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June 2016

A G D I Working Paper

WP/16/015

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AGDI Working Paper

Research Department

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Abstract

This paper examines the relationship between Foreign Direct Investment (FDI) and per capita Gross Domestic Product (GDP) in the Middle East and North Africa (MENA) region for the period 1985-2009. The empirical evidence is based on an endoeneity-robust Generalised Method of Moments. Results show that the effect of FDI on per capita income in the Gulf Cooperation Council (GCC) countries is positive but negative in Non-GCC countries. Results also reveal that in contrast to the GCC countries, the financial openness policy in the Non-GCC countries have reduced the benefits of FDI on growth, this finding is explained by the fact that most of the Non-GCC countries that have engaged in the process of financial reforms have poor quality of institutions. These results are confirmed with both annual data and five year average data.

1- Introduction

The last four decades have been accompanied with rapid growth in the world economy. This growth has been driven in part by the ever increasing Foreign Direct Investment (FDI) inflows. According to the World Investment Report established by the United Nations Conference on Trade and Development (UNCTAD) in 2012, global FDI inflows reach $1.9 trillion in 2007. Although, the Middle East and North Africa (MENA) region has received far less FDI inflows than other regions in the world, except for Sub-Saharan Africa (see Figure 1) due in part to the weak institutions and political instability (Gammoudi and Cherif, 2015, 2016), the share of FDI in Gross Domestic Product (GDP) has increased considerably. For example, it moved from 0.81 percent in 1970 to reach 4 percent in 2009, a fourfold increase (see Figure 2). It has helped in the perspective that in the late 1980s, many countries in the region have realized many liberalization reforms in line with programs prescribed by international institutions such as the International Monetary Fund (IMF) and the World Bank in order to encourage FDI inflows and promote economic growth, development and poverty reduction. These reforms include new or restructured investment legislation, incentives such as tax exemption and relaxed restrictions on foreign ownership.

According to Organization for Economic Co-operation and Development (OECD) report (OECD, 2007) all MENA countries have free zones except Algeria, Qatar and Saudi Arabia. Turkey, Egypt and Kuwait have all reduced corporate taxes by up to 25% (UNCTAD, 2004). Liberalization of FDI inflows was considered by several international institutions and policy makers as the first step towards economic liberalization to promote economic growth . Moreover it is comparativelymore stable than other types of capital inflows (foreign portfolio investment and bank flows). Jeffry Sachs, special adviser to the then Secretary General Kofi Annan on the Millennium Development Goals (September 22, 2004) said that *"Many of the poorest countries are simply being bypassed by globalization, and the promises of the rich countries are not being fulfilled. We need more globalization that reaches poor countries, and more successful globalization, not less. The kind of globalization that the poorest countries are feeling is brain drain. They are not seeing inflow of foreign investment. FDI is so important because it is one of the strongest engines for growth in the developing world"*(Katsioloudes and Hadjidakis, 2007, p. 214).

The fundamental concern about whether FDI helps to improve economic growth has been discussed extensively in the economic literature. Many policy makers and academics contend that FDI can has important positive effects on a host country's growth as it is

largely assumed to be a provider of capital, the creator of jobs and the supplier of foreign currency. In addition it is considered to be the main conduit of new technologies spillovers between countries (Javorcik, 2004, Gorg and Greenaway, 2004, Aitken and Harrison, 1999, Borensztein et al., 1998).

Although, there is a widespread belief among economists that FDI has a positive effect on economic growth in host countries, the nature of the relationship is still open to debate in empirical studies. This controversy has prompted research on the evaluation of the possible pre-conditions under which FDI may spur growth. From a theoretical point of view, countries must reach a certain threshold in terms of institutional and financial openness before they can expect to benefit from FDI. However, very little attention has been paid by scholars to these arguments(Villegas-Sanchez, 2009,Alfaro et al., 2004, Makki and Somwaru, 2004).

This paper seeks to contribute to this emerging body of knowledge by investigating the relationship between FDI and per capita income in the MENA region over the period 1985 -2009. This study is mainly motivated by the factthat the growth performance of the MENA region is highly dependent on oil prices and it is important to diversify income sources by developing non-oil industries (Mina, 2007). Our study is not the first to investigate the impact of FDI on economic development in the MENAregion(Brahim and Rachdi, 2014). However, it differs from previous ones with respect to three main points: first, it offers a more comprehensive picture of the growth effect of FDI in promoting economic growth in the MENA region by examining how financial openness and political stability can influence the FDI-growth nexus in the region.

Second, to examine the relation between FDI and growth in the MENA region, previous studies have provided an analysis of the MENA region as a whole (Brahim and Rachdi,2014, Mina, 2012). In this paper, we hypothesize that this effect is significantly different in Gulf Cooperation Council (GCC) and Non-GCC countries. Figure 3 shows that during the period under investigation, the averageper capita GDP (in PPP terms) in the GCC countries was higher than for Non-GCC countries. Finally, although some studies have examine the interection between FDI and institutional quality in boosting economic growth, they haveneglegted to take into account the degree of financial openness which can alter this relation(Brahim and Rachdi, 2014, Mina, 2012, Jude and Levieuge, 2015, Bénassy-Quéré et al., 2005; Belloumi, 2014).

The rest of this paper is organized as follows. Section 2 surveys the theoretical and empirical literature of the relationship between FDI and growth. Section 3 outlines the

methodological framework and data used in the empirical study. Section 4 discusses the regression results while Section 5 draws conclusions.

2-Relationship between FDI and economic growth
2.1 Theoretical underpinnings

From the theoretical point of view, scholars distinguish between three theories which have been used to study the impact of FDI on economic growth (Toone, 2013), namely: *dependency theory, classical theory* and *middle path theory*.

In its extreme form, the *dependency theory* is based on the Marxist tenet, which sees globalization in terms of the spread of market capitalism, the exploitation of cheap labour and resources in return for the obsolete technologies of developed countries. Proponents of *dependency theory* maintain that FDI has a negative impact on developing countries and provide three main explanations to substantiate the argument. First, the benefits of FDI are unequally distributed between multinational corporations and host countries in favor of the former. Foreign capital absorbs local assets that could have been used to finance internal development, this means that foreign firms exploit profit-making opportunities in developing countries but expatriate the profit to the wealthy host countries (Jensen, 2008).

Second, multinational corporations create distortions within the local economy by crowding-out domestic investment; employing inappropriate capital-intensive technologies leading to unemployment; worsening the distribution of income; and altering consumer tastes and undermining the local culture (Taylor and Thrift, 2013). Third, there is a potential "alliance" between foreign capital and local elite (political and economic elites), each of these actors use their power and influence to gain from the alliance. The citizens of host countries are excluded from this alliance and suffer greatly from the distorted policies created by this system (Jensen, 2008).

Advocates of the *classical theory* advance the claim that FDI contributes to the economic development of host countries through a number of channels. These include, the: transfer of capital, advanced technological equipment and skills; improvement in the balance of payments; expansion of the tax base and foreign exchange earnings through FDI exports; creation of employment, infrastructural development and integration of the host economy into international markets (Toone, 2013). Much of these views can be seen in the vast literature on "spillover[1]": a concept that occurs " *when the entry or presence of multinational corporation increases productivity of domestic firms in the host country and the*

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[1] See Gorg and Greenaway (2004) for a review of a "spillover" literature

multinationals do not fully internalize the value of these benefits" (Javorcik, 2004, p. 607).Spillovers can come in many forms, such as technologies, working methods, and management skills, but they have one thing in common, they boost productivity.

The so-called "*middle path*" combines the enthusiasm on the benefits of FDI in the classical theory and the caution on its possible harms in the dependency theory. The theory calls for a mixture of intervention (regulation) and openness in dealing with foreign investment and cautions against too much openness and too much regulation or intervention. In this sense, the objective of the host country is to attract FDI while carefully regulating its effects. According to UNCATD (1998), FDI is necessary and useful to least developed countries. However, these countries should retain the discretion to guide investment into selected sectors and geographical areas and to limit the entry of investment which is likely to have adverse effects on its balance of payment or its overall development objectives and efforts.

2.2 Empirical evidence

Many policy makers and academics contend that FDI is one of the strongest engines for growth in the developing world. Many studies have been documented in this respect, with emphasize on the impact of FDI on economic growth in host countries. The literature related to this subject is so vast that it is difficult to provide a comprehensive review of it. There is a large number of micro based studies, such as Aitken and Harrison (1999) that analyze the productivity-enhancing effect of FDI on individual firms[2]. In this section we review the main contributions of macro level studies. The discussion is organized around the econometric methodologies, which include respectively the cross-section regression, time series and dynamic panel analysis. Within these sets of methods, the impact of FDI on economic growth is analyzed, with and without conditions or constraints.

Cross section evidence on FDI and growth

Cross-country studies generally suggest a positive relation between FDI and growth. However, the growth impact seems to be conditional on a number of factors, such as the level of per capita income, human capital, trade openness, and financial market development.

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[2] . For an overview of the micro based studies, see Keller (2004).

Studies using Ordinary Least Squares (OLS)

Blomstrom et al. (1992) based on OLS and the generalized instrumental variable (GIV) estimations in a sample of 78 developing countries and 23 developed countries over the period 1960 -1985, found that FDI contributed positively to economic growth in higher income developing countries but not in lower income countries. In this study, the authors used the ratio of FDI to GDP, measured in current dollars as a proxy of FDI and they added the following variables: the average ratio of the number of students enrolled in secondary education to the population of the appropriate age groups; a variable to assess the dynamics of prices; ratio of fixed capital formation as a percentage of the GDP; change in labor force participation rate and the average ratio of import of machinery and transport equipment to GDP.

Balasubramanyam et al. (1996) used the OLS estimation method and concluded that FDI had a greater impact on countries that promote exports of products than on countries that have import substitution policies. The sample used in this study covers 46 developing countries over the period 1970-1985. The results are based on an equation aimed at explaining growth using the following variables: labor input, domestic capital stock, stock of foreign capital and exports.

Borensztein et al. (1998) examine the effect of FDI on economic growth by using the Seemingly Unrelated Regression (SUR) technique[3] in the case of 69 developing countries over the period 1970-1989. Authors in this study include: initial GDP; government consumption; black market premium on foreign exchange; measures of political instability and political rights; a proxy variable for financial development; inflation rate; a measure of the quality of institutions; human capital; FDI and an interaction term built with FDI and human capital. They suggest that FDI contributed to economic growth through the transfer of technology. However, the higher productivity of FDI holds only when the host country has a minimum threshold stock of human capital.

Alfaro (2003) uses a cross-section analysis on 47 countries between 1980 and 1999 in order to evaluate the role of FDI on economic growth. More precisely, she attempts to determine whether FDI in the primary, manufacturing, and services sectors exerts different effects on a country's growth. The variables included in this study are: the growth of real per capita, government final consumption expenditure as a percentage of GDP, secondary

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[3]Borensztein et al. (1998) use seemingly unrelated regressions (SUR) with panel data averaged over two separate time-periods (1970-1979 and 1980-1989) to account for the possible correlation of error terms across equations.

schooling of the total population, inflation, institutional quality and openness. Results reveal that FDI inflows into the primary sector tend to have a negative effect on growth, whereas FDI inflows into the manufacturing sector have a positive effect. Evidence from the foreign investments in the service sector is ambiguous. These results are robust to the inclusion of other growth determinants, such as human capital, different samples, and the use of lagged values of FDI.

Alfaro et al. (2004) examine the links between FDI, financial markets and economic growth using cross-country data from 71 developing and developed countries. Their empirical evidence suggests that the development of local financial markets is an important precondition for a positive impact of FDI on growth. Financial market development is measured by capitalization, liquidity, private sector credit and bank credit. Control variables include: domestic investment, government consumption, trade, creditor rights, schooling, inflation, institutional stability (measured by risk of expropriation, level of corruption, the rule of law, and bureaucratic quality) and dummy variables for sub-Saharan Africa. The results are robust to different measures of financial market development, the inclusion of other determinants of economic growth, and consideration of endogeneity. This finding was further supported by Villegas-Sanchez (2009) using micro-level data from Mexico. The author finds that domestic firms benefit from FDI only if they are relatively large and located in financially developed regions.

However, the studies cited above are subject to criticism. Firstly, as noted by Herzer et al. (2008),a well-known problem with cross-country studies is the assumption of identical production functions across countries. In fact, production technologies, institutions and policies differ substantially across countries, so that the growth effects of FDI are also likely to differ. As a consequence of cross-country parameter heterogeneity, these regression results are generally not robust to the selection of countries. Secondly, unobserved heterogeneity due to omitted variables may lead to biased parameter estimates. Thirdly, cross-country studies may suffer from serious endogeneity biases. In fact, FDI will be endogenous if the economic growth rate of a host country is an important factor for international firms when deciding where to invest. In other words, FDI can determine and be determined by host country growth rates (i.e. higher growth leads to higher FDI). Carkovic and Levine (2002) claim that previous FDI and growth studies should be viewed skeptically, given that most of these studies do not control for possible endogeneity when using FDI flows and heterogeneity among countries. Accordingly, studies, in response to these problems have adopted different strategies. Some have tried to solve this endogeneity with instrumental variables techniques (Alfaro, 2003,

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Alfaro et al., 2004), panel data approach (Gui-Diby, 2014,Feeny et al., 2014) or using time-series.

Studies using cross section instrumental variable approach (IV)

To overcome the endogeneity problem of FDI, researchers have adopted the IV technique. The choice of an appropriate instrument should be driven by the literature of FDI determinants. An ideal instrument should be highly correlated with FDI but not with the error term in the regressions. Some studies have sought to find a valid external instrument for the FDI variable (Feeny et al., 2014). Unfortunately suitable instruments have been difficult to identify, some of these studies used the distance that the host country is from the major investing country. The favored approach of recent FDI literature has therefore been to control for the potential endogeneity of the FDI variable by using internal instruments. For example, Alfaro(2003), Alfaro et al.(2004) and Makki and Somwaru (2004)use lagged of FDI, which is considered as a consistent instrument in the literature (Asongu, 2014; Asongu and De Moor, 2016).

Makki and Somwaru (2004) analyse the role FDI and trade in economic growth of developing countries within the endogenous growth-theory framework. The authors use the SUR method as well as instrumental variables in the sample of 66 developing countries over the period 1971- 2000. Macroeconomic policies and institutional stability are necessary pre-conditions for the positive effect of FDI on growth. The control variables include: trade in goods and services, stock of human capital, domestic capital investment, initial GDP, inflation rate, tax on income, profits, capital gains in the host country expressed as percentage of current revenue, and government consumption.

Similarly, Durham (2004) examines the effects of FDI and equity foreign portfolio investment on economic growth using data on 80 countries from 1979 to1998 in the sample of 83 countries (62 non-OECD and 21 high-income countries) found that the effect of FDI depends on the absorptive capacity in the host countries, specifically, financial and institutional developments. The estimations are based on equations that include initial GDP, human capital variables explaining the economic growth rate, investment ratio, FDI, and different interaction terms with FDI.

Based on a panel of 57 developing countries over the period 1980 to 1999, Yabi (2010) concluded that FDI flows do not always have an impact on economic growth. He found that due to the heterogeneity of countries, the positive impact of FDI was observed in countries with high economic growth but not in countries with low economic growth. These

results were based on estimations with instrumental variables that included control variables that explained economic growth, such as local investment, average number of years spent in secondary schools by the male population, inflation, fertility rate, government consumption, rule of law, number of telephone lines per thousands of people, etc.

Noting that although the cross section-sectional IV regression address biases related to the endogeneity problem (omitted variable, measurement error and simultaneity), it suffers from two important problems. Firstly, only the endogeneity and measurement error of FDI are controlled, the technique does not control the endogeneity and measurement error of other explanatory variables included in the growth regression. Secondly, if there are country-specific fixed effects that are not included in the conditioning information set and that help to explain economic growth, the OLS estimation may produce erroneous estimates on the FDI coefficient.

Panel evidence on FDI and growth

To remove the effect of omitted variable bias and deal with the unobserved country-specific effects, empirical studies have used the fixed and/or random effects models. Furthermore, to control for the endogeneity problem induced by the inclusion of the lagged explanatory variable in dynamic model, several studies have employed the GMM estimator (Asongu, 2013, 2015; Gammoudi and Cherif, 2016).

Fixed and random effect

Serrasqueiro and Nunes (2008)assert that developing countries differ in terms of: colonial history, political regimes, ideologies and religious affiliations, geographical locations and climatic conditions. According to the narrative, if this heterogeneity is not taken into account it will influence measurement of the estimated parameters. Thus to control for country-specific effects, studies have used panel data models of fixed or random effects. Bengoa and Sanchez-Robles (2003)examine the relationships among economic freedom, FDI and economic growth using panel data analysis for a sample of 18 Latin American countries for the period 1970 to 1999. They include control variables such as inflation, primary enrollment, secondary enrollment and public consumption. Using a fixed effects model, they suggest that FDI is positively correlated with economic growth in the host countries. However, host countries require, adequate human capital, economic stability and liberalized markets to benefit from long-term capital flows. These results are robust with the *two-step*

Generalized Method of Moments as an alternative estimation. Melnyk et al. (2014) investigate the impact of FDI on economic development in post communist transition economies by using fixed effects to show a positive relationship between FDI and economic growth. Tiwari and Mutascu (2011) examine whether FDI has an impact on the economic growth in the case of 23 Asian countries by employing data from 1986 to 2008. Using random and fixed effects models, they find that FDI enhances growth in these countries

In contrast to the studies cited above, Johnson (2006) find that FDI inflows have a positive effect on host country economic growth for developing but not for developed economies. Mello (1999) looks at causation from FDI to growth in the sample of 23 OECD and non-OECD countries for the period 1970-1990 by using time series and panel data estimations (fixed effect) to find weak indications of a positive relationship between FDI and economic growth.

Generalized method of moments (GMM)

To account for unobserved country-specific effects and to control for the potential endogeneity problem induced by the inclusion of the lagged dependent variable, Carkovic and Levine (2002) construct a panel data set covering 71 developing and developed countries in order to analyze the relationship between FDI and growth. Performing both cross-country OLS analysis and dynamic panel data analysis using GMM, they conclude that there is no robust link running from inward FDI to host country economic growth

Gui-Diby (2014) examines the impact of FDI on economic growth in 50 African countries during the period 1980 to 2009 by using the system GMM estimators. He finds that FDI inflows have a significant impact on economic growth in the African region during the period of interest. However, this effect is not identical during the overall period, the impact of FDI on economic growth was negative during the period 1980 to 1994 and positive during the period 1995 to 2009. He also finds that human resources do not matter in the FDI-growth nexus.

Feeny et al. (2014) use data averaged over seven five-year periods between 1971 and 2010 for a sample of 209 countries to examine the impact of FDI to the Pacific region. More precisely, to examine whether the FDI-growth relationship is different in Pacific countries, the authors include in their econometric model an interaction term between FDI and the Pacific countries dummy variable. Results show that the impact of FDI is lower in pacific countries than it is in host countries. On average, a 10% increase in the ratio of FDI to host in GDP is associated with higher growth of about 2% in all countries on average. The impact in Pacific

countries falls to between 0.1 and 0.4%. The low impact of FDI on economic growth is explained by the fact that FDI displaces domestic investment in the Pacific region.

Alege and Ogundipe (2014) investigate the relationship between FDI and economic growth in the Economic Community of West African States (ECOWAS) in the period between 1970 and 2011 to show that the positive effect of FDI on economic development depends on the absorptive capacity in the host country capability of the available human stock, extent of openness, the political and economic stability of ECOWAS countries, when they use pooled OLS, fixed effects and random effects. However, considering the System-GMM panel estimation technique they find that the contributions of FDI appear insignificant in the dynamism of GDP per capita despite the significant contributions of the control variables.

Time series evidence on FDI and growth

The time series analysis is undertaken to analyze whether there exists any long-run relationship between FDI and economic growth as well as the direction of the relationship.

In this context, Adewumi (2006) examines the contribution of FDI to economic growth in Africa using annual series, by applying time series analysis from 1970 to 2003. He found that FDI contributes positively to economic growth in most of the countries, but it is not statistically significant. Herzer et al. (2008) examine the FDI-led growth hypothesis for 28 developing countries, 10 countries from Latin America, 9 countries from Asia and 9 countries from Africa by using cointegration techniques. Their results indicate that there is no clear association between the growth impact of FDI and the level of per capita income, the level of education, the degree of openness and the level of financial market development in developing countries.

Zhang (2001) analyses the causality between FDI and economic growth in the case of 11 developing countries in East Asia and Latin America. Using cointegration and Granger causality tests, he finds that in five cases economic growth is enhanced by FDI but that host country conditions such as trade regime and macroeconomic stability are important.

Frimpong and Oteng-Abayie (2006) examine the causal link between FDI and GDP growth for Ghana for the pre and post structural adjustment program (SAP) periods and the direction of the causality between two the variables by using annual time series data covering the period from 1970 to 2005. The results establish no causality between FDI and growth for the total sample period and the pre-SAP period. FDI, however caused GDP growth during the

post –SAP period. Har et al. (2008) reached the same result in the case of Malaysia for the period 1970 to 2005.

Chowdhury and Mavrotas (2006) examine the causal relationship between FDI and economic growth by using time series data covering a period from 1969 to 2000 in the case of three developing countries, namely Chile, Malaysia and Thailand. They suggest that it is GDP that causes FDI in the case of Chile and not vice versa while for both Malaysia and Thailand, there is a strong evidence of a bi-directional causality between the two variables. Majagaiya et al. (2010) found unidirectional causality from FDI to economic   growth. In the case of Nepal over the period between 1980 and 2006, the same result is reached by Tang et al. (2008) in the case on China.

Herzer (2012) shows that the cross-country and panel studies, as well as time series analyses suffer from several econometric problems, then he examines empirically the impact of FDI on growth in 44 developing countries by employing panel cointegration techniques that are robust to omitted variables and endogenous regressors, to find that the effect of FDI on economic growth in developing countries is negative. However, there are large differences in the effect of FDI on economic growth across countries. Accordingly, it is depends on freedom from government intervention, business freedom, FDI volatility, and primary export dependence.

The above literature review suggests that the impact of FDI on economic growth remains extremely controversial. This is partly due to the use of different samples by different authors and partly due to the endogeneity problem between FDI and growth. FDI may have a positive impact on economic growth leading to an enlarged market size, which in turn attracts further FDI.

Despite these controversial effects, the empirical evidence generally suggests that FDI has a positive impact on economic growth in developing countries, as recent surveys by Lim (2001) and Hansen and Rand (2006) attest. However, the existence and size of the impact of FDI on growth seems to depend on economic and political conditions in the host country, such as the level of per capita income, the human capital base, the degree of openness in the economy and the extent of the development of domestic financial markets.

2- Specification of models

In order to empirically test if FDI has a direct effect on per capita income in the MENA region over the period1985 to 2009,we use the following dynamic panel models to capture the

dynamics of the variables over time, as presented by Azman-Saini et al. (2010) and GUI-Diby (2014):

$$LGDP_{i,t} = \alpha LGDP_{i,t-1} + \beta_1 FDI_{i,t} + \beta_2 X_{i,t} + \eta_i + \varepsilon_{i,t} \qquad (1\text{-}1)$$

Where i is country index, t is time index, LGDP, represent the logarithmic value of the purchasing power parity (PPP)-converted gross domestic product (GDP) per capita at 2005 constant price, FDI is foreign direct investment in percentage of GDP at current prices, X is the matrix of control variables that affect economic growth, η_t is unobserved country-specific effect term, and ε_{it} it is the usual error term.

The group of control variables is comprised of covariates frequently used in the FDI–growth literature, including: Urban population growth in annual percentage *(POP),* general government final consumption expenditure to GDP *(GOV),* gross domestic investment as a percentage of GDP *(GCF),* and secondary gross school enrollment ratio *(SEC)*(as a proxy for human capital).

After we see the direct effect of FDI inflows on per capita income in the MENA region, we examine whether this effect is significantly different in NonGCC countries. To answer this question, we add an interaction term between FDI/GDP and the Non-GCC countries to capture the effect of FDI in this region. The NonGCC variable is a dummy variable taking the value of 1 if the country is located in the GCC and zero otherwise.

Our model is specified, then as follows:

$$LGDP_{i,t} = \alpha LGDP_{i,t-1} + \beta_1 FDI_{i,t} + \beta_2 X_{i,t} + \beta_3 (FDI * NonGCC)_{i,t} + \eta_i + \varepsilon_{i,t} \qquad (1\text{-}2)$$

Where,(FDI*NonGCC) is an interaction term between FDI and NonGCC countries. From equation (2), the effect of FDI on per capita income is given by:

$$\frac{dLGDP_i}{dFDI_i} = \begin{cases} \boldsymbol{\beta_1}, for\ countries\ outside\ Non\ GCC \\ \boldsymbol{\beta_1 + \beta_3}, for\ Non\ GCC\ countries \end{cases}$$

Finally to determine the role of financial openness and institutional qualities in the FDI-growth relationship, we include separately the two interaction terms: **FDI*KAOPEN**

and **FDI*INS**. While the significance of the first interaction term implies that open financial countries are more likely to benefit from FDI. The significance of the second suggests that the marginal effect of FDI on growth depends on the level of institutional qualities in the host countries.

3.1 Methodology

We employ the GMM panel estimator first proposed by Arellano and Bond (1991) and extended by Arellano and Bover (1995) and Blundell and Bond (1998). This estimator enables us firstly, to control for country-specific effects, which cannot be done using country-specific dummies due to the dynamic structure of the regression equation. Secondly, to control for a simultaneity bias caused by the possibility that some of the explanatory variables may be endogenous. For example, FDI will be endogenous if the economic growth rate of a host country is an important factor for international firms when deciding where to invest. In other words, FDI can determine and be determined by host country growth rates.

Arellano and Bond (1991) propose transforming Eq. (1-1) into first-differences to eliminate country-specific effects as follows:

$$
\begin{aligned}
LGDP_{i,t} - LGDP_{i,t-1} \\
= \alpha(LGDP_{i,t-1} - \alpha LGDP_{i,t-2}) + \beta_1(FDI_{i,t} - FDI_{i,t-1}) + \beta_2(X_{i,t} - X_{i,t-1}) \\
+ (\varepsilon_{i,t} - \varepsilon_{i,t-1})
\end{aligned} \quad \textbf{(4-3)}
$$

To address the possible simultaneity bias of explanatory variables and the correlation between $(LGDP_{i,t-1} - LGDP_{i,t-2})$ and $(\varepsilon_{i,t} - \varepsilon_{i,t-1})$, Arellano and Bond (1991) proposed that the lagged levels of the regressors are used as instruments. This is valid under the assumptions that: (i) the error term is not serially correlated, and (ii) the lag of the explanatory variables are weakly exogenous. This strategy is known as difference GMM estimation. Following Arellano and Bond (1991),we set the following moment conditions:

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

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

$$E[X_{i,t-s}.(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for } s \geq 2; \ t=3 \ ; \dots T \quad (1\text{-}6)$$

Although the difference estimator above is able to control for country-specific effects and simultaneity bias, however, as pointed out by Arellano and Bover (1995), lagged levels are poor instruments for first differences if the variables are close to a random walk (such as economic growth). In response, Blundell and Bond (1998) proposed a more efficient

estimator, the "system" GMM estimator, which combines the difference Eq. (1-3) and the level Eq. (1-1). Blundell and Bond (1998) show that this estimator is able to reduce biases and imprecision associated with difference estimator. Following Arellano and Bover (1995), the additional moment conditions for the second part of the system (the regression in levels) are set as follows:

$$E\left[(LGDP_{i,t-s} - LGDP_{i,t-s-1}).\left(\eta_i + \varepsilon_{i,t}\right)\right] = 0 \text{ for s=1} \tag{1-7}$$

$$E\left[(FDI_{i,t-s} - FDI_{i,t-s-1}).\left(\eta_i + \varepsilon_{i,t}\right)\right] = 0 \text{ for s=1} \tag{1-8}$$

$$E\left[(X_{i,t-s} - X_{i,t-s-1}).\left(\eta_i + \varepsilon_{i,t}\right)\right] = 0 \text{ for s=1} \tag{1-9}$$

The consistency of the GMM estimator depends on two specification tests. The first is the Hansen (1982) J-test of over-identifying restrictions. The joint null hypothesis is that the instruments are jointly valid. A rejection casts doubt on the validity of the instruments.
The second test examines the hypothesis of no second-order serial correlation in the error term of the difference Eq. (1-3) (Arellano and Bond, 1991). A satisfaction of the Hansen and serial correlation diagnostic tests gives credence to the adequacy of our instruments.

The GMM estimators are typically applied in one and two-step variants (Arellano and Bond, 1991). The one-step estimators use weighting matrices that are independent of the estimated parameters, whereas the two-step GMM estimator uses the so-called optimal weighting matrices in which the moment conditions are weighted by a consistent estimate of their covariance matrix. In our study, we use the two-step GMM estimator, which is asymptotically efficient and robust to all kinds of heteroscedasticity (Asiedu and Lien, 2011). Furthermore, following the results of Roodman (2009) on the number of instruments to be used for GMM, a limited number of instruments was used in a collapse matrix format.

To check whether the results obtained are sensitive to changes in the period of estimation by accounting for the effect of business cycle, we re-estimate the empirical models using data averaged within countries over five-year period, so that there are five observations per country over the 1985 to 2009 period (*1985-1989, 1990-1994,1995-1999,2000-2004,2005-2009*, which yield 85 observations.

3.2 Data

Depended variable

Following Alexeev and Conrad (2011) and Gui-Diby (2014) we use the logarithmic value of the purchasing power parity (PPP)-converted gross domestic product (GDP) per capita at 2005 constant price to measure economic performance .This measurement allows us to take into account price differences between countries and to provide an assessment of the real volume of the GDP.

Foreign direct investment (FDI)

Most of empirical studies in the relation between FDI and growth have used the net FDI inflows (with FDI outflows subtracted), as a percentage of host country GDP (Adewumi, 2006, Alfaro et al., 2004, Azman-Saini et al., 2010; Uduak et al., 2014; Asongu, 2016). According to the World Bank, FDI refers to the net inflows of investment to acquire a lasting management interest (10 percent or more of the voting stock) in an enterprise operating in an economy other than that of the investor and can be further developed as the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments.Net FDI inflows include new investment from foreign investors less disinvestment. Net FDI flows can therefore be negative if disinvestment exceeds new foreign investment in a country. However, the regression sample includes just 46 observations that are negative. We use Net FDI inflows as a percentage of GDP as proxy of FDI and we expect an ambiguous sign of its coefficient.

Government expenditure (GOV)

A large part of the empirical growth literature has examined the impact of government expenditure on economic growth. Overall, the evidence on the nature of the relationship is mixed. Brahim and Rachdi (2014) show a positive impact of government expenditure on growth in the case of the MENA region. However, Eken et al. (1997) find that the effect of government expenditures is negative in non-oil –exporting countries and positive in oil exporting countries. We use a general government final consumption expenditure as percentage of GDP which includes all government current expenditures for purchases of goods and services (including compensation of employees) and expenditures on national defense and security, but exclude government military expenditures that are part of

government capital formation (WDI). The sign of government expenditure coefficient is expected to be ambiguous.

Human capital (SEC)

The importance of human capital to economic growth is highlighted by several studies (Blomstrom et al., 1992,Feeny et al., 2014). In addition to a direct impact on economic growth, human capital can be critical for absorbing foreign knowledge and is an important determinant of whether positive FDI spillovers will be realized. Borensztein et al. (1998) argue that countries need to reach a certain threshold level of human capital in order to experience positive the effect of FDI. This finding is confirmed by Li and Liu (2005) which assert that human capital is very important for inward FDI to positively promote economic growth in developing countries. Human capital has been measured in various ways inthe literature. Average years of schooling and school completion rates from Barro and Lee (2001) are often favored. In our study we use the Secondary school enrollment (% gross) to capture human capital since these data are widely available for the MENA countries under consideration and we anticipate a positive relationship between secondary school enrolment and growth. According to the WDI, Secondary School enrollment (% gross) is the total enrollment in secondary education, regardless of age, expressed as a percentage of the population of official secondary education age.

Population (POP)

Many studies have confirmed the positive relationship between per capita income and urbanization levels. Hytenget (2011) shows that urbanization impacts GDP per capita positively in the case of 47 SSA countries over the period 1970 to 2009. Arouri et al. (2014) find that there is an inverted U-shape relationship between urbanization and economic development in African countries. In the first stage of development, urbanization improves economic growth, in the second stage there is a negative correlation between urbanization and economic growth. However, they observe in the case of North African countries that GDP per capita is strictly increasing with urban population share. Thus, in our study we include the growth of urban population in annual percentage as a proxy of the population. The sign of the population coefficient is expected to be positive. According to the World Bank urban, population refers to people living in urban areas as defined by national statistical offices. It is calculated using World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects.

Domestic investment (GCF)

Several studies have highlighted the important role of domestic investment in enhancing economic growth (Adams, 2009, Tang et al., 2008 and Feeny et al., 2014). For example, Gui-Diby(2014) show a positive impact of domestic investment in African countries during the period from 1980 to 2009, Brahim and Rachdi (2014) reach the same result based on a sample of 19 MENA countries over the period 2008 -2011. We use gross domestic investment as a percentage of GDP as proxy of investment[4]. *"Gross capital formation consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and "work in progress."(World Bank[5]).*

Capital control (KAOPEN)

This measure was taken from Chinn and Ito (2008). It is scaled in the range between −2.5 and 2.5, with higher values standing for higher degrees of financial openness. One of the merits of the KAOPEN index is that it refers to the intensity of capital controls because it incorporates other types of restrictions such as current account restrictions, not just capital account controls. The data was available for 181 developed and developing countries for 1970–2008 and updated to 2011.

Institutional quality (INS)

In the literature, many measurements for institutional quality are employed by researchers. One of the most widely used measures is obtained from the International Country Risk Guide (ICRG). Following Knack and Keefer (1995), we use this database. We employ the index of political risk as proxy of institutional quality. It is ranged from zero to one hundred. The highest overall rating (theoretically, 100) indicates the lowest risk, and the lowest score (theoretically, 0) indicates the highest risk.

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[4]Some studies use the investment share of PPP GDP per capita at current prices from the Penn World Table (PWT 7.1).
[5]Emphasis from original.

Data on the dependent variable (per capita GDP (PPP)), net FDI inflows as a percentage of GDP (FDI) and the control variables (including, urban population growth in annual percentage (POP), general government final consumption expenditure to GDP (GOV), gross domestic investment as a percentage of GDP (GCF), and secondary gross school enrollment ratio (SEC)) are collected from World Development Indicators published by the World Bank (2011) online database. Data on institutional quality (INS) are from the International Country Risk Guide (ICRG) published by the Political Risk Services (PRS Group) and data on capital control is obtained from Chinn and Ito (2008). Full details of data sources and definitions are reported in Table (1-1) of the Appendix.

3- Empirical results

4.1 Descriptive statistics

The descriptive statistics of the variables is presented in Table 1-2. These descriptive statistics is presented for the entire sample as well as for the GCC countries and for the non GCC countries. The information in the table shows that the variations of per capita GDP and FDI in the percentage of GDP are quite high as their standard deviations exceed the average and their related coefficients of variation are above 1.1. There is considerable variation in log per capita GDP across countries, ranging from 7.5024 in Yemen (1990) to 11.3689 in the United Arab Emirates (U.A.E) (in 1985). The average of net inflows of FDI is 2.14 percent of GDP, with a standard deviation of 3.88. The maximum value of net inflows of FDI is from Bahrain (33.56 in 1996). The U.A.E exhibits the highest value of institutional quality (highest scoring: 0.79), whereas the lowest index value is observed in Lebanon (lowest scoring: 0.1). Furthermore, the table reveals that the average per capita GDP is lower in Non GCC countries relative to GCC countries, although the level of FDI in these countries is higher. The statistics also reveal a greater degree of financial openness, higher levels of human capital, urbanization and institutional quality in GCC countries.

Table 1-3 present the pairwise correlation coefficients of the variables that are analyzed, and suggests that there is a positive, but weak correlation between FDI and per capita GDP for MENA countries for the period 1985-2009. The variation of per capita GDP is more strongly correlated with secondary gross school enrollment, urbanization and financial openness. Based on this descriptive analysis, the impact of FDI on economic growth remains questionable as this variable does not necessarily explain a significant portion of the

variability of the dependent variable per capita GDP given that the correlation coefficients and growth rates do not suggest such a conclusion.

In the following tables we report results of our estimation using the system GMM estimator. Before discussing the estimation results, we must confirm the validity of the instruments. Indeed, the GMM system regressions satisfy both the Hansen test of over-identifying restrictions and the second order serial correlation test (AR(2)). In all specifications of the Hansen test, we do not reject the null hypothesis that our instruments are valid. Moreover, the AR (2) test fails to reject the null hypothesis that there is no second order correlation in the first-differenced residuals. In the light of the overwhelming failure to reject the null hypothesis, the models seem correctly specified.

Tables 1-4 present the results of the direct effect of FDI on per capita GDP income, as well as whether the FDI-growth relationship is different in Non-GCC countries. Tables 1-5 and 1-6 report respectively, the results of regressions analyzing the influence of financial openness and institutional qualities on the role FDI in economic growth. In each table, we report empirical results of GMM-system estimators based on both annual and five year average data.

4.2 The direct effect of FDI on per capita GDP income

Results of annual data are provided in columns 1-4, while the results of five-year average data are reported in columns 5-8. The first regression (Column 1) is run by including all of the control variables, namely: human capital, domestic investment, government expenditure, urban population and the lagged of log per capita GDP. Results indicate that as expected the level of urbanization and human capital have positive associations with growth, the coefficient attached to these variables are all statistically significant (at the 10% and 5% levels, respectively). For example, a 10% increase in Secondary School enrollment is associated with (on average) about a 3% increase in per capita income growth. However the coefficient attached to the domestic investment is positive and significant only when we use the five-year average data set.

Column 2 in Tables1-4 shows the results of the Eq.1-1 where we include the explanatory variable FDI/GDP and we control for human capital, domestic investment, government expenditure, urban population and the lagged of log per capita GDP. We note that

∂LGDP /∂FDI =$\beta_1$and therefore the parameter of interest is the estimated coefficient of FDI, β_1, which is positive and significant at the 1% level, suggesting that everything being equal, FDI improves per capita GDP in the MENA region. A one standard deviation increase in FDI (sd = 3.88, see Table 1-4) is expected to increase income per capita by about 0.08percentage points [∂ LGDP /∂FDI =0.021*3.88=0.08]. We use an example to provide the reader with a better sense of the positive effect of FDI on per capita GDP in the region. Specifically, we consider two countries in the MENA region that have extremely different levels of FDI net inflows: Iran and Qatar. The average value of FDI net inflows from 1985 to 2009 is about 0.52 for Iran and 2.33 for Qatar. Then, the estimation result of the regression (Column 2) shows that everything being equal, an increase in FDI inflows from the level of Iran to the level of Qatar will increase per capita GDP by about 0.038 percentage points in the short run and by about 0.82 percentage points in the long-run. This follows from the fact that the short-run effect of a Δ change in FDI on per capita GDP is given by $(\widehat{\beta_1} * \Delta)$ and the long-run effect is $\frac{(\widehat{\beta_1} * \Delta)}{1-\widehat{\alpha}}$ Where $\widehat{\beta_1}$ is the estimated coefficient of FDI and $\widehat{\alpha}$ is the estimated coefficient of LGDP$_{i,t-1}$.Here, Δ=[2.33-0.52] and from Table [4-4] $\widehat{\beta_1}$ = 0.021 and $\widehat{\alpha}$= 0.954. Then ∂LGDP /∂FDI=[0.021*(2.33-0.52)=0.038] in the short period and 92.4 [0.021* (2.33-0.52)/1-0.954=0.82] in the long period.

Results reveal also that the estimated coefficient of lagged GDP $\widehat{\alpha}$ is positive, suggesting that the current value of per capita GDP is positively correlated with future per capita GDP. Note that a one unit increase in the level of current FDI inflows on current GDP is equal to $\widehat{\beta_1}$ and the long effect is $\frac{\widehat{\beta_1}}{1-\widehat{\alpha}}$. Since $\widehat{\beta_1} < \frac{\widehat{\beta_1}}{1-\widehat{\alpha}}$. , this result implies that past levels of FDI inflows have less than proportionate impact on current and future per capita GDP , however the effects subsides over time. Urban population remains significantly positive.

We now discuss if the effect of FDI in Non-GCC countries is significantly different from the GCC countries. In Column 3, we include in addition to FDI variable, the interaction term between FDI and the Non- GCC (FDI*Non-GCC) region to compare the effect of FDI on per capita income in the Non GCC region with the GCC region. Results indicate that FDI remains positive and statistically significant at 1%. The coefficient attached to the FDI variable suggests that a 10% increase in FDI is associated with (on average) about a 3.8% increase in per capita income growth. In contrast, the coefficient attached to the FDI-Non GCC interaction variable is negative, large and statistically significant. Since the coefficient on the FDI-Non GCC interaction is in absolute terms larger than the coefficient on the FDI

variable, the results imply that FDI has a negative association with growth in the Non GCC countries.

In Column 4, we interact the GOV variable with a GCC dummy variable to examine whether the effect of government consumption on per capita GDP is different for this region than it is in the Non GCC region. We show that while the coefficient of government consumption is negative and statistically significant at the 5% level, the coefficient associated to interaction term is positive and statistically significant at the 5% level. This result that is consistent with Eken et al. (1997) which find that the effect of government expenditures is negative in non-oil –exporting countries and positive in oil exporting countries.

The results of five year average data are robust and consistent with annual data set for all control variables Furthermore, the coefficient of FDI remains positive and statistically significant and the coefficient of the FDI-Non GCC interaction variable is negative and statistically significant. In sum, the effect of FDI on per capita income in the GCC region is positive but negative in Non GCC countries. This result is confirmed by using an annual data set and a five year average data.

There are a number of explanations as to why the impact of FDI in Non GCC is different from that in GCC countries. One explanation is that in the Non GCC region, FDI flows were mainly hosted by countries with low value added in the manufacturing sector. Another explanation is that the profits from FDI may have been repatriated overseas rather than re-invested in the Non-GCC countries. Furthermore, the negative impact of foreign inflows in these economies could be related with the difficulties that these countries face in improving their business environment. Toone (2013) suggests that among the primary factors contributing to the upsurge in FDI in the GCC were the liberal FDI policies adopted by GCC member states. He asserts that the GCC countries have successfully promoted open FDI regimes while simultaneously maintaining regulatory control over strategic economic sectors, particularly in the areas of labor regulation and resource management. Thus, in the following, we test the role of financial openness and institutional qualities in the FDI-growth relationship.

4.3 FDI and growth: the role of capital account liberalization
The estimation in Tables 1-5 provide evidence of the growth effects of capital account openness in the MENA region as well as the result of the influence of capital control on the

FDI-growth relationship. We report the results of annual data in Columns 1-6 and in Columns 7-12 we present the results of five year average data.

Column 1 shows that the estimated coefficient of KAOPEN is positive and significant at the 1% level, suggesting a positive effect of capital account liberalization on growth. The findings also show that *ceteris paribus*, a one standard deviation increase in KOPEN (sd = 1.75 Table 1-2) will increase GDP per capita by about 0.16 percentage points [∂ LGDP /∂KAOPEN =0.094*1.75=0.16].

Furthermore, to test whether capital account liberalization affects growth in non-GCC and GCC countries similarly, we include the interaction term between the index of capital openness and Non GCC dummy variable (KAOPEN*Non-GCC). Results as reported in Column 2 indicate that while the coefficient related to KAOPEN remains positive and statistically significant at the 1% level, the coefficient of KAOPEN-Non GCC variable is negative and statistically significant at the 1% level. However, given the size of the coefficient on these variable (0.361>0.341), these results suggest that the impact of capital account openness is positive, but it is much smaller than for GCC countries. This further implies that the effect of financial openness on per capita income in the Non-GCC countries is less than in the GCC countries.

The effect of FDI as well as that of financial openness on per capita GDP in the MENA region remain positive when we include the FDI and KAOPEN variables simultaneously(see Columns 3 and 9). Then to check whether the growth effect of FDI in the MENA region is sensitive to the degree of financial openness, the variable KAOPEN is interacted with FDI inflows. As reported in Column 4 (and 10 for the five year average data), the coefficient corresponding to the interaction term is negative and statistically significant, suggesting that MENA countries with capital controls are likely to benefit more from the effect of FDI on growth. However, when we interact KAOPEN with FDI in Non GCC and GCC countries separately, we find that the estimate for Non GCC countries is negative and statistically significant (-0.006) and that of the GCC countries is positive and statistically significant (0.011). This implies that the financial openness policy in GCC countries has increased the benefits of FDI on per capita income. Nevertheless such policies have reduced the benefits of FDI on growth in the Non-GCC region. These results are consistent with those obtained by the five –year average data (see Column 11 and 12 in Tables 1-5.

Thus, the rapid increase of growth into the GCC can be attributed in part to: (i) the financial openness policies which were undertaken in the 1980s as part of the structural adjustment programs of the IMF and World Bank and (ii) the legal and institutional changes

adopted by GCC governments during the past fifteen years. The GCC experience demonstrates that while liberal policies are in no doubt essential for the promotion of FDI, they can be supplemented with strategic regulatory controls that protect local investors and ensure long-term economic stability.

The negative effect of capital account liberalization in the FDI- growth relationship in Non GCC can be explained by the fact that most of these countries that have engaged in the process of financial reforms have poor quality of institutions. This fact is reflected by their comparatively low levels of governance quality in the Worldwide Governance Indicators.
In what follows, we try to test whether institutional quality can influence the capital account liberalization-growth nexus.

4.4 Capital account and growth: the role of institutional quality

Tables 1-6 report the results of the regression analyzing the direct effect of institutional quality on income per capita and their influence on the role of capital account policies in promoting growth. Results of annual data are provided in Columns 1-3, while the results of five-year average data are presented in Columns 4-6.

Column 1 shows that the effect of institutional quality on income per capita in the MENA region is positive with coefficient of 0.015 that is statically significant at 1% level. A one standard deviation increase in institutional quality (sd = 11.99 Table 4-2) will increase the income per capita by about 0.18 percentage points in the MENA region [∂LGDP/∂ INS 0.015*11.99=-0.18].Furthermore, we provide an example to illustrate the catalyzing effect of institutions in enhancing the per capita income. Consider two countries in the MENA region that differ significantly in terms of institutions: (i) Lebanon, a country with very poor institutions and (ii)Oman, a country with the best institutions in the region. The average values of the measures of institutions (ICRG index) from 1985-2009 for the two countries are: 46.61 in Lebanon and 69.63 in Oman. Everything being equal, an improvement in the institutional quality in Lebanon to the level of Oman will increase per capita income by about 0.34 percentage points [0.015 (69.63-46.61) =0.34].

To see if the effect of institutions significantly differs in Non-GCC region than the GCC region, we enter the interaction term between the institutional variable and the Non-GCC dummy. Column 2 (and 5 for five year average data) suggests that while, the coefficient of institutional variable remains positive and statistically significant, the interaction term between INS*Non-GCC is negative and statically significant at 1% level. More precisely given the size of the coefficient on these variable (0.0078>0.0074), these results suggest that

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the impact of institutions on per capita income is positive in the Non-GCC region, but it is much smaller than for GCC countries. These findings are confirmed when we use the five year average data. As apparent in Tables 1-2, the average values of the measures of institutional quality in the GCC and Non-GCC are 11.84 and 10.56 respectively. It follows that everything being equal, a one standard deviation increase in institutional quality will increase the income per capita by about 0.17 percentage points in the GCC region [∂LGDP/∂ INS 0.015*11.84=0.17] and by about 0.15 percentage points in the Non- GCC region [∂LGDP/∂ INS 0.015*10.56=0.15].

As a final exercise and to capture the complementary effect of financial openness and institutional quality on growth, we add an interaction term between capital openness and institutional variable (KAOPEN*INS). The results show that the coefficient of the interaction term between these two variables is positive and statistically significant at 1% level. This result is confirmed by using the five year average data (Column 6) and implies that institutional quality further enhances the positive effect of capital openness on growth in the MENA region: a result which is in line with previous studies (Klein, 2005; Chinn and Ito, 2002) which demonstrated that institutional conditions matters in the Capital Account Liberalisation (CAL) and per capita income relationship. Overall, countries with a higher degree of institutional development benefit more from financial liberalization than those with a lower degree.

5. Conclusion

In this study, we have investigated the effect of FDI inflows on growth, taking into account the role of financial openness and institutional quality. The following findings have been established. First, FDI inflows have contributed to the growth of the GCC region and have adversely affected growth in the Non-GCC countries. Secondly, using the interaction terms between capital openness and FDI, we have found that the financial openness policy in GCC countries has increased the benefits of FDI on per capita income, and reduced the benefits of FDI on growth in Non-GCC region. Thirdly, we have also established that the impact of institutions on per capita income in the Non-GCC region is less than that in other countries in the GCC region. Finally, when we have assessed whether institutional quality matters for capital account liberalization and growth relationship to show that institutional quality further boosts the positive effect of capital openness on growth.

With regard to policy, our results suggest that capital account policy in Non-GCC countries must be embedded within a sound institutional and financial framework .Thus,

governments in this region should develop a set of policies that are not only focused on capital account openness but also on the improvement of political framework, which constitutes a necessary precondition for successful capital account liberalization and attraction of FDI which is considered as an engine of growth. These states must undertake measures that can help to: (i) fight corruption;(ii)enhance the protection of property rights; (iii)increase the respect for law and the impartiality of the legal system and(iv)improve other aspects of the institutional environment. Our results are in line with Fratzscher and Bussiere (2004) who have stressed the importance of domestic institutions, the size of FDI and the financial openness in boosting economic growth . This result has important implications for countries in the MENA region given that most of the countries in the region which are in dire need of FDI have weak institutions (Gammoudi and Cherif,2015).
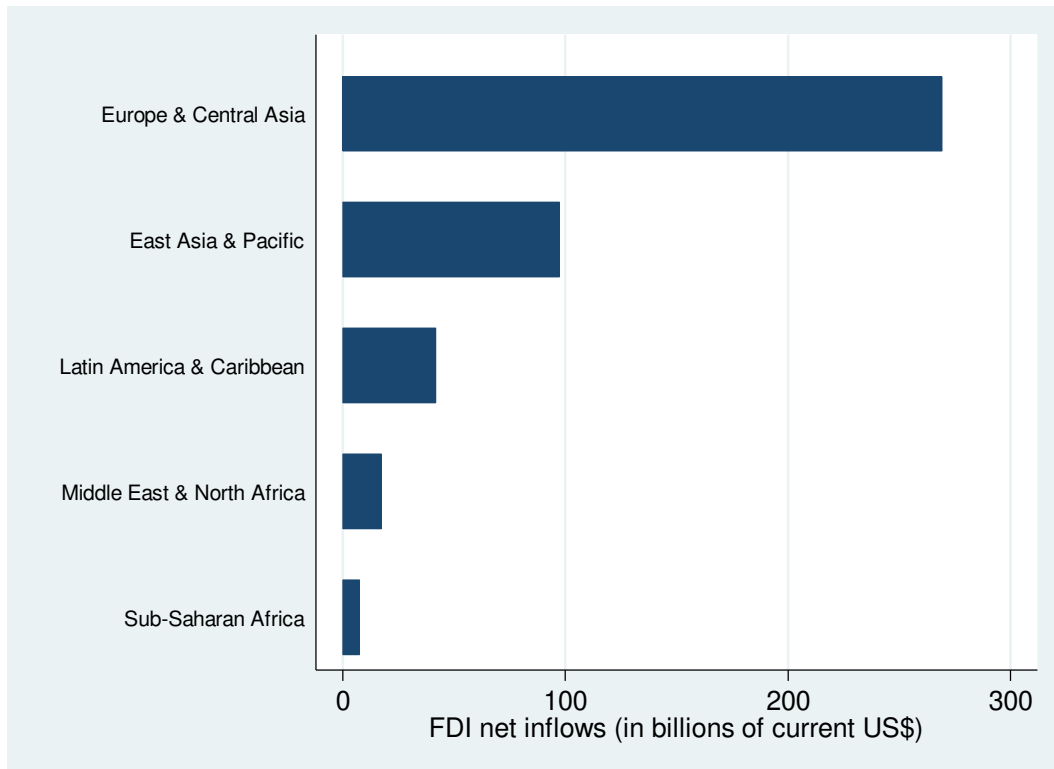
Figure 1 : FDI net inflows in selected regions, 1970-2011
(in billions of current US$)
Source: WDI and author's calculations
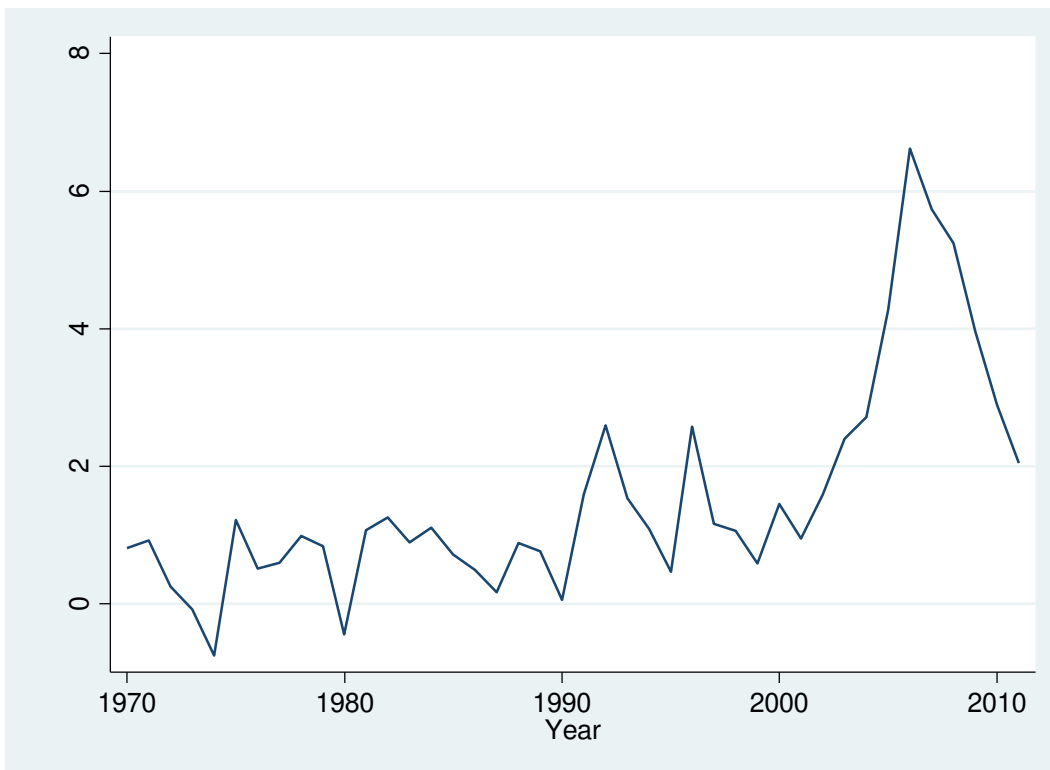
Figure 2 :Evolution of FDI inflows in theMENA region
Source: WDI and author's calculations
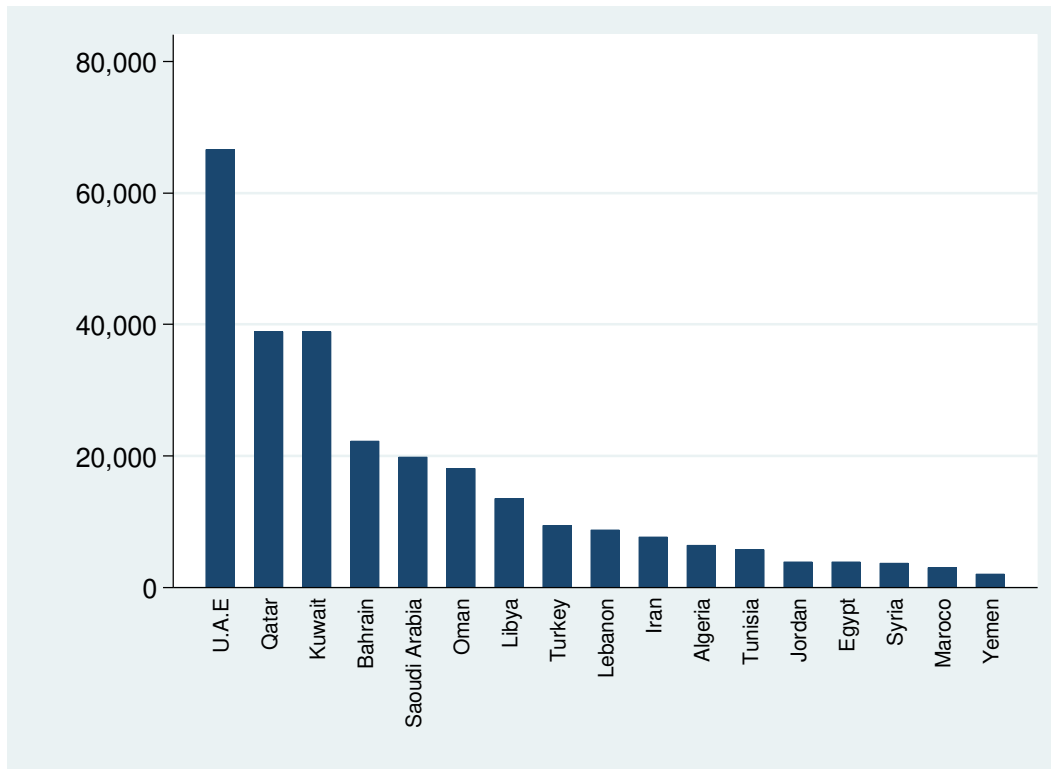
Figure 3: GDP per capita, PPP (constant 2005 International US$) (Average data : 1985-2009)

Table 1-1 Data description and sources				
Variable	**Description**	**Proxy**	**Source**	**Expected sign**
Growth	The natural logarithm of GDP per capita, PPP (constant 2005 international $)	LGDP	WDI(2011)	
FDI	Net FDI inflows as a percentage of GDP	FDI	WDI(2011)	(+)/ (-)
Human capital	School enrollment, secondary (% gross)	SEC	WDI(2011)	(+)
Domestic investment	Gross domestic investment as a percentage of GDP	GCF	WDI(2011)	(+)
Government expenditure	General government final consumption expenditure to GDP	GOV	WDI(2011)	(+)/(-)
Population	Urban population growth (annual %)	POP	WDI(2011)	(+)
Capital account liberalization	Capital openness index measuring the extent of openness in capital account transactions	KAOPEN	Chinn and Ito (2008)	(+)/(-)
Institution qualities	Political risk index	INS	ICRG (2008)	(+)

Table 1-2 Summarystatistics					
Variables	**Obs**	**Mean**	**Std.Dev**	**Min**	**Max**
LGDPP	393	9.1623	0.9853	7.5024	11.3689
SEC	322	72.18474	20.74493	25.12675	114.8685
POP	421	3.637981	2.531282	-2.948278	17.74491
GOV	365	18.51184	6.863613	7.5156	76.2221
GCF	388	23.53369	6.620468	7.9052	46.2682
FDI	393	2.147137	3.881058	-5.28819	33.566
KAOPEN	397	.5655672	1.75367	-1.83119	2.50001
INS	420	60.7625	11.9903	10.6667	79.1667
Non GCC countries					
LGDPP	253	8.5366	0.5163	7.5024	10.7282
SEC	210	65.57335	18.20823	30.77665	112.6223
POP	275	2.99103	1.570227	.7273965	12.86543
GOV	238	15.78053	3.948783	7.5156	28.8754
GCF	251	24.3317	6.351928	9.92224	46.2682
FDI	243	2.101644	3.629748	-5.11178	23.5374
KAOPEN	253	-.381102	1.487954	-1.83119	2.50001
INS	270	57.97191	11.84348	10.6667	75
GCC countries					
LGDPP	140	10.2930	0.5048	9.5380	11.3689
SEC	112	84.58112	19.55842	25.12675	114.8685
POP	146	4.856555	3.407525	-2.948278	17.74491
GOV	127	23.63036	8.140358	10.11	76.2221
GCF	137	22.07164	6.872258	7.9052	41.8557
FDI	150	2.220836	4.26855	-5.28819	33.566
KAOPEN	144	2.228812	.4934496	1.16699	2.50001
INS	150	65.78555	10.56115	34	79.1667

LGDPP is the natural logarithm of GDP per capita, *FDI* is the net FDI inflows as a percentage of GDP, *GCF* is the gross domestic investment as a percentage of GDP, *GOV* is the general government final consumption expenditure to GDP, *POP* is the urban population growth (annual %), *KAOPEN* is the measure of capital account liberalization from Chin and Ito(2008) and *INS* is the political risk index given from the ICRG.

									Table 1-3 Pairwisecorrelation coefficients								

Table 1-3 Pairwisecorrelation coefficients

	Per capita GDP	LGDP	SEC	POP	GOV	GCF	FDI	KAOPEN	INS
Per capita GDP	1.0000								
LGDP	0.9662*	1.0000							
SEC	0.5895*	0.5684*	1.0000						
POP	0.2909*	0.2932*	0.0647	1.0000					
GOV	0.3805*	0.3865*	0.1502*	-0.0254	1.0000				
GCF	-0.0756	-0.0858	-0.0878	0.0267	-0.1641*	1.0000			
FDI	0.0446	0.0390	0.3123*	0.0626	-0.0947	0.1117*	1.0000		
KAOPEN	0.5955*	0.5677*	0.4633*	0.2742*	0.3991*	-0.115*	0.2158*	1.0000	
INS	0.3094*	0.2623*	0.3581*	0.1421*	-0.0522	0.0128	0.2176*	0.1891*	1.0000

Note(*) means that the correlation coeifficient is significant at 5% level
LGDPP is the natural logarithm of GDP per capita, *FDI* is the net FDI inflows as a percentage of GDP, *GCF* is the gross domestic investment as a percentage of GDP, *GOV* is the general government final consumption expenditure to GDP, *POP* is the urban population growth (annual %), *KAOPEN* is the measure of capital account liberalization from Chin and Ito(2008) and *INS* is the political risk index given from the ICRG.

Variables	Table 1-4 The direct effect of FDI							
	Dependent variable Log of per capita GDP (PPP)							
	Annual data				**5- year average data [c]**			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
$LGDPP_{(t-1)}$	0.938 (0.000)***	0.954 (0.000)***	0.950 (0.000)***	0.892 (0.000)***	0.937 (0.000)***	0.982 (0.000)***	0.977 (0.000)	0.927 (0.000)***
FDI		0.021 (0.000)***	0.038 (0.000)***	0.007 (0.017)**		0.0021 (0.080)**	**0.015 (0.001)***	0.10 (0.054)**
SEC	0.003 (0.036)**	0.001 (0.216)	0.001 (0.195)	0.0003 (0.647)	0.0007 (0.643)	0.0006 (0.10)*	0.0002 (0.630)	-0.0002 (0.821)
POP	0.011 (0.072)*	0.014 (0.041)**	0.004 (0.280)	0.002 (0.698)	0.009 (0.041)**	0.006 (0.007)***	0.003 (0.057)*	0.0003 (0.933)
GCF	0.002 (0.211)	0.000 (0.988)	-0.001 (0.197)	0.0007 (0.808)	-0.003 (0.228)	0.001 (0.003)***	0.0007 (0.493)	0.004 (0.173)
GOV	-0.006 (0.060)*	*-0.004 (0.088)*	-0.008 (0.006)***	-0.025 (0.012)**	-0.0016 (0.681)	0.0005 (0.764)	0.001 (0.275)	-0.011 (0.005)
GOV*GCC				0.018 (0.014)**				0.014 (0.012)**
FDI*NONGCC			-0.039 (0.000)***				-0.012 (0.012)*	
constant	0.35 (0.119)	0.325 (0.163)	0.518 (0.019)**	1.23 (0.111)	0.295 (0.453)	0.048 (0.682)	0.134 (0.043)**	0.680 (0.054)*
$AR(2)^a$	0.10	0.10	0.69	0.22	0.47	0.47	0.75	0.58
$Hansen^b$	0.33	0.52	0.53	0.70	0.70	0.53	0.22	0.59
Number of instrumens	10	13	14	11	8	14	17	11
Number of observations	278	264	264	264	68	66	66	66

Note: p-values in parenthesis. ***, **, * refer to the 1, 5 and 10% levels of significance respectively.

The model is estimated with the two-step Arellano-Bond GMM dynamic panel methodology which is asymptotically efficient and robust for all kinds of heteroskedasticity.

[a] The null hypothesis is that the errors in the first difference regression exhibit no second order correlation.

[b] The null hypothesis is that the instruments are not correlated with the residuals.

c- regression is based on 5-years averages for the period 1985-1989, 1990-1994,1995-1999,2000-2004,2005-2009

LGDPP is the natural logarithm of GDP per capita, **FDI** is the net FDI inflows as a percentage of GDP, **GCF** is the gross domestic investment as a percentage of GDP, **GOV** is the general government final consumption expenditure to GDP, **POP** is the urban population growth (annual %), *KAOPEN is the measure of capital*

*account liberalization given from Chin and Ito(2008) and***INS** *is the political risk index given from the ICRG.*

	Table 1-5 FDI , CAL (Capital Account Liberalisation) and interaction											
Variables	Dependent variable Log of per capita GDP (PPP)											
	Anual data						5- year average data [c]					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
$LGDPP_{(t-1)}$	0.765 (0.000)***	0.583 (0.000)***	0.833 (0.000)***	0.846 (0.000)***	0.783 (0.000)***	0.791 (0.000)***	0.904 (0.000)***	0.938 (0.000)***	0.917 (0.000)***	0.930 (0.000)***	0.969 (0.000)***	0.985 (0.000)***
FDI			0.015 (0.002)***	0.087 (0.017)**	-0.005 (0.134)	0.011 (0.001)***			0.038 (0.094)*	0.057 (0.078)*	-0.005 (0.251)	0.011 (0.054)*
SEC	0.004 (0.009)***	0.006 (0.004)***	0.002 (0.018)**	0.001 (0.490)	0.0035 (0.018)**	0.0031 (0.047)**	0.001 (0.339)	0.002 (0.052)*	-0.0000 (0.391)	-0.0004 (0.655)	-0.0001 (0.832)	-0.0002 (0.754)
POP	0.020 (0.022)**	0.005 (0.431)	0.001 (0.830)	0.009 (0.076)*	0.008 (0.245)	0.015 (0.04)**	0.005 (0.067)*	-0.001 (0.822)	-0.003 (0.546)	-0.002 (0.398)	-0.001 (0.699)	0.037 (0.308)
GCF	0.005 (0.029)**	0.007 (0.006)***	0.004 (0.002)***	-0.0005 (0.857)	0.004 (0.052)*	0.004 (0.089)*	0.001 (0.324)	0.0004 (0.817)	0.003 (0.213)	0.002 (0.398)	-0.003 (0.226)	0.0009 (0.744)
GOV	-0.003 (0.528)	-0.016 (0.006)***	-0.007 (0.051)*	-0.009 (0.035)**	-0.003 (0.421)	-0.002 (0.592)	0.002 (0.486)	-0.004 (0.145)	0.001 (0.370)	0.001 (0.659)	-0.004 (0.188)	-0.004 (0.016)**
KAOPEN	0.094 (0.004)***	0.361 (0.001)***	0.086 (0.008)***	0.10 (0.004)***	0.091 (0.008)***	0.095 (0.008)***	0.048 (0.000)**	0.152 (0.030)**	0.033 (0.008)***	0.040 (0.035)**	0.015 (0.076)*	0.023 (0.005)***
KAOPEN*NONGCC		-0.346 (0.002)***							-0.147 (0.032)**			
FDI*NONGCC			-0.030 (0.002)***	-0.064 (0.009)***					-0.039 (0.077)*	-0.043 (0.096)*		
FDI*KAOPEN				-0.024 (0.010)**						-0.008 (0.039)**		
FDI*KAOPEN*GCC					0.011 (0.013)**						0.016 (0.004)***	
FDI*KAOPEN*NONGCC						-0.006 (0.004)***						-0.004 (0.016)**
constant	1.69 (0.001)***	3.23 (0.000)***	1.36 (0.018)**	1.40 (0.024)**	1.63 (0.003)***	1.52 (0.006)***	0.711 (0.001)***	1.27 (0.034)**	0.651 (0.011)**	0.560 (0.064)*	0.468 (0.000)***	0.179 (0.317)
AR(2) [a]	0.14	0.82	0.11	0.26	0.34	0.12	0.24	0.97	0.33	0.35	0.64	
Hansen [b]	0.53	0.33	0.38	0.62	0.49	0.42	0.77	0.65	0.66	0.48	0.31	
Number of instrumens	11	12	15	15	13	13	13	14	15	16	17	
Number of observations	277	277	263	263	263	263	68	68	66	66	66	

Note: p-values in parenthesis. ***, **, * refer to the 1, 5 and 10% levels of significance respectively.

The model is estimated with the two-step Arellano-Bond GMM dynamic panel methodology which is asymptotically efficient and robust for all kinds of heteroskedasticity.

[a] The null hypothesis is that the errors in the first difference regression exhibit no second order correlation.

c- regression is based on 5-years averages for the period 1985-1989, 1990-1994,1995-1999,2000-2004,2005-2009

LGDPP is the natural logarithm of GDP per capita, **FDI** is the net FDI inflows as a percentage of GDP, **GCF** is the gross domestic investment as a percentage of GDP, **GOV** is the general government final consumption expenditure to GDP, **POP** is the urban population growth (annual %), *KAOPEN* is the measure of capital account liberalization given from Chin and Ito(2008) and**INS** is the political risk index given from the ICRG.

Variables	Table 1-6 Institutions, CAL(Capital Account Liberalisation) and interaction					
	Dependent variable Log of per capita GDP (PPP)					
	Anuual data			5- year average data [c]		
	(1)	(2)	(3)	(6)	(7)	(8)
LGDPP$_{(t-1)}$	0.893 (0.000)***	0.821 (0.000)***	0.899 (0.000)***	0.992 (0.000)***	0.805 (0.000)***	0.906 (0.000)***
FDI			0.018 (0.007)***			0.040 (0.055)*
SEC	0.0002 (0.871)	0.0006 (0.363)	0.001 (0.367)	0.0000 (0.962)	0.002 (0.108)*	-0.0004 (0.653)
POP	0.029 (0.005)***	0.002 (0.559)	-0.008 (0.232)	0.005 (0.079)*	-0.002 (0.510)	-0.002 (0.706)
GCF	-0.005 (0.347)	-0.0003 (0.811)	0.0005 (0.740)	-0.001 (0.240)	0.0007 (0.681)	-0.001 (0.651)
GOV	-0.006 (0.083)*	-0.016 (0.000)***	-0.010 (0.004)***	0.0007 (0.813)	-0.005 (0.143)	0.0001 (0.963)
INS	0.015 (0.004)***	0.0078 (0.000)***	-0.0001 (0.951)	0.0007 (0.056)*	0.0051 (0.076)*	0.002 (0.140)
FDI*NONGCC			-0.026 (0.008)***			-0.041 (0.073)*
INS*NONGCC		-0.0074 (0.000)***			-0.0050 (0.009)***	
KAOPEN*INS			0.0015 (0.002)***			0.0005 (0.001)***
constant	0.13 (0.479)	1.71 (0.000)***	1.02 (0.009)***	0.043 (0.46)	1.604 (0.007)***	0.755 (0.006)***
AR(2)[a]	0.11	0.14	0.11	0.45	0.34	0.36
Hansen[b]	0.12	0.25	0.48	0.73	0.68	0.64
Number of instruments	12	14	17	16	13	16
Number of observations	278	278	263	68	68	66

*Note: p-values in parenthesis. ***, **, * refer to the 1, 5 and 10% levels of significance respectively.*

The model is estimated with the two-step Arellano-Bond GMM dynamic panel methodology which is asymptotically efficient and robust for all kinds of heteroskedasticity.

[a] The null hypothesis is that the errors in the first difference regression exhibit no second order correlation.

[b] The null hypothesis is that the instruments are not correlated with the residuals.

c- regression is based on 5-years averages for the period 1985-1989, 1990-1994,1995-1999,2000-2004,2005-2009

LGDPP is the natural logarithm of GDP per capita, **FDI** is the net FDI inflows as a percentage of GDP, **GCF** is the gross domestic investment as a percentage of GDP, **GOV** is the general government final consumption expenditure to GDP, **POP** is the urban population growth (annual %), **KAOPEN** is the measure of capital account liberalization given from Chin and Ito

(2008) and **INS** is the political risk index given from the ICRG.

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