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FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH IN ARAB COUNTRIES (1970-2008): AN INQUIRY INTO DETERMINANTS OF GROWTH BENEFITS

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This paper investigates the relationship between Foreign Direct Investment (FDI) and economic growth in a group of 16 Arab countries from 1970 to 2008. The empirical analysis also addresses the role of what are identified in the literature as local "preconditions" for deriving growth benefits from FDI. Using a dynamic panel approach, it is found that the impact of FDI on economic growth in Arab countries is limited or negligible. The findings also suggest that financial development, trade openness, human capital and infrastructure quality are not significantly improving Arab countries' capacity to reap growth benefits from FDI. The paper suggests that the preconditions should not be seen as of equal importance. The sectoral composition of FDI plays a critical role in deriving FDI growth benefits which might make it a "necessary" precondition for FDI to promote economic growth, while other factors such as financial development, trade openness, human capital and infrastructure quality could be seen as sufficient preconditions for reaping FDI growth dividends. The paper's findings have important policy implications as Arab countries can turn to domestic policy solutions to direct FDI inflows to the dynamic sectors and focus not only on FDI "quantity" but also on FDI "quality". Meanwhile, efforts should be made to reform and improve institutional quality, macroeconomic policies, and domestic financial markets.

Keywords: FDI, Economic Growth, Arab Countries
JEL classification: F21, O40, O43

1. INTRODUCTION

Capital is the cornerstone of any production process at both the micro and the macro-economy levels. Capital can be obtained through domestic sources as well as through foreign sources, which is mostly in the form of Foreign Direct Investment (FDI).

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FDI inflows have multifaceted features which make them preferable to other sources of capital. These features include filling savings-investment gaps, relaxing foreign exchange constraints, and consisting of a bundle which includes not only capital but also technology, knowledge, and marketing and managerial skills (Grossman and Helpman, 1992; Walz, 1997; Pradham, 2003).

FDI has become the most stable and the largest component of capital flows to developing countries. As a result, FDI is considered an important element in the economic development process. Yet the role of FDI in the economic growth/ development process has for long been a topic of intense debate. To date, the empirical evidence of the effect of FDI on economic growth is not conclusive.

While one stream of research has indicated a positive impact of FDI on economic growth, another stream reports otherwise. A third stream of research suggests that the effect of FDI on a host country's economy is dependent on the country's absorptive capacity in terms of its human capacity and the level of economic and financial development (Hermes and Lensink, 2004; Makki and Somwaru, 2004).

FDI flows around the world have dramatically increased in the past three decades. World FDI flows rose from $54 billion in 1980 to $208 billion in 1990, then to $1,401 billion in 2000 before falling to $1,114 in 2009. Arab countries were not an exception to this trend. Total FDI inflows to Arab countries increased from a mere $502 million in 1970 to $1,288 million in 1990, then jumped to $6,056 million in 2000 before soaring to $47.6 and $79.2 billion in 2005 and 2009, respectively (UNCTAD). These trends reflect the increasing importance of FDI flows both for recipient and exporting countries.

This paper aims at answering two main questions. First, did FDI inflows contribute to economic growth in Arab countries over the period 1970-2008? Second, can country-specific features and initial conditions explain cross-country variations in the growth benefits of FDI? Answers to these questions provide insights into how changes in economic and institutional conditions can affect FDI prospects for Arab countries, as well as inform policy responses for acquiring growth benefits from FDI in the future.

To shed light on these questions, the paper utilizes **dynamic panel regressions** to empirically examine the impact of FDI on economic growth in 16 Arab countries[1] over the last four decades and determine how country-specific factors can explain variations in the growth benefits of FDI. This paper contributes to the existing literature in two dimensions. First, unlike most existing studies which largely consider either developing or developed economies, or a group of both developing and developed economies, this paper focuses solely on Arab countries. Second, the paper adds to the growing literature by studying a range of supporting conditions and structural policy-related factors that seem to play an important role in shaping the relationship between FDI and economic growth.

[1] Arab countries are divided into OPEC (Algeria, Kuwait, Libya, Qatar, Saudi Arabia and UAE) and non-OPEC (Bahrain, Egypt, Jordan, Lebanon, Morocco, Sudan, Syria, Tunisia and Yemen).

The rest of the paper is structured as follows. Section 2 documents the trends and developments in FDI inflows to Arab countries from the early 1970s to the late 2010s. Section 3 provides a selective literature review of the link between FDI and growth and the importance of initial conditions in mediating this relationship. The empirical methodology is presented in section 4. Section 5 presents a discussion of the paper's results and section 6 draws some policy conclusions

2. FDI INFLOWS TO ARAB COUNTRIES (1970-2008)

The past four decades have seen remarkable changes in FDI inflows to Arab countries. Table 1 presents the development of FDI inflows to developed economies, developing economies and Arab countries (which are divided into two main groups: OPEC and non-OPEC) over the period 1970-2010. The figures in Table 1 document the trend of FDI inflows using several indicators.

A number of features of Table 1 are worth noting. First, FDI inflows to Arab countries have increased substantially since the early 2000s. FDI inflows remained less than $3 billion until the mid 1990s. They were $1.475 billion in 1975, then rose to $2.058 billion and $2.821 billion in 1985 and 1995, respectively. The last decade was the one that witnessed the explosive growth in FDI inflows to Arab countries, which jumped from $5.898 billion in 2000 to $47.564 billion in 2005 and further to $66.210 billion in 2010. Similar trends could be seen in the development of FDI stock, FDI inflows per capita, and FDI stock per capita.

Second, the development of FDI inflows over the period under consideration has been reflected in the importance of FDI in Arab countries, as indicated by FDI inflows as a percentage of Gross Domestic Product (GDP), FDI inflows as a percentage of Gross Fixed Capital Formation (GFCF), and FDI stock as a percentage of GDP, where they reached - and sometimes exceeded - the corresponding levels in both developing and developed economies (Table 1).

Third, changes in the relative importance of OPEC and non-OPEC Arab countries as FDI destinations have been strongly linked to oil prices. For instance, in the mid 1970s, OPEC Arab Countries received 94% of total FDI inflows to Arab countries. This ratio decreased to 20% in 1985, then rose to 35% in 1995. More recently, FDI inflows to Arab countries have risen rapidly, but have been concentrated in OPEC Arab countries where they reached $28.356 billion and $45.220 billion in 2005 and 2010, respectively. In relative terms, OPEC Arab countries received 60% and 68% of total FDI to Arab countries in 2005 and 2010, respectively. These developments in OPEC Arab countries' share of total FDI to Arab countries cannot be isolated from the changes in oil prices, which rose by more than 400% in the mid 1970s and stagnated in the 1980s and 1990s before booming in the 2000s.

Table 1. Trends in FDI Inflows to Developed Economies, Developing Economies and Arab Countries (1970-2010)

Host Region	1970	1975	1980	1985	1990	1995	2000	2005	2010
World									
A	13,346	26,567	54,078	55,866	207,455	342,391	1,402,680	982,593	1,243,671
B	-	-	698,951	987,618	2,081,299	3,392,763	7,445,637	11,539,452	19,140,603
C	5.3	9.5	13.1	12.4	39.3	60.1	230.0	151.6	181.0
D	-	-	170	219	394	595	1,221	1,780	2,785
E	0.50	0.49	0.50	0.47	0.93	1.14	4.35	2.15	1.90
F	2.2	2.1	2.1	2.2	4.1	5.3	20.1	9.9	-
G	-	-	6.5	8.3	9.4	11.3	23.1	25.2	29.7
Developed Economies									
A	9,491	16,858	46,576	41,663	172,526	222,484	1,138,032	619,171	601,906
B	-	-	401,633	613,707	1,562,326	2,533,588	5,653,192	8,563,033	12,501,569
C	12.9	22.0	56.3	48.6	190.5	236.2	1177.0	621.8	587.5
D	-	-	497	729	1,725	2,689	5,847	8,599	12,203
E	0.43	0.39	0.57	0.44	0.99	0.95	4.58	1.83	1.48
F	1.9	1.7	2.4	2.1	4.4	4.5	21.5	8.9	-
G	-	-	4.9	6.5	8.9	10.8	22.7	25.3	30.7
Developing Economies									
A	3,854	9,709	7,479	14,188	34,853	115,801	257,625	332,307	573,568
B	-	-	297,319	373,911	517,322	847,707	1,731,604	2,700,998	5,951,203
C	2.2	4.9	2.3	3.9	8.6	26.0	53.4	64.1	103.5
D	-	-	91	103	127	190	359	521	1,073
E	0.86	0.93	0.30	0.56	0.90	1.96	3.69	3.08	2.60
F	4.4	3.9	1.2	2.5	4.0	7.9	15.9	11.9	-
G	-	-	11.8	14.7	13.4	14.4	24.8	25.0	27.5
Arab Countries									
A	502	1,475	3,166	2,058	1,288	2,821	5,898	47,564	66,210
B	-	-	7,389	35,077	44,093	61,477	87,194	202,486	603,038
C	4.1	10.1	-18.6	10.4	5.6	11.0	20.7	149.5	185.2
D	-	-	43	177	193	239	306	636	1,687
E	1.31	0.97	-0.76	0.60	0.31	0.57	0.86	4.32	3.47
F	8.1	4.2	-3.2	2.5	1.5	2.8	4.8	22.3	-
G	-	-	1.8	10.2	10.6	12.4	12.7	18.4	31.6
Arab OPEC-Countries									
A	443	1,388	3,822	406	406	992	363	28,365	45,220
B	-	-	3,903	18,653	18,283	21,799	25,155	80,039	329,893
C	41.0	15.7	-73.9	-10.0	0.9	53.4	44.6	937.4	777.0

D	-	-	212	288	246	405	711	2,541	5,771
E	1.73	-0.14	-0.50	0.03	0.09	0.32	0.24	3.44	3.35
F	9.0	0.3	-2.4	0.3	0.6	1.2	1.4	18.8	-
G	-	-	1.6	3.3	3.0	4.1	4.4	9.3	22.2
Arab non- OPEC Countries									
A	47	87	622	1,649	882	1,829	5,535	19,198	20,990
B	-	-	9,431	16,190	25,842	39,700	62,067	122,447	273,144
C	0.7	3.8	-66.7	27.2	-17.0	61.1	82.4	257.7	183.2
D	-	-	114	210	255	509	989	1,591	2,530
E	0.30	-1.04	-0.11	0.84	0.00	0.94	2.55	7.57	2.63
F	2.2	-2.4	-1.0	3.1	-0.8	4.8	14.1	23.9	-
G	-	-	6.8	10.6	12.3	15.8	22.7	37.1	42.2
GCC Countries									
A	50	1,998	3,403	548	166	1,555	391	28,318	39,870
B	-	-	-	18,272	18,319	23,993	29,649	81,251	314,918
C	6.6	194.8	-243.8	29.4	7.3	60.4	13.7	824.4	916.6
D	-	-	-	981	801	931	1,040	2,365	7,240
E	0.53	2.69	-1.42	0.32	0.09	0.65	0.11	4.56	3.76
F	3.7	14.1	-6.9	1.4	0.5	3.1	0.7	24.8	-
G	-	-	-	10.6	9.5	10.0	8.7	13.1	29.7

Sources: UNCTADstat, UNCTAD: http://www.unctad.org/ and author's calculations.

Notes: A. FDI Inflows (Millions of US$), B. FDI Stock Inflows (Millions of US$), C. FDI Inflows per capita (US$), D. FDI Stock Inflows per capita (US$), E. FDI Inflows (% of GDP), F. FDI Inflows (% of Gross Fixed Capital Formation), G. FDI Stock Inflows (% of GDP).

The surge in FDI flows to Arab countries - and worldwide - over the last decade (2000-2008) was related to several factors. First, there has been a steady increase in the growth rate in both G7 and major emerging economies, especially China and India, which has coincided with strong growth in emerging markets. Although most FDI flows to Arab countries originate from developed countries, a number of new players emerged from middle-income countries. FDI flows from these new investors have been both seeking new markets - created by market-oriented reforms - and resources/extractive investment in mining and agriculture. Second, as reported by the World Bank (2010), the sharp increase in global FDI flows before the financial crises largely reflects a surge in inexpensive debt financing, where international interest rates remained low over a sustained period resulting in abundant global liquidity and low borrowing costs. Third, the increased role of institutional lenders in developed economies, such as mutual and pension funds as financial intermediaries, as well as the increased importance of securitization, also represented a "push" factor in the form of a secular change which boosted funding for FDI. Fourth, the macroeconomic environment and policies towards

FDI in Arab countries improved consistently over the last two decades, which can partially explain the recent sharp rise in FDI inflows to Arab countries. Fifth, booming oil and commodity prices propelled FDI into extractive sectors, especially in OPEC Arab countries. Lastly, most Arab countries have taken a wide range of measures to encourage the role and participation of the private sector during the last two decades. These measures and policies include vigorous programs of privatization, trade liberalization, and abolition of foreign exchange controls.

It is worth noting that although Arab countries have defining characteristics in common, such as the relatively small size of the manufacturing sector in the economy, the significant importance of rent-seeking activities, the heavy reliance on exporting raw materials (oil and/or agricultural products), imperfection in factors and goods markets, weak economic fundamentals, and poor institutional quality, they differ in key features. Examples are market size, standards of living, per capita income, and population structure. For instance, Qatar, one of the smallest Arab countries - with a population of less than 2 million - is a gas/oil producer and a member of OPEC, with the highest GDP per capita in 2009 ($ 61,532), while Egypt is the largest country (approaching 90 million population), and the most industrialized, but with GDP per capita $2,371 (World Bank Indicators: World Bank).

Finally, as oil - either directly or indirectly - plays a critical role in determining the structure of the economy, international trade patterns and standards of living in Arab countries, classifying Arab countries based on OPEC membership is a reasonable and accepted criterion and has been followed in this paper.

3. SELECTIVE LITERATURE REVIEW

The relationship between FDI and economic growth has been extensively discussed and examined in the economic literature. Three main theoretical perspectives on this relationship can be distinguished: i) the “positive” view, ii) the “negative” view, and iii) the “dependent impact” view.

The “positive” view is based mainly on the neoclassical theory of economic growth (endogenous growth models). According to this view, FDI can promote economic growth in host countries through both direct and indirect benefits. Direct benefits stem from the standard neoclassical arguments, which assume that economic growth is primarily capital-driven. Since FDI augments domestic capital accumulation, it can enhance the potential for economic growth. That is, FDI flows can complement limited domestic savings in host countries and, by reducing the cost of capital, augment growth. In addition, FDI might even increase domestic investment in the presence of complementarities and so have an indirect positive impact on total domestic investments (Sylwester, 2005). Indirect benefits of FDI on growth are suggested by endogenous growth models which consider knowledge and technology as factors of production (Romer, 1994). FDI flows can bring productivity gains in host countries through

transfers of technology (adoption of new production techniques), skill acquisition (education and training of workers), competition (efficient use of existing resources by domestic firms), and exports (expansion of export potential of domestic firms) (Moran *et al*., 2005). It has even been argued that externalities generated by FDI in promoting growth could be more valuable than its direct generation of more output by complementing domestic investment (Kumar and Pradham, 2002).

The "negative" view, which is based on "Dependence Theory", on the other hand, argues that FDI flows might have a negative effect on growth and increase income inequality (Bornschier *et al*., 1978; Nolan, 1983). FDI might also create an industrial structure in which monopoly is predominant, leading to "underutilization of productive forces" (Chase-Dunn, 1975). Furthermore, FDI crowds out local investment because local firms cannot compete due to limitations in size, financing, and marketing power. This argument is in line with Amin's assertion that an economy controlled by foreigners would not develop organically, but would rather grow in a disarticulated manner, as the multiplier impact by which demand in one sector of a country creates demand in another is weak, thereby leading to stagnant growth in host countries (Amin, 1974). In addition, expatriation of profits by foreign investors leads to stagnant growth in the host country and transfers demand to the international market rather than the domestic market (Reis, 2001).

The conflict between the "negative" and "positive" views of the relationship between FDI and growth has been shifted to empirical research as the empirical findings, especially those based on cross-country research, have been largely inconclusive. While some empirical studies conclude that there are growth benefits associated with FDI (for instance, Caves, 1996; De Mello, 1999; Makkii and Somworu, 2004; Hsiao, 2003; Sylwester, 2005), other studies tend to find no or limited effects of FDI on growth (Chase-Dunn, 1975; Haddad and Harrison, 1993; Dutt, 1997; Hermes and Lensink, 2003; Kose *et al*., 2009a).

The "dependent impact" view suggests that FDI does not have an "independent" positive effect on economic growth. The impact of FDI is "dependent" on a host country's conditions or its absorptive capacity. More specifically, a number of macroeconomic studies argue that FDI can have a positive impact on economic growth in particular environments. For instance, Blonstron *et al*. (1994) argue that FDI has positive growth effects when the host country is sufficiently wealthy; that is, FDI can exert a positive effect on economic growth given a threshold level of income in the host country. Below this level FDI growth benefits might vanish. In other words, those countries with income not less than a certain level could absorb new technologies and reap other advantages of FDI. Lautier and Moreaub (2012) show that lagged domestic investment has a strong influence on FDI inflows implying that domestic investment is a strong catalyst for FDI in developing countries. The study's findings suggest that investment promotion policies directed towards domestic firms will be efficient to attract foreign investors as well. In addition, Alfaro *et al*. (2004) argue that FDI can promote economic growth in countries with sufficiently developed financial markets.

Balasubramanyam *et al*. (1996) argue that a higher degree of trade openness and export orientation in an economy can facilitate greater transfer of know-how and managerial skills through FDI, and "crowd in" domestic investment. Borensztein *et al*. (1998) suggest that technology and other productivity spillovers associated with FDI may only translate into higher growth when the host country has a minimum level of stock of human capital. Rajan and Zingales (1998) and Antras (2003) argue that poor quality in a country's institutions can limit the indirect benefits of FDI. On the other hand, sound macroeconomic policies can create a general stimulus for FDI spillovers to domestic investment, according to Mody and Murshid (2005). Alfaro and Charlton (2007) emphasize the critical role of sectoral composition of FDI inflows on the potential spillover advantages derived from FDI, as those advantages differ markedly across primary, manufacturing and services sectors. Lim (2001) argues that FDI in the extractive sector may have limited beneficial spillovers for growth as it often involves mega projects that rarely employ domestically-produced intermediate goods or labor.

In sum, this stream of literature suggests that the growth benefits of FDI depend upon a range of local conditions. This points to the importance of controlling for country-specific effects in cross-nations studies, which implies that regressions that pool data for countries at significantly different levels of development might produce biased results.

4. EMPIRICAL METHODOLOGY

Most of the empirical literature on the FDI-growth issue has used cross-country evidence. Yet, cross-section analysis suffers from two major econometric weaknesses. First, endogenity - most explanatory variables are likely to be jointly endogenous with economic growth which leads to biases resulting from simultaneous or reverse causation. For example, FDI inflows cause higher economic growth as opposed to more FDI inflows being the result of economic growth. It is likely that countries that grow faster attract more FDI flows than others. This will lead to over-estimating the effects of FDI on growth. Second, there may also be periods and country-specific omitted characteristics/ variables affecting both FDI flows and growth.

This paper employs a dynamic panel approach to investigate the impact of FDI inflows on economic growth in the Arab countries. Using dynamic panel methods on cross-country data to assess the impact of FDI inflows on economic growth raises some endogeneity concerns as mentioned above, as some of the regressors may be potentially endogenous or pre-determined in determining economic growth. To address the potential endogeneity of the regressors and to incorporate country-fixed effects, this paper employs the system-GMM approach of Blundell and Bond (1998).

The following regression specification is considered:

$$Y_{i,t} = \alpha + \lambda\varepsilon_{i,t-1} + \beta_1 FDI_{i,t} + \beta_2 X_{i,t} + \mu_i + \varepsilon_{i,t}\,, \tag{1}$$

where $Y_{i,t}$ is the logarithm of real per capita *GDP*, $FDI_{i,t}$ is *FDI* inflows as a percentage of *GDP*, $X_{i,t}$ represents the set of relevant explanatory variables, μ_i represents the time-invariant country specific effects, and $\varepsilon_{i,t}$ is the error term.

The GMM estimators employed in this paper are based, first, on differencing regressions or instruments to control for unobserved effects and, second, on using previous observations of explanatory and lagged-dependent variables as instruments, or what are called *internal instruments*.

By accounting for some time-specific effects, Equation (1) can be re-written as follows:

$$Y_{i,t} = \eta Y_{i,t-1} + \beta Z_{i,t} + \mu_i + \varepsilon_{i,t} . \quad (2)$$

To eliminate the county-specific effect, the differences of Equation (2) are taken.

$$Y_{i,t} - Y_{i,t-1} = \eta(Y_{i,t-1} - Y_{i,t-2}) + \beta(Z_{i,t} - Z_{i,t-1}) + (\varepsilon_{i,t} - \varepsilon_{i,t-1}) . \quad (3)$$

The use of instruments is required to deal with the likely endogeneity of the explanatory variables and the problem that, by construction, the new error term, $\varepsilon_{i,t} - \varepsilon_{i,t-1}$, is correlated with the lagged dependent variable, $Y_{i,t-1} - Y_{i,t-2}$. The instruments take advantage of the panel nature of the data set in that they consist of previous observations of the explanatory and lagged-dependent variables. Given that it depends on past values as instruments, this method only allows current and future values of the explanatory variables to be affected by the error term. Therefore, while relaxing the common assumption of strict exogeneity, this instrumental-variable method does not allow the *Z* variable to be fully endogenous (see under the assumption that the error term, ε, is not serially correlated and that the explanatory variables, *Z*, are weakly exogenous), that is, the explanatory variables are assumed to be uncorrelated with future realization of the error term. The GMM dynamic panel estimator uses the following moment conditions:

$$E[Y_{i,t-s}.(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 , \text{ for } s \geq 2; t = 3,...,T , \quad (4)$$

$$E[Z_{i,t-s}.(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 , \text{ for } s \geq 2; t = 3,...,T . \quad (5)$$

For $s = 2$ and $t = 3,...,T$, it is worth mentioning that theoretically the number of potential moment conditions is large and growing with the number of periods, *T*, when the sample size in the cross-sectional dimension is limited. However, it is recommended to use a restricted set of moment conditions (Chang, R. *et al*., 2005). This study works only with the first acceptable lag as an instrument, that is, for the regression in

differences, and it uses only the twice-lagged level of the corresponding variable.

The Bundell-Blond approach has several advantages. First, it adds lagged differenced variables as instruments in the level equations which may generate substantial efficiency gains when the time span is relatively short. Second, it can identify the coefficients of time-invariant variables in the level equations. Third, the number of valid instruments increases as the length of the panel increases which makes this approach superior to the standard or difference IV estimates. Although the Bundell-Bond approach is often seen as simply a mechanical way of dealing with endogeneity, it is economically sound and has been commonly used in a variety of different contexts (Kose *et al*., 2009b).

The panel consists of annual data from 16 Arab countries over a span of 38 years (1970-2008), but some results focus on the last 15-20 years due to limits on data availability for institutional/qualitative variables. Explanatory variables include a standard set of determinants that have been identified in the literature as being relatively robust determinants of economic growth. These include gross capital formation as a percentage of GDP as a proxy for capital, secondary school enrollment as a proxy for human capital, financial sector development measured as the ratio of private sector credit to GDP, trade openness measured as the ratio of the sum of exports and imports of goods and services to GDP, monetary stance as measured by CPI inflation rate, and government consumption expenditure as a proxy for fiscal policy stance and population growth (see Appendix 1 for a description of variables and data sources used).

5. RESULTS AND DISCUSSION

5.1. Baseline Results

Table 2 reports the regression results of the baseline specification on the full sample as well as the two main subsamples, OPEC Arab countries and non-OPEC Arab countries, to test for within-sample heterogeneity. Results are also presented for the full period (1970-2008) and the two sub-periods (1970-1989 and 1990-2008), to control for the variation in the time period, as the second sub-period has seen significant changes in the macroeconomic environment and policies of most Arab countries.[2]

[2] In the late 1980s, most of Arab countries have initiated economic reform policies to overcome sever economic and public finance crises and enhance their long-term growth prospects. Most of the reforms undertaken (programmes of macro-economic stabilization and structural adjustment) were proposed by the International Monetary Fund and World Bank. Those reforms followed the principles of market reforms and reduction of the state's role in the economy and focused on four main areas: cutbacks in government spending, privatization of state-owned enterprises, reduction of barriers to trade, and liberalization of interest and exchange rates. They include also greater labor-market flexibility and less restrictions on both domestic

Table 2. Growth Regressions: The Baseline
(Dependent Variable: GDP per capita growth (annual %))

	Full Period (1970-2008)			1970-1989			1990-2008		
	A	B	C	A	B	C	A	B	C
FDI	0.010**	0.004*	0.007**	0.001	0.003**	0.001*	0.008**	0.006*	0.005**
	(1.18)	(2.27)	(1.43)	(2.09)	(4.02)	(3.12)	(1.47)	(0.38)	(2.61)
Gross Capital Formation(*t*-1)	0.18*	0.14**	0.22**	0.12*	0.19*	0.32**	0.41**	0.38*	0.27**
	(2.66)	(3.44)	(1.63)	(4.58)	(2.29)	(1.34)	(2.08)	(1.26)	(4.04)
Secondary School Enrollment	0.10**	0.12*	0.15**	0.09*	0.11**	0.22**	0.32*	0.26**	0.27**
	(2.07)	(1.06)	(2.29)	(0.50)	(1.83)	(0.58)	(1.59)	(1.08)	(1.01)
Private Sector Credit	0.08**	0.14**	0.18**	0.06**	0.04*	0.9**	0.12*	0.09*	0.21**
	(2.51)	(1.59)	(0.98)	(0.77)	(1.35)	(1.42)	(0.67)	(1.36)	(1.86)
Trade Openness	-0.001	0.018*	-0.014**	-0.004**	0.011*	-0.09**	-0.08*	0.13**	-0.17**
	(1.95)	(0.468)	(0.188)	(1.35)	(1.04)	(1.24)	(2.09)	(2.53)	(2.07)
CPI	-0.014**	-0.018*	-0.09**	-0.13**	-0.08**	-0.25***	-0.08**	-0.13*	-0.19**
	(3.14)	(2.65)	(4.12)	(2.98)	(1.57)	(2.11)	(1.66)	(2.03)	(3.12)
Government Consumption Expenditure	-0.08*	0.04**	-0.11*	-0.12**	-0.10*	-0.17*	-0.14*	-0.21**	-0.18*
	(0.87)	(0.49)	(0.63)	(1.03)	(1.41)	(2.09)	(1.96)	(1.82)	(2.01)
Population	-0.82**	-0.21*	-1.13***	-1.66	-0.12*	-1.85*	-0.89	-0.08*	-0.87*
	(0.92)	(1.03)	(1.46)	(2.04)	(2.14)	(2.89)	(3.01)	(2.94)	(1.75)
Log Initial Real GDP Per Capita(*t*-1)	-3.01	-1.64*	-4.25**	-4.05**	-1.42***	-3.58**	-2.42**	-2.58	-3.20*
	(0.47)	(0.82)	(0.76)	(1.08)	(1.43)	(1.32)	(2.14)	(1.69)	(2.08)
Arellano-Bond test (*p*-level)	0.38	0.35	0.48	0.61	0.58	0.72	0.79	0.53	0.42
Number of Observations	584	202	381	286	108	174	288	104	178
Number of Countries	16	6	10	16	6	10	16	6	10

Notes: Robust standard errors in parentheses. ***, ** and * represent significance at 1%, 5%, and 10%, respectively. A. All Arab Countries, B. OPEC-Arab Countries, C. Non-OPEC Arab Countries.

As shown in columns 1, 2 and 3, the coefficients of FDI are mostly significant and positive, implying that FDI flows are associated with GDP growth. Yet the salient

and foreign capital. As those reforms have significant implications on FDI inflows, the full period (1970-2008) has been divided into two sub-periods (1970-1989) and (1990-2008).

feature of the coefficients is the extremely small magnitude. Econometrically, these results suggest a minor or negligible impact of FDI on growth. For example, as suggested by the figures in column 7, a one percent increase in FDI is associated with 0.008 percent increase in per capita GDP growth. To examine whether specific characteristics of certain countries are driving the results, Arab countries, as previously mentioned, are divided into OPEC and non-OPEC countries. Interestingly, the results reported in columns 2 and 3 (Table 2) are similar to those reported in column 1.

It is widely presumed that long time spans are needed for examining the impact of FDI on economic growth. However, the time period covered can be an important source of variation in results. This is particularly true given the fact that FDI flows to developing countries and Arab countries have really taken off only in the last two decades. To examine the impact of the sample period on the results, the sample time span was divided into two sub-periods: 1970-1989 and 1990-2008. Columns 4-9 in Table 3 present the regression results for the sample period and the two sub-periods. The results suggest a beneficial impact of FDI on growth but significant only for the second sub-period. Once again, the results suggest that the positive impact of FDI on growth is clearly very limited.

The paper tests the sensitivity of the baseline results in a number of ways: First, it replaces FDI inflows as a percentage of GDP with FDI stock as percentage of GDP, FDI as a percentage of gross capital formation and FDI per capita. Second, to test for robustness of the results to the exclusion of specific group of countries, GCC countries[3] were excluded. Interestingly, the results are quite similar to the results presented in Table 2.

5.2. Control Variables

How do financial development, trade openness, human capital, economic liberalization and infrastructure quality influence the growth dividends of FDI?

The paper examines four fundamental economic variables that interact with FDI in important ways to determine the growth outcomes of FDI: i) financial development measured as the ratio of private sector credit to GDP, ii) trade openness measured as the ratio of the sum of exports and imports of goods and services to GDP, iii) human capital as proxied by secondary school enrollment, and iv) infrastructure quality as proxied by a number of variables such as the number of landline telephones per 1000 of population.

Although the above mentioned variables influence economic growth, as suggested by the economic growth accounting literature, the purpose here is to examine how they affect the growth benefits of FDI. To this end, the sample countries were divided into two groups: the “high” group and the “low” group. The “high” group has an average

[3] Gulf Cooperation Council (GCC) members are: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates.

value of the relevant indicator that is above the median value over the sample period while the "low" group has an average value of the relevant indicator that is below the median value. Then, the basic specifications are separately run for both the "high" and "low" groups.

Table 3. Growth Regressions: Control Variables
(Dependent Variable: GDP per capita growth (annual %))

	Financial Development					
	Full Period (1970-2008)		1970-1989		1990-2008	
	High	Low	High	Low	High	Low
FDI	0.001**	0.002*	0.008	0.005*	0.003*	0.005*
	(0.12)	(0.014)	(0.004)	(0.07)	(0.018)	(0.07)
Gross Capital	0.16	0.14*	0.17*	0.08**	0.09**	0.11**
Formation(*t*-1)	(0.05)	(0.08)	(0.40)	(1.43)	(1.32)	(0.45)
Secondary School	0.11*	0.12**	0.012	0.09*	0.22***	0.19*
Enrollment	(0.08)	(0.018)	(0.15)	(0.03)	(1.13)	(1.09)
Private Sector Credit	0.04*	- 0.06	0.02**	0.14**	0.08	- 0.04*
	(0.02)	(0.05)	(0.01)	(0.06)	(0.24)	(0.18)
Trade Openness	-0.03	0.004*	-0.012	-0.09*	-0.05*	-0.008
	(0.001)	(0.016)	(0.21)	(0.18)	(0.07)	(0.019)
CPI	-0.101*	-0.018**	-0.04*	-0.008	-0.003	-0.06**
	(0.001)	(0.004)	(0.67)	(0.45)	(0.41)	(0.006)
Population	-0.61*	-0.72*	-0.54	-0.81**	-0.72*	-0.32
	(0.31)	(0.26)	(0.28)	(0.41)	(0.51)	(0.40
Log Initial Real GDP	-2.14*	-3.11*	-2.91	-4.12*	-3.67	-4.06*
Per Capita (*t*-1)	(1.56)	(1.82)	(1.88)	(2.12)	(2.83)	(3.08)
Government	-0.004*	-0.006*	-0.024	-0.091	-0.12**	-0.074
Expenditure	(0.08)	(0.04)	(0.06)	(0.07)	(0.01)	(0.009)
Arellano-Bond test	0.43	0.57	0.48	0.34	0.71	0.69
(*p*-level)						
Number of	203	362	104	211	109	154
Observations						
Number of Countries	6	10	6	10	7	9

As shown in Table 3, the impact of human capital and infrastructure quality is examined only for the period 1990-2008 because of the data limitation. In addition, other important control variables such as institutional quality and sectoral composition of inflows are absent from this examination. Unavailability of data on these variables for a reasonable time span makes it impossible to examine their impact on the benefits of FDI on growth.

Table 3. Growth Regressions: Control Variables (Cont.)

	Trade Openness					
	Full Period (1970-2008)		1970-1989		1990-2008	
	High	Low	High	Low	High	Low
FDI	0.006**	0.003*	0.006	0.002	0.009**	0.005*
	(0.06)	(0.10)	(0.007)	(0.44)	(0.11)	(0.66)
Gross Capital	0.27*	0.14	0.27*	0.09*	0.16**	0.12*
Formation(*t*-1)	(0.07)	(0.12)	(0.06)	(0.008)	(0.43)	(1.08)
Secondary School	0.14*	0.17**	0.05*	0.11	0.31**	0.15*
Enrollment	(0.12)	(1.81)	(0.89)	(1.56)	(0.08)	(0.02)
Private Sector Credit	0.01*	0.07**	0.03*	0.50*	0.04*	0.002**
	(0.21)	(0.002)	(0.09)	(0.07)	(1.04)	(0.98)
Trade Openness	0.002**	-0.017*	-0.014	-0.007**	-0.008*	-0.005*
	(1.007)	(1.002)	(0.03)	(0.002)	(1.008)	(1.003)
CPI	-0.03**	0.001***	0.007*	-0.03	-0.005*	-0.09
	(0.002)	(0.002)	(0.009)	(0.51)	(0.62)	(0.023)
Population	-0.68*	-0.74*	-0.81*	-0.52**	-1.48	-0.89*
	(0.32)	(0.29)	(0.44)	(0.61)	(0.27)	(0.32)
Log Initial Real GDP	-3.89*	-4.00*	-3.56*	-2.88	-4.11*	-3.44
Per Capita (*t*-1)	(2.89)	(1.78)	(2.24)	(1.99)	(2.00)	(2.44)
Government	-0.021**	-0.023*	-0.034	-0.054*	-0.002*	-0.008*
Expenditure	(0.005)	(0.02)	(0.08)	(0.09)	(0.012)	(0.015)
Arellano-Bond test (*p*-level)	0.48	0.81	0.72	0.49	0.55	0.44
Number of Observations	222	309	103	171	114	155
Number of Countries	7	9	6	10	7	9

Table 3 reports the regression results for both the “high” and the “low” group. Surprisingly, the coefficients of DFI in Table 3 do not differ significantly from those in Table 2 which suggest that the variables examined (financial development, trade openness, human capital and infrastructure) did not have much to do with the benefits of FDI on growth over the period under consideration.

5.3. Discussion of Results

The regression results suggest that FDI inflows to Arab countries over the last four decades have had a limited role in economic growth, which might not seem surprising given that some of the previous studies have reached similar conclusions.

Table 3. Growth Regressions: Control Variables (Cont.)

	Human Capital		Infrastructure Quality	
	High	Low	High	Low
FDI	0.020*	0.010**	0.004*	0.001**
	(0.14)	(0.27)	(0.30)	(0.16)
Gross Capital Formation (*t*-1)	0.06*	-0.02**	0.08*	0.04**
	(0.016)	(0.018)	(0.022)	(0.010)
Secondary School Enrollment	0.04**	0.10*	0.03**	0.009*
	(0.08)	(0.03)	(0.09)	(0.04)
Private Sector Credit	0.008*	0.012**	0.04*	0.02*
	(0.001)	(0.03)	(0.008)	(0.010)
Trade Openness	-0.008**	-0.007*	-0.09**	0.001*
	(0.003)	(0.001)	(0.012)	(0.016)
CPI	-0.14*	-0.28**	-0.11*	-0.34*
	(0.18)	(0.14)	(0.24)	(0.36)
Government Consumption Expenditure	-0.041*	0.030**	-0.016	-0.019*
	(0.018)	(0.014)	(0.023)	(0.031)
Population	-0.64*	-0.56	-0.047**	-1.04
	(0.35)	(0.40)	(0.81)	(1.024)
Log Initial Real GDP Per Capital (*t*-1)	-2.01*	-2.42*	-3.14	-4.01*
	(2.13)	(3.17)	(2.58)	(3.15)
Arellano-Bond test (*p*-level)	0.41	0.54	0.61	0.70
Number of Observations	101	164	104	159
Number of Countries	6	10	6	10

Notes: Robust standard errors in parentheses. ***, **and * represents significance at 1%, 5%, and 10% respectively. Countries are separated into two groups according to whether selected indicators are above (high) or below (low) the median value for the sample in each period.

What might seem surprising and even puzzling is that relatively high levels of some of the main economic fundamentals, such as human capital, infrastructure and financial development, have not significantly improved the growth dividends of FDI. There are a number of possible explanations of these puzzling results.

First, the indicators used to measure the main economic fundamentals might not be correctly reflecting the reality. For instance, secondary school enrollment as a proxy for human capital is a quantitative measure and reveals nothing about the quality of education and skills acquired. Similarly, the supposed indicator of financial development (credit to private sector as a percentage of GDP) does not capture other important aspects of financial development. For example, the importance of a well-developed financial market is often cited as one of the prerequisites for economic growth. Prasad *et al*. (2007) argue that foreign capital inflows including FDI can boost growth only when the recipient countries' financial markets are developed enough to channel foreign

capital efficiently to finance productive investment. In addition, Alfaro *et al*. (2004) found that well-developed financial markets are a precondition for positive effects of FDI on economic development. Tackling the same issue from another perspective, Campos and Kinoshita (2002) argue that foreign investors care about the efficiency of domestic financial markets for its indirect benefit even if they do not raise capital locally. With well-developed local financial markets, it is more likely that local suppliers can invest in upgrading technology and machinery to provide better inputs. Thus, financial market development can be a good signal for the availability of potentially good suppliers. In this regard, it is important to note that Arab financial markets, which were mostly established or re-activated in the 1990s, have seen remarkable "growth" over the last two decades. However, according to most analysts and observers, they are not "developed", which puts serious constraints on their contribution to reaping growth benefits from FDI.

Second, the distribution of FDI inflows to Arab countries, which shows a concentration in just a few economies, might help to explain the limited role of FDI in enhancing economic growth. For instance, in the 1970s, Egypt, Algeria and Tunisia received around 70% of total FDI inflows to Arab countries. In the 1980s Saudi Arabia and Egypt hosted more than 80% of total FDI inflows to Arab countries, and it was not until the 2000s that FDI inflows became more widely dispersed among the Arab countries. Yet, even then, oil exporting countries were still receiving the lion's share, with Saudi Arabia and the UAE receiving more than 50% of total FDI inflows to Arab countries. The concentration of FDI in a few "lucky" countries no doubt leaves limited scope for the "unlucky" countries - which received small amounts - to reap the growth benefits of FDI. Furthermore, FDI inflows were concentrated in the mining, extractive and services sectors, which might make less surprising the regression results suggesting at most a limited role for FDI in promoting growth, as will be discussed below.

The above considerations might not be enough to explain the puzzling regression results, given the figures in Table 1 which show the rising ratio of FDI to gross fixed capital formation in the last two decades in Arab countries. However, a great deal of the confusion might disappear if we consider FDI mode of entry to Arab countries. As reported by the World Investment Report (UNCTAD, 1999), given the extent to which mergers and acquisitions (M&As) become a more important form of entry of multinational corporations into host countries, the rising ratio of FDI to gross fixed capital formation that can be observed in recent years must be reinterpreted, since it does not necessarily signify an increase in the net contribution to domestic investment in host countries. Rather, it indicates a transfer of ownership, and management control of countries' production facilities, to shareholders located in other countries. This is particularly important for Arab countries' experience in light of the privatization process that has taken place in the last two decades in Arab countries which are major recipients of FDI inflows such as Egypt, Algeria and Tunisia.

Further, one of the main "inevitable" weaknesses in regression results presented in this paper -because of data limitation- is that the specifications used to examine the role

of FDI in growth, and the variables affecting the growth benefits of FDI, do not include a number of critical variables. On the top of these variables come institutional quality, the degree of diversification of the economy and sectoral composition of FDI.

Host country institutions significantly influence investment decisions because these institutions directly affect business operating conditions. This has been concluded by many studies. For instance, Mohamed and Sidiropouls (2010) found that institutional variables among the key determinants of FDI inflows in MENA region.[4] Weak protection of property rights implies that foreign financing may not be directed to projects which require long gestation, are investment-intensive and offer low initial profitability. Yet financing for such projects could be particularly useful given domestic financing constraints (Rajan and Zingales, 1998). Poor institutional quality can also limit the interaction between foreign and local firms only to hiring labor, thereby limiting the indirect benefits derived from FDI (Antras, 2003). Available data on corruption in Arab countries partially reflects the poor quality of institutions, but the unavailability of data on indicators capturing other dimensions of institutional quality makes it not possible to decisively assess the impact of institutional quality on the growth benefits of FDI.

With regard to diversification, Dabla-Norris *et al*. (2010) found that the degree of diversification of the economy plays a significant role in exploiting FDI benefits. Countries with a more diversified economic structure (lower reliance on commodity exports) exhibited higher and statistically significant FDI coefficients in the regression equations. In this regard, it is noteworthy that fuel exports as a percentage of merchandise exports remained at around 80% on average for Arab countries over the last four decades. In addition, manufactured exports as a percentage of merchandise exports, and high-technology exports as a percentage of manufactured exports do not exceed 13% and 3% respectively during the same period. These figures simply reflect less diversified economies which might explain the limited benefits of FDI in Arab countries.

With regard to sectoral composition of FDI inflows to Arab countries, comparable data is scarce or even non-existent. Available evidence suggests that the share of FDI in the extractive sector, particularly the petroleum sector (IMF, 2010), and the service sector, including tourism, banking and financial services, increased significantly in the run-up to the crisis in developing countries (IMF, 2008). For instance, available data on Africa, where a significant number of Arab economies are located, indicates that a distinct feature of FDI flows to Africa is their sectoral bias. A breakdown of stock figures for 1988 and 1997 shows a slight increase in the primary sector share from 51.8 percent to 53.4 percent of the total stock in Africa (UNCTAD, 1999). Flows between 1996 and 2000 continued to be concentrated in the primary sector, accounting for nearly 55 per cent of total flows to Africa from major investors, but reaching as high as 80

[4] The MENA Region includes: Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malta, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia ,United Arab Emirates, West Bank and Gaza and Yemen. All are Arab countries except for Iran, Malta and Israel (World Bank definition).

percent in some years (UNCTAD, 2002). Another piece of "implicit" or "indirect" evidence revealing a bias against the manufacturing sector is the stagnated manufacturing value-added as a percentage of GDP in Arab countries on average, which was only 8% in 1980 and still did not exceed 12% by 2009. In some oil exporting countries this ratio even decreased - from 6% in 1980 to 2% in 2004 as in the case of Kuwait.

One might argue that the sectoral composition of FDI flow is the most prominent factors in deriving FDI growth benefits. As noted by the World Investment Report (UNCTAD, 2001), in the primary sector the scope for linkage between foreign affiliates and local suppliers is often limited. In the service sector the scope for dividing production into discrete stages and subcontracting out large portions to independent domestic firms is also limited. On the other hand, the manufacturing sector has a broad variety of linkage-intensive activities. In addition, there are other factors that affect how much benefit can be reaped from FDI which should not be overlooked. These factors include the technological base and the structure and the nature of FDI incentives.

Finally, in light of the above discussion, it could be argued that grouping all "preconditions" that have been identified in the literature as prerequisites to deriving growth benefits from FDI in one set and treating them equally is misleading because they are not of equal importance. For instance, having well developed domestic financial markets might not be of great help if FDI inflows are mainly concentrated in the extractive sector because, by nature, this sector has limited beneficial spillovers. The same argument might be valid for other factors such as institutional quality, capital endowments, trade openness and indeed all other factors except for the sectoral composition of FDI inflows, as all these factors cannot perform their "role" in deriving growth benefits if FDI inflows are directed to the primary sector. In other words, the sectoral composition of FDI inflow could be seem as a "necessary" precondition, while all other preconditions are "sufficient" preconditions, for deriving growth dividends from FDI.

This argument has important policy implications as it implies that policy objectives and FDI incentive packages should be focused on "directing" FDI inflows to sectors that have a broad variation of linkage-intensive activities, and this also might explain a great deal of the confusion created by the regression results presented in this paper that examined the role of some preconditions in deriving growth benefits from FDI.

6. CONCLUSIONS

The empirical literature on the growth benefits of FDI has been to a large extent inconclusive. While one strand of research concluded that there are growth benefits associated with FDI, another strand of studies tends to find no effects or limited effects through traditional channels such as capital accumulation. More recently, the literature has identified possible channels through which FDI may be made more effective, such

as a minimum threshold level of absorptive capacity: well-developed domestic financial markets, institutional quality and human capital (Borensztein *et al*.,1998).

Using data on FDI flows for 16 Arab countries from 1970 to 2008, and utilizing a dynamic panel approach, this paper finds that FDI inflows had no or a very limited role in promoting economic growth in Arab countries. A number of sensitivity analyses are carried out through isolating OPEC Arab countries from non-OPEC Arab countries and dividing the time span covered into two sub-periods, yet the results remain robust. In addition, the impact of four of the factors or "preconditions" that have been identified in the literature as determining a country's capacity to take advantage of FDI externalities was assessed. Interestingly, the regression analysis shows that these factors have not significantly helped in deriving more benefits from FDI. The role of other important "preconditions" in deriving growth benefits from FDI has not been examined because of data unavailability. The paper concludes that within these "preconditions" a distinction could be made between what might be called a "necessary" precondition (i.e., without it growth dividends cannot be attained), namely the sectoral composition of FDI (where do FDI inflows flow?), on one hand, and all other preconditions, such as well-developed domestic financial markets and human capital that might serve as "sufficient" preconditions, on the other hand.

More importantly, the paper's results suggest that economic policies and investment incentives programs should focus not only on FDI "quantity" but also on FDI "quality". That is, the primary focus of domestic policy solutions should be to direct FDI inflows to dynamic sectors that have a high potential for beneficial spillovers for growth, such as the manufacturing sector as a first priority, then comes improving levels of the above-mentioned "sufficient" preconditions.

APPENDIX

Data Description and Sources

Variable	Definition	Source
CRD	Domestic Credit to Private Sector (% of GDP)	World Development Indicators (World Bank)
GDP	GDP per Capita Growth (annual %)	
	GDP Growth (annual %)	
GDPI	Initial GDP per Capita (constant 2000 US$)	
GFC	General Government Final Consumption Expenditure (% of GDP)	
GCF	Gross Capital Formation (% of GDP)	
GFCF	Gross Fixed Capital Formation (% of GDP)	
INF	Inflation, Consumer Prices (annual %)	

FDI	Inward FDI Flows (% GDP) Inward FDI Flows (% GFCF: Gross Fixed Capital Formation) Inward FDI Flows per Capita (at US Dollars at Current Prices and Current Exchange rates) Inward FDI Stock (% GDP) Inward FDI Stock per Capita (at US Dollars at Current Prices and Current Exchange rates)	UNCTAD stat (UNCTAD)
POP	Population Growth (annual %)	World Development Indicators (World Bank)
HUM	School Enrollment, Secondary (% gross)	
TEL	Telephone Lines (per 100 people)	
TRAD	Trade (% of GDP)	

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