets might proceed apart from goods market integration.

To assess the potential gains from integration of other markets, Konan (2003) conducted a CGE analysis focusing on Tunisia and Egypt and considering the impacts of both the Pan Arab Free Trade Area (PAFTA) and the Euro-Med agreement. She considered; (i) a shallow integration scenario (reduction in tariffs only) under PAFTA; (ii) a shallow integration scenario under PAFTA and Euro-Med; (iii) deep integration scenario, i.e., shallow integration plus reduction in non-tariff barriers under PAFTA and Euro-Med; (iv) a scenario combining deep integration and liberalization of FDI in services under PAFTA. Table 1 summarizes the impact on GDP of the four scenarios of integration.

Table 1. Changes in GDP

(%)

Scenarios	Tunisia	Egypt
(i) Pan Arab Free Trade Area (PAFTA): *Shallow*	-0.07	2.05
(ii) PAFTA and Euro-Med: *Shallow*	4.31	0.45
(iii) PAFTA and Euro-Med : *Deep*	8.26	1.87
(iv) PAFTA : *Deep plus liberalization of FDI in services*	16.49	8.20

(Source) Konan (2003).

The gains from liberalization are greater for Tunisia than for Egypt; except in one case. While a shallow PAFTA has almost no effect on Tunisia, shallow integration also involving the EU would raise Tunisian GDP by 4 percent. In contrast, the gain from

a shallow PAFTA in Egypt is 2 percent, while the addition of a shallow integration with the EU would have a negligible impact. The explanation of the differences of the impacts in the two countries seems to be that Tunisia relies much more on trade than Egypt does. Note that the surprising result that Egypt gains less under a shallow PAFTA and Euro-Med than under a shallow PAFTA only seems to be due to the interaction between domestic taxes and trade taxes (Konan 2003).

Turning to the deep integration scenarios, the results show that a liberalization involving elimination of tariffs and non-tariff barriers to trade in goods entails gains significantly higher than those of shallow integration. In the case of Tunisia, the GDP gains are almost twice as high. In Egypt, the gains are also twice as high, but their levels are still modest compared to Tunisia's. Interestingly, the scenario of deep PAFTA plus liberalization of FDI in services induces the highest gains to both countries, and these gains are substantial.

Bchir *et al*. (2007) confirm the potential gains from integration of other markets. They focused on the Maghreb (Morocco, Algeria, Tunisia, Libya) and examined three scenarios: (i) a free trade area in the Maghreb similar to the shallow integration in Konan (2003); (ii) a customs union between Maghreb countries; (iii) a Maghreban common market, similar to scenario (iv) discussed above. Table 2 summarizes the main results. The gains for Tunisia in term of increase in GDP are almost the same as in Konan (2003). Moreover, Tunisia seems to benefit more from any scenario of liberalization than the rest of the Maghreb. The additional gains from moving from a customs union to a common market are important in all North African countries.

Table 2. Changes in GDP

(%)

	Tunisia	Morocco	Rest of North Africa
(i) PTA	1.87	0.40	0.19
(ii) Customs Union	5.94	4.54	-0.48
(iii) Common Market	8.46	6.40	1.32

(Source) Bchir *et al*. (2007)

In sum, available evidence suggests the existence of important potential welfare gains from integration of the capital market in the Arab region.

B. Determinants of FDI

Various motivations of FDI outflows have been put forward in the literature. The eclectic theory of FDI groups them into three categories (Dunning, 1988): Ownership-specific advantages, transaction costs, and location advantages. Given the objective of this study, we will focus on the third motivation. That is, a host country's advantages.

The mainstream literature shows that FDI inflows to countries are determined in part by the size of domestic and accessible foreign markets (Agarwal, 1980, and Lucas, 1993), sound economic policies (Brewer, 1993), infrastructure (Wheeler and Mody, 1992), and political/institutional security (Wei, 2000, and Henisz, 2000). Studies on Arab countries confirm the relevance of these factors for the region. Sekkat and Veganzones (2007) showed the importance of openness, infrastructure availability, and sound economic and political conditions with respect to FDI. Méon and Sekkat (2004) found that political risk and specific aspects of governance (corruption, government effectiveness, and the rule of law) do much to explain the FDI performance of the region. Bolbol and Fatheldin (2006) concluded that Arab countries need to markedly upgrade their capabilities in terms of economic and political openness and good governance.

More recent developments in the literature point to the importance of similarity between countries as another major determinant of FDI inflows. This means that after controlling for the above variables, FDI between two countries will be higher if the countries are similar than otherwise. Similarity encompasses culture, language, and institutions. Habib and Zurawicki (2002), focusing on corruption, showed that the absolute difference of the corruption index between the investor and the host country has a negative impact on bilateral FDI. Benassy *et al*. (2007), using a wide variety of institutional characteristics, found that institutional distance tends to reduce bilateral FDI. Melitz (2008) focused on language, considering both the ability to communicate directly or indirectly through translation. Direct communication appears about three times more effective than indirect communication in promoting trade. Taking both direct and indirect communication into account, the impact of a common language is nearly twice as high as suggested in the previous literature. Guiso *et al*. (2009) investigated the impact of bilateral trust on economic exchange. Bilateral trust is defined as the willingness to make oneself vulnerable to another person's actions, based on beliefs about his/her trustworthiness (Bohnet, 2008). It is affected by objective considerations based on repeated interactions and expectations (Williamson, 1993)

as well as proximity in religion, history, or other cultural dimensions as discussed by Guiso *et al*. (2009). The latter showed that bilateral trust leads to more trade and investment between two countries. Finally, Roberts and Almahmood (2009) confirmed the importance of similarity in the case of FDI of Saudi Arabia.

Arab countries share the same language, history, religion except for Lebanon which is more mixed in term of religion than the rest of the Arab countries. In addition, they are geographically contiguous. The "Classical" Arabic language is exactly the same from Morocco to Syria. Although each country has inherited from former colonists a second language that is widely used, "Classical" Arabic is the effective language when it comes to formal exchanges, contracts, litigation, and other institutional practices. There are also some differences in terms of religion, history, and legal frameworks but they are not more pronounced than those within the European Union. It follows that if the role of similarity is important for FDI, one could expect intra-Arab FDI to be higher than cases involving an Arab and a non-Arab country.

III. Descriptive Analysis

A. Arab Countries' Attitudes toward FDI

The positive effects of FDI on the host economy have widely served as a way of opening up of its economy to foreign investors. After the restrictive policies on foreign ownership pursued throughout the 1970s and the emergence of the Washington Consensus as a streamline for development in the 1980s, FDI was seen by policymakers in developing countries as the best and fastest way to get access to foreign technologies and markets and to increase foreign currency earnings. As it should serve as a support to the building of domestic production capabilities and exports, FDI required specific domestic policies (Gore, 2000).

Arab countries were not exceptions to this trend. Examples include Algeria, Libya, Egypt, Jordan, Morocco, and Tunisia among others. Before 1990, Algeria allowed direct investments in the hydrocarbons sector only if foreign investors enter the country via joint ventures with the national hydrocarbon company, Sonatrach. This illustrates the willingness of public bodies to keep the country's resources under control while

gaining access to foreign technologies. Egypt, although not imposing controls on foreign investors' ownership, has used Law 8 of 1997 to channel foreign participation into targeted sectors. Libya allowed foreign participation on a minority basis. Jordan allowed only 50% of foreign ownership in a number of activities, and FDI is subject to a minimum amount of funds. Before the 1980s, Morocco used the "moroccanization decree" to increase local ownership against foreign investments.

Today, most of the countries under study have adopted a more liberal framework toward foreign investors. Since 1995, Morocco has abolished its restrictive framework and adopted a highly liberalized environment for foreign investors. Tunisia has set foreign investment promotion as a key target of its 11th Economic Development Plan. Inflows have slowly increased partly as a result of less restrictive regimes.


B. Arab Countries in the World FDI Market

The extent of Arab integration in the world FDI market can be examined following two perspectives: (i) Arab countries as receivers: Did they receive enough FDI given their weight in World GDP? (ii) Arab countries as senders: Did they send enough FDI given their weight in World GDP? Figures 1 and 2 shed light on each perspective. Arab countries included in the descriptive analysis are Algeria, Bahrain, Egypt, Jordan, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, UAE, and Yemen.

Figure 1 tackles the first perspective. It gives the ratio of the share of FDI entering Arab countries in total World FDI to the share of Arab GDP in World GDP. If the ratio equals 1, Arab countries receive as much FDI as their GDP weight. If the ratio is lower (higher) than 1, Arab countries receive less (more) FDI than their importance in terms of GDP. Before 2003, Arab countries were receiving less than they should have given their weight in World GDP. After 2003, the share of FDI inflows to Arab countries in World FDI started increasing markedly to stand well above their importance in World GDP.

Figure 2 concerns the second perspective. It gives the ratio of the share of FDI outflows from Arab countries in total World FDI to the share of Arab GDP in World GDP. Over the whole period 1995~2009, Arab countries were sending less than they should have. The share of Arab countries' FDI outflows in World outflows has always been lower than their share in World GDP. However, a similar change for outflows

showed up after 2003. The share of Arab countries' FDI outflows in World outflows jumped markedly to stabilize at levels closer to the share of the Arab countries in World GDP.

Figure 1. Importance of Arab Countries as Receivers of World FDI

$$\dfrac{\left(\dfrac{\text{FDI inflows to Arab}}{\text{World FDI}}\right)}{\left(\dfrac{\text{Arab GDP}}{\text{World GDP}}\right)}$$
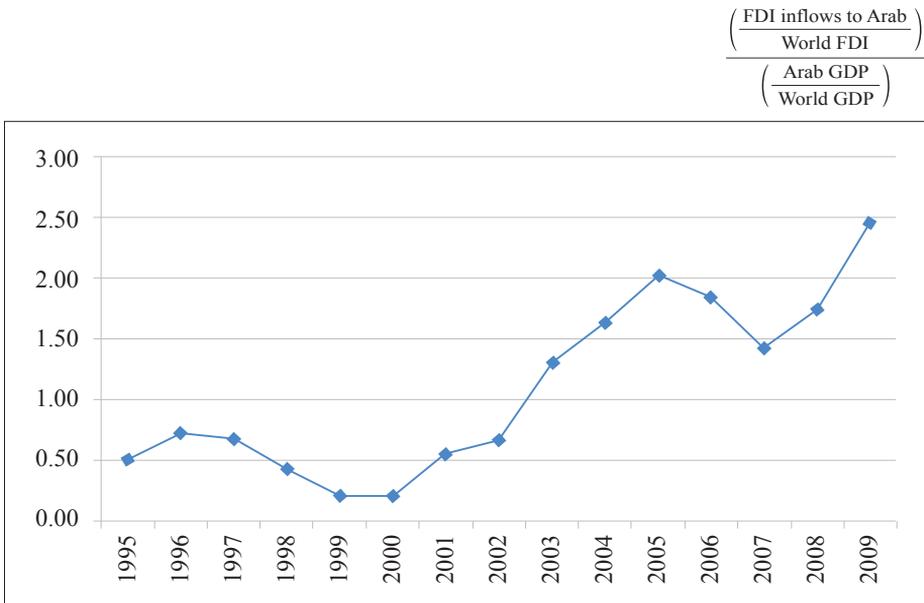
(Source) World Development Indicators (2012)

Figure 2. Importance of Arab Countries as Senders in World FDI

$$\frac{\left(\dfrac{\text{FDI outflows from Arab}}{\text{World FDI}}\right)}{\left(\dfrac{\text{Arab GDP}}{\text{World GDP}}\right)}$$
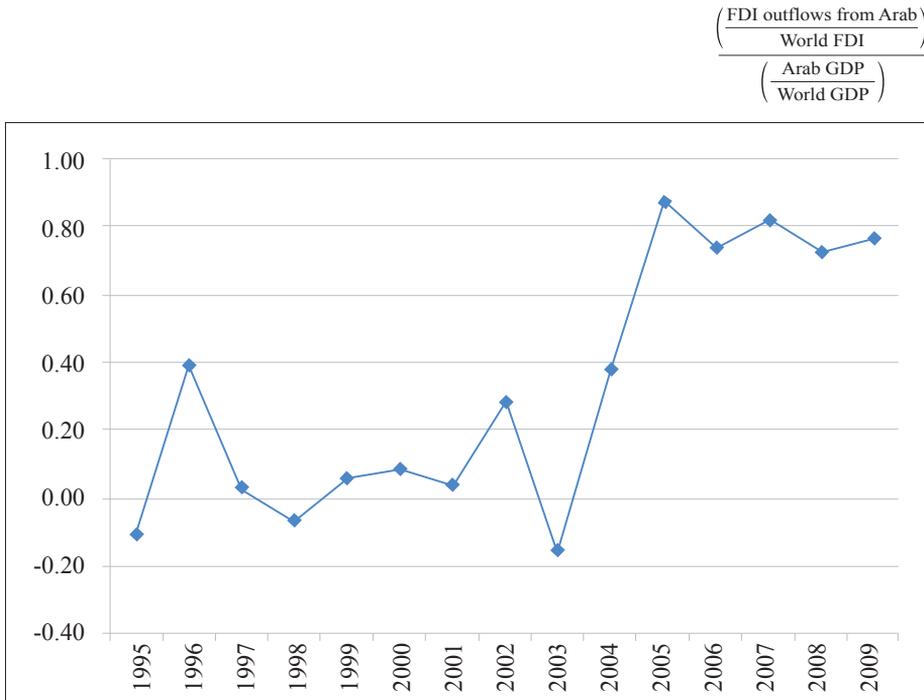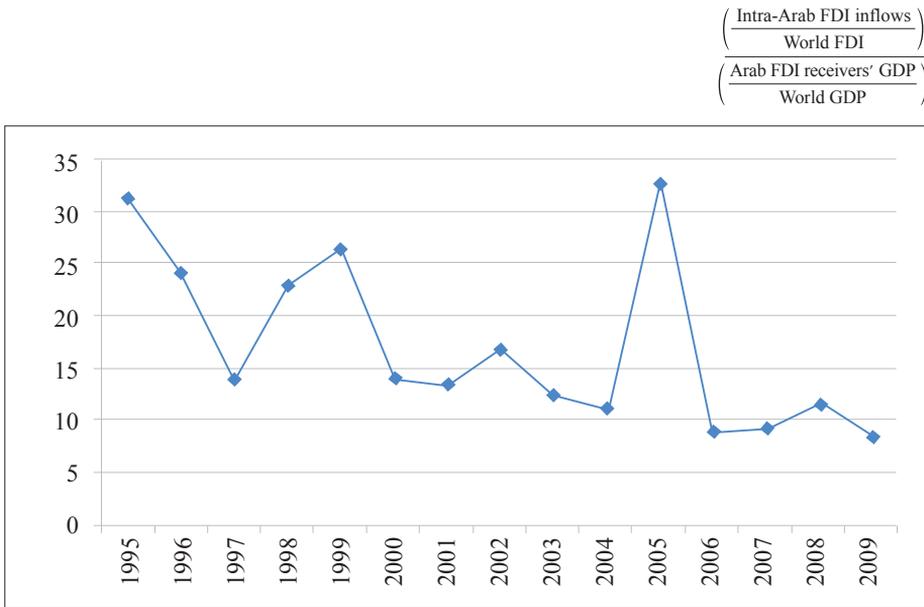

(Source) World Development Indicators (2012)

C. Intra-Arab FDI

Here, we also adopt the two perspectives explained above and use similar ratios. From the first perspective, Figure 3 shows that Arab countries receive more FDI from other Arab countries than they should, i.e., given the overall share of receivers in World GDP. From the second perspective, Figure 4 shows a different picture. While Arab countries send on average more FDI to other Arab countries than they should, i.e., given the overall share of senders in World GDP. Moreover, after 2003 the average share of FDI sent to other Arab countries in relation to total Arab FDI outflows has been lower than before.

Figure 3. Importance of Intra-Arab FDI Inflows

$$\frac{\left(\dfrac{\text{Intra-Arab FDI inflows}}{\text{World FDI}}\right)}{\left(\dfrac{\text{Arab FDI receivers' GDP}}{\text{World GDP}}\right)}$$

(Source) World Development Indicators (2012)

Figure 4. Importance of Intra-Arab FDI Outflows

$$\frac{\left(\dfrac{\text{Intra-Arab FDI outflows}}{\text{World FDI}}\right)}{\left(\dfrac{\text{Arab FDI senders' GDP}}{\text{World GDP}}\right)}$$

(Source) World Development Indicators (2012)

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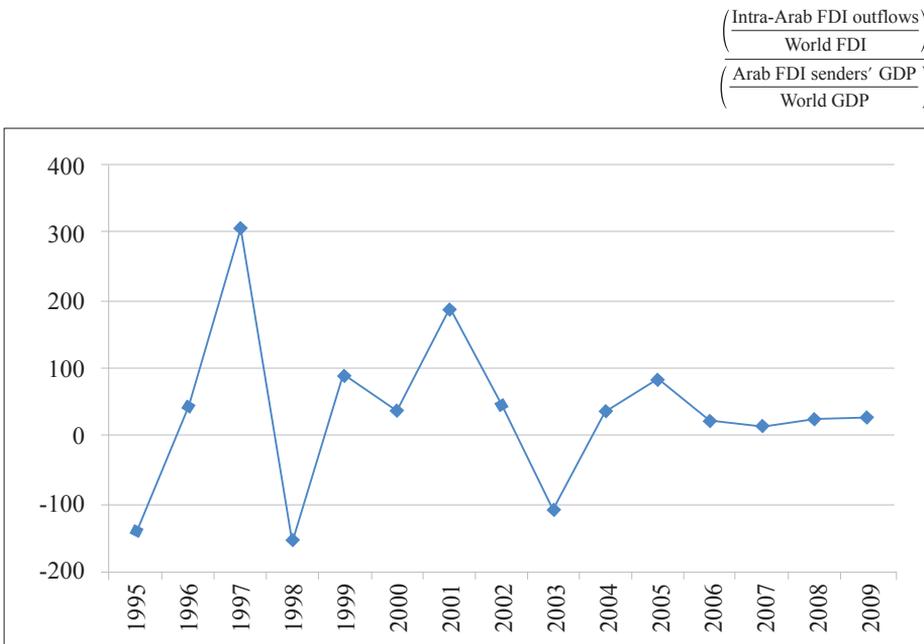
Summing up, the descriptive analysis suggests that intra-Arab FDI is higher than it should be. Arabs receive more FDI than they should from other Arab countries and Arabs send more FDI than they should to other Arab countries.

Figures 1, 2, and 4 suggested a break in the trend of FDI shares after the year 2003, which coincides with the US-Iraq war. Since Iraq is not included in the descriptive analysis, the decrease observed in Figure 4 is due to other Arab countries' outflows and might be explained by the increased uncertainty in the region. However, the explanation is not coherent with the upward jump observed in Figure 1. We will come back to this question in the empirical analysis.

IV. Empirical Analysis

A. Specification

A common specification relates FDI to GDP and to per capita GDP. The literature discussed in Section II suggests adding indicators of human capital openness, infrastructure, political and institutional quality. Moreover, the descriptive analysis showed that FDI inflows to and from Arab countries jumped after 2003. This observation is not anecdotal and may have implications for the determinants of intra-Arab FDI. Méon and Sekkat (2012) showed that the impact of various determinants of FDI inflows to a given country may depend on the total supply of FDI, or the total amount of available FDI. We therefore add the total amount of FDI outflows from Arab or from non-Arab countries as an explanatory variable. The resulting specification is:

$$
\begin{aligned}
\text{Log}(FDI_{jit}/GDP_{it}) = {} & \beta_{0i} + \beta_1 * \text{Log}(GDP\ per\ capita_{it}) + \\
& \beta_2 * \text{Log}(Infrastructure_{it}) + \beta_3 * \text{Log}(Institutions_{it}) + \\
& \beta_4 * \text{Log}(School_{it}) + \beta_5 * \text{Log}(Openness_{it}) + \\
& \beta_6 * \text{Log}(Total\ FDI_{jt}) + \eta_{it} \qquad\qquad (1)
\end{aligned}
$$

where i stands for the receiving country, j refers to the investor (Arab or non-Arab), t is the time index and

FDI_{jit}	is Foreign Direct Investment inflows (in current \$US) to country i from investor j in year t;
GDP_{it}	is GDP (in current \$US) of country i in year t;
$GDP\,per\,capita_{it}$	is per capita GDP (in real \$US) of country i in year t;
$Infrastructure_{it}$	refers to paved roads (as % of total roads) in country i and year t;
$Institutions_{it}$	refers to the protection of property rights in country i in year t;
$School_{it}$	is the primary school enrollment ratio (% gross) in country i in year t;
$Openness_{it}$	refers to the freedom to trade internationally in country i in year t;
$Total\,FDI_{jt}$	refers to the total amount of FDI (in current \$US) by investor j in year t;
β_{0i}	is country i's fixed effect;
η_{it}	is the error term

We use the ratio of FDI to GDP to take account of the differences in countries' sizes. The relationship between per capita GDP and FDI is debated in the empirical literature (Asiedu, 2002). For instance, Schneider and Frey (1985) consider GDP per capita as reflecting the wealth of the residents in the host country and, hence, demand effectiveness. The expected sign of the corresponding coefficient is, therefore, positive. In contrast, Edwards (1990) interprets GDP per capita as the inverse of the return on capital in the host country. Then the coefficient of GDP per capita in the FDI equation is expected to be negative. A higher real per capita income is supposed to lower the attractiveness of FDI.

We use the literature findings to select possible indicators, with subsequent robustness checks to examine the sensitivity of the results to the use of different indicators.

For infrastructure, we used the percentage of paved roads in total roads. Some authors use mobile phone lines per 1000 inhabitants to explain FDI. The problem when using this variable to explain FDI is that one cannot separate causes from effects. Many of the countries under consideration have privatized their telecom sectors and sold some parts of them to foreigners. In this case, the causal interpretation is not clear. It might be that FDI caused the number of phones (especially mobiles) to increase and not that phones attract FDI. Moreover, when one looks at the data, the series of phone numbers is exploding: increasing from 0 to several millions over ten years or so. Even when divided by population, the variable poses problems in estimation.

The traditional indicator of openness, i.e., exports plus imports divided by GDP is likely to depend on FDI, which generates endogeneity problem. This is why some economists constructed alternative indicators of openness (Sachs and Warner, 1995; Frankel and Romer, 1999). However, these indicators are available only up to the mid-1990s. We, therefore, use the indicator of openness published by Economic Freedom Network (Gwartney *et al.*, 2010) called *Freedom to trade internationally*. It has been available annually since 2000 and every five years since 1970 covering around 140 countries. It reflects the open orientation of the economy beyond trade in goods, which is more relevant for investors than trade only. It combines information on taxes on international trade, regulatory trade barriers, black-market exchange rates, and international capital market controls. An increase in the indicator means more openness.

The coefficient of *openness* might be positive or negative depending on the motives of FDI. If the motive is only to serve the host market, the coefficient should be negative because higher openness means more competition in this market. This is known as the "tariff jumping" motivation for FDI. If the objective is to serve external markets, the coefficients should be positive since higher openness means easier access to foreign markets. Moreover, higher openness can allow cheaper access to imported inputs.

To assess the impact of the quality of institutions on FDI, various indicators are now available. They include the Gastil democracy index, the International Country Risk Guide (ICRG) index, the Transparency International index, and a set of World Bank indices covering various dimensions of institutions' quality. Li and Resnick (2003) argued that institutions have conflicting effects on FDI inflows. For instance, democratic institutions might hinder FDI inflows by limiting the oligopolistic or monopolistic behaviors of multinational enterprises. However, democratic institutions can promote FDI inflows because they ensure more credible property rights protection, reducing risks and transaction costs for foreign investors. Their empirical analysis confirmed that property rights protection is the main institutional attractor of FDI inflows. Hence, we use the protection of property rights index, available annually since 2000 and every five years since 1970 for about 140 countries (Gwartney *et al.*, 2008). Higher values of the indicator indicate a better institutional environment. The expected coefficient is positive.

B. Estimation Results

Estimation of Equation (1) is conducted on two separate samples. Appendix presents the descriptive statistics of the variables. Both samples concern Arab countries as receivers of FDI but differ with respect to senders, i.e., Arabs and non-Arabs. For convenience, we call the first sample intra-Arab and the second sample extra-Arab. Each sample covers the 1995~2009 period and 13 receivers, i.e. Bahrain, Egypt, Jordan, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, UAE, and Yemen.

In estimating Equation (1) we use OLS method. For the time invariant, fixed effects estimation method is recommended. However, some of the explanatory variables might be correlated with the error term resulting in inconsistent parameter estimates. To address this problem, the General Method of Moments (GMM) is recommended. However, one important issue in using GMM is the choice of instruments. These should be highly correlated with the variables to be instrumented (i.e. strong) and uncorrelated with the error term (i.e. valid). In general, papers using GMM employ the test of overidentifiying restrictions to assess the validity of the instruments but do not explicitly test whether they are strong (Bazzi and Clemens, 2013). As Bazzi and Clemens (2013) points out, the tests of overidentifiying restrictions are invalid when instruments are weak. Moreover, when using more than one instrumental variable, each of the instruments can appear strong in isolation but be so highly correlated with the others that all of them are weak when used jointly. To deal with this issue, an adaptation of Stock and Yogo's (2005) rule of thumb should be used before running a GMM estimation to test whether the instruments are jointly strong. The instruments can be considered strong enough if the F-statistic of the first-stage regression, where the variables to be instrumented are regressed on the instruments, is above 10. This is the approach we have adopted here. As shown by Greene (2003, Chapter 13), the inclusion of the lagged dependent variable among instruments with GMM estimation takes account of country fixed effects.

Table 3 presents the estimation results using both the fixed effects and the GMM methods. The overall quality of fit is low for the intra-Arab sample and high for the extra-Arab sample. The fixed effects tests support the need of including country dummies to take account of a time invariant country's idiosyncrasies. The reported first stage's *F*-statistics and the tests of overidentifying restrictions show that the GMM estimates are strong and valid. Since the inclusion of the lagged dependent variables among instruments with this method also takes account of country fixed effects, we

consider the GMM results as the most reliable and focus on them.

One objective of our analysis is to examine whether intra-Arab and extra-Arab FDI behave in the same way. One concerns the difference in the intercept (constant) only, while the other examines the difference in the impacts of the standard fundamentals (slopes). Irrespective of the estimation method, the differences is supported by the data for both the constants and the slopes. The expectation that the coefficients are different between the two samples or alternatively that Arab and non-Arab investors behave differently regarding their FDI inflows to Arab countries is not rejected by the data. This is in accordance with the discussion in Section II regarding the role of similarity in attracting FDI.

Focusing on the GMM results for the reasons explained above, only the total supply of FDI has a significant coefficient among the determinants of intra-Arab FDI. For extra-Arab FDI, the coefficients of real per capita GDP, institutions, and openness are significant. The coefficient of the per capita GDP is negative, which is coherent with Edwards (1990)'s interpretation, i.e. GDP per capita as the inverse of the return on capital in the host country. The two other significant coefficients have the expected positive sign.

Interestingly, the above results suggest that human capital, quality of institutions, infrastructure, and openness do not affect an Arab investor's decision to locate in a given Arab country.

Hence, for an Arab country to attract more Arab FDI it doesn't need to comply with the literature and international organization's recommendations regarding openness and institutions. As Bolbol and Fatheldin (2006) puts it, intra-Arab investments are likely to be driven by non-economic factors based on proximity and contacts. The pessimistic side of the result is that this leaves no policy tool to attract more Arab FDI. The optimistic side is that an Arab country can still try improving its openness and institutional records to attract non-Arab FDI without losing Arab FDI.

Table 3. Determinants of FDI to Arab Countries

Variables	Fixed effects		GMM	
	From **Arabs**	From **non-Arabs**	From **Arabs**	From **non-Arabs**
Log(Real per capita GDP)	4.858	-0.415	0.485	-0.397
	(3.358)***	(-0.548)	(1.504)	(-1.921) *
log(infrastructure)	3.402	-0.735	0.336	0.847
	(2.574) ***	(-0.673)	(0.556)	(1.566)
log (institution)	-2.378	2.658	-0.443	2.267
	(-1.213)	(1.35)	(-0.32)	(2.308) ***
Log (School)	-1.009	1.106	1.884	2.521
	(-0.543)	(0.924)	(1.123)	(1.551)
log (Openness)	0.874	3.159	-0.927	4.357
	(0.696)	(3.05) ***	(-0.444)	(2.567) ***
log(Total FDI)	-0.027	0.847	0.605	0.324
	(-0.083)	(3.304) ***	(3.114) ***	(1.223)
Number of observations	97	83	77	57
Fixed effects; *p*-value	$F(7,81)$: 0.01	$F(7,67)$: 0.01		
Value of the first stage's *F*-statistic			$F(6,61)$: 21.08	$F(6,47)$: 19.84
Test of over identifying restrictions; *p*-value			0.27	0.20
Adjusted R^2	0.28	0.44	0.16	0.56
H_0: Same constant; *p*-value	$F(1,170)$: 0.00		$F(1,124)$: 0.00	
H_0: Same slopes; *p*-value	$F(7,162)$: 0.01		$F(7,118)$: 0.00	

(Note) *t*-statistics are in parentheses and are autocorrelation and heteroscedastic consistent, ∗:significant at 10%, ∗∗:significant at 5%, ∗∗∗:significant at 1%

C. Robustness Check

We try alternative explanatory variables to check the robustness of the results. We focus on the GMM estimates to deal with potential endogeneity. The results are presented in Table 4. Out of the twelve sets of results, the *p*-values of the test for the over‑identifying restrictions suggest that the estimates are valid at the 5% level in nine instances and at the 10% level in three instances. The levels of the Adjusted R^2 are comparable to those in Table 3.

To control for the shift in FDI inflows to Arab countries, we introduce a dummy variable which takes the value 0 before 2003 and the value 1 afterward. The dummy is significant and positive for extra-Arab FDI and insignificant for the intra-Arab FDI. The rest of results in the first two columns of Table 4 are almost the same as the corresponding sets in Table 3.

Turning to openness, we use two alternative indicators: the traditional ratio of trade to GDP, (*Exports + Imports*) / (2 × *GDP*); and the ratio of exports to GDP. The latter is motivated by the fact that some FDI-recipient Arab countries (e.g. Morocco and Tunisia) are receiving a lot of export-oriented FDI (Baliamoune-Lutz, 2004). The estimates with the intra-Arab sample show that except for the coefficients of openness that become significant at the 10% level, the results remain the same as before irrespective of the new measure used. With the non-Arab sample, the coefficient of real per capita GDP becomes insignificant while the coefficients of infrastructure and of the total supply of FDI become significant. When significant, the coefficients have the expected signs. As before, the coefficient of institution is significant with the non-Arab sample but not with the Arab sample.

It is not straightforward to decide on what level of schooling is relevant for foreign investors' decisions. Such a level also depends on the type of project to be implemented. We, therefore, rerun regressions with two alternative measures of schooling: secondary and tertiary school enrollment ratios. With the Arab sample, the only change is that the coefficient of real per capita GDP becomes significant. With the non-Arab sample, the changes concern the coefficients of infrastructure and of the tertiary school enrollment ratio that become significant with the expected signs. The main difference between the two samples identified in Table 3 (i.e. the coefficients of openness and of institution are significant with the non-Arab sample but not with the Arab sample) still hold.

The last robustness check concerns the measure of the quality of institutions. Instead of the protection of property rights index, we use the democratic accountability and the law and order indexes from the International Country Risk Guide (ICRG). The results, especially with the law and order index, confirm the findings in Table 3.

Table 4. Robustness Check

Checking alternative Variables	Dummy 2003		Openness: Exports over GDP		Openness: Trade over GDP		School: Secondary		School: Tertiary		Institution: Democratic accountability		Institution: Law and order	
	From Arabs	From non-Arabs	From Arabs	From non-Arabs	From Arabs	From non-Arabs	From Arabs	From non-Arabs	From Arabs	From non-Arabs	From Arabs	From non-Arabs	From Arabs	From non-Arabs
Log (Real per capita GDP)	0.485 (1.358)	-0.385 (-1.985) *	0.108 (0.366)	-0.207 (-1.311)	0.241 (0.941)	-0.079 (-0.624)	0.527 (1.806) *	-0.232 (-1.47)	0.709 (2.127) ***	0.065 (0.358)	0.661 (1.68) *	-0.53 (-2.39) ***	0.498 (1.574)	-0.496 (-3.088) ***
Log (infrastructure)	0.368 (0.547)	1.147 (2.009) *	-0.237 (-0.408)	1.628 (4.916) ***	-0.423 (-0.669)	1.492 (3.954) ***	0.49 (0.942)	1.236 (2.757) ***	0.384 (0.719)	1.205 (2.788) ***	0.44 (0.791)	0.122 (0.268)	0.033 (0.051)	1.331 (2.926) ***
log (institution)	-0.546 (-0.355)	3.433 (3.094) ***	-2.68 (-1.429)	2.397 (2.165) ***	-2.994 (-1.513)	2.363 (2.209) ***	-0.213 (-0.151)	3.066 (3.393) ***	-0.471 (-0.338)	3.916 (4.398) ***	0.365 (0.863)	0.123 (0.469)	-1.346 (-0.942)	2.867 (3.048) ***
Log (School)	3.082 (1.63)	1.026 (0.572)	0.266 (0.141)	-1.607 (-1.49)	0.757 (0.438)	-1.178 (-1.131)	0.61 (0.853)	0.457 (0.87)	0.373 (1.118)	0.562 (2.556) ***	2.100 (1.235)	4.010 (2.461) ***	2.454 (1.436)	2.421 (1.749) *
log (Openness)	-0.472 (-0.224)	3.081 (1.694) *	1.240 (1.748) *	1.080 (2.804) ***	1.178 (1.746) *	0.961 (2.724) ***	-2.184 (-1.08)	2.501 (2.307) ***	-1.894 (-1.027)	1.926 (1.901) *	-2.108 (-0.97)	6.186 (4.034) ***	-1.542 (-0.828)	6.306 (5.585) ***
Log (Total FDI)	0.771 (1.777) *	-0.469 (-1.01)	0.627 (3.145) ***	0.552 (2.545) ***	0.62 (3.156) ***	0.507 (2.279) ***	0.622 (3.607) ***	0.361 (1.331)	0.617 (3.629) ***	0.129 (0.446)	0.624 (3.017) ***	0.412 (1.462)	0.595 (3.067) ***	0.469 (1.893) *
Dummy 2003	-1.07 (-0.784)	1.001 (2.487) ***												
Number of observations	77	57	77	57	77	57	77	57	77	57	77	57	77	57
Test of over-identifying restrictions; *p*-value	4.47	0.38	0.66	0.08	0.66	0.08	0.46	0.11	0.56	0.23	0.47	0.07	0.42	0.16
Adjusted R^2	0.05	0.55	0.19	0.53	0.20	0.53	0.14	0.55	0.15	0.56	0.16	0.52	0.17	0.58

(Note) *t*-statistics are in parentheses and are autocorrelation and heteroscedastic consistent, * :significant at 10%, ** :significant at 5%, *** :significant at 1%

D. Observed and Fitted Intra-Arab FDI

One of the main messages from the discussion in Section II is that FDI between two countries will be higher if the countries are similar than otherwise. Similarity is to be understood in a broad sense, including culture, language, and institutions. This implies that FDI between two Arab countries should be higher than the case of one Arab and one non-Arab country. To address this question rigorously, we use the estimation results together with the observed explanatory variables. We use the estimations results of the GMM method in Table 3 because, as discussed above, it addresses both endogeneity issues and takes account of fixed effects. The main conclusions do not change if the results of the fixed effects method are used. To get rid of the influence of unobserved factors, we focus on differences rather than levels. We consider two scenarios.

Scenario 1: We compare the difference between the fitted and the observed *intra-Arab FDI* on the one hand and the difference between the fitted and the observed *extra-Arab FDI* on the other hand. The first pane of Table 5 presents the results of this scenario. It shows that both Arab and non-Arab investors send more FDI to Arab countries than predicted by the model. However, the comparison of the observed and fitted values might be affected by many factors and cannot, therefore, be interpreted with high confidence as indicating that Arab countries receive more than expected FDI. An adequate comparison concerns the ratio of fitted to observed values using the intra-Arab sample to a similar ratio using the extra-Arab sample. The first ratio is equal to 113.47%, meaning that Arab countries receive 13% more FDI from other Arab countries than predicted by the model. The second ratio is equal to 116.54%, meaning that Arab countries receive 16% more FDI from non-Arab countries than predicted by the model. The difference is around 3 percentage points, which is neither economically nor statistically significant (the standard error equals 2.54). Arab countries do not seem to receive "more than expected" FDI from Arab investors as compared to FDI from non-Arabs.

Table 5. Intra-Arab FDI

	Scenario 1	
	Intra-Arab FDI Suppliers behave their own way	Extra-Arab FDI Suppliers behave their own way
FDI / GDP		
Observed	1.15%	3.78%
Fitted	1.01%	3.24%
Observed – fitted	113.47%	116.54%
	Scenario 2	
	Intra-Arab FDI Suppliers behave their own way	Intra-Arab FDI Suppliers behave like non-Arabs
FDI / GDP		
Observed	1.15%	1.13%
Fitted	1.01%	0.68%
Observed ÷ fitted	113.47%	166.65%

Scenario 2: We compare the difference between the fitted and the observed intra-Arab FDI on the one hand and the difference between the fitted and the observed *intra-Arab FDI under the assumption that Arabs behave like non-Arabs* on the other hand. Practically, we combine the estimates coefficients pertaining to the extra-Arab sample with the explanatory variables in the intra-Arab sample. The second pane in Table 5 shows that the ratio of observed to fitted using the intra-Arab coefficients is, of course, the same as before, i.e. 113.47%. The ratio of observed to fitted values using the extra-Arab coefficients ratio is equal to 166.65%, meaning that Arab countries receive from other Arab countries 50% more FDI than they would have received if Arab investors behaved like non-Arabs. Such a comparison suggests that, given their characteristics and the investors' behaviors, Arab countries are receiving "more than expected" FDI from Arab investors. Such a result is in accordance with the literature suggesting that FDI should be higher between similar countries than between non-similar ones.

In sum, it appears that Arab countries are receiving more FDI from other Arabs than they could have and that this difference seems more related to the suppliers' behavior rather than to the receivers' efforts to reform.

V. Conclusion

The paper has examined the determinants of intra-Arab FDI inflows. The issue is motivated by both normative and positive considerations. First, available evidence suggests that such inflows should be higher in order to reap further benefits from intra-Arab integration. Second, recent developments in the literature point to the importance of similarity between countries as a major determinant of FDI inflows. This means that after controlling for its traditional determinants, FDI between two countries will be higher if the countries are similar than otherwise. Hence, the analysis is conducted on two separate samples: one concerns intra-Arab FDI, while the other focuses on FDI flows to Arab from non-Arab countries.

The results illustrate the difference in the determinants of FDI inflows to Arab countries, depending on the suppliers (Arab or non-Arab). More importantly, only the total supply of FDI by a sender determines intra-Arab FDI. In contrast, extra-Arab FDI depends on real per capita GDP, institutions, and openness in the receiving countries. Combining the estimated coefficients with the exogenous variables, we examined whether Arabs are investing more than they should in other Arab countries. The results show that they are; which is in accordance with the discussion regarding the role of similarity in attracting FDI.

The most striking result of the analysis is not that Arabs are investing in other Arab-countries more than they should be but the difference in the determinants of Arab FDI inflows. Such a difference suggests that human capital, quality of institutions, infrastructure, and openness do not affect an Arab investor's decision. Hence, for an Arab country to attract more Arab FDI it doesn't necessarily comply with the literature and international organizations' recommendations regarding openness and institutions. The pessimistic side of the result is that this leaves no policy tool to attract more Arab FDI since GDP depends on too many other factors apart from government action. The optimistic side is that such a country can still try improving its openness and institutional records to attract non-Arab FDI without losing Arab FDI.

While it is beyond the scope of the present paper to rigorously examine the reasons for such "Arab specificity," some explanations could be put forward. One is that, to the extent that a large share of intra Arab FDI is provided by government or government-related entities (e.g. the Gulf Cooperation Council), the driving force might be a regional authoritarian bargain across the Arab world. In this case, capital-surplus Arab

countries would invest in other Arab countries for strategic considerations, hence causing some standard FDI fundamentals, to be relatively unimportant as determinants of FDI. The cultural and language commonality across the Arab world might be operating through the information channel. Naturally this would allow them to be less sensitive than their non-Arab counterparts to some established FDI fundamentals such as institutional quality.

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Appendices: Descriptive Statistics

Table A1. Univariate Statistics

	Mean	Std Dev	Min.	Max.
FDI/GDP	-5.45	1.11	-8.57	-3.51
Real per capita GDP	9.00	0.94	7.92	10.90
infrastructure	4.29	0.34	3.32	4.61
institution	1.79	0.14	1.48	2.04
School	4.62	0.10	4.34	4.84
Openness	1.89	0.18	1.36	2.17
Total FDI Arab	8.64	1.85	3.97	10.87
Total FDI non-Arab	13.77	0.46	13.07	14.61

Table A2. Correlation Matrix

	FDI/ GDP	*Real per capita GDP*	*infrastructure*	*institution*	*School*	*Openness*	*Total FDI Arab*	*Total FDI non-Arab*
FDI/GDP	1.00							
Real per capita GDP	0.27	1.00						
infrastructure	0.30	-0.13	1.00					
institution	0.34	0.39	-0.46	1.00				
School	0.17	-0.08	0.41	-0.42	1.00			
Openness	0.67	0.71	-0.04	0.53	-0.22	1.00		
Total FDI Arab	0.76	0.09	0.11	0.07	0.16	0.24	1.00	
Total FDI non-Arab	0.62	0.11	0.10	0.12	0.16	0.24	0.73	1.00