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A Panel Analysis of Good Governance and FDI on Economic Growth in MENA Region

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Abstract
The paper focuses on regional trade agreements and economic co-operation and develops a new appropriate approach to study their impact on growth and trade. The approach is based on an endogenous trade-growth theory and novelly specified in an economic integration (expenditure) framework which is the conceptual foundation of regional trade agreements. Importantly, it also appropriately takes into account major add- and sub-factors as recommended by Johansen, the computable general equilibrium pioneer, in practical economic planning and policy modelling. Applications of the approach to China, a key member of the Regional Comprehensive Economic Partnership agreement group, are also reported to provide useful insights for suitable evidence-based impact analysis. The analysis has relevance to such trading blocs as BRICS and the 21-member Indian Ocean Rim Association where Iran is a key member. Policy implications from the findings are then briefly discussed.

Keywords: Good Governance, FDI, Economic Growth, GMM, MENA region.

JEL Classification: C22, E21, O47

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1. Introduction

During the last decades, the analysis of economic growth has become increasingly popular in the macroeconomic literature (Barro and Sala-i-Martin, 1992). The factors that determine economic growth are among the most extensively studied subjects in existing economics literature. The growth literature is related to empirical studies which have considered the impact of the conventional sources of growth including investment in physical and human capital, labor, trade, foreign direct investment (FDI) and a variety of other variables within the neoclassical growth model (Omri et al, 2015). During the past two decades, foreign direct investment (FDI) has become increasingly important, with increasing volumes of direct investment flowing between and into the developed countries (Vu and Noy, 2009).

FDI is generally seen as a composite bundle of capital stock and technology, and can augment the existing stock of knowledge in the host economy through labor training, skill acquisition and diffusion, and the introduction of new managerial practices and organizational arrangements (De Mello 1997). In addition, FDI can create employment and reduce poverty, increase the host country's export capacity causing the developing country to increase its foreign exchange earnings (Magnus et al, 2006). In addition, FDI increases the productivity not only on the firms which receive these investments, but potentially on all host-country firms (Rappaport, 2000).

The MENA region achieved an average real GDP growth of 3.9% in 2013 compared with an average 6.9% in 2003-08 (IMF, 2014). Generally, FDI inflows to MENA countries witnessed a very fast increase since 2001. Total FDI inflows in 2008 attained a new record high of USD 95 billion, which represents 14.4% of total inflows to developing countries, compared to USD 5.6 billion in 2000 that represents only 2.2% of FDI inflow to developing countries. FDI inflows to the MENA region amounted to an average USD 45 billion in 2013. After almost a decade of strong FDI growth, inflows started falling in 2009, in the aftermath of global financial crisis. As of 2013, several Arab countries in transition experienced a slight rebound in FDI inflows despite the persistence of political and macroeconomic instability in the region (UNCTAD, 2014).

Government and private sector are not held to be on the opposite ends of the continuum, but are considered to play complementary roles. The evaluation of "good" governance is important for a number of reasons. First, donors and reformers take it into consideration when assessing the impact of policies and determining future development projects. Second, "good" governance evaluations determine the investment climate. It is well established that aid flows have greater impacts on development in countries with "good" governance.

Historically, MENA region countries have had a controversial good governance record in comparison to other regions of the world. These countries have been bogged down with political instability, government ineffectiveness, the lack of rule of law, and serious problems of corruption which are signs of bad governance. With respect to the importance of good governance to development, improving governance in this region has been a necessary condition for economic growth and development. Accordingly, identifying the factors affecting growth is critical for designing economic policies that lead to higher standards of living. Theoretically, FDI and Good Governance are two important factors in promoting economic growth. Thus, while the importance of good governance (GG) has been appreciated over time, several important issues concerning economic growth remain unresolved. Of interest in this study is one of such issues namely: what is the relationship between good governance and economic growth?. This question has not been adequately addressed in MENA region. All studies investigate the relationship on a certain country level for time series data or for one or two variables. Also a general panel model has not been applied yet. Therefore, to fill this gap, this study aims to examine the effects of good governance and FDI on economic growth using Generalized Method of Moment (GMM) panel data of 18 MENA region countries over the period 2000-2013.

The remainder of the study is organized as follows: Section 2 briefly reviews the previous literature. Section 3 describes data and methodology. Empirical results are given and discussed in Section 4. Section 5 concludes the study and gives some policy implication.

Table 1: Good Governance Indicators, 2013

	Low Income	Low Middle Income	MEN Region	Upper Middle Income	High Income
Voice and Accountability	23	40	25	49	61
Political Stability No Violence	18	39	44	52	76
Government Effectiveness	18	33	44	52	76
Regulatory Quality	23	32	44	49	75
Rule of Law	19	34	44	49	75
Control of Corruption	19	35	45	50	76

Source: http://www.worldbank.com/

2. Literature Review

2.1. FDI and economic growth

In neoclassical models, long-term growth can only result from exogenously driven technological progress and/or labour force growth. Therefore, FDI can only affect economic growth if it enhances technological progress. In endogenous growth theories, FDI contributes to growth directly through higher capital stock and newer technology, and indirectly through improving human capital, Institution, infrastructure and spillovers. FDI can also collaborate the host economy with gaining access to world markets (Mehmet, 2015). There are at least four key prerequisites for FDI to stimulate economic growth on the host country: (1) the existence of a stock of human capital that provide a domestic labor force to assimilate new technologies, (2) appropriate level of technology in host countries, (3) a level of financial sector development that allows foreign firms to upgrade their technologies, and (4) the openness to trade of the host economy as it facilitates technology transfer (Chauvin, 2013).

According to the neoclassical prediction, the effect of FDI on growth would depend inversely on the technological gap between the investor and the host country because of capital would flow across countries in search of higher marginal returns (Razin and Sadka, 2007). That FDI is positively correlated with economic growth is situated in growth theory that emphasize the role of improved technology, efficiency and productivity in promoting growth (lim, 2001).

Moreover, FDI directly results in an injection of capital, new technologies, marketing techniques and management skills into the domestic economy, thus potentially raising its competitiveness and output growth and stimulates thus economic growth (Thangavelu and Narjoko, 2014).

FDI may have a negative effect on economic growth (Carkovic and Levine, 2005). In this respect, if foreign firms obtain significant benefits from host governments, the distortions caused could have large negative effects on growth. Borensztein et al. (1998) argue that if FDI enters a country to overcome trade barriers, it might result in FDI inflows that does not respond to higher efficiency, but only to profit opportunities created by distorted incentives. Balasubramanyam et al. (1996) argue that the mere infusion of human capital and new technology into a distortion-ridden economy may neither lift the economy to a higher plane nor alter the slope of the production function. It might, instead, merely serve to redistribute income in consideration of the new agents of production. In addition, FDI might crowd out domestic investment by diverting scarce resources away from other productive sectors. Government size could be another channel for harmful growth effects. Governments might need to invest in infrastructure to attract FDI; this might increase foreign debt and the distortionary tax burden, serving as another example of crowding out (Mehmet, 2015). Borensztein et al. (1998) find that this crowding out effect is not robust and also argue that FDI facilitates domestic investment. DeMello (1999) finds that the substitutability between capital stocks embodying old (domestic) and new (FDI-related) technology is higher in advanced economies than developing economies.

There are a significant number of studies which identified a positive relationship between FDI and economic growth, both in developed

and developing countries (Lu et al, 1999; Zhang, 2001; Alfaro, 2004; Lee and Tan, 2006; Vu, 2009; Choong, 2010; Narjoko, 2014). The FDI contributes to economic growth in developing countries by complementing domestic savings which are usually low, improving the balance of payment and also as a source of knowledge transfer and spillovers (De Mello, 1997). The positive relationship between FDI and the effects generated in the economy requires the insurance of a minimum level of human capital, economic and financial stability and a degree of markets liberalization [UNCTAD, 1999]. Hsiao and Shen (2003), who point out that economic growth is one of the important factors attracting foreign investment in developing countries.

Mehmat and Sasi (2015) examined the relationship between FDI inflows and economic growth in 140 countries for the 1970-2009. The results recorded a FDI positively affects economic growth. Moreover, they find that this association holds globally as strongly as in the developing world. Brahmasrene and Lee (2013) examine the long-run equilibrium relationship among tourism, CO2 emissions, economic growth and foreign direct investment (FDI) using panel data of European Union countries from 1988 to 2009. The results show that FDI coefficients indicate that a 1 percent increase in FDI inflows increases economic growth by 0.083 percent. Alfaro et al (2007) investigate the effect of FDI on growth via financial markets using panel data approach of 72 countries over 1975-1995 periods. Factor accumulation – physical and human capital – does not seem to be the main channel through which countries benefit from FDI. Also, they find that countries with well-developed financial markets gain significantly from FDI via TFP improvements. These results are consistent with the recent findings in the growth literature that show the important role of TFP over factors in explaining cross-country income differences.

Li and Liu (2005) investigate the effects of FDI on growth for 84 countries over the period 1970-1999. The results imply that FDI affects growth directly and also indirectly through its interaction with human capital. They also found a negative coefficient for FDI when it is interacted with the technology gap between the source and host economies. Levine and Carkovic (2002) investigate the relationship and causality between FDI and economic growth using Generalized Method of Moment (GMM) estimators for the period 1960-1995 on 72 countries. The empirical results showed that FDI inflows do not exert an independent influence on economic growth. Borensztein et al. (1998) investigate the effect of FDI and economic growth for 69 LDCs in the period 1970-1989. The results show that inward FDI has positive effects on growth through its interaction with human capital. They also found that FDI contributed more to growth than domestic investment and that it also had the effect of increasing domestic investment.

2.2. Good Governance and Economic Growth

The roots of the modern good governance in theoretical developments within the new institutional economics developed by North and Thomas (1973), North (1990), Olson (2000), Williamson (1985), Milgrom and Roberts (1992) and Bates (2001). These models established the importance of stable property rights for the functioning of a market economy. Good governance also drew on theories of rents and rent seeking that date back to the work of Krueger (1974) and Bhagwati (1982). These theories claimed subsidies, market restrictions and other sources of rents or politically created incomes were highly damaging for market economies. And finally, it drew on new political economy theories that supported democracies on the grounds that they helped to establish property rights and reduced rent seeking

North (1990), Olson (2000). The theoretical argument was that democratic accountability reduced the possibility of corruption and rent seeking, this in turn enabled a rule of law and stable property rights to be enforced, and these were essential for reducing transaction costs in markets, thereby allowing economic growth (Khan, 2005). Owens (1987) and Sen (1990) argued that political freedom as necessary conditions for the economic growth and development of nations. The theoretical argument was that institutions of governance such as property rights and contract enforcement positively influence economic growth (Keefer et al., 1997, Campos and Nugent, 1999). Kaufmann, et al. (1999a and 1999b) identify the problems associated with the aggregation of good governance measures, but conclude that good governance matters for development. Schneider (1999) defines good

governance as the exercise of authority, or control to manage a country's affairs and resources. The United States Agency for International Development (USAID, 2002), defines good governance as a complex system of interaction among structures, traditions, functions, and processes characterized by values of accountability, transparency, and participation. The UNDP (2002) defines good governance as striving for rule of law, transparency, equity, effectiveness /efficiency, accountability, and strategic vision in the exercise of political, economic, and administrative authority.

These theoretical arguments were backed up by numerous econometric studies that purported to show a positive relationship between improvements in good governance and various measures of economic performance, in particular economic growth. Man (2014) investigated the relationship between political competition and economic growth in cross-sectional data of 187 countries for the time period 1988 –2007. The results show that the general relationship between political competition and growth tends to be negative. Bellettini et al (2013) examine the relationship between political persistence and economic growth for a panel of 62 countries in the period of 1984-2008. They classify 62 countries with relatively high political and civil rights according to Freedom House into two groups; high and low red tape cost. The empirical results imply that political persistence is negatively associated with growth in the high-cost group, but not in the low-cost group. Lane (2010) divides rule of law into two parts, first being judicial independence and the second one being called constitutional democracy. This study concluded that legally and constitutionally safeguarded property rights are key to optimal market activity, when more legal protection to business community is available, they will be more encouraged to invest and contribute. Pin-A-Jong (2009) examine the causal impact of political instability on economic growth using a dynamic panel system Generalized Method of Moments (GMM) model is based on the period 1984–2003. The results show that the instability of the political regime has a robust and significant negative effect on economic growth.

In a cross-sectional analysis, Chauvet and Collier (2004) investigate the relationship between good governance and economic growth for all developing countries over the period 1973-1999. They found that those countries suffering from poor governance, on average, experience 2.3 percentage points less GDP growth per year relative to other developing countries. Kaufmann and Kraay (2002) find that strong positive correlation between per capita incomes and the quality of governance across countries. The results confirm existing evidence on the importance of good governance for economic development. Mo (2001) used a sample of 46 countries and concluded that a 1% increase in the corruption level reduces the growth rate by about 0.72% or, expressed differently, a one-unit increase in the corruption index reduces the growth rate by 0.545 percentage points. The most important channel through which corruption affects economic growth is political instability, which accounts for about 53% of the overall effect.

3. Methodology and Data

We applied the panel data technique to estimate the relationships between the explanatory variables and economic growth.

The major advantage of the fixed effects model is that it avoids bias due to omitted variables that do not change over time (e.g. gender, race). The random effects model is applicable when the unobserved effect is uncorrelated with all the explanatory variables (Wooldridge, 2009).

In order to determine which model is preferred for the equation estimation, we applied a Hausman test. The rationale behind the Hausman test is that one uses the random effects estimates unless the Hausman test rejects this. A rejection using the Hausman test is taken to mean that the key random-effects assumption is false and then the fixed-effects estimates are used (Wooldridge, 2009). If Hausman test Chi-square statistic is significant at the 5% level, this indicates that the random-effects estimator is inconsistent and that the fixed effects estimator is to be preferred. The findings from fixed or random effects models may be affected by endogeneity problems. In other words, it can be an unrealistic assumption if we suppose that the explanatory variables are exogenous (variables that are not correlated with the residuals). This form of endogeneity of explanatory variables is simultaneity. This arises when one or more of the explanatory

variables are jointly determined with the dependent variable (Wooldridge, 2009). The endogeneity problem can be solved by applying instrumental variable methods such as Generalized Method of Moments (GMM).

Another econometric problem is that time-series regression analysis may involve autocorrelation of the disturbances or serial correlation (Gujarati, 1999). To solved the autocorrelation problem by including the lagged dependent variable on the right hand side of the regression equations. In doing so, the econometric specification was changed to a dynamic panel. The usual method for dynamic panels is the GMM estimator. Arellano and Bond (1991) and Arellano and Bover (1995) suggest first-differencing the model to eliminate the unobserved effects and then using valid instruments to deal with the problem of the new error term being correlated with the lagged dependent variable. A drawback of the first difference GMM is that when first differences are taken, time invariant variables are removed. According to the assumption that the time varying disturbances in the original levels equations are not serially correlated (Bond, 2001). Therefore, the dynamic panel model is a good specification for economic growth in the sample countries. Therefore, we use the Generalized Method of Moments (GMM) estimators introduced by Arellano and Bond (1991). We use two specification tests suggested by Arellano and Bond (1991). The first is a Sargan test of over-identifying restrictions that tests the overall validity of instruments. Failure to reject the null hypothesis supports the model. The second test examines the null hypothesis that the error term is not serially correlated.

The researchers suggest a number of variables that affect economic growth, for example Good governance (Man, 2014; Bellettini et al, 2013; Lane, 2010; Campos and Karanasos, 2008; Ahlin and Pang, 2008) and foreign direct investment (Alfaro, 2004; Lee and Tan, 2006; Choong, 2010; Narjoko, 2014). This study investigates the effects of good governance and FDI on economic growth for the 18 MENA countries between the years 2000-2013. Following Katircioglu (2009), our equation model is as follows:

$$\begin{aligned}\Delta \ln Y_{i,t} &= \beta_0 \Delta lnY_{i,t-1} + \beta_1 \Delta lnGG_{i,t} \\ &+ \beta_2 \Delta lnFDI_{i,t} \\ &+ \beta_3 \Delta lnIInf_{i,t} + \beta_4 \Delta lnL_{i,t} + \beta_5 \Delta lnK_{i,t} \\ &+ \varepsilon_{i,t}\end{aligned} \quad (1)$$

where $\ln Y_{i,t}$ is the natural log of per capita real GDP in country i at time t; GG index (voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption); $\ln FDI_{i,t}$ is the natural log of FDI net inflows in country i at time t; $\ln Inf_{i,t}$ is the natural log of consumer price index (as proxy of inflation) in country i at time t; $\ln L_{i,t}$ is the natural log of labor force in country i at time t; $\ln K_{i,t}$ is the natural log of capital stock in country i at time t. We will use STATA econometric software to obtain the Arellano and Bond dynamic panel estimators of the linear Equation (7). We will also carry out a test for autocorrelation and the Sargan test of over-identifying restrictions as derived by Arellano-Bond (1991). Failure to reject the null hypothesis in both tests supports our model.

Table 2: Variable Description and Data Source

Variable	Description	Source
Y	Annual GDP per capita Growth	(WDI, 2015)
GG	Good Governance Indicators	Kaufman, (WDI, 2015)
FDI	foreign direct investment net inflows	UNCTAD (2015)
K	Gross capital formation	(WDI, 2015)
L	Labor force	(WDI, 2015)
INF	Consumer Price Index	(WDI, 2015)

Source: Authors

4. Estimation Results and Discussions

Results obtained using the fixed effects and GMM dynamic method along with the STATA, are presented in the table below. Table 3 present the estimation results of fixed effects model. To choice best model we use Hausman test. The result of Hausman specification test shows that the $p < 0.05$, therefore, we reject the random-effects model. We thus base the discussion of our findings on the more robust fixed-effects results reported in Table 3. The results imply the expected relationship between the economic growth ($Y_{i,t}$) and the explanatory variables i.e., the variables representing the sources of growth have the expected signs and

are according to the a priori predictions. The results from fixed effects model indicate that all the good governance index (voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption) indicator variables have positive and statistically significant effects on the GDP per capita except political stability and control of corruption (at $p < .05$) of MENA countries in 6 panels.

Table 3: Fixed Effects Estimation Results

Variable	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6
Constant	2.255**	2.361*	3.942*	2.754*	2.541*	2.245*
	(2.20)	(9.65)	(3.59)	(5.96)	(5.87)	(6.89)
Y_{t-1}	0.352*	0.253*	0.221*	0.495*	0.353*	0.675*
	(6.65)	(5.35)	(5.98)	(3.36)	(6.98)	(7.26)
FDI	0.084*	0.045**	0.109	0.142**	0.241*	0.149*
	(8.69)	(2.51)	(1.70)	(2.09)	(6.39)	(9.68)
K	0.003*	0.006*	0.004**	0.083	0.058*	0.063*
	(3.67)	(3.79)	(2.68)	(1.69)	(3.36)	(3.78)
INF	-0.055*	-0.037*	0.063*	-0.061*	0.058	-0.048**
	(-4.68)	(-6.59)	(4.48)	(-6.68)	(1.83)	(-2.98)
L	0.035*	0.031*	0.029*	0.032*	0.034	0.035*
	(4.37)	(4.54)	(3.48)	(5.24)	(1.83)	(3.54)
VAI	0.058*					
	(4.58)					
PSI		0.043*				
		(3.58)				
GEI			0.051			
			(1.48)			
RQI				0.171*		
				(3.73)		
RLI					0.064*	
					(4.57)	
CCI						0.081
						(1.54)
R-Squared	0.832	0.823	0.873	0.864	0.798	0.897
No- obs	252	252	252	252	252	252

Source: Authors

Notes: *, **, *** denote statistical significance at the 10%, 5% and 1% levels, respectively. The number is brackets are t-Statistics. VAI, PSI, GEI, RQI, RLI and CCI denote voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption respectively.

Table 4: First Difference GMM Estimation Results

Variable	Panel 1	Panel 2	Panel 3	Panel 4	Panel 5	Panel 6
Constant	2.401*	2.471*	2.682*	2.134*	2.401*	3.354*
	(4.82)	(9.11)	(4.43)	(2.45)	(5.82)	(6.23)
Y_{t-1}	0.268*	0.221*	0.278	0.208*	0.168*	0.302*
	(6.75)	(7.78)	(0.90)	(5.45)	(6.55)	(5.35)
FDI	0.039**	0.083	0.005	0.083**	0.023**	0.048*
	(2.19)	(0.42)	(1.30)	(2.06)	(2.29)	(10.82)
K	0.7741	0.198**	-0.502*	0.091*	-0.774**	0.658*
	(1.90)	(2.34)	(-12.35)	(6.80)	(-2.90)	(3.23)
INF	-0.065	-0.720*	-0.756*	0.459*	-0.565**	-0.726*
	(-1.32)	(-6.21)	(-9.19)	(6.76)	(-8.32)	(-4.19)
L	0.061	0.050*	0.057*	0.069*	0.501**	0.067*
	(2.32)	(5.21)	(7.29)	(7.54)	(6.42)	(4.68)
VAI	0.068*					
	(6.55)					
PSI		0.038				
		(2.02)				
GEI			0.050*			
			(5.79)			
RQI				0.191*		
				(3.80)		
RLI					0.065**	
					(2.32)	
CCI						0.069
						(1.16)
Diagnostic Test						
Wald test	5513.24	1673.06	3159.37	3522.43	4253.44	8451.25
	[0.0000]	[0.0000]	[0.00]	[0.0000]	[0.0000]	[0.0000]
Sargan test	51.445	53.945	52.641	52.245	50.541	54.195
	[0.0335]	[0.0224]	[0.0254]	[0.0345]	[0.0345]	[0.0441]
AR(1) test	-5.014	-4.545	-3.155	-2.655	-4.254	-5.378
	[0.0001]	[0.0004]	[0.0000]	[0.0076]	[0.0001]	[0.0000]
AR(2) test	-1.554	-1.254	-0.875	-3.925	-2.570	3.535
	[0.1254]	[0.2810]	[0.491]	[0.0154]	[0.1544]	[0.6521]
No. of Obs.	252	252	252	252	252	252

Source: Authors

Notes: The Sargan Chi-square statistic tests the null hypothesis of no correlation between the instrumental and Residuals.The Arellano and Bond Z-statistic tests the null hypothesis that the residuals are first order correlated (AR(1)) and the residuals are not second order correlated (AR(2)). The figures in the parentheses are Z-statistic, while in the brackets are probability value (p-value). *, ** and *** The coefficient is significant at 1%, 5% and 10% levels, respectively.

Results obtained using the GMM dynamic method along with the STATA, are presented in Table 4. Table 4 shows the coefficients of estimators and the standard of the parameter of estimators (in parentheses) and the selection of diagnostic test. Two tests for the validity of instruments are used. The first is sargan test of over-identifying restrictions, which aims to examine the null hypothesis that the instruments used are not correlated with the residuals. The second test examines the null hypothesis that the error term is not serially correlated. The one-step and two-step GMM estimators are asymptotically corresponding for the first-differenced estimator (Arellano and Bond, 1991). In this case the two-step estimator is more efficient.

Accordingly, when the voice and accountability index (VAI) is used as the proxy for good governance, a 10 percent improvement in the voice and accountability of a county's citizenry leads to a 0.68 and 0.58 percent increase in its real per capita income in GMM (panel 1) and fixed effect (panel 1) model respectively. In the case of government effectiveness index (GEI), we find that a 10 percent improvement in a country's government effectiveness index (GEI) lead to a 0.50 and 0.51 percent increase in its real per capita income in GMM (panel 3) and fixed effect (panel 3) model respectively.

Also the results illustrated that a 10 percent increase in the regulatory quality index (RQI) lead to a 0.11 and 0.121 percent rise in its real per capita income in GMM (panel 4) and fixed effect (panel 4) model respectively. Similarly, we find that a 10 percent improvement in rule of law (RLI) translate into a 0.65 and 0.64 percent rise in per capita income in GMM (panel 5) and fixed effect (panel 5) model respectively. These findings of the current study are consistent with some previous studies which also found a significant positive effect of good governance index (GGI) to real GDP per capita for example (Man, 2014; Nsiah and Fayissa, 2010, Chauvet and Collier, 2004).

As can be seen from Table 4, for example, if FDI increases by 10 percent, real per capita income increases by 0.39 percent. These findings of the current study are consistent with some previous studies which also found a significant positive effect of FDI to real GDP per capita for example (Sasi and Mehmet, 2015; Brahmasrene and Lee, 2013). Also the results illustrated that a 10 percent increase in the capital leads to a 0.65 percent increase in its real per capita income in MENA countries. These findings of the current study are consistent with some previous studies which also found a significant positive effect of FDI to real GDP per capita for example (Ming, 2013; Tang, 2011, Lee and Chang; 2008). Table 4 show three diagnostic tests on the appropriateness of the instruments used. The first test is the Wald test to examine the significance of all regressors. The Wald test shows that the joint significance of regressors is statistically significant at the 1 percent level in all panels' first difference estimators for all panels of six index of good governance. The second test is a Sargan test of identifying restrictions under the null hypothesis of the validity of the instruments (Arellano and Bond, 19918). Based on the Sargan test statistic for all models, the high p-value suggests that the null hypothesis of no over-identifying restrictions fail to reject. Therefore, the Sargan test supports the validity of the first differenced GMM estimator.

The third test is proposed by Arellano and Bond (1991), which examines the hypothesis that the residual from the estimated regressions is first-order correlated but not second-order correlated. The third test examines the statistics (AR(1) and AR(2)) for presence of serial correlation in the first differenced residuals of first and second order, reported as the asymptotically standard normal distribution values. The results of the test for first-order autocorrelation AR(1) indicate that it rejects the null; the p-value of the Arellano and Bond statistics in Table 4 at the 1 percent significance level. The test results for second-order autocorrelation AR(2) fail to reject the null hypothesis of no autocorrelation and the statistics reported are p-values, giving the probability of correctly rejecting the null hypothesis of no autocorrelation. The absence of serial correlation shows the differenced residuals by significant negative first-order serial correlation and no second-order serial correlation. Therefore, the Arellano-Bond test statistics show that the instruments used are independent of the error term (no autocorrelation) and hence appropriate for the estimation; therefore, the first and second order serial correlation tests are all satisfied.

5. Conclusion and policy Implication

The purpose of this study has been to investigate the impact of good governance and FDI on per capita income growth for countries of the MENA region. The empirical results are based on annual panel of data of 18 MENA countries covering the years between 2000 and 2013. Six different sub-categories of good governance index (voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption) are analyzed. The result of Hausman specification test shows that the $p < 0.05$, therefore, we accept the fixed-effects model.

The results imply the expected relationship between the economic growth (Y) and the explanatory variables. The results of the GMM estimator model suggest that good governance has a positive and significant impact on growth, regardless of the proxy used for good governance except political stability and control of corruption. The relationship between growth and governance, however, was not established for both indicators "control of corruption" and "political stability". Furthermore, the results indicate that the impact of FDI is positive effects on GDP per capita.

Based on the Sargan test statistic for all models, the high p-value suggests that the null hypothesis of no over-identifying restrictions fail to reject. Therefore, the Sargan test supports the validity of the first differenced GMM estimator. The results of the test for first-order autocorrelation AR(1) indicate that it rejects the null; the p-value of the Arellano and Bond statistics in Table 4 at the 1 percent significance level. The test results for second-order autocorrelation AR(2) fail to reject the null hypothesis of no autocorrelation and the statistics reported are p-values, giving the probability of correctly rejecting the null hypothesis of no autocorrelation.

The salient conclusions drawn from this study suggest that good governance is important for the economic growth of MENA economies. To reverse the persistent anemic economic growth trend in MENA region, both domestic and external policy makers may have to place significant emphases on the maintenance of the voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. This by improving good governance index (six indexes) on real GDP per capita, and better economic institutions including strengthening the government effectiveness, enforceable contracts and the rule of law, drying up the root causes of corruption, and fair and predictable rules form the basis for economic growth. They also should take measures to promote political stability which will further attract more FDI, which in turn can lead to accelerate the process of economic growth in the region. The main implication of this study is that strong efforts are needed within MENA countries to improve the quality and effectiveness of regulatory mechanisms; to bring down corruption levels, to strengthen the rule of law, to achieve political stability and reduce internal violence; and to make governments more accountable to their own citizens.

The main policy implications of this study are that if MENA countries were to maximize the positive effects of FDI in their economies, they should (i) continue to improve their policy environment, reduce macroeconomic instability, and develop their financial systems; (ii) reduce the size of the government by implementing privatization programs that would reduce red tape and corruption and at the same time open economic sectors dominated by the State to foreign investors; and (iii) undertake deep reforms of educational and vocational training systems and promote local human capital accumulation. More specifically, the costly financial incentives to attract more FDI will be insufficient, and the region will miss the chance to tap a favorable international context where the shift of FDI to emerging markets continues to gather pace.

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