

## Foreign Direct Investment, Institution and Economic Growth: Evidence from MENA Region

Subaran Roy<sup>1</sup> & Swetasree Roy<sup>2</sup>

### Abstract

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The paper explores the relationships between Foreign Direct Investment (FDI), institution and economic growth for a group of eighteen Middle East and North African (MENA) countries. For a sample of 18 countries covering from 2006 to 2012, we identify the positive and significant roles of foreign direct investment and institutions on the economic growth of these countries. Specifically, we find transparent government, less risk in operating business, and judicial independence provides positive support to growth in presence of FDI in these countries. We derive our results using panel data analysis. Our alternative estimation techniques and methods confirm the robustness of our findings.

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**Keywords:** Institutions; Foreign Direct Investment; Economic Growth; Middle East and North Africa

**JEL Classification:** C33, F20, F21, O40

### I. Introduction

Foreign direct investment (FDI) is desirable and necessary form of capital flow for the growth and development of emerging and developing countries. As Borensztein and Lee (1998) iterate that FDI is an important instrument for economic growth as it leads to superior technology transfer into the recipient countries from the developed nations. FDI made by multi-national corporations (MNC) is an important channel to acquire advanced technology by developing countries. FDI also creates technological externalities like knowledge spillovers and demonstration effect for domestic industry (Markusen and Venables 1999). Researches have also shown that FDI has positive effect on the domestic firms' total factor productivity and their propensity to export (Chung et. al. 1994). Overall, the beneficial effects of FDI on economic growth of a country are abundant.

Several factors have been identified by scholars, which are expected to increase foreign investment in a developing country (Elfakhani and Mackie 2015, Büthe and Milner 2008, Busse and Hefeker 2007). For example, management skills, economies of scale, innovative product technologies, market structure, market size and growth, infrastructure, exchange rate risks, labor costs are important determinants of FDI. Overtime developing countries have been making sincere efforts to attract as much foreign investments into their countries as possible. It is noted that FDI has increased considerably in the developing countries in past 25 years.

In developing countries with a GDP per capita of US \$ 9075 or less, share of foreign investment rose from a mere 0.1% in 1980 to more than 3% in 1999 (Busse and Hefeker 2007).

Besides economic indicators, lately, scholars have also identified political factors as important determinant of economic growth of a country. Political institutionalization, amount of democratic experience, political learning is some of the things that are seen to have some positive effect on the economic performance of a country. For example, Gerring, et. al. (2005) argue that longer a country has experience with democratic institutions, better would be the economic performance.

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<sup>1</sup> Assistant Professor, Abu Dhabi School of Management, Abu Dhabi, UAE. Email: [s.roy@adsm.ac.ae](mailto:s.roy@adsm.ac.ae)

<sup>2</sup> Assistant Professor, Zayed University, Abu Dhabi, UAE. Email: [swetasree.roy@zu.ac.ae](mailto:swetasree.roy@zu.ac.ae)

Similarly, Anderson and Marcouiller (2002) observe that bad institutions reduce the flow and volume of trade. At the same time, scholars also suggest that government stability, religious tensions, democracy, internal and external conflicts, bureaucratic quality of government, and civil and political rights as significant determinants of FDI inflows in developing countries (Busse and Hefeker 2007). It goes without saying that political climate of individual countries, as well as the region, affects investors' decision calculus. Henisz (2000) shows that foreign firms prefer wealthier countries with large population and credible political rules. Therefore, institutions, both social and political, will attract or deter the flow of FDI in a particular country, and also in the region. Present literature concentrates on various factors that attract or deter the flow of FDI into a country. There is no clear evidence in literature on whether or not this incoming FDI is helping in the process of growth in the country or not.

Although governments of low and middle-income countries realize the role of FDI in developing their countries, yet they failed to reap the maximum benefit from FDI. Thus an active area of research in this field is to investigate the essential ingredients/complementary assets required for FDI to deliver the most to these economies. In this context we investigate the role of institutions and FDI in the MENA region. In particular, we try to document the role of transparency of government policy making, judicial independence, business costs of crime and violence and FDI in pushing their countries on the growth trajectory for eighteen MENA countries.

MENA region has been experiencing very slow growth rate in the last few decades. This region appears to be among the least integrated regions of the world as far as trade and FDI is concerned. For oil exporting countries in this region growth has remained heavily linked to the energy sector. But for non-oil exporting countries like Morocco growth remains dependent on primary sector and so dependent on climatic conditions. The share of FDI to GDP was 0.83 percent for MENA region during 1990s compared to 1.51 in Eastern Europe, 1.66 in Sub-Saharan Africa, 2.35 in Latin America, and 2.82 in East Asia (Méon and Sekkat 2004). Furthermore, Méon and Sekkat (2004) also argue that FDI inflow in MENA region is highly dependent on availability of oil and political climate. They show that foreign investments in Iraq, Sudan and Algeria remained negligible due to unstable political conditions, while Saudi Arabia and Egypt has been attracting FDI over time. Although there has been relatively good inflow of FDI into countries in MENA region, it is not clear if these foreign investments actually helped these countries to improve their economic performance.

In this paper, we examine the role of FDI and institutions in the context of growth in eighteen MENA countries. Based on availability of data our time period for analysis is from 2006-2012. Besides common economic variables, we disaggregate the measure of regime type into three important institutional indicators – transparency of government policy-making, business costs of crime and violence and judicial independence. In almost all the model specifications, we find that the institutional indicators are positive and highly significant. We find transparent government, less risk in operating business, democracy provide positive support to growth in presence of FDI in the country. Our findings lend further support to the available literature that political institutions play an important role in developing a country with the help of foreign investment. On similar lines, we argue that foreign investment can play a pivotal role in fostering growth if stable government apparatus supports it.

## 2. Literature Review

Globally FDI inflows increased to \$1.24 trillion in 2010, of which more than half went to transitioning and developing countries. On the other hand, FDI inflows into Arab countries have remained disproportionate relative to their size in world economy (Bolbol and Fatheldin 2006). Meon and Sekkat (2004) argue that deteriorating quality of institutions is a serious impediment to attracting FDI in these countries. Contrarily, Bellos and Subasat (2012) point out that poor governance structure does not deter the flow of FDI; rather it encourages foreign investors to choose such countries. However, we do not see any systematic analyses on how the FDI that came into the country affected economic growth of the same. The contradicting evidences available in literature warrant further study on the role of institutions in attracting or deterring flow of FDI into an economy and fostering economic growth.

A long held belief amongst scholars and policy-makers has been that foreign direct investment fosters growth, which has been proved in the real world to a great extent. To cite a few, Balasubramium et. al. (1996) find in their study of forty-six developing countries that FDI enhances growth. Furthermore, they conclude that the growth enhancing effects of FDI are stronger in those countries that follow export promotion rather than import substitution. On similar vein, Borensztein et. al. (1998) and Xu (2000) find that FDI is more productive than domestic investment only when the host economy has a minimum threshold stock of human capital.

Besides human capital and trade regimes, literature suggests the level of financial development of an economy, developed financial markets, absorptive capacities also as important determinants of the positive effects of FDI on economic growth (Alfaro et. al. 2002, Girma 2005) Hence, it will not be too far-fetched to assume that like suitable economic climate, FDI can function best if supported by stable political institutions.

According to North (1990), institutions are set of rules and norms that formally limit free behavior of individual in a society, thereby shaping relationships between individuals. Given this definition of institution, one can assume that institutions are detrimental to FDI inflows as they restrict free behavior of foreign investors. For example, Gani and Al-Abri (2013) conclude that more than political environment, MNCs are concerned with business environment while choosing a location for investment. They find that less time required starting a business, reasonable time spent in enforcing contract, less time to register a property and less time to resolve insolvency significantly makes a country more attractive to a foreign investor. In a nutshell, less regulation attracts more investments.

On the other hand, Olson (1996) argued that if the legal system can objectively establish rules of game and enforce them, it would facilitate productive cooperation amongst market players. So investors should be looking for rules of law that support their investment plans. To cite, Mauro (1995) finds in his study that corruption has been a substantial reason for the economic failure of many developing countries. Gliberman and Shapiro (2002) also corroborate this point that good governance promotes FDI inflows into developing countries. Elfakhani and Mackie (2015) find in their analysis of BRIC countries that 40-47 percent of change in net FDI inflow can be accounted by social and political variables.

History bears evidence that institutions play a significant role in the growth and development of a country. Xu (2015) argue in the context of China that backward institutions of Communist China kept her far away from the world's development frontier in the post WW II period. On similar line Acemoglu et. al. (2014) conclude that democracy determines long-term economic growth. This is definitely supported when one observes that all the developed economies of the world are democracies, i.e., follow the rule of law. Supporting this claim further, according to PricewaterhouseCoopers Opacity Index (PWC 2001) absence of transparent government machinery increases the cost of capital directed towards a particular country. During the last three years of nineties decade "opaque" countries lost \$131 billion of FDI to more transparent countries (PWC 2001). Further, opaqueness in government policy making can also frustrate the domestic investor and they choose to move their capital to a freer and transparent country. For these countries, net inflow of FDI runs into negative. Therefore, one observes, in general, countries with more transparent government machinery are more likely to attract FDI into their countries. Additionally, foreign investments in these countries find supporting structures to foster economic growth and development of the country.

Gerring et. al. (2005) iterate that rule of law is the most important element in ensuring secured property rights and credibility of commitments towards government policies, which in turn, spurs growth in a market economy. Since 1980s many developing countries has been undertaking regulatory changes and encouraging more political openness. There has been a dramatic shift in the relation between the governments of developing countries and multinational companies. In order to keep up with their competitors, these countries have continued to provide tax incentives, rebates on custom duties, changes in investment policies, thereby, making investment easier (Elfakhani and Mackie 2015). For example, 208 new changes were made in FDI laws by 71 countries in the last decade to attract more inward investment. Nonetheless, it is yet to be examined that whether or not the incoming FDI has been a positive influence on economic growth of these countries. In this paper, we examine the role of transparency in government decision-making in fostering economic growth.

Judicial independence is an important requirement to ensure good governance. Staats and Biglaiser (2012) find that judicial strength and rule of law are important determinants of FDI in Latin American countries. Olson (1996) always argued in favor of a strong and independent legal system. He further iterates that there is no reliable contract enforcement unless there is a strong and impartial court system that can depend on the state to ensure that the terms of the contracts are truly executed. It is of utmost concern to foreign investors that the host country upholds their property titles enforce contracts in private transactions.

Besides protection of property rights and enforcing contracts, investors from abroad prefer to invest in country, which is already on a path of growth. Government credibility in upholding rule of law and property rights goes a long to ensure steady growth and development of a country (North and Weingast, 1989). An independent judiciary ensures that future changes of government policies will not affect business arbitrarily. A court-enforced constitutionalization of rights makes change more difficult, costly and slow, hence, boosts confidence of the investors (Staats and Biglaiser 2012). Moreover, strong judicial system also ensures political stability, which foreign investors always favor and is expected to enhance growth.

Another important institutional variable examined in this paper is business cost of crime and violence. Scholars found that countries at risk have trouble in attracting FDI (Jensen 2008, McAdam, McCarthy and Zald 1996). Semi-democracies are more at risk of internal unrest (Hegre et. al. 2001). But it will be wrong to conclude that these semi-democracies do not receive any FDI. A more pertinent problem these countries face is how the incoming FDI help in economic growth. Transitional democracies also face the problem of steady economic growth. Gerring, et.al. (2005) argues that longer a democracy has been in existence, better would be its economic performance. This is because with passing time democracies develop all four types of capital – physical, human, social and political – which promotes economic growth in a country. But for these fledgling democracies, there has not been enough lapsed time for their “capital” to mature (Gerring et. al. 2005). As a result, poor performance.

Research so far has remained focused on political stability or instability due to civil violence. There is almost no evidence or research done on how quintessential security level of a country can affect the decision calculus of a foreign investor. To be honest, we do not see a civil war, or for that matter even non-violent campaigns like protests, everyday. But there are many countries which experiences intermittent violence. For example, a car bomb explodes in Israeli market or in the subway during rush hour. Countries with poor internal law enforcement mechanism are seen to attract less foreign investment. For example, Venezuela, Honduras, Colombia, Nigeria receive a meager amount of FDI due to the high murder rate in these countries (Crime and Criminal Justice Statistics, UNODC 2014, Staats and Biglaiser 2012). Despite this fact there exist a clear dearth in the literature that examines the effect of internal security on decisions of foreign companies or firms.

The explanatory variable we use to measure internal security level of a country is business cost of crime and violence. If an investor feels that his property might be destroyed due to vandalism, they will not feel confident investing in that country. Investors are always very skeptical and wary about the sunk cost associated with overseas investments. Additionally, weak internal security is also an indicator of a weak state apparatus. A weak state automatically would be deficient in judicial impartiality and transparency in government decision-making. A quick eyeballing of the data on eighteen countries in MENA region confirms our assumption. There is a negative relationship between business cost of crime and violence and inward FDI. For example, countries like Israel, Egypt, Lebanon, Morocco, Tunisia, Saudi Arabia shows poor performance in reducing local crime and violence, which, in turn, has a direct effect on their attractiveness to foreign investors. Further it is observed that, although, Lebanon received a moderate share of FDI, the growth rate remained below average. One can assume that in absence of supporting institutions, FDI was unable to push this country on its growth trajectory. The paper is organized as follows: in the next section we discuss data, estimation, and results. In the final section we conclude with further research areas.

### 3. Data, Estimation and Results

Our study includes 18 countries from the Middle East and North Africa (MENA) region for the timeframe 2006 -2012. The time period chosen is entirely based on the availability of data for explanatory variables. We extract the measures of Institution from the Global Competitive Index Historical Dataset.<sup>3</sup>Primarily, the Institution data are relatively new which restricted us to look before the year of 2006. , We use *Transparency of Government Policymaking*, *Judicial Independence* and *Business Costs of Crime and Violence* to capture the role of Institutions. The values are provided on a scale of 1 to 7, where seven stands for the best and ones hows the worst-case scenario. Regarding FDI, there are various sources for data on FDI. One important and most commonly used source is World Development Indicators (WDI, 2014). We use net FDI inflow as a percentage of GDP. Net inflow of FDI, as measured in WDI, refers to net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor.

<sup>3</sup>Global Competitive Index Historical Dataset, 2005 -2014

It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. The GDP growth rates are annual growth rates. We include logarithm of initial GDP per capita in our entire regression analysis.

We also try to see the direct role of Infrastructure in enhancement of growth and reaping more benefits from FDI. Specifically, we employ the three different variables at a time. They are: a) Internet users (per 100 people), Mobile subscriptions (per 100 people) and Telephone lines (per 100 people). These are used as proxy of overall infrastructure of roadways, railways, airports, ports, highways, and bridges and of course to measure the standard of Information, Communication and Technology (ICT). It is assumed that a country with better facility in terms of ICT will have better quality of overall infrastructure. These variables are also widely used in the existing literature to measure the level of infrastructure of an economy (Jorgenson, 2001; Oliner and Sichel, 2004).

The other control variables which we use for the study are: Investment as a share of GDP, Oil rent as a share of GDP, Unemployment rate & Trade as a share of GDP. The measure of trade is sum of total exports and imports as a share of GDP.

**Figure 1: FDI as a share of GDP and GDP growth Rate for MENA Countries (2006-2012)**

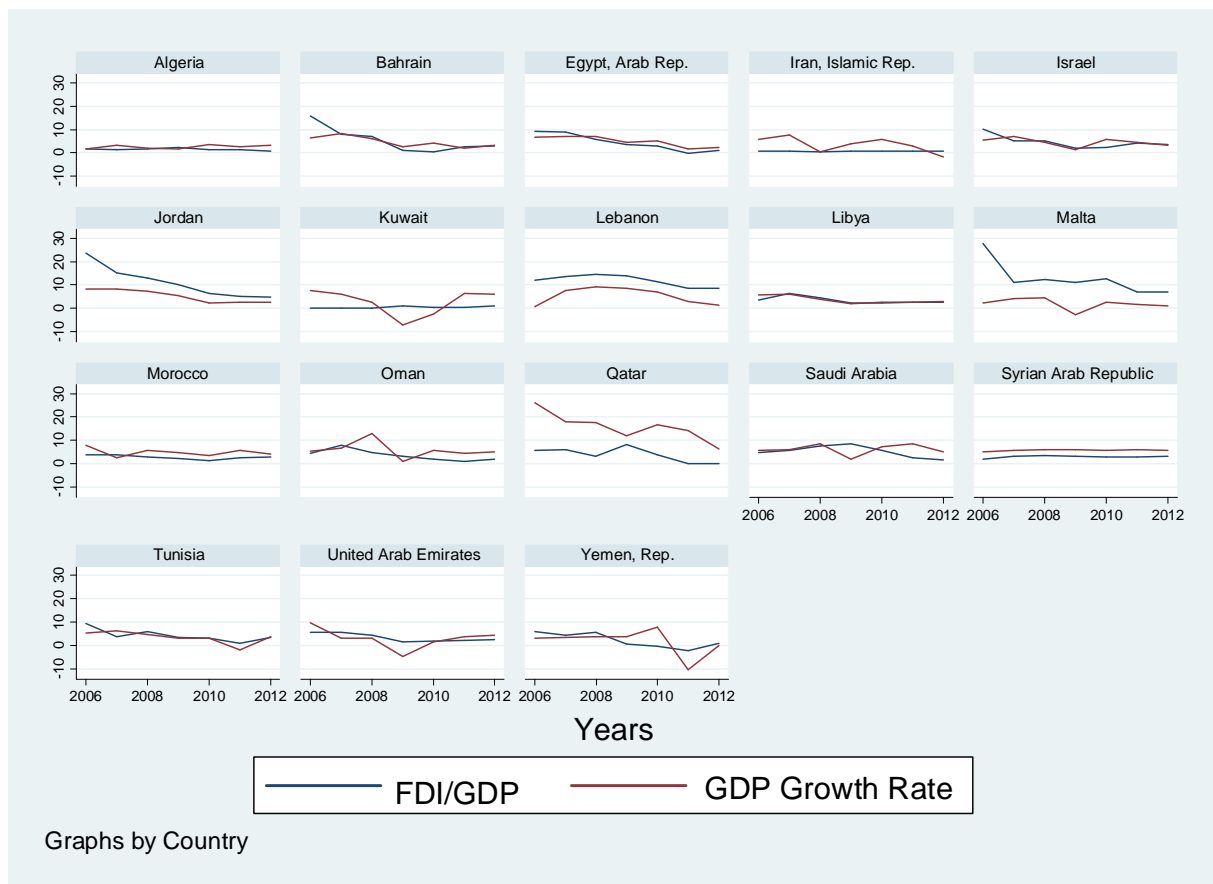


Figure 1 shows the FDI as Share of GDP & growth rate for each of country include in the study. It is distinct that most economies during our period of study experienced a decline in the net FDI inflow. The trend is in similar line with the global scenario. The global FDI flows decreased from 1473 billions of dollars to 1200 billion of dollar during 2005 and 2011.<sup>4</sup>

<sup>4</sup> Source: UNCTAD, World Investment Report, 2012.

According to UNCTAD report, FDI inflows to the Middle East region declined due to the cancellation of large-scale investment projects, especially in construction, when project finance dropped in the wake of global financial crisis, and were further aggravated by the unrest across the region. On the other hand in North Africa, inflows in particular to Egypt and Libya (which had been major recipients of FDI) decreased by significant amount due to their protracted political instability. Over all we can say economic stress, political instability and lower growth rates in major economies resulted in a downward trend not only for these economies but globally. In terms of economic growth the picture is quiet similar to the FDI trend.

**Table 1: Descriptive Statistics**

Variables	Mean	Standard Deviation	Minimum	Maximum
FDI as a share of GDP	4.70	4.66	-2.25	27.87
GDP Growth Rate	4.78	4.32	-10.48	26.17
Investment as a share of GDP	23.70	7.39	10.65	46.81
Oil Rent as a share of GDP	19.86	18.26	0	63.22
Unemployment Rate	6.39	5.21	1.2	18.5
Transparency of government policymaking, 1-7 (best)	4.07	1.00	1.00	5.63
Judicial independence, 1-7 (best)	4.24	1.20	1.66	6.32
Business costs of crime and violence, 1-7 (best)	5.27	1.32	1.00	6.71
Internet users (per 100 people)	35.52	22.62	1.25	88.10
Mobile cellular subscriptions (per 100 people)	97.05	41.06	14.41	193.45
Telephone lines (per 100 people)	19.46	13.08	4.17	58.38

Table 1 summarizes the descriptive statistics for the major variables used in our study. Our first look at the dataset reveals considerable variation over time and across countries in all of our variables. For example, Malta attracted the maximum amount of FDI as a share of GDP (27.87) while Qatar experienced highest economic growth rate (26.17) during 2006 -2012. On the other side the size of the economy of Yemen has actually reduced over this time. The average value for FDI as a share of GDP is 4.70 and the average for the GDP growth rate is 4.78. In all three measures of Institutions, Qatar consistently gained the highest position and Yemen ended up with lowest in all three occasions. The mean values for the Institution variables range from 4.04 (Transparency of Government policy making) to 5.27 (Business costs of crime and violence). We also note that Qatar has the highest number of Internet users per 100 people (88.10) and Saudi Arabia has the largest number of Mobile cellular subscriptions per 100 people (193.45). Overall we see considerable variation in the data set. We now turn to the causal linkages among FDI as a share of GDP, Institutions and GDP growth for these countries.

In order to conduct our empirical analysis we employ random effects. There is a pool of literature which indicates, that, Hausman test is not a reliable tool for identifying bias in a typically sized samples: nor does it support in evaluating the balance of bias and variance implied by the two modelling - fixed and random approaches (Clark and Linzer 2012). In their simulation study, they illustrate that in any specific dataset where there are few observations per unit, similar to our dataset, random effects are suitable compared to the fixed. In addition, an associated shortcoming of fixed effects model is that they need the estimation of a parameter for each unit – the coefficient on the dummy variable. This has the potential to significantly decrease the model's power and the standard errors of the coefficient estimates considerably increase. For Example, in our study we observe six observations per country, but have nineteen countries in our sample, we will have concern estimating the relationship between the covariate of interest and the outcome, simply because the unit fixed effects will already explain most of the variation in the dependent variable. Random effects models do not involve the estimation of a set of dummy variables but it uses the mean and standard deviation of the distribution of unit effects, saving many degrees of freedom. Finally, when random effects model estimates are used the model estimates the distribution of unit effects – including the mean effect – in the broader underlying population. Thus, it makes an appropriate case for using random effects over the other popular method.

The random effects model can be written as:

$$Y_{it} = \alpha + X'_{it} \beta + Z'_i \gamma + v_{it}, \text{ where } v_{it} = c_i + u_{it}. \quad (1)$$

Where  $Y_{it}$  is the dependent variable,  $X'_{it}$  is a  $K$ -dimensional row vector of time-varying explanatory variables and  $Z'_i$  is a  $M$ -dimensional row vector of time invariant explanatory variables excluding the constant,  $c_i$  is an individual specific effect and  $u_{it}$  is an idiosyncratic error term. Random effect model assumes that individual specific effect is random variable that is uncorrelated with the explanatory variables of all past, current and future time periods of the same unit i.e.,  $E(c_i | (X_i, Z_i)) = 0$ .

In our investigation, we start with the following auxiliary equation:

$$(GDPGROWTH)_{it} = \alpha + \beta_1 \left(\frac{GDP}{POP}\right)_{it} + \beta_2 \left(\frac{INV}{GDP}\right)_{it} + \beta_3 \left(\frac{FDI}{GDP}\right)_{it} + INST_{it} + \beta_4 \left(\frac{FDI}{GDP}\right)_{it} \times INST_{it} + \beta_5 \left(\frac{TRADE}{GDP}\right)_{it} \dots (2)$$

Where,  $(GDPGROWTH)_{it}$  stands for annual growth rate,  $\left(\frac{GDP}{POP}\right)_{it}$  reflects the logarithm of initial GDP per capita for country  $i$  in time  $t$ .  $\left(\frac{INV}{GDP}\right)_{it}$ ,  $\left(\frac{FDI}{GDP}\right)_{it}$ , &  $\left(\frac{TRADE}{GDP}\right)_{it}$  represent Investment as share of GDP, FDI as share of GDP & Trade as a share of GDP respectively.  $INST_{it}$  is the measure of Institution as mentioned earlier.<sup>5</sup> We start our estimation procedure with pooled cross sectional followed by Feasible Generalized Least Square.

Table 2 (refer to Column 1) shows that FDI inflows have significantly contributed to the economic growth of these countries in our dataset. Specifically, a 1-percentage point increase in FDI raises growth by 0.4%. Moreover, the magnitude of the coefficient estimate of FDI (0.4486) is greater than the estimate of domestic investment (0.1264). This result aligns with the current research findings. Unlike domestic investments, research show the benefits of FDI include but not limited to skills, spillover effects, managerial efficiency, economies of scale and technologies that comes along with the capital in FDI (Blomström and Sjöholm 1999, Borensztein et. al. 1998 and Alfaro et. al. 2002). As expected, coefficient estimate of trade is positive and significant. Though very significant at 1 percent level, the effect of international trade on GDP growth is not strong (0.0410). This marginal effect can be attributed to the fact that protective barriers in the MENA region are presently the highest in the world and seem very slow at coming down (Basu and Srinivasan, 2002). However, our variable of interest Institution fails to gain any statistical significance in the estimation. This may be due to the pooled cross sectional technique, which has its own pitfalls. Thus in column 2 (refer to Table 2) we report the results of Feasible Generalized least Square results.

First glance on the results indicate improved estimates both in terms of magnitude and in terms of significance. FDI as a share of GDP has now more reasonable estimate of 0.3484 and remains statistically significant. The estimate of FDI is still greater than the domestic investment (0.1489). It probably indicates the beneficial effects of FDI are far more important in accelerating growth compared to local investment. Coefficient estimate of trade is quite similar to previous estimation. In addition, institution variable turns out to be positive and statistically relevant. The interpretation goes the same way as discussed in the previous section that better, efficient institutions are important elements of growth. But, we fail to capture evidence in our results that better institutions combined with efficient FDI promote growth.. Specifically, the interaction variable (FDI and Institutions) remains insignificant. Although we have FDI and Institution variable with expected signs and statistical significance, the interaction terms show no sign of significance. This remains as a point of future research where we intend to find if there is any minimum or threshold level of FDI and level of Institutional development beyond which the interaction effect becomes significant and it contributes to growth in a positive way. In other words, we will like to investigate for any critical mass that is associated with FDI and Institution that can trigger off the third route (interaction term) to impact growth. We also note that that the result from this estimation indicates 1 percentage point increase in Institution variable translates to 0.01% contribution to growth.

<sup>5</sup> In our calculation, we quantify Institution following the standard Cobb-Douglas Production function. Specifically,  $Institution = Kx^\alpha y^\beta z^\gamma$ , where  $K$  is constant and  $\alpha, \beta$  and  $\gamma < 1$ .  $x, y$  and  $z$  stands for our three measures of Institution. For simplicity, we assume  $\alpha = \beta = \gamma$ .

This relatively low magnitude of the estimate seriously raises the issue that these countries may have a long way to go in terms of reaping more benefits from efficient institutions. Alternatively, we can say that these institutions itself has a significant trajectory to cover to become efficient. We will try to document these in our future studies. In search of better results, next we employ panel estimation with random effects to our dataset.

**Table 2: Impact of FDI and Institutions on Economic Growth of MENA Countries**

Variables	Pooled (1)	FGLS (2)	Panel- RE (3)	Panel-Het. (4)	Panel- Het & Contemp. Corr. (5)
GDP/POP	0.0001** (0.03)	0.0001*** (0.00)	0.0001*** (0.00)	0.0001** (0.04)	0.0001*** (0.00)
INV/GDP	0.1264** (0.02)	0.1489*** (0.00)	0.1264** (0.02)	0.1372*** (0.00)	0.1489*** (0.00)
FDI/GDP	0.4486** (0.01)	0.3484** (0.03)	0.4486** (0.02)	0.4755*** (0.00)	0.3484** (0.03)
INST.	0.0123 (0.44)	0.0175* (0.09)	0.0123 (0.35)	0.0267*** (0.00)	0.0175* (0.10)
FDI/GDP×INST.	0.0011 (0.52)	0.0004 (0.76)	0.0011 (0.48)	0.0012 (0.27)	0.004 (0.79)
TRADE/GDP	0.0410*** (0.00)	0.0489*** (0.00)	0.0410** (0.00)	0.0431*** (0.00)	0.0489*** (0.00)
CONSTANT	1.1687 (0.53)	1.2279 (0.42)	1.1687 (0.56)	0.4328 (0.72)	1.227 (0.42)
N	126	126	126	126	126
Wald chi <sup>2</sup> (6)	156.11	90.20	49.74	77.69	69.81
Prob.>chi <sup>2</sup>	0.00	0.00	0.00	0.00	0.00

The benchmark regression (refer to Column 3) shows a statistically significant FDI coefficient with positive sign but larger magnitude compared to the previous estimation. Trade, Investment and initial GDP retains their statistical significance, direction and magnitude. The institution variable loses its significance. Yet we have to keep in mind a likely drawback of the estimation may be due to presence of heteroskedasticity in the panel such that they may have differing variances across ranges or subsets of nations. In other words, nations with higher values on variables tend to have less restricted and, hence, higher variances on them. For example, a large country may have more volatile as well as higher FDI compared to another country. This means that the variance in FDI will tend to be greater for larger nations with huge amount of FDI than for smaller economies. Thus, in order to correct for this error we account for this in our next estimation technique (refer to column 4), where we use panel corrected for heteroskedasticity. This amendment in our analysis shows that Institution variable is still an important aspect of growth even in presence of FDI. The coefficient estimate is positive and significant. However, the interaction effect between FDI and Institutions remains insignificant. The other variables like trade, investment and initial GDP continue to play a vibrant role in growth.

Finally, in column 5 we account for the contemporaneous correlation of the errors in presence of heteroskedasticity. We follow Beck and Katz (1995) method to correct for this.<sup>6</sup> The improvement in estimation does not distort our previous findings although the coefficient estimates for institution and FDI shrink in their magnitude. This result evidently shows that both FDI and institutions through better governance can ensure growth even in autocratic countries like the ones in our dataset. It also needs to be mentioned that trade also plays an important role. However, in comparing the coefficients we notice that FDI has the strongest impact on these economies in terms of growth.

<sup>6</sup>Beck and Katz (1995) argue that since it is not possible to provide analytical formula for the degree of over confidence introduced by the Parks-Kmenta method, they provide evidences from Monet Carlo experiments using simulated data. At the same time, by using Monte Carlo analysis they show that OLS with PCSE allow for accurate estimation of variability in the presence of the TSCS error structures.



Nevertheless, the common argument against our results can be exclusion of the oil rent as a control variable given the fact most economies are somewhat still dependent oil. In order to further strengthen our findings we augment our benchmark regression by including other macroeconomic variables. Specifically table 3 conducts the robustness check of our results.

**Table 3: Impact of FDI and Institutions on Economic Growth of MENA Countries (Robustness of Results)**

Variables	Pooled (1)	FGLS (2)	Panel- RE (3)	Panel-Het. (4)	Panel- Het. & Contemp. Corr. (5)
GDP/POP	0.0001*** (0.00)	0.0001* (0.10)	0.0001*** (0.00)	0.0001* (0.10)	0.0001*** (0.00)
INV/GDP	0.1359*** (0.00)	0.1240*** (0.00)	0.1327** (0.04)	0.1240*** (0.00)	0.1359*** (0.00)
FDI/GDP	0.4855*** (0.00)	0.4649*** (0.00)	0.4844** (0.02)	0.4649*** (0.00)	0.4855** (0.01)
INST.	0.0354*** (0.00)	0.0358*** (0.00)	0.0268* (0.06)	0.0358*** (0.00)	0.0354*** (0.00)
FDI/GDP×INST.	0.0023 (0.13)	0.0017 (0.16)	0.022 (0.19)	0.0017 (0.16)	0.0023 (0.19)
TRADE/GDP	0.0331*** (0.00)	0.0358*** (0.00)	0.0239 (0.15)	0.0358*** (0.00)	0.0331*** (0.00)
OILRENT/GDP	0.0068 (0.76)	0.0190 (0.30)	0.0301 (0.32)	0.0190 (0.30)	0.0068 (0.77)
UNEMP.	0.057 (0.50)	0.0042 (0.94)	0.0458 (0.67)	0.0047 (0.94)	0.0575 (0.48)
INFRASTRUCTURE	0.0688** (0.00)	0.0385** (0.03)	0.0605** (0.01)	0.0385** (0.03)	0.0688** (0.01)
CONSTANT	0.0340 (0.98)	0.2776 (0.88)	0.5053 (0.86)	0.2776 (0.88)	0.0340 (0.99)
N	126	126	126	126	126
Wald chi <sup>2</sup> (6)	177.31	90.30	55.45	90.30	88.24
Prob.>chi <sup>2</sup>	0.00	0.00	0.00	0.00	0.00

We include oil rent as a share of GDP, unemployment rate and infrastructure in our set of control variables. The oil rent is taken in to consideration since most of the countries in the sample have dependency on oil rents in their GDP. The purpose of unemployment variable is to take account of overall monetary policy situation and inflation rate. Finally, infrastructure is introduced to capture the role of overall road, railways, airport and ICT facility, which are considered fundamental requirements for economic growth. The results from table 3 indicate that our variables of interest FDI and institutions still leave a statistically significant impact on growth across all estimation techniques. The interaction term fails to gain any significance. Rather, infrastructure has significant contribution in growth. Overall, we see that our results still hold true even after expanding the set of control variables by relevant candidates. In fact the coefficient estimate of FDI increases from 0.3484 (column 5 table 2) to 0.4855 (column 5 table 3) and the estimate for institution variable rises to 0.0354 (column 5 table 3) from 0.0175 (column 5 table 2). Thus, as discussed earlier, FDI is important for growth but the complimentary assets like institutions are equally important. We interpret this as Capital-Institution complementarity in the context of economic advancement. Our results suggest that transparency in government decision-making, judicial independence, business costs of crime and violence and FDI are determinant of growth for our sample of countries.

#### 4. Conclusion

This research corroborates the long held belief in economic growth literature that foreign direct investment fuels growth. It is supported by different sophisticated methods of analyses and model specification. FDI retained itself as a significant contributor of economic growth. Nonetheless, the most important contribution of this paper is in pointing out that socio-political institutions should provide the supporting platform for FDI to contribute fully.

We find throughout in all parts of our quantitative analysis that good and stable institutions positively and significantly push a country on the path of economic growth. Although, there has been some research already done in this area, our paper reiterates the point for MENA region. Since we disaggregate the institution variable, now we are more confident in pointing out which aspects or agencies of institutions policy makers should focus on.

In order to reap the best out of foreign investments in a country, decision-makers should aim at establishing more and more democratic and credible institutions. Transparency in government decision-making boosts confidence in foreign investors. They are less scared of overseas sunk costs if they feel that an independent judiciary protects their rights. If situation demands, foreign companies can move the domestic courts for fast and fair decisions. So if a developing country aims to attract foreign investments and make best out of it, they should keep the judicial system as far as possible from the political clout. This not only wins foreign investment, it also helps in efficient functioning of the economy. Finally, our third variable of concern was business cost of crime and violence. We found that an increasing risk of crime and violence will not only dissuade foreign companies from investing in that country; it would also hinder the country from achieving economic growth. In countries with strong law enforcement mechanisms, FDI is more likely to perform better and act as a catalyst for economic growth.

There exists a strong Capital-Institution complementarity, which decision makers should consider. However, it should be borne in mind that institutional development is not limited to only these three areas examined in this paper. For any country, to achieve sustainable economic growth, decision-makers should always focus on ways to establish and support stable and credible institutions. We found in all our model specifications that variables measuring FDI (as a share of GDP) and Institutional performance were significant and in expected directions yet individually. We added the interaction effect of these two variables to get an even clearer picture. However, the interaction term failed to reach significance in all forms of our analyses. This remains as a future area of inquiry. To conclude, we state that rather than focusing our attention on regime type – democracy or autocracy – focus should be given on quality of institutions that prevails in a country which is ultimately the predictor that whether a country will grow with FDI or not.

## Reference:

- Acemoglu, D, S. Naidu, P. Restrepo, and J.A. Robinson (2014) "Democracy does cause growth"; MIT Working Paper.
- Alfaro, L., A. Chanda, S. K. Ozcan, and S. Sayek (2004), "FDI and Economic Growth: The Role of Local Financial Markets," *Journal of International Economics*, Vol. 64, pp. 89-112.
- Anderson, James and Douglas Marcouiller (2002) "Insecurity and the Pattern of Trade: An Empirical Investigation"; *The Review of Economics and Statistics*, Vol. 84 (2) pp. 342-352, May.
- Balasubramanyam, V. N., M. Salisu, and David Sapsford (1996), "Foreign Direct Investment and Growth in EP and IS countries," *Economic Journal*, Vol. 106, pp. 92-105.
- Basu, A., Srinivasan , K., (2002) "Foreign Direct Investment in Africa – Some case studies": IMF working paper, wp/02/61.
- Beck, N. and J. N. Katz (1995) "What to do (and not to do) with time-series cross-section data": *American Political Science Review*, Vol. 89, pp. 634- 47.
- Borensztein, E., J. De Gregorio, and Jong-Wha Lee (1998), "How Does Foreign Direct Investment Affect Economic Growth?," *Journal of International Economics*, Vol. 45, pp. 115-135.
- Braithwaite, Alex, Jeffrey Kucik and Jessica Maves (2014) "The Cost of Domestic Political Unrest"; *International Studies Quarterly*, Vol. 58.
- Busse, Matthias and Carsten Hefeker (2007) "Political Risk, Institutions and Foreign Direct Investment"; *European Journal of Political Economy*, Vol. 23, pp. 397-415.
- Büthe, Tim and Helen V. Milner (2008) "The Politics of Foreign Direct Investment into Developing Countries: Increasing FDI through International Trade Agreements?"; *American Journal of Political Science*, Vol. 52 (4), October, pp. 741-762.
- Clark, Tom S, and Drew A Linzer. (2012) "Should I use fixed or random effects?" Emory University, available at <http://polmeth.wustl.edu/mediaDetail.php?docId=1315>
- Crime and Criminal Justice Statistics, U.N. Office of Drug and Crime, 2014.

- Daniel E. Sichel, and Stephen D. Oliner (2004) "[How fast do personal computers depreciate? concepts and new estimates](#)," *Finance and Economics Discussion Series*, Board of Governors of the Federal Reserve System.
- Elfakhani, Said and Wayne Mackie (2015) "An analysis of net FDI drivers in BRIC countries"; *Competitiveness Review*, Vol 25, No. 1.
- Gani, Azmat and Al Mukhtar Saif Al-Abri (2013) "Indicators of business environment, institutional quality and foreign direct investment in Gulf Cooperation Council (GCC) countries"; *International Review of Applied Economics*, Vol. 27 (4), pp. 515-530.
- Gerring, John, Philip Bond, William T. Brand and Carola Moreno (2005) "Democracy and Economic Growth: A historical perspective"; *World Politics*, Vol. 57, April.
- Girma, S. (2005), "Absorptive Capacities and Productivity Spillovers from FDI: A Threshold Regression Analysis," *Oxford Bulletin of Economics and Statistics*, Vol. 67 (3), pp. 281-306.
- Global Competitive Index Historical Dataset, 2005- 2014.
- Globerman, Steven and Daniel Shapiro (2002) "Global Foreign Direct Investment Flows: The Role of Governance Infrastructure"; *World Development*, Vol. 30 (11) pp. 1899-1919, November.
- Hegre, Havard, Tonya Ellingsen, Scott Gates and Nils Gleditsch (2001) "Towards a democratic civil peace? Democracy, Political Change, and Civil War, 1816-1992"; *American Political Science Review*, Vol. 95 (1).
- Henisz, Witold J. (2000) "The Institutional Environment for Multinational Investment"; *Journal of Law, Economics and Organization*, Vol. 16 (2), pp. 334-364, October.
- Jensen, Nathan (2008) "Political Risk, Democratic Institutions and Foreign Direct Investment"; *The Journal of Politics*, Vol. 70 (4).
- Jorgenson, Dale W. (2001) "Information Technology and the U.S. Economy": *The American Economic Review* Vol. 91 (1), March 2001, pp. 1-32
- Markusen, James and Anthony Venables (1999) "Foreign Direct Investment as a Catalyst for Industrial Development"; NBER Working Paper No. 6241.
- Mauro, Paolo (1995) "Corruption and Growth"; *The Quarterly Journal of Economics*, Vol. 110 (3), pp. 681-712, August.
- McAdam, Douglas, John McCarthy and Mayer Zald (1996) *Comparative Perspectives on Social Movements: Political Opportunities, Mobilizing Structures and Cultural Framings*. Cambridge University Press.
- Méon, Pierre-Guillaume and Khalid Sekkat (2004) "Does the quality of Institutions Limit the MENA's integration in the World Economy?"; *World Economy*, Vol. 27 (9), pp. 1475-1498.
- Moon, Chungshik (2015) "Foreign Direct Investment, Commitment Institutions and Time Horizon: How some autocrats do better than others"; *International Studies Quarterly*, Vol. 59, pp. 344-356.
- North, Douglas (1990) *Institutions, Institutional Change and Economic Performance*. New York: Cambridge University Press.
- North, Douglas and Barry Weingast (1989) "Constitutions and Commitment: The Evolution of Institutional and Governing Public Choice in Seventeenth Century England"; *The Journal of Economic History*, Vol. 49.
- Nunnenkamp, Peter and Julius Spatz (2004) "FDI and Economic Growth in Developing Countries: How relevant are host-economy and industry characteristics"; *Transnational Corporations*, Vol. 13 (3), December.
- PWC (2001) *PricewaterhouseCoopers Opacity Index: A project of the PricewaterhouseCoopers Endowment for the Study of Transparency and Sustainability*.
- Staats, Joseph and Glen Biglaiser (2012) "Foreign Direct Investment in Latin America: The Importance of Judicial Strength and Rule of Law"; *International Studies Quarterly*, Vol. 56, pp. 193-202.
- UNCTAD, *World Investment Report*, 2012.
- World Development Indicators, 2014
- Xu, B. (2000), "Multinational Enterprises, Technology Diffusion and Host Country Productivity Growth," *Journal of Development Economics*, Vol. 62. pp. 477- 493.
- Xu, Chenggang (2015) "China's Political-Economic Institutions and Development"; *CATO Journal*, Fall 2015, Vol. 35 (3).
- Zurawicki, Leon (2003) "Nothing to hide, everything to gain: Transparency and FDI"; Paper presented at OECD: Global Forum of International Investment; Nov 17-18, Johannesburg, South Africa.