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Is FDI Growth Enhancing: An Exploration from OIC Member Countries

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ABSTRACT

This study examines the impact of FDI inflow on economic growth of the selected countries over the period of 1980-2011. Results, from Generalized Method of Moment (GMM) in Simultaneous Equations Model (SEM), suggest that positive spillover-effect of FDI inflows is conditional on the level of human capital development. Further, we find the evidence that FDI erodes domestic investment and a net crowding-out effect of FDI is documented. The study recommends formulating policies to develop human capital through better education and skill level that would absorb FDI spillovers. Further, these inflows should be directed to sectors where FDI complements domestic investment to ensure that FDI persuades growth.

1. INTRODUCTION:

Foreign Direct Investment (FDI) has risen to be one of the most significant channels of capital flows across the globe increasing from US$ 54.5 billion to US $1.46 trillion between 1980 and 2013[2]. Importantly, total flows of FDI in recent decades grew more than double to that of world trade (Gorg and Greenway 2004). FDI is considered to be the engine for economic growth (Alfaro et al. 2010; Mencinger 2003). One of the least volatile sources of capital inflows, FDI can contribute to economic growth through increasing productivity resulting from technology transfer[3], knowledge-spillovers, and through making complementarities with local investment. Further, FDI inflows are a key source of capital formation also for resource deficient developing countries (Majeed & Ahmad 2008). FDI can fail however to generate spillovers if it is concentrated in the capital intensive sector or if it crowds-out domestic investment (DI).

Human capital is considered as an important factor in determining FDI inflows (Bhaumik et al. 2012). FDI spillovers are conditional on availability of efficient human capital also. Traditionally, the relationship of FDI with human capital and domestic capital is crucial and decisive factor in the realization of gains from FDI (Agosin & Machado 2005; Wang & Wong 2011). A better human capital will attract more FDI inflows (Dorożyński & Dorożyński 2014) as lower level of human capital (low skills lack of education or insufficient training) will lower the returns associated with investment. A low level of human capital will adversely affect the FDI inflows and thus will hamper the economic growth. Lower stock of human capital limits the absorption capacity of an economy in terms of making efficient use of FDI (Pisaniuc 2012; Nguyen, et al. 2009). Islamic countries in general are hampered by an unskilled labor force, inefficient/lower levels of human capital, alarmingly high population growth rates and a lack of physical infrastructure. These factors may limit “technology transfer” or “knowledge-spillovers” attached with FDI. This work analyzes empirically the extent to which FDI spillovers is an outcome of a mix of certain precondition of the host economies. It is in this context, this study analyses FDI, domestic investment and economic growth dynamics in the

2 UNCTAD: Global Investment Trends Monitor No.15 28 January 2014

3 Jensen (2003) specially highlights this channel

simultaneous framework for six (6) Islamic Development Bank (IDB) member countries[4]. We explore the new evidence for this group of countries on the following questions:

1. Is FDI growth enhancing in IDB member countries?
2. How does human capital interact with FDI to generate economic growth in IDB member countries?
3. What is the long-term interaction/relationship between FDI and domestic investment, i.e. "crowding-in" or "crowding out" effect of FDI inflows?

Given the nature and the scope of the study, we opt for panel analysis. Most of the studies available are based on data from the developed world or a mix of developing countries[5]. Most importantly, these studies do not count for potential simultaneity involved in the macro variables and rely on single equation models leaving room for skepticism about their findings in the context of bias stemming from simultaneity and endogeneity (Carkovic & Levine 2005).

In this study, Generalized Methods of Moments (GMM) is employed in simultaneous equation model framework to resolve endogeneity and simultaneity issues in this work. The rest of the paper is structured as follow: Theoretical model, estimation methodology and data are described in section 2 and 3 respectively. Section 4 details the results and discussion thereof while section 5 concludes the study.

2. THE MODEL

Neoclassical growth models state that an increase in factor accumulation or in total factor productivity (TFP) can lead towards economic growth (Felipe, 1997). FDI can contribute to the growth of host country through technology transfer and capital formation (Blomstrom et al. 1996; Borensztein et al. 1998). Another mechanism through which FDI can affect the growth is an increase in the level of knowledge (de Mello 1997, 1999). Foreign firms may bring new techniques of production and make their workers more skilled through training. The main feature of exogenous growth models is that growth can only come, in long run, from technological progress and labor force growth. Both technological progress and labor force growth are exogenous in exogenous growth models and levels of investment can increase the amount of capital per capita which can result in economic growth (Nair-Reichert & Weinhold 2001). Let's assume, that

$g = f(FDI, IGDP, X)$[6] (1)

"g" refers to GDP per capita growth while IGDP denotes initial GDP of any particular country in the sample. In context of discussion and framework set on previous pages, Eq. (1) shows the impact economic growth of a country depends on FDI and initial GDP of the country. The evidence suggests that FDI enables the host country producing new varieties of capital goods at lower costs

4 Initially ten top FDI receiving OIC member countries were selected. However, data was only available for 6 countries. Pakistan was added to the list as it is a major player in OIC. The selected countries are Saudi Arabia, Turkey, Pakistan, Egypt, Malaysia, Indonesia and Iran

5 Blomstrom (1983), Lensink and Morrissey (2001), Alfaro (2003), Basu et al. (2003), Choe (2003), Khamfula (2007), Mengistu and Adams (2007),

6 GDP in this equation is initial GDP and is denoted as "IGCP" (initial GDP per capita) in this study

(Borensztein et al. (1998). X includes conventional determinants of economic growth as given in equation 2.

$$GPCG = f(GPCG_{t-1},\ IGPC, FG,\ FG_{t-1},\ DG,\ Inf,\ HC,\ DF,\ FHC,\ ,\ POPG,\ X) \qquad (2)$$

Where, GPCG is GDP per capita growth, FG and DG are ratio of FDI to GDP and domestic investment to GDP respectively. Whereas, "Inf" denotes inflation, while HC POPG, DF, FHC stand for human capital, measured through average years of schooling, population growth rate, FDI and domestic investment interaction term and FDI and human capital interaction term respectively. X is a vector of control variables used in the analysis guided by the previous empirical literature and include openness (OP), Government expenditures as ratio to GDP (GexG) and Telephone density (TEL) as proxy for physical infrastructure.

Growth and FDI may be determined simultaneously in an economy. To resolve simultaneity bias as well as to look into the impact of growth on FDI, we adopt a simultaneous equation model and write second equation of our model for FDI. In concurrence with scope of our study, and following existing literature, we adopt the following equation for FDI:

$$FG = f(FG_{t-1},\ GPCG,\ DG,\ HC,\ X) \qquad (3)$$

FG is a function of FGt-1 and all other variables as defined in eq 2.

The most interesting feature of equation (3) is the relationship between FDI inflows (FG) and domestic investment (DG). FDI inflows can complement domestic investment (DG) (crowding in effect) as well as it can substitute DG (crowding out). The nature and magnitude of FDI spillovers, therefore, depends on its relationship with domestic investment. We propose a separate equation for domestic investment (DG) to capture the nature of FDI inflows in terms of its impact on domestic investment. Relying on Agosin and Machado (2005), a standard parsimonious equation for DG is adopted.

$$DG = f(FG,\ FG_{t-1},\ GG,\ GG_{t-1},\ DG_{t-1}) \qquad (4)$$

GDP growth rate (GG), rather than GDP per capita growth rate (GPCG) is introduced in equation 4 purposefully to capture accelerator effect. For rest of the variables, standard definitions, as given in equation 2 and 3, apply. The inclusion of the lagged values is to capture the dynamic relationship between the three variables (Agosin and Mayer 2000; Kumar and Pradhan 2002).This completes our model with three equations being determined simultaneously. This particular specification of our model serves two major purposes. Firstly, it resolves the issue of simultaneity bias. Secondly, and most importantly, endogeniety, a serious problem in regressions, is well dealt with by using Generalized Method of Moments (GMM).

3. DATA AND ESTIMATION METHODOLOGY:

3.1. DATA CONSTRUCTION

All the data used in the analysis are in constant US dollars. All the variables are extracted from World Development Indicators (WDI) online version (2013), International Financial Statistics (2012) and Penn World Table (2013) developed by Robert C, Robert Inklaar and Marcel P. Timmer (2013). To overcome the size of the economy problem, the variables are

then converted into percentage of GDP except the indices such as terms of trade, consumer price Index (CPI) and growth variable like GDP, GDP per capita and population.

The major variables used in the analysis include initial per capita GDP (GDP per capita in 1980), GDP and per capita GDP growth rate, human and physical capital (infrastructure) (HC and TEL respectively), foreign direct investment (FDI) inflows, domestic investment[7] (DG), general government final consumption expenditures (GEXG), and trade openness. Economic growth is represented by growth rate of per capita GDP.

We use human capital proxy developed by Feenstra et al. (2013), available in annual frequency. This proxy consists of an index of human capital per person based on years of schooling (Barro & Lee, 2013) and the returns on education (Psacharopoulos, 1994). So we use human capital data from PWT (2013) Telephone lines per 100 are used as proxy for Infrastructure. Most of the empirical literature use exports plus imports as ratio to GDP as proxy for trade openness (TO) but due to unavailability of data on imports for Turkey and Saudi Arabia, we turned to other proxy (also used in empirical studies Emery 1967, Kravis 1970, Tyler 1981), which is exports of goods and services as ratio to GDP. Terms of trade is calculated by dividing export value index to import value index.

3.2. ESTIMATION METHODOLOGY:

We use three equations model with FDI, per capita GDP growth rate (GPCG), and Domestic Investment (DG) as dependent variables in simultaneous equation framework for panel of Islamic countries. The lagged values of these dependent variables are also used as explanatory variable along with other control variables to capture the sluggishness of variables. Given the simultaneity and endogeniety involved in the model, the use of single equation model produce invalid estimates as described by Carkovic and Levine (2005).

In Simultaneous Equations, Model for estimation of equation 2, 3, and 4, the lagged explanatory variables (FG_1, GPCG_1, and DG_1) and error terms are correlated so Ordinary Least Square (OLS) will provide biased (upward) estimates (Nickel 1981). In such case, the recent literature has widely used the Generalized Method of Moments (GMM) in panel data estimations as it considered providing more efficient results and we also use this method.

Based on above discussion, Generalized Method of Moments (GMM) is the most suitable estimation technique that we can use. Initially, we thought of using System GMM but System GMM is more efficient for the dynamic panel with number of cross-sections (N) greater than time period (T). Our sample is quite opposite as we have smaller N and larger T. Using system GMM, in this case, was not a good choice and would have been ending in inefficient and inconsistent results. Further, Newey-West technique[8] will be used to get white noise residuals or HAC standard errors.

7 Domestic investment (DG) is calculated by subtracting FDI inflows from Gross Fixed capital Formation (GFCF): to avoid double counting (Kumar and Pardhan 2002; Nath 2005 and Samuel Adams 2009).

8 Strictly speaking, the Newey-West method is applicable and valid in large sample i.e. in large number of observations, say, 50 or more observations (Gujarati 5th Ed).

3.3. DATA DESCRIPTION:

Descriptive statistics of the variables used in the study are given in the Table 1 below. We can see from the table that FDI inflows (FG) have maximum value 9.34 (%GDP) and minimum value -2.76 (negative FDI mean FDI outflows are greater than inflows) indicating large disparities in FDI inflows. Similar patterns are observed for domestic investment (DG) showing large difference with maximum value of 38.88 (%GDP) and minimum value of 9.39 (%GDP). Other variables including openness (OP), population growth rate (POPG), initial GDP per capita (IGPC), GDP per capita and GDP growth rates (GPCG and GG) and government expenditures (GEXG), major factors that contribute to FDI inflows and growth, have also shown large disparities across the sample countries. Human capital (HC) somehow remains stable as shown that HC takes maximum value 2.97 and minimum value 1.33.

Table 1: Descriptive Statistics

	Mean	Median	Maximum	Minimum	Std. Dev.
DF	34.38	16.20	244.17	-62.34	48.45
DG	21.28	20.70	38.88	9.39	5.24
FHC	3.63	1.86	22.25	-5.23	5.06
FG	1.61	0.88	9.34	-2.76	2.09
GEXG	14.28	12.31	35.22	5.69	6.16
GG	4.54	5.14	13.69	-13.23	4.30
GPCG	2.22	3.23	10.82	-16.57	4.47
HC	2.04	1.99	2.97	1.33	0.38
IGPC	4480.89	2315.31	21432.29	396.41	7027.03
INF	14.68	8.95	110.17	-3.20	19.43
POPG	2.25	1.88	6.35	1.12	1.01
OP	33.63	25.41	121.31	3.93	25.62
TEL	9.69	6.85	36.81	0.26	8.84

3.4. ESTIMATIONS, RESULTS AND DISCUSSION:

We begin estimations by applying GMM on three equations system, i.e. 2, 3 and 4 given in preceding section. All three equations with foreign direct investment as %age of GDP (FG), GDP per capita growth rate (GPCG), and domestic investment as %age of GDP (DG) as dependent variable are estimated simultaneously. Results for these simultaneous models are reported in three tables, i.e. table 2, 3 and 4 respectively[9]. Each table contains 6 specifications with alternative explanatory variables. For example FG (1), GPCG (1) and DG (1) in table 2, 3 and 4 respectively are measured simultaneously for our first specification and so on. DG is obtained by subtracting FDI from Gross Fixed Capital Formation to avoid double counting. We use standard parsimonious equation for DG as here we set to capture the impact of FDI on economic growth controlled for crowding in or crowding out effect of FDI. We use this equation as control equation to capture the role of FDI under certain conditions and specifications.

9These tables are reported in this format for brevity.

Conventional determinants of FG, GPCG and DG are incorporated in first specification (Columns 1 of table 2, 3 and 4. The previous lag of FDI (FG_1) enters statistically significant and carries a positive sign confirming that higher flows in previous years behave like a green signal for the investors in terms of business environment and that multinational companies feel comfortable in investing in the specific destinations.

Table 2: Determinants of FDI **Dependent Variable= FDI (%GDP)**

Variable	FG (1)	FG (2)	FG (3)	FG (4)	FG (5)	FG (6)
Constant	0.301**	0.237	-0.897**	-0.116	-1.407***	-0.958**
	(0.110)	(0.377)	(0.394)	(0.453)	(0.307)	(0.310)
FG_1	0.741***	0.693***	0.679***	0.637***	0.688***	0.722***
	(0.045)	(0.043)	(0.043)	(0.030)	(0.027)	(0.024)
GPCG	0.051	0.134**	0.151***	0.181***	0.117***	0.089***
	(0.037)	(0.041)	(0.039)	(0.030)	(0.016)	(0.013)
DG		-0.002	-0.008	-0.020	-0.019*	-0.021*
		(0.018)	(0.019)	(0.013)	(0.011)	(0.012)
HC			0.570**	0.163	1.087***	0.888***
			(0.190)	(0.310)	(0.179)	(0.198)
TEL				-0.007	-0.020***	-0.016**
				(0.008)	(0.006)	(0.005)
OP[10]				0.012***		
				(0.003)		
Adj.R Sqr	0.687	0.688	0.695	0.690	0.709	0.713
J (Stat)	0.108	0.124	0.141	0.148	0.172	0.159
J Prob	0.947	0.725	0.708	0.701	0.679	0.690
N	196	189	189	189	189	203

Note: Standard errors are given in parentheses. *, ** and *** indicate 10%, 5% and 1% significance level respectively.

Column 1 of table 3 reports results for growth equation with GDP per capita growth rate (GPCG) as dependent variables. The lagged GDP per capita growth rate (GPCG_1) enters positively and significant statistically while lagged value of FDI carries a negative sign and is insignificant in statistical terminology. Statistically significant negative coefficient for initial GDP per capita (IGPC) confirms the conditional convergence for Islamic countries[11]. Completing the first specification, column 1 of table 4 contains the estimation output for domestic investment (DG) equation where domestic investment is positively affected by lagged FDI, its own lagged value and GDP growth rate of economy (GG). Negative sign of FDI

10 Openness and FDI are taken to be substitute for each other as both represent opening of border so the robustness of the results was also confirmed by dropping OP.

11 Empirical evidence of convergence hypothesis is reported by NakaBashi and Figueiredo (2005), Barro (1991, 2003), Barro and Sala-i-Martin (1995) and many others

confirms the substitution effect of FDI inflows (i.e. FDI substitute domestic investment) for Islamic countries.

To reaffirm the above-mentioned result of crowding out effect of FDI inflows, in specification 2, we add domestic investment variable (DG) in FDI and growth equations (column 2 of table 2 and 3). Negative sign of DG (though insignificant in statistical terms) in FDI equation (column 2 of table 2) endorse the crowd out effects of FDI inflows (observed in specification one where FDI carry negative sign in DG equation table 4) for Islamic countries. The possible explanation of a negative sign of DG in FDI equation may be that FDI inflows does not create new investments and are directed through privatization only to sector with poor (Mileva 2008). FDI carrying negative sign in DI equation and DI carrying negative sign in FDI equation confirms that both FDI and DI are substitutes (net crowding out effect is reported by Akkina and Celibi 2002 and William and Darius 1998).

In growth equation (column 2 of table 3), FDI (again) carry statistically significant positive sign while DI enter with insignificant positive sign. This confirms the net crowding out effect of FDI inflows. This could happen if a country look for foreign investment irrespective of taking care in which sector these flows is coming and causing local firms to compete against multinationals.

Knowing the significance of human capital as discussed in previous pages, we incorporate human capital (Feenstra et al. 2013 Penn World Table) in growth and FDI equations in specification 3 (column 3 of table 2 and 3). As per expectations, human capital (HC) is positive and statistically significant in FDI equation (column 3 of table 3) suggesting that when multinational companies (MNCs) transfer their operations in host country, they are concerned about the transaction costs. Lower transaction costs will motivate these MNCs to invest thus they look for the regions having low transaction costs. In growth equation (column 3 of table 3), human capital enters with positive sign but insignificant statistically. Crowding out effect of FDI is also held in this specification (column 3 of table 4) where FG carry similar negative sign as in previous specifications.

In specification 4, infrastructure and trade openness variables are included in FDI and growth equations (column 4 of table 2 and 3). Number of telephone lines per 100 person and exports of goods and services as ratio to GDP is proxy of trade openness in infrastructure variable. Against our expectations of having positive sign, infrastructure variable (TEL) enters with negative but statistically insignificant sign in FG equation (column 4 of table 2). Low level of infrastructure is the possible justification of a negative sign of infrastructure variable in FDI. In the same FG equation, inclusion of infrastructure has turned the human capital variable insignificant. This indicates that improvement in infrastructure along with developed level of human capital is precondition of attracting these inflows (Javed 2012). Openness variable, on the other hand, carries a statistically significant positive sign. The possible explanation may be that in countries with low level of infrastructure, governments by opening their boarder attract more FDI in physical infrastructure. This is also evident from growth equation (column 4 of table 3) that FG contains a significant positive sign. In mid-1980, policies were made to encourage private sector (especially

foreign sector) to finance infrastructure services. Privatization was the main agenda of economic reforms and World Bank (2003) reported increased foreign investment in infrastructure projects. Both variables (TEL and OP) enter with reverse signs in growth equation (column 4 of table 3) compared to FG equation. Infrastructure enters with positive sign but is insignificant statistically. Trade openness carries negative sign and the possible explanation is that if primary goods are major exports then openness can result in loss of domestic competitiveness and reduce production as the foreign investment will crowd out domestic investment.

Table 3: Determinants of Economic Growth Dependent Variable= GDP per Capita Growth

Variable	GPCG (1)	GPCG (2)	GCPG (3)	GPCG (4)	GPCG (5)	GPCG (6)
FG	0.445	1.110**	0.614*	1.098***	-4.244**	-0.823
	(0.725)	(0.546)	(0.353)	(0.289)	(1.871)	(0.961)
FG_1	-0.267	-0.674	-0.478*	-0.668**		
	(0.580)	(0.410)	(0.262)	(0.212)		
GPCG_1	0.297***	0.252***	0.285***	0.231***	0.194***	0.300***
	(0.052)	(0.047)	(0.043)	(0.038)	(0.044)	(0.036)
IGPC	-0.0001**	-0.00006***	-0.0001***	-0.00007***		
	(0.00002)	(0.00002)	(0.00001)	(0.00001)		
DG		0.007	-0.020	-0.019	0.047	0.019
		(0.054)	(0.055)	(0.048)	(0.087)	(0.033)
HC			0.792	1.121	-4.947***	-0.509
			(0.512)	(1.067)	(1.425)	(1.097)
TEL				0.004	0.108***	0.060**
				(0.029)	(0.028)	(0.028)
OP				-0.017*	-0.019	
				(0.009)	(0.016)	
DF					-0.015	
					(0.029)	
INF					-0.064***	-0.047***
					(0.013)	(0.010)
GEXG					-0.135***	-0.209***
					(0.028)	(0.024)
FHC					2.085**	0.290
					(0.756)	(0.407)
POPG					-0.809**	
					(0.247)	
Constant	1.899***	1.358	0.698	0.211	14.953***	5.705**
	(0.372)	(1.197)	(1.115)	(1.707)	(3.089)	(2.129)
Adj.R Sqr	0.15	0.16	0.15	0.15	0.12	0.18
J (Stat)	0.108	0.124	0.141	0.148	0.172	0.159
00J Prob	0.947	0.725	0.708	0.701	0.679	0.690
N	196	189	189	189	189	203

Note: Standard errors are given in parentheses. *, ** and *** indicate 10%, 5% and 1% significance level respectively.

To test the joint impact of FDI and human capital and FDI and domestic investment, interaction terms FHC and DF are included in growth equation (column 5 of table 3). Furthermore, inflation (INF), government expenditures (GEXG), and population growth rate (POPG) are also included in column 5 of table 3[12]. If level of human capital is low enough to absorb FDI inflows and create positive spillovers, interaction term will carry positive sign (known as complementarity hypothesis) and FG must carry negative sign if human capital is below threshold level. Looking at column 5 of table 3, it is evident that interaction term FHC carry positive and statistically significant sign. FG and human capital turned negative in respective column. The possible explanation of positive interactive term and negative FDI and human capital may be that it is not necessary that FDI inflows are beneficial for every country and before achieving a certain level of prerequisites like attaining a minimum level of efficient human capital, these inflows can affect the domestic economic situation negatively (Javed, 2012). Regarding the interaction term between FDI and domestic investment (DF) we hypothesize that in case where domestic investment is more effective and FDI inflows cause domestic investment to decrease to a certain minimum level, DF must have a positive sign. From the results reported in column 5 of table 3 we find a negative sign of interaction term DF and it is statistically insignificant[13] suggesting non-complementary relation between FDI and domestic investment. The possible explanation of this negative and insignificant sign may be that there is difference in technological level of FDI and domestic investment (Borensztein et al., 1998). Another probable reason may be that both FDI inflows (FG) and domestic investment (DG) are mutually exclusive when both are allocated sectorial. The bottom row of table 4 concludes a net crowding out impact of FDI inflows.

In the same column 5 of table 3, inflation variable (INF) (measured by percentage change in CPI) enters statistically significant with negative sign indicating that high rates of inflation will effect economic growth adversely. This negative sign of INF is in-line with "Friedman Hypothesis" which states that with increasing rate of inflation uncertainty about future inflation will increase and this future inflation uncertainty, having positive correlation with rising levels of inflation, will adversely affect the price mechanism which ultimately will affect economic growth negatively (Briault 1995; Fischer 1993; De Gregorio, 1992). General government final consumption expenditures, as ratio to GDP, (GEXG) and population growth rate (POPG) enter negatively and both are statistically significant. This negative sign of GEXG might be due to the inefficiency of public spending on development projects. Another possible explanation may be that government expenditure may result in crowding out private consumption expenditures hence affect growth adversely. The possible explanation of negative sign of POPG (in column 5 of table 3) is that high fertility rates may increase the dependency ratio, thus increasing population may reduce economic growth (Bloom & Freeman 1986). If complementarity between skill base of recipient country and FDI do not exist it could affect economic growth negatively.

12 The interaction term FHC is added based on the hypothesis that FDI inflows will not enhance growth when human capital is low. Positive effects of FDI will depend on the absorbing capacity and efficiency of human capital

13 Insignificant value means that we cannot calculate the threshold level of domestic investment (DI)

Table 4: FDI and Domestic Investments Dependent Variable= Domestic Investment (%GDP)

Variable	DG (1)	DG (2)	DG (3)	DG (4)	DG (5)	DG (6)
DG_1	0.856***	0.884***	0.890***	0.900***	0.898***	0.869***
	0.036	0.030	0.026	0.021	0.020	0.209
FG_1	1.193**	1.002**	0.918***	1.107***	0.950***	0.935***
	0.403	0.345	0.215	0.152	0.112	0.165
FG	-1.488**	-1.256**	-1.117***	-1.385***	-1.000***	-0.915***
	0.512	0.442	0.265	0.198	0.133	0.021
GG	0.618**	0.672**	0.678***	0.682***	0.291***	0.284***
	0.153	0.100	0.082	0.075	0.034	0.040
Constant	0.468	-0.354	-0.594	-0.680	0.867*	1.332**
	1.118	0.823	0.678	0.586	0.471	0.488
Adj.R Sqr	0.777	0.776	0.773	0.771	0.840	0.837
J (Stat)	0.108	0.124	0.141	0.148	0.172	0.159
J Prob	0.947	0.725	0.708	0.701	0.679	0.690
N	196	189	189	189	189	203
Δ	-2.057	-2.182	-1.798	-2.785	-0.488	0.156

Note: Standard errors are given in parentheses. *, ** and *** indicate 10%, 5% and 1% significance level respectively. $\Delta=\beta(FG+FG\_1)/(1-\beta(DG\_1)$, where Δ represents net FDI effect on Domestic Investment: $\Delta=1$, $\Delta>1$, $\Delta<1$ stand for 1-1 relation, crowding In and Crowding Out, respectively.

In specification 6, population growth rate and insignificant interaction term DF and openness variables are dropped from growth equation (column 6 of table 3). The basic purpose was to see the impact on government expenditures (GEXG). Government expenditures (GEXG) still remain negative and statistically significant.. With the exclusion of DF and openness (OP) variables, FG, human capital and the interaction term between human capital and FDI (FHC) turns insignificant in statistical terminology (signs remains unchanged) and crowding out effect holds in DG equation (column 6 of table 3 and 4 respectively).

All the models were tested for instrument validity using J-stat. Insignificant high p-value of J-statistic provided at 2nd last row of table 2 and 3, and 3rd last row of table 4 confirms the validity of instruments and that over-identifying restrictions are satisfied.

4. CONCLUSION:

This study analyses the impact of FDI inflows on the economic growth of a panel of Islamic countries using data from 1980-2011. GMM is applied in a SEM comprising 3 equations. The results are suggestive that FDI contributes positive to the growth in general but when the nexus is controlled for interactive impact of human capital and FDI and FDI and domestic investment the FDI is found dissuading growth of the panel countries suggesting that the benefits of FDI are conditional on availability of efficient human capital and the nature of FDI inflows in context of its attitude toward domestic investment. A strong net crowding out impact of FDI is observed in the Islamic countries. The policy lessons to be learned is simple and straight forward that attracting FDI inflows is not a sufficient condition for economic growth rather the nature of the investments coming into the recipient countries decides the outcome. Countries with efficient human capital and FDI complementing the domestic investment can persuade economic growth of recipients. The negative sign on FDI must be interpreted carefully. A negative coefficient on FDI does not imply that FDI per se is growth hampering and that the borders be closed for MNC rather the lesson is that recipient countries should create an environment in which gains of FDI can be realized through using efficient human capital and where FDI and domestic investments go hands-in-hands.

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