The Impact of Foreign Direct Investments on Economic Growth: The Case of MENA Region

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Abstract

The main purpose of this paper is to investigate relationship between foreign direct investment and economic growth for MENA countries from 1990 to 2014. We firstly tested heterogeneity and cross sectional dependence and found that all series have homogeneity and cross sectional dependence. For that reason, Hadri Kruzomi and Pesaran et al. Multifactor Error Structure panel unit root tests were used. For obtaining long-run relationship, we used Weterlund's panel and group cointegration tests. The results supported the long-run relationship, therefore, we used Common Correlated Effect Model, thanks to this method, and coefficients for each cross-section unit could be calculated individually.

Introduction

Growth rates change across countries and regions because the patterns of growth are not unique. The role of foreign trade on economic growth is important for academic research. Endogenous growth theory emphasizes the role of export on economic growth because in the long run export allows increasing innovations in all sectors. The rapid growth of FDI in developing countries widely accepted as an argument of openness in trade. The major role of FDI in the economy is to give courage to companies and governments to make investments on technology for gain the attention of foreign ones.

Empirical definition of FDI which has adopted by many countries just to distinguish it from portfolio flows is comprise capital provided by foreign investors directly or indirectly via of enterprises in another country with an expectation of profits derived from the capital investment (Ray, 2012). According to Abdouli and Hammami (2015) FDI means domestic investment in the host country. Foreign investors buy local inputs to produce and later they sell these intermediate inputs to the local enterprises and firms. In addition to this not only export capacity but also innovation process of host country can developed thanks to FDI inflows. Because of foreign exchange earnings, the creation of new jobs and technology spillovers can be seen.

According to the Neo-classical framework the impact of FDI on growth rate of output has two different effects, such as direct and indirect impact. The direct impact is FDI flows can influence growth rate if they increase investment rate. Indirect impact is FDI flows can promote growth rate if they will be the reason of positive spillovers in technology, labor and capital. Kamaly (2002) explained that there are two stories in the existing literature which called push and pull stories. Push stories describe the importance of external factors on capital flows, and they say the main driving force is international interest rate but pull stories show that domestic factors are more important than external ones to attract capital flows. He points that after 1990's economic growth based on capital flows (FDI + portfolio investment) in MENA region. On the other hand, Brahim and Rachdi (2014) stressed that FDI is one of the most stable component of capital stock and describes as a key of technology transfer that improves total factor productivity (TFP).

In fact the growth rate differs from developed and underdeveloped countries. Mehrara and Musai (2015) shows the importance of FDI is much higher in developing and underdeveloped countries. Because they are unable to satisfy their investment needs with domestic savings. Furthermore, FDI is one of the most effective and easiest ways to integrate with the rest of the markets not only providing capital but also knowledge and management know-how which is the fundamental of restructuring firms in the host countries.

The countries of MENA region have specific characteristics not only economically but also socially. According to Hassan (2004), the growth pattern heavily reliance on oil with weak economic base because of high population growth without education and unemployment rates. The state is still dominant in the economic sector and liberalization is not sufficient. Serious efforts only began after 1980's with the decreasing oil prices in MENA region to foster foreign trade to attract foreign direct investment as a development strategy. Because having a development programs heavily based on oil revenues was too risky. These countries started to generate new development strategies including export promotion and FDI inflows. Liberalization in trade sectors and eliminating restrictions on FDI in certain sectors with new legislations in several MENA countries (such as; Algeria, Tunisia, Turkey, Egypt, Morocco etc.) helped them not only to lower foreign debt and inflation but also introduce new laws with a new policy frame work. A major component of these legislations emphasized property rights and its protection. It means that the effect of FDI on growth rate has different aspects. Also researchers assume that FDI is additional input along with labor and domestic physical capital. It represents foreign ideas, managerial skills, know-how, and technological innovations (Darrat et al., 2011: 5). It is also crucial to emphasize that heavy dependence on foreign capital could be harmful for the economy of host country when the FDI flows are characterized by high volatility. Therefore, policy makers in developing country should not welcome any kind and level of FDI inflows just to suppose that it will be beneficial without thinking the cost of it to the economy.

It is accepted that FDI develops the modern techniques in industry with new technologies and technological diffusion. Owing to the FDI, to employ skilled managers is getting easier, and the stock of human capital with long-life learning with job training in research and development (R&D) departments increases. Also FDI can stimulate to produce raw materials for exporting. As a result of these facts government has to spend and invest much more effort to attract FDI, but crowding out should take into account for domestic savings not to have a negative impact on balance of payment via of capital account.

In this paper, relationship between FDI and economic growth is examined with using an empirical model for MENA countries for the period from 1990 to 2014. The rest of paper is divided into three sections. Section 1 provides literature review. Section 2 describes the data, methodology and gives empirical results. And conclusion part gives some policy implication.

1. Literature Review

The empirical literature finds strong evidence for the effect of FDI on economic growth. Solow (1956), Barro (1991), Romer (1986) and Lucas (1988) tried to show the importance of human capital for economic growth and income convergence across countries. Human capital is important because more highly trained work force is more productive for helping to enhance annual output rate of economy. After 1980's with globalization FDI became a key factor to understand economic growth. Kaldor (1963) tried to explain the mechanism of economic growth. In according to his study, growth in per capita output and also physical capital per worker are changing across countries.

Bashir (1999) examined the empirical relationship between FDI and per capita output growth rate for the period 1975-1990 for selected MENA countries. He developed the model of Barro and Sala-i-Martin (1995) to find an answer to maximization problem of utility function and found that FDI leads to economic growth but it changes across regions and over time. Zhang (2001) showed the contribution of FDI to economic growth concerned with the financial resources, technology, domestic savings and investments.

Neuhause (2006), points out that some determinants of FDI can influence economic growth rate with following three channels. These channels are technological change, improving capital stocks and generating economic growth. Hsiao T. And Hsiao M. (2006) set up a panel vector auto regressive model and found that FDI has unidirectional effects on GDP through exports. Alfaro et al. (2006) found that the same amount of increase in FDI generates three times more additional growth in financially well-developed countries than in financially poor-developed countries. Bhandari et al. (2007) reached similar results for East European Countries. At these countries an increase in the stock of domestic capital and inflow of FDI effect economic growth positively.

Basu et al. (2003) found a cointegration relationship between FDI and GDP for 23 developing countries for the period 1978-1996. Similarly Herzer et al. (2008) used time series techniques for 28 developing countries (10 Latin American, 9 Asian and 9 African countries) for the period 1970-2003, and found weak evidence that FDI enhances economic growth. Tiwari and Mutascu (2011) examines the impact of FDI on growth rate for the period 1986-2008 for

Asian countries. Also they considered the nonlinearities between export and FDI. Finally they found both FDI and export support the growth process. Hassen and Anis (2012), shows that in Tunusia for the period 1975-2009 with cointegration time series analysis, FDI significantly affect GDP positively with a few variables driving growth namely human capital and financial development. After giving the review of literature it is better to go on with theoretical and empirical model to show the impact of FDI for MENA countries.

2. Data, Methodology and Empirical Evidence

In this study, we examine whether FDI effects economic growth of MENA countries. To test this, we started with the production function framework. The production function can be written as follows:

$$Y = f(K, L) \tag{1}$$

Y, denotes output level (GDP per capita), K, denotes capital level (gross capital formation as a percentage of GDP), and L denotes labor level (labor force participation rate as a percentage of total population). We assume that technology is constant. While technology level is constant any increase in capital (or labor) will cause an increase in the output level of the country.

This production function can be improved according to new growth theory of Barro and Sala-i Martin (1995). The new growth theory points that export improves productivity growth. Mankiw (2004) states that international trade affects economic growth like technology. Which means that export can be converted into non-specialized production specialized production. Furthermore exports can lead total factor productivity growth thanks to efficiency in allocation of inputs. Grossman and Helpman (1991a) shows that exports can be lead to positive economic growth through different channels such as economies of scale, and diffusion of technical knowledge (Tiwari and Mutascu, 2011: 177-178).

Therefore we can add export (X, exports of goods and services as a percentage of GDP) to the production function as an explanatory variable. And the literature involved shows that FDI has positive effect on economic growth in host countries. On the other hand Blömstrom et al. (2000) stressed that FDI is not uniquely sufficient to generate economic growth in a host country. Our production function can be written as following:

$$Y = f(K, L, X, FDI) \tag{2}$$

When we write the equation (2) as an econometric form, our regression can be written as follows:

$$Y_{it} = \beta_0 + \beta_1(K_{it}) + \beta_2(L_{it}) + \beta_3(FDI)_{it} + \beta_4(X_{it}) + \varepsilon_{it} \tag{3}$$

t denotes time, *i* denotes country, and ε_{it} is the error term.

At this paper, the degree of linkage between FDI and economic growth will be tested for MENA countries during the period 1990-2014. We collected data from World Bank Economic Indicators. We excluded before 1990s from the analysis due to lack of data.

In the first step of the estimation, we run heterogeneity test. Pesaran and Yamagata (2008) developed Delta test to examine the heterogeneity between cross section units (Pesaran and Yamagata, 2008: 52):

$$y_{it} = \alpha_i \tau_T + X_i \beta_i + \varepsilon_{1,i}, \tag{4}$$

where τ_T indicates $T \times 1$ vector of ones, β_i is $k \times 1$ vector of unknown slope coefficient, $y_i = (y_{i1},..., y_{iT})'$, $x_i = (x_{i1},..., x_{iT})'$, and $\varepsilon_{1,i} = (\varepsilon_{1,i1},..., \varepsilon_{1,iT})'$. According to the Delta test, null and alternative hypotheses are as follows:

$$\begin{aligned} H_0 &: \beta_i = \beta \\ H_1 &: \beta_i \neq \beta_j \end{aligned} \tag{5}$$

If null hypothesis is failed to reject, then series are homogeneous. Our Delta test results are shown in table 1 below.

Table 1: Delta Test Results

Delta Test	Test Statistics	Probability
$\hat{\Delta}$	-2.156	0.984
$\hat{\Delta}_{adj}$	-2.458	0.993

According to table 1 our variables are homogeneous because the given probability value is under 0.05 for both level so null hypothesis has accepted.

It is important to determine the Cross-section dependence (CD) before implementing unit root tests, so we used CD test of Pesaran (2004). Standard panel data model (Pesaran, 2004: 3):

$$y_{it} = \alpha_i + \beta_i' x_{it} + \varepsilon_{2,it}, \qquad \text{for } i = 1,2,\ldots,N \text{ and } t = 1,2,\ldots,T \tag{6}$$

where i indicates the cross section dimension, t the time series dimension, x_{it} is $k \times 1$ vector of observed time-varying regressors, α_i are individual intercepts, β_i are slope coefficients. The hypotheses are

$$\begin{aligned} H_0 &: \rho_{ij} = \rho_{ji} = cor(\varepsilon_{2,it}, \varepsilon_{2,jt}) = 0 \\ H_1 &: \rho_{ij} = \rho_{ji} \neq 0 \end{aligned} \tag{7}$$

The CD test results are shown in table 2 below.

Table 2: Cross Sectional Dependence Test

Variable	Test Statistics	Probability
Y	83.791***	0.000
K	69.011***	0.012
L	211.647***	0.000
FDI	80.769***	0.001
X	61.250**	0.054

Note: ***,** indicate that the coefficient is significant at 1% and 5% respectively.

According to probability values of variables in table 2, the null hypothesis which claims that there is no cross section dependency is rejected. So there is cross sectional dependence exist for our data. Before implementing the co-integration test second-generation unit root tests [Hadri-Kurozumi (2012) and Pesaran et al. Multifactor (2013)] were performed panel data which take into account the cross sectional dependence.

Hadri and Kurozumi (2012), the study of Hadri (2000) unit roots for panel data set had been corrected in the light of Pesaran (2007) to take into account cross sectional dependence and in fact it is KPSS test (SPC version) which has just adapted to panel data and suggested as a second generation unit root test. In case of trend existence or many other circumstances (heterogeneity or homogeneity etc.) the test gives powerful and statistically significant results.

The model is predicted by the test as follows (Hadri and Kurozumi, 2012: 31);

$$y_{it} = z'_t \delta_i + f_t \gamma_i + \varepsilon_{it}, \quad (8)$$

$$\varepsilon_{it} = \emptyset_{ip} \varepsilon_{it-1} + \cdots + \emptyset_{i1} \varepsilon_{it-p} + v_{it} \quad (9)$$

$i = 1, \ldots, N$ ve $t = 1, \ldots, T$ while z_t denotes deterministic trend which can be calculated or gives an explanation about the changes in dependent variable. Contrast to first generation unit root test the null hypothesis claims that the serie is stationary. So the null and alternative hypotheses are stated as follows (Hadri and Kurozumi, 2012: 32);

$$H'_o : \emptyset_i(1) \neq 0, \ \forall_i \quad (10)$$

$$H'_1 : \emptyset_i(1) = 0 \quad (11)$$

Two different types of test statistics are calculated for this test. There are Z_A^{SPC} and Z_A^{LA}; Both are assumed to have normal distributions while converges to infinity.

The HK test results are shown in table 3 below.

Table 3: HK unit root test results

	Constant		Constant and trend	
Level	**T-stat.**	**Prob.**	**T-stat.**	**Prob.**
Ingdp				
ZA_spc	-0.3373	0.6321	0.1747	0.4307
ZA_la	-0.2274	0.5899	0.7454	0.2280
Infdi				
ZA_spc	0.5167	0.3027	2.4176	0.0078
ZA_la	0.1784	0.4292	2.3214	0.0101
Inlab				
ZA_spc	-0.9455	0.8278	0.6197	0.2677
ZA_la	-1.0302	0.8486	0.6278	0.2651
Ingro				
ZA_spc	2.0789	0.0188	7.5072	0.0000
ZA_la	1.4540	0.0730	5.2912	0.0000
InX				
ZA_spc	2.7127	0.0033	4.6886	0.0000
ZA_la	2.4483	0.0072	7.3121	0.0000
First Difference				
Ingdp				
ZA_spc	-0.5176	0.6976	4.4643	0.0000
ZA_la	0.8377	0.2011	9.2246	0.000
Infdi				
ZA_spc	0.8277	0.2039	7.0143	0.0000
ZA_la	1.4432	0.0745	9.4035	0.0000
Inlab				
ZA_spc	-1.3735	0.9152	1.2882	0.0988
ZA_la	-1.0755	0.8589	2.1669	0.0151
Ingro				
ZA_spc	3.7555	0.0001	12.8507	0.0000
ZA_la	3.7751	0.0001	14.0986	0.0000
InX				
ZA_spc	6.3318	0.0000	27.0781	0.0000
ZA_la	7.7938	0.0000	32.0881	0.0000

Maximum length is taken as 4 and optimal lag length for each horizontal section is determined by the Schwarz information criteria. ZA_spc is KPSS test statistics of long term variance which developed and expanded by Sul et al (2005). ZA_la is KPSS test statistisc of long-term variance which is calculated by Choi (1993); Toda and Yamamoto (1995) for panels. When looking at table 3, it is clear that variables are non-stationary at the level. Because, the probability value calculated for variables are statistically significant and less than 0.05. So variables contained unit root and can be said that they are stationary after their first difference I(1).

In this the study we also used Pesaran et al. (2013) unit root test in the presence of Multifactor Error Structure which is prerequisite for CCA (Common Correlated Affects) method and developed from Pesaran (2007) with CIPS (cross-sectionally augmented panel unit root test) statistics and expanded with a new CSB (simple average of cross-sectionally augmented Sargan-Bhargava) statistics. The purpose of this unit root test to prevent or consider the error structure of common factors [such as; technology shock, fiscal policy and so on] (autocorrelation) for emprical studies in macroeconomic theory with the context of (output, unemployment, interest rates, investment rates etc.).

Test statistics are estimated as follows (Pesaran et al., 2013: 96);

$$CIPS_{NT}^{*} = N^{-1} \sum_{l-1}^{N} t_i^*(N,T) \quad (12)$$

$$CSB_{NT} = N^{-1} \sum_{i-1}^{N} CSB_i\,(N,T) \quad (13)$$

N refers the number of horizontal section' units and T refers time. $t_i^*(N,T)$ is the distribution of sample. Null hypothesis claims that for all i's (1,2,3, ... N) $H_0: \beta_i$ cross section units have unit root or not co-integrated (Pesaran et al, 2013: 99). CSB test statistics has been calculated with stochastic simulation method. Therefore, series whether or not linear, or even in the existence of autocorrelation, the calculated test statistics are reliable and superior to the CIPS statistics in this respect.

Table 4: Multifactor error structure unit root test results

		Constant		**Constant and Trend**	
	Lags	**Stat.**	**Critical Value (k=3) (%10)**	**Stat.**	**Critical Value (k=3) (%10)**
Ingdp					
$CIPSm$	0	-1.258	-2.60	-0.911	-2.95
	1	-0.631	-2.41	-1.170	-2.74
	2	-	-2.10	-	-2.41
	3	-	-1.85	-	-2.09
	4	-	-	-	-
$CSBm$	0	0.085	0.351	0.055	0.120
	1	0.147	0.257	0.088	0.092
	2	0.129	0.180	0.098*	0.066
	3	0.150*	0.109	0.086*	0.039
	4	0.180*	0.051	0.072*	0.016
Factors					
		Infdi;Ingro;InX;Inlab		**Infdi;Ingro;InX;Inlab**	
Infdi					
$CIPSm$	0	-1.830*	-2.60	-1.740*	-2.95
	1	-0.284*	-2.41	-0.183*	-2.74
	2	-	-2.10	-	-2.41
	3	-	-1.85	-	-2.09

	4	-	-	-	-
$CSBm$	0	0.057	0.351	0.037	0.120
	1	0.105	0.257	0.084	0.092
	2	0.186*	0.180	0.103*	0.066
	3	0.227*	0.109	0.102*	0.039
	4	0.229*	0.051	0.106	0.016
Factors		**Ingdp;Ingro;InX;Inlab**		**Ingdp;Ingro;InX;Inlab**	
Inlab					
$CIPSm$	0	-2.530*	-2.60	-2.393*	-2.95
	1	-0.690*	-2.41	-0.554*	-2.74
	2	-	-2.10	-	-2.41
	3	-	-1.85	-	-2.09
	4	-	-	-	-
$CSBm$	0	0.047	0.351	0.037	0.120
	1	0.059	0.257	0.051	0.092
	2	0.053	0.180	0.040	0.066
	3	0.055	0.109	0.043*	0.039
	4	0.082*	0.051	0.069*	0.016
Factors		**Infdi;Ingro;InX;Ingdp**		**Infdi;Ingro;InX;Ingdp**	
Ingro					
$CIPSm$	0	-0.559*	-2.60	-1.134*	-2.95
	1	-0.067*	-2.41	-0.373*	-2.74
	2	-	-2.10	-	-2.41
	3	-	-1.85	-	-2.09
	4	-	-	-	-
$CSBm$	0	0.054	0.351	0.047	0.120
	1	0.248	0.257	0.127*	0.092
	2	0.243*	0.180	0.115*	0.066
	3	0.240*	0.109	0.097*	0.039
	4	0.225*	0.051	0.074*	0.016
Factors		**Infdi;Ingdp;InX;Inlab**		**Infdi;Ingdp;InX;Inlab**	
InX					
$CIPSm$	0	-1.446*	-2.60	-1.246*	-2.95
	1	-0.567*	-2.41	-0.006*	-2.74
	2	-	-2.10	-	-2.41
	3	-	-1.85	-	-2.09
	4	-	-	-	-
	0	0.030		0.021	

CSBm			0.351		0.120
	1	0.133	0.257	0.060	0.092
	2	0.120	0.180	0.054	0.066
	3	0.150*	0.109	0.046*	0.039
	4	0.212*	0.051	0.054*	0.016
Factors					
		Infdi;Ingro;Ingdp;Inlab		**Infdi;Ingro;Ingdp;Inlab**	

CIPS and CSB statistic's critical values are taken from Pesaran et al. (2013)'s study. Vide for CIPS; constant model in page 109 table B1; constant and trend model in page 111 table B2. Vide for CSB; constant model in page 113 table B3; constant and trend model in page 115 table B4. * indicates calculated statistical value is greater than the table critical value. So variables contain unit roots at level and but their first difference I (1) is stationary.

The results obtained from the panel unit root tests indicate that it is necessary to use second generation co-integration test which takes into account cross sectional dependence. Because the assumptions of cointegration test are changing according to the degree of stability.

Given the cross section dependence of our series, we employ second generation panel cointegration tests. Westerlund (2008) proposed the Durbin–H panel and group cointegration test, which gives more powerful results than any other panel cointegration test if there exists cross section dependence. The following equation is proposed by Westerlund (2007):

$$\Delta y_{it} = \delta_i^{'} d_t + \alpha_i (y_{it-1} - \beta_i^{'} x_{it-1}) + \sum_{j=1}^{pt} \alpha_{ij} \Delta y_{it-j} + e_{2,it} \quad (14)$$

where α_i is error correction term, d_t shows deterministic trend, $e_{2,it}$ is residuals. Durbin-H group and Durbin-H panel statistics are computed as follows Westerlund (2008):

$$DH_g = \hat{S}_i (\tilde{\phi}_i + \hat{\phi}_i)^2 \sum_{t=2}^{T} \hat{e}_{it-1}^2 \quad (15)$$

$$DH_p = \hat{S}_n (\tilde{\phi} + \hat{\phi})^2 \sum_{i=1}^{n} \sum_{t=2}^{T} \hat{e}_{it-1}^2 \quad (16)$$

$\hat{S}_i$ and $\hat{S}_n$ are the variance ratios, and $\hat{e}_{it-1}$ is the consistent estimate of e_{it-1}. Panel statistics, DH_p, is summing the n individual terms. Group mean statistics, DH_g, is constructed by multiplying the terms and then summing them up. The null and alternative hypotheses of Durbin–H panel and group cointegration tests are as follows:

$$H_0 : \phi_i = 1 \quad for \ all \ \ i = 1,\ldots,n$$
$$H_1^p : \phi_i = \phi \ \ and \ \ \phi < 1 \quad for \ all \ \ i$$
$$H_1^g : \phi_i < 1 \quad for \ at \ \ least \ \ some \ \ i$$

The Durbin-H panel cointegration results are compared with the critical value, 1.645.

Table 5: Durbin-H panel and group Cointegration Test

	Test Statistics	**Bootstrap Prob.**
DH_p	37.691	0.000
DH_g	11.900	0.000

According to the table 5, null hypothesis is rejected. Our test results support the long run cointegration relationship. It means that deviations from equilibrium value of the variable in the short run will be corrected in the long run. After panel co-integration test it is time to estimate long term coefficients with CCE (Common Correlated Effects) method which has developed as a new prediction approach by Pesaran (2006). Because panel data models include unobserved common factors so it is necessary to consider this multifactorial error structure of given external individual regressors.

The pooled CCE coefficients are predicted by Monte Carlo experiments. In context of adequate levels of heterogeneity and dynamic structure forecasters are giving accurate results even in small observations. Cross section units are calculated individually in this model (Pesaran, 2006: 967).

The model for heterogeneous panel data regression is estimated with the following equations (Pesaran, 2006: 971);

$$y_{it} = \alpha_i d_t + \hat{b}_i x_{it} + e_{it}, \tag{17}$$

$$e_{it} = \gamma f_t + \varepsilon_{it} \tag{18}$$

Pesaran and Yamagata (2008), $f_t \rightarrow m \ x \ 1$ indicates vector of unobservable coomon effects, ε_{it} denotes individual error terms. d is observable (constant, trend, dummies etc.) and f is unobservable common effects. (d_t, x_{it}) has a independent distribution from each other. Observed and unobserved factors are assumed to be external and stationary in the first difference are co-integrated.

Table 6: CCE test results

Variables	Coefficients	Standard Deviation	T- statistics
FDI	0.083283	0.190425	0.437357
L	-0.38414	0.200507	-1.91587
K	0.258945	0.084805	3.053418
X	-0.08961	0.139795	-0.64105

According to table 6, capital formation has positive effect on gdp per capita i.e. economic growth of economy in the long term. An increase in the capital formation 1% percent, economic growth increased 0.25%. Coefficient of FDI and X is insignificant, so we cannot interpret the results.

There are two different estimators to predict long-term regression coefficients in CCE method. They are Common Correlated Effects Mean Group (CCEMG) and Common Correlated Effects Pooled (CCEP). After Monte Carlo simulations it has seen that CCEMG and CCEP estimators are giving effective results even in small samples and CCEP estimator superior than the other (Nazlıoğlu, 2010: 102).

Another advantage of this method is long-term coefficients for each cross section unit can be individually calculated. Thanks to this it is possible to see and evaluate results for each country separately. The following table gives the long-term regression coefficients of the cross section units.

Table 7: CCE Test Results for All Cross Section Units

ID	*K*	*X*	*L*	*FDI*
Algeria	0.191***	0.097	1.225***	1.563***
Bahrain	-0.210	-0.185***	-1.716***	-0.053
Egypt	0.301***	-0.095	-0.419	0.348***
Iraq	-0.189	-0.413	0.630	1.201
Jordan	0.572***	-0.774	-0.504***	-0.230
Morocco	1.087***	-1.532***	-2.269***	0.224
Israel	0.362	-0.504	-0.251	1.266***
Turkey	0.897***	-0.023	-0.940***	-1.135**
Tunisia	0.625***	-0.183	-0.551	-0.353
Saudi Arabia	-0.590***	0.588***	-0.140	0.340***

SD represents standard deviation and T represents time. *** show the significance at 1%. The results show that in Algeria, Egypt, Jordan, Morocco, Turkey, Tunisia capital formation effect economic growth positively except for Saudi Arabia. Export effects economic growth positively in Saudi Arabia, but effects negatively in Bahrain and Morocco. Labor force of the country has negative impact on economic growth in Bahrain, Jordan, Morocco and Turkey. Only in Algeria, labor force effects positively. FDI has positive contribution to economic growth in Algeria, Egypt, Israel and Saudi Arabia.

Conclusion and Policy Implications

MENA countries achieved to get increased foreign direct investment inflows and it affected the sustained growth. But from 2009, these countries are affected from external shocks because of the global economic crisis and Arab Spring.

In the MENA region, one of the biggest problems is policy uncertainty and lack of transparency. Because of this FDI inflows decreased 52% from 2008 global crisis. FDI to MENA region concentrated in limited sectors. These are coal, oil and natural gas. These countries should increase variety of sectors.

There is no significant independent impact of FDI on economic growth in the MENA countries. But when we look at the individual results, we can see the significant and positive relationship in Algeria, Egypt, Israel and Saudi Arabia. We see negative effect for Turkey.

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