



Stability, FDI & Growth: Evidence from the MENA region

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ABSTRACT

This study aims to investigate the impact of foreign direct investment (FDI) on the economic growth of the MENA region from 1996 to 2022. It incorporates the world governance indicators (WGI) established by (Kaufmann et al., 2009) to use it as a proxy to reflect the government quality and a channel for activating the efficient role of FDI. I applied Hansen's (2001) and Arellano & Bond's (1991) GMM estimator techniques to deal with the endogeneity between FDI and growth. The study assumes that countries with high political stability are much better at benefiting from FDI and, hence, improve economic growth. The result indicates that political stability is an essential channel to activate the role of FDI, which in turn benefits the region of the MENA countries by improving their economic development.

Keywords: Government performance, Institutions, Economic development, Investment inflows

JEL Codes: F13, F43, F60

INTRODUCTION

Several studies have proven that open economies produce more goods and services in the long run, spread knowledge more widely, and ultimately have higher total factor productivity in the long term than closed economies (Barro & Sala-i-Martin, 1995; Meissner, 2014). Foreign direct investment (FDI) has been recognized as an essential resource for economic development. Several studies, including (Dabour, 2000; Forbes & Warnock, 2012; Yuan et al., 2017; Cui & Lu, 2018), draw attention to the fact that the flow of foreign direct investment plays a significant role in attracting capital, transferring technology and culture to develop capital, and promoting economic growth in open countries. FDI also could fill the gap between desired investments and locally mobilized savings. It also may boost tax revenues and support management, technology, and labor skills in host countries. Extensive studies have been conducted on the effects of FDI on economic growth, either at the firm or national levels. The research in this area has been intensified during this last decade due to the increased role of FDI in total capital flows.

Literature suggests that FDI stimulates economic growth in host countries through a significant source of capital, supports domestic private investment, mostly creates new job opportunities, and improves knowledge transfer (Joo & Shawl, 2023; Bouchoucha & Ali, 2019; Pegkas, 2015; Szkorupová, 2014; Feridun & Sissoko, 2011; Tiwari & Mutascu, 2011; Hansen & Rand, 2006; Sahoo & Mathiyazhagan, 2006; de Mello, 1999). While foreign direct investment is a critical factor for improving economic development, few studies show a negative impact of FDI on growth by lowering the productivity of the industrial sector and correlating to the CO2 emissions for the

host country. (e.g., Belloumi & Alshehry 2018; Zheng & Sheng 2017; Adams 2009; Lensink & Oliver 2006; Durham 2004; Sadik & Ali 2001; Haddad & Harrison 1993).

The indicators on the public governance dimensions play an essential role in achieving higher levels of economic development by improved credit ratings and increased investment, better public services and higher levels of human capital accumulation, more efficient use of foreign aid resources, faster technological innovation, and higher productivity of government spending are all ways to achieve higher levels of economic development.

Further, better and effective institutions proxied by high-quality governance indicators¹ can create better investment circumstances for a host country to attract more FDI (Xiujie & Weihua, 2021). The second important factor after macroeconomic instability is the political risks that are the biggest obstacle to the inflow of FDI in developing countries (Miga, 2013). The effectiveness of governance is a crucial factor in enhancing globalization and, in turn, leads to a significant magnitude of flowing FDI. Smooth globalization and a high rate of FDI require a high level of government efficiency, strong

¹ The Worldwide Governance Indicators (WGI) project reports aggregate and individual governance indicators for over 200 countries and territories, for six dimensions of governance:

- Voice and Accountability
- Political Stability and Absence of Violence/Terrorism
- Government Effectiveness
- Regulatory Quality
- Rule of Law
- Control of Corruption



infrastructure, and reduced transaction costs and trade barriers (Long et al., 2015).

Therefore, it is assumed that countries with better governance indicators will be more capable of attracting capital in different sectors, encouraging, and expanding the role of FDI. The immediate effects can be seen in the increasing sharing of goods and services and wealth distribution. The flow of foreign direct capital is a potential growth-enhancing player in the receiving country. The interest in the subject has also grown from the substantial increase in FDI flow that began in the late 1990s and led to a wave of research related to its determinants.

According to a recent report by the OECD, FDI flows have decreased dramatically globally, and the MENA region is experiencing a particularly sharp decline, especially after COVID-19, which has caused the region's severe socioeconomic issues (Feng et al., 2023). More importantly, a few sectors, such as the extractive industry, real estate, construction, and light manufacturing, have seen a concentration of FDI taking advantage of the oil-produced countries. Many of these industries have not made enough progress toward economic diversification or the creation of jobs, nor have they promoted the expansion of small and medium-sized businesses (SMEs) in the case of the MENA region.

The main goal of this paper is to investigate the relationship between the flow of FDI and economic growth through the channel of political stability. The importance of this study can be seen from the side of activating the role of political stability in the MENA region, which can attract a significant amount of foreign investment and stimulate economic growth. This study adds to the existing literature by considering the determinants of economic development for the MENA countries through the role of FDI and political stability. The results indicate that political stability and the absence of violence are essential to activating the role of FDI, which benefits the region of the MENA countries by improving economic growth.

METHODOLOGY

The present article intends to investigate whether FDI impacts the economic growth of 22 MENA countries and extend this relationship to analyze the role of political stability and the absence of violence in activating the role of FDI and affecting the growth of these countries. The significance of this study lies in attempting to answer the question: Does the channel of political stability lead the MENA region to benefit from inward FDI to stimulate growth better?

To answer this question, I follow (Syarifuddin, 2020; Kaur et al., 2013; Yao, 2006; Sijabat, 2023; Akiri & Eshidenang, 2020; Ramasamy & Matthew, 2022), and under the Cobb-Douglas specification of the production function that can be written as follows:

$$Y = f (K_{jt}^{\alpha} L_{jt}^{\beta} Z_{kt}^{\delta}) \quad (1)$$

Where Y is the outcome country j in time t, K is the capital stock held by domestic investors and foreign investors, Z is the combination between technology and labor, α, β, δ represent the elasticities. By applying the steady state equations of k and y

along with logarithmic transformation, we will get the following equation:

$$\ln y_{it} = \alpha_i (\ln K_{it}) + \beta_i (\ln L_{it}) + \delta_i (\ln Z_{it}) \quad (2)$$

OLS and Dynamic Panel Data Model

In this study, both the static and dynamic panel estimation techniques are estimated by using the OLS and fixed and random effects for static panel and the generalized method of moments (GMM) (Hansen, 2001; Arellano & Bond, 1991; Arellano & Bover, 1995) to estimate our dynamic panel data model which also allows for the lagged level of economic growth. Hence, the general relationship between the inflow of foreign direct investment and economic growth can be written in the form of the following panel data equation:

$$\ln y_{i,t} = \beta_0 + \beta_1 \ln y_{i,t-1} + \beta_2 \ln (FDI_{i,t}) + \beta_3 \ln X_{i,t} + \alpha_i + \lambda_t + \varepsilon_{i,t} \quad (3)$$

Where y is the GDP and defined as per capita in 2010 U.S. dollars in log form. FDI is defined as the net inflows of investment to acquire a lasting management interest as (% of GDP) i denotes a country subscript, t denotes time. X represents the control variables used in the study to capture the economic, social, and other exogenous factors that determined the economic growth, and they are defined in the Table 1, α is a country-specific effect, λ is a time-specific effect, and ε is a mean zero standard error term.

This study applies different specifications models to achieve the goal, namely, panel fixed and random effects, along with a pooled OLS model. While countries' unobservable individual effects are not controlled in the case of pooled OLS regression, using a panel-data model allows us to incorporate country effects and account for individual heterogeneity (Aviral & Mihai, 2011). Also, this study applies dynamic panel estimation techniques to deal with our estimates' biases and inconsistencies (Kiviet & Phillips, 2005). (Arellano & Bond, 1991) suggest a dynamic panel data model using the generalized method of moments (GMM) that includes the lagged endogenous variable as an explanatory variable. Specifically, I use the GMM system, which builds a system of level and first difference equations and uses appropriately lagged variables as instruments from both the levels and the first difference equations.

Descriptive Statistics

The analyses are conducted with a sample of panel data in which countries are the units of observation. This study employs macroeconomic data from the World Bank and the IMF. Also, this study incorporates the World Governance Indicators (WGI) established by (Kaufmann et al., 2009) to use it as a proxy to reflect the government quality and a channel for activating the efficient role of FDI. Therefore, this study analyzes the effect of the degree of FDI, political stability, and other control variables on economic growth from 1996 to 2022 for MENA countries².

² Countries included in the study are as follows: United Arab Emirates, Bahrain, Djibouti, Algeria, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Malta, Oman, West Bank and Gaza, Qatar, Saudi Arabia, Sudan, Syrian Arab Republic, Tunisia, Turkey, Yemen.



Table 1. Descriptive Statistics for the Applied Variables

Variables	Mean	S.D.	Min	Max
FDI (as % of GDP)	1.75	1.44	.61	2.02
GDP per capita (2010 U.S)	14725.5	17305.2	632.90	69679.09
Log of GDP	8.906	1.22	6.45	11.15
Political Stability (Estimated)	-.07	1.08	-2.50	2.13
Education	96.98	15.40	32.20	128.46
Population Growth rate	2.620	2.257	-4.53	17.51
Natural Resources	19.652	27.617	0	173.01
Access to sea or ports (Dummy)	0.956	0.204	0	1
Gross Fixed Capital Formation (as % of GDP)	26.32	9.34	2.85	56.87
Oil Shock (Dummy Variable)	.22	.41	0	1

Source: Author's calculation

Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Primary education provides children with basic reading, writing, and mathematics skills and an elementary understanding of such subjects as history, geography, natural science, social science, art, and music (World Bank,2022).

Table 1 provides the descriptive statistics for all variables used in this study. There are some essential and exciting facts that need to be highlighted in Table 1. That is, on average, the MENA countries in our sample have estimated political stability of ³ -0.7 over the entire period from 1996 to 2022; the lowest rate is -2.5, reflecting Iraq and Yemen countries that have experienced violence and war in different years, whereas the highest is about 2.13 for Malta country. The result also shows that the net inflow of FDI as a percentage of GDP has an average of 0.7 and was at its highest peak of 2.2 in the UAE. The lowest means of FDI (0.7) and GDP per capita (\$632.90) are in Yemen. In this study, I capture other macro and demographic factors essential in determining economic growth in the MENA region. The correlation matrix in Table 2 indicates a positive relationship between FDI and economic development—Table 3 measures multicollinearity among the independent variables over a variance inflation factor (VIF). The result suggests a small VIF on all explanatory variables in Table 3.

Since smooth trade requires a high level of government quality, a high level of government efficiency facilitates the increase of international exchanges and inward FDI by reducing transaction costs and trade barriers (Rodrik, 2011). Therefore, countries with better-quality governments are more likely to manage and control their resources, stimulating FDI and affecting growth.

In this paper, I use political stability and the absence of violence to represent the quality of government. It measures perceptions of the likelihood of political instability or politically motivated violence, including terrorism—performance score

from -2.5 (weak) to 2.5 (strong) governance performance and represented in Eq. 4 by PS. To test for the indirect or the cross-effect of FDI and political stability, I introduce an interactive term between FDI and political stability in our basic specification. Thus, our extensive econometric model of Eq.3 can be seen in the Eq.4.

RESULTS AND DISCUSSION

Primary Result

The OLS, fixed, random, and system GMM estimation results from Eq. (3) & (4) are presented in Tables 4 & 5. The estimation results point out stable coefficients. More importantly, the F-test of overall significance indicates the OLS regression model in Tables 4 & 5 provides a better fit than the intercept-only model. Based on examining the correlation between unit-specific error terms and independent variables, the Hausman test is used to decide between fixed and random effect models. The Hausman test results indicate that a fixed effect model is more appropriate in the case of the MENA region. The Wald test in Table 4 & 5 suggests good goodness of fit, and the Hansen test reveals no sign of over-identifying restrictions. The equations show a negative first-order autocorrelation. It does not imply that the estimates are inconsistent as they are rejected by the test for AR (2) errors (Arellano & Bond, 1991). The lagged dependent variable, which measures the degree of persistence of our economic growth measure outcome, is statistically significant across all models in Table 4&5, indicating a high degree of growth persistence and justifying the use of a dynamic model.

³ Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e., ranging from approximately -2.5 to 2.5, Kaufmann, Daniel, Aart Kraay and Massimo Mastruzzi (2010). "The Worldwide Governance Indicators: Methodology and Analytical Issues". World Bank Policy Research Working Paper No. 5430 (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1682130).



Table 2. Correlation Matrix between Variables

Variables	FDI (as % of GDP)	GDP per capita	Political Stability (Estimated)	Education	Population Growth rate	Natural Resources	Access to sea or ports (Dummy)	Gross Fixed Capital Formation (as % of GDP)	Oil Shock (Dummy Variable)
FDI (as % of GDP)	1								
GDP per capita (2010 U.S)	0.44*	1							
Political Stability (Estimated)	0.196*	0.143*	1						
Education	0.274	-0.05*	0.059	1					
Population Growth rate	0.460	0.517	0.017*	0.117*	1				
Natural Resources	0.134*	0.052*	0.055*	0.361	0.121*	1			
Access to sea or ports (Dummy)	0.078	-0.11*	-0.052*	0.188*	0.411*	-0.016	1		
Gross Fixed Capital Formation (as % of GDP)	0.111*	0.05	0.145	0.126*	0.420*	0.392*	-0.018	1	
Oil Shock (Dummy Variable)	0.615*	-0.531	-0.341*	0.206*	0.501*	-0.107*	-0.024	0.032	1

Source: Author's calculation

Table 3. Variance Inflation Factors for all regressors

Variable	VIF	(VIF) ²	Tolerance	R ²
FDI (as % of GDP)	1.25	1.12	0.802	0.197
GDP per capita (2010 U.S)	1.02	1.01	0.981	0.018
Political Stability (Estimated)	2.45	1.57	0.408	0.592
Education	1.91	1.38	0.52	0.47
Population Growth rate	2.12	1.46	0.471	0.528
Natural Resources	1.50	1.23	0.665	0.334
Access to sea or ports (Dummy)	1.44	1.19	0.76	0.24
Gross Fixed Capital Formation (as % of GDP)	1.50	1.23	0.66	0.33
Oil Shock (Dummy Variable)	1.91	1.37	0.53	0.47

Source: Author's calculation



Table 4. The effect of FDI on the economic growth of the MENA region.

Dependent variable: Ln(GDP)				
Variable	OLS (1)	Fixed Effect (2)	Random Effect (3)	GMM (4)
Ln(L.GDP)912 (.014) ***
Ln(FDI)	.140 (.060) ***	.250 (.046) ***	.120 (.806)	.098 (.019) ***
EDU	.045 (.006) **	.029 (.004) ***	.019 (.004) **	.052 (.004) ***
Pop Grow	-.026 (.003) ***	-.022 (.003) ***	-.026 (.003) ***	-.045 (.003) ***
Natur. Resu	.004 (.002) *	.001 (.0007)	.002 (.002) *	.004 (.002) *
Acce. T. Sea	.221 (.982)	.201 (.843)	.111 (.245)	.098 (.019) ***
GCF (as % of GDP)	.016 (.007) **	.018 (.007) **	.012 (.007) *	.019 (.007) **
Constant	1.841 (.087) ***	1.489 (.101) ***	1.510 (.139) ***	1.547 (.083) ***
Time & Country fixed effects	Yes	Yes	Yes	Yes
No. of Countries	22	22	22	22
Observations	528	528	528	528
Wald chi ² & Wald-Test	.	.	1074.98 ***	1120.54 ***
F- test	24.94	113.93	25.85	.
R ²	0.729	0.390	0.736	.
Hausman & Hansen test (p-value)	.	20.25 ***	.	0.271
AR test AR(1) (p-value)	.	.	.	(0.04)
AR test AR(2) (p-value)	.	.	.	(0.549)

Note 1- The F test has normal distribution $N(0,1)$ and tests the null hypothesis of the insignificance of the estimated parameters against the alternative hypothesis of the significance of the estimated parameters.

2- *** and * denote significance at 1 and 10 % significance levels, respectively.

3-The figure in parenthesis below the coefficient estimates is standard errors.

4-The Hausman test has χ^2 distribution and tests the null hypothesis that unobservable individual effects are not correlated with the explanatory variables, against the null hypothesis of correlation between unobservable individual effects and the explanatory variables.

Source: Author's calculation

Table 4 provides estimates of equation 3 to analyze the impact of FDI on economic growth using OLS, fixed effect, and GMM estimators, respectively. The FDI variable appears with expected signs in all specifications. It is statically significant with different levels of significance across specifications to explain the variation in the economic growth of the MENA region. On average, a 10 percent increase in the inflow of FDI leads to 1.4, 2.5, and 0.98 percent overall economic growth in the MENA region for OLS, fixed effect, and GMM models, respectively. The result consists with (Joo & Shawl, 2023; Bouchoucha & Ali, 2019; Pegkas, 2015; Szkorupová, 2014) in which FDI has a positive and significant impact on economic growth in the host countries, while few studies show a negative

effect of FDI on growth by decreasing the productivity of the industrial sector for the host country. (Belloumi & Alshehry 2018; Zheng & Sheng 2017; Adams 2009; Lensink & Oliver 2006; Durham 2004; Sadik & Ali 2001; Haddad & Harrison 1993).

Based on the literature, this study includes several control variables to reflect the social, environmental, and economic factors in all specifications. The results in Table 4 indicate that gross capital formation and human capital proxied by total enrollment of primary school are significantly linked with economic growth and appear with expected signs. It suggests that a 10 percent increase in GCF is associated with .16, .18, and .19 percent enhancement in average economic growth



using OLS, fixed effect, and GMM estimators, respectively. Improvements to human capital are necessary for economic growth. Countries can be improved in terms of the competencies and expertise of their labor force by allocating resources toward education, training, and experience. The result indicates that a 10 percent increase in total enrollment in primary school is associated with .45, .29, and .52 percent enhancement in average economic growth using OLS, fixed effect, and GMM estimators, respectively.

The Role of Stability in FDI-Growth Nexus

To test the FDI mechanism and observe how FDI influences economic growth through the performance of the

government's quality, I include political stability and the interaction term of this variable with FDI. Therefore, Table 5 summarizes the empirical results for the economic growth outcome after adding the political stability and its interaction with FDI, using OLS, fixed effect, and GMM estimators, respectively. Results from Table 5 show a significant and positive relationship between FDI and political stability with economic growth. That proves our assumption that the countries in the MEMA region with better government quality proxied by political stability can attract more FDI and control their resources, hence, better economic development.

Table 5. The effect of FDI and political stability on the economic growth of the MENA region.

Dependent variable: Ln(GDP)				
Variable	OLS (1)	Fixed Effect (2)	Random Effect (3)	GMM (4)
Ln(L.GDP)928 (.001) ***
Ln(.FDI)	.160 (.012)***	.152 (.013)***	.537 (.030)***	.291 (.010)***
PS	.260 (.008) ***	.200 (.010) ***	.318 (.011) ***	.211 (.006) ***
(PS * FDI)	.251 (.081) ***	.136 (.001) ***	.347 (.064) ***	.155 (.018) ***
Control Variables	Yes	Yes	Yes	Yes
Time & Country fixed effects	Yes	Yes	Yes	Yes
Constant	1.214 (.041) ***	1.280 (.093) ***	1.490 (.24.) ***	1.346 (.084) ***
Time & Country fixed effects	Yes	Yes	Yes	Yes
No. of Countries	22	22	22	22
Observations	528	528	528	528
Wald chi ² & Wald-Test	.	.	1452.01***	1662.54***
F- test	113.54	109.01	124.43	
R ²	0.601	0.612	0.600	.
Hausman & Hansen test (p-value)	.	0.105	.	0.229
AR test AR(1) (p-value)	.	.	.	(0.002)
AR test AR(2) (p-value)	.	.	.	(0.441)

Note: 1- The F test has normal distribution $N(0,1)$ and tests the null hypothesis of the insignificance of the estimated parameters against the alternative hypothesis of the significance of the estimated parameters.

2- *** and *denote significance at 1 and 10 % significance levels, respectively.

3-The figure in parenthesis below the coefficient estimates is standard errors.

4-The Hausman test has χ^2 distribution and tests the null hypothesis that unobservable individual effects are not correlated with the explanatory variables, against the null hypothesis of correlation between unobservable individual effects and the explanatory variables.

5- The Hansen test is for over-identifying restrictions in GMM dynamic model estimation. AB test AR (1) and AR (2) refer to the Arellano–A bond test that average autocovariance in residuals of order 1, respectively of order 2 is 0 (H_0 : no autocorrelation); p-values in brackets.

Source: Author's calculation



Further, the sum of the coefficients representing FDI's effect on economic growth is highly significant. In other words, the higher the degree of political stability, the stronger the positive correlation between FDI and economic growth in the case of the MENA region in Table 5. In other words, an increase of 1 standard deviation in political stability (1.08) corresponds to $0.251 \times 1.08 = 0.271, 0.167$ additional percent of the entire growth associated with each unit change in the inflow of FDI. In other words, an increase of 1 standard deviation in political stability increases the effect of FDI on overall economic growth by about 60% using OLS and GMM estimators (from 0.25 to 0.41 for each one percent change in FDI). Our result goes along with (Xiujie & Weihua, 2021; Botta, 2018; Anetor, 2020), in which they suggest that to maximize the role of FDI in growth, the government should focus on maintaining the overall level of the governance indicators. More specifically, (Hossain & Rahman, 2017) find that improvement in rules of law increases the impact of FDI on the growth of developing countries by 23.1%.

CONCLUSION

The empirical literature on the growth benefits of FDI has been largely indecisive. While some researchers concluded that growth benefits are linked with FDI, another study tends to find no, or limited effects associated with FDI. This paper has examined how FDI, government quality, and macroeconomic factors affect the growth development of 22 countries of the MENA region over the period from 1996 to 2022 using different estimation techniques. This article contributes to the literature by concentrating on the role of political stability and the absence of violence as a channel to improve the function of FDI on the economic growth of the MENA region. The results of this study indicate that FDI and economic growth have a positive and substantial association. The findings reported in this study are consistent with previous literature on the same theme. The overall impression one can draw from these findings is that foreign direct investment enhances economic growth through the channel of governance indicators. Further studies can be extended to see other economic, political, environmental, or social channels to boost the inflow of FDI and increase economic growth.

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