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FDI, Financial Development and Growth in Host Countries: The Case of North African Countries (NACs)

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Abstract

This paper investigate the long run relationship between financial depth, FDI and economic growth in a sample of 5 FDI-receiving NACs over the period 1980-2018. A standard growth models are estimated using both fixed-effects and random effects models. In addition panel unit root and panel cointegration tests are employed to check for the efficiency of the data. The long run relationship is estimated using fully modified OLS and: Panel Dynamic Least Squares (DOLS) methods.

The empirical results show the support of the fixed –effects method as the random effects model is rejected based on Hausman test result. The results of fixed effect show positive and statistically significant measures of the interaction terms of financial market development indicators with FDI. These results confirm the complementarity between the different components of financial intermediary and FDI, and their effect on economic growth. The panel cointegration tests confirm the fact that there is a positive, significant and long period relationship among finanacial depth indicators, FDI and economic growth.

.This study concludes that for countries in NACs region, to utilize the benefits from FDI more emphasis and concern should be directed to the pre-country conditions for attracting FDI, mainly financial sector development.

Keywords: FDI, Economic Growth, Fixed effects, NACs Countries
JEL Classification Code: C33, F21, F23, F43

1. INTRODUCTION

With increased of trade liberalization, industrialization digitization, and globalization in the recent years the volume of trade activities and FDI inflow to both developed and developing has increased strongly. The global foreign direct investment (FDI) totaled US$1.39 trillion in 2019, slightly less than a revised $1.41 trillion for 2018[2].

According to UNCTAD the FDI inflows to developing economies in 2019 was recorded to total $695 billion, meaning that these countries continued to absorb more than half of global FDI. For the performance of FDI growth rate, Latin America and the Caribbean showed the highest growth at 16% among the developing regions followed by Asia 6% and Africa 3%.

Concerning North African Countries (NACs)[3], FDI inflows increased by 7 per cent to $14 billion, and this is attributed to elevated iInvestment in most countries of the subregion.About half ($6.8 billion) of FDI inflow recorded in this sub region is performed by Egypt. Egypt is the the largest FDI recipient in Africa in 2018[4]followed by South Africa. Figure 1 below show the volume of FDI inflow to this sub region.

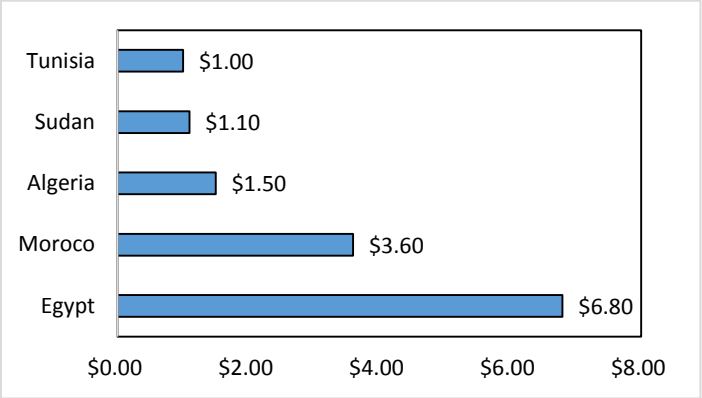

Figure 1: The volume of FDI inflow to North African Countries ($ billions)

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2 GLOBAL FDI FLOWS FLAT IN 2019, MODERATE INCREASE EXPECTED IN 2020, Investment Trends Monitor, UNCTAD

3 These countries are, Sudan, Egypt, Morocco, Algeria and Tunisia

4 According to regional Trends, Chapter 2, UNCTD, Foreign investment in Egypt was skewed towards the oil and gas industry, as significant discoveries of offshore gas reserves attracted investments from MNEs, and the country became a net exporter of gas in January 2019. Egypt signed at least 12 exploration and production agreements with international oil companies in 2018.

As shown in Figure 1 the highest performer among NACs group countries is Egypt followed by morocco. Egypt and morocco undertaken some reforms in favor of FDI. Foreign investment in Egypt was skewed towards the oil and gas industry, as significant discoveries of offshore gas reserves attracted investments from MNEs, and the country became a net exporter of gas in January 2019. Morocco benefit from relatively stable economic performance and a diversified economy, which is drawing foreign investment in finance, renewable energy, infrastructure and the automotive industry. (WIR, 2019) Algerian and Tunisia record reasonable achievement in attracting FDI. For Sudan, political instability, foreign exchange shortages and underdeveloped banking sector constitute the main constrains to the flow FDI to the country.

The objective of this paper is to focus on the impact of FDI inflows on (NACs) economic growth. We are going to examine the relationship between FDI and growth as well as financial development and growth in NACs by taking into account the complementarity between FDI and financial development on the process of economic development.

The rest of the paper is organized as follows. Section 2 reviews the literature on the relationship between FDI and economic growth. Section 3 outline the model specification and econometric methodology. Section 4 present and discuss the empirical results of our analysis of the relationship between FDI and economic growth Section 5 concludes and formulates policy recommendations.

2. LITERATURE REVIEW

Previous studies show that FDI can work efficiently in the host country if a minimum threshold level of absorptive capacity is fulfilled. A minimum threshold level of human capital, well developed financial markets, trade openness, levels of income, and technological gap are the prerequisite for attracting FDI.

FDI raises national welfare by increasing the volume and efficiency of investment through improved competitiveness, technological diffusion, accelerated spillover effects and the accumulation of human capital (Borensztein et al. 1998; Chakrabati, 2001; Asicdu, 2002; and Durham, 2004).

Some empirical studies argued that for FDI to promote growth certain characteristics of the host country should be met. Alfaro, Chanda, Kalemli-Ozcan, and Sayek (2004) for example they confirmed that well developed financial markets contribute significantly to the attraction of FDI. The level of development of the financial market is a deciding factor whether MNC's operate isolated in enclaves or they become catalysts for technology transfers. Moreover, Baltagi et al. (2005) find that the role of FDI is significantly influenced by the third countries effects and the complex integration strategies of multinationals, especially the bilateral trade costs among host countries

Carkovic and Levine (2002) in this paper they uses new statistical techniques and two new databases to reassess the relationship between economic growth and FDI. They find that the exogenous component of FDI does not exert a robust, independent influence on growth. Therefore, they show that FDI, per se, does not have a direct influence on growth.

Krogstrup and Mattar (2005) in their study of " Foreign Direct Investment, Absorptive Capacity and Growth in the Arab World" they argue that FDI is more likely to have positive externalities in countries with a certain level of absorptive capacity such as technology availability, level of education of the workforce, financial development and institutional quality.

In their paper "Foreign Direct Investment, Financial Development, and Economic Growth: Evidence from the Arab Countries "Omran and Bolbol (2003) estimate a growth equation to assess the impact of FDI in the countries of the Arab world. They finds that Arab FDI will have a favorable effect on growth if interacted with financial variables at a given threshold level of development. It also finds that in reform countries FDI could Granger cause financial development they also imply that countries should reform their domestic financial systems before working on attracting FDI.

Edison et al. (2002) argue that a more developed financial system is better able to effectively absorb capital inflows, especially if these flows are fungible. Thus, financial development might help explain possible divergent outcomes across countries with different incomes. Hermes and Lensink (2003) indicate that the importance of the domestic financial system as a precondition for the positive growth effects of FDI can be illustrated with a simple model of technological change. FDI and domestic financial markets are complementary in terms of enhancing the process of technological diffusion; to be sure, this in turn increases the rate of economic growth. Along similar lines, Alfaro et al. (2004) put forth the view that although most FDI is in the form of capital from abroad, it is essential to recognize that the spillovers for the receiving economy are most likely highly dependent on the extent of the development of the internal financial market. It is true that some local firms might be able to finance new endeavors with internal financing, but when it comes to firms that require technological knowledge the greater the gap is between current practices and the latest technology, the greater is the need for external financing.

Some recent studies also documented the effect of FDI on economic growth through financial development channel. Azman-Saini et al. (2010) for example demonstrate the importance of financial

development in enhancing the positive influence of FDI on growth through the usage of data from 91 economies over the period 1975 to 2005. The study reveals that favorable impact of FDI hinges on the pedestal of development of the financial markets.

Adeniyi, O. et al., (2012) on the other hand, examines the causal linkage between foreign direct investment(FDI) and economic growth - in Cote' d'Ivoire, Gambia, Ghana, Nigeria and Sierra Leone – with financial development accounted for over the period 1970-2005 within a trivariate framework which applies Granger causality tests in a vector error correction(VEC) setting. The study reveals the role of financial development for garnering the gains of FDI on the economic growth in Ghana, Gambia and Sierralone, further there is no trace of linkage in the case of the Nigerian economy

Sghaier & Abida (2013) examines the causal linkage between foreign direct investment (FDI), financial development, and economic growth in a panel of 4 countries of North Africa (Tunisia, Morocco, Algeria and Egypt) over the period 1980-2011. The study moves away from the traditional cross-sectional analysis, and focuses on more direct evidence of the channels through which FDI inflows can promote economic growth of the host country. Using Generalized Method of Moment (GMM) panel data analysis, we find strong evidence of a positive relationship between FDI and economic growth. We also find evidence that the development of the domestic financial system is an important prerequisite for FDI to have a positive effect on economic growth.

Choong, C. K. (2012) through using Generalized Method of Moments (GMM) panel data analysis to examine the relationship between Foreign Direct Investment (FDI), financial development and economic growth in a group of 70 developed and developing countries from 1988 to 2002, they found that the impact of FDI on economic growth is ambiguous. FDI may either increase or decrease the growth rate of the economy, depending on the financial market development indicators used in the study. The findings, however, support the notion that a certain level of financial sector development is a significant prerequisite for FDI to have a positive effect on economic growth.

On country case studies the relationship also tested for several countries, for example, Nwosa, Agbeluyi, & Saibu (2011) investigate the Causal relationships between financial development, foreign direct investment and economic growth in Nigeria over the time period 1970 to 2009. Through the tri-variate vector error correction model, it is deduced that there is existence of causality among the financial development, foreign investment and economic growth. Further, the purported variables have positive effect on the growth of the economy.

On the other hand, Najeeb et al (2017), investigate the relationship between Foreign Direct Investment, Financial Development and Economic Growth in Saudi Arabia, over the period of 1970 to 2015 by employing Vector Auto Regression (VAR) and modified Granger Casualty Models. The result of Johansen co-integration test illustrates that no long run co-integration can be established among the variables. VAR has established a link between economic growth, financial development and foreign direct investment. The Granger causality test also confirms that economic growth causes foreign direct investment and financial development which is a unidirectional causality running from economic growth towards foreign direct investment and financial development. No significant causality can be observed empirically between foreign direct investment and financial development. This feature can be attributed to the fact that Saudi Arabian economy is still heavily dependent on its oil resources which is the driving force behind growth. Impulse Response Function has been utilized in order to observe the response to the shocks among the variables.

3. Model Specification And Econometric Methodology

3.1 The Model

As the objective of this paper is to examine the impact of FDI on economic growth in NACs a simple econometric framework is adopted. To examine the basic determinants of FDI, the following model will be estimated:

$$Y_{it,} = f\ (FDI_{it}\ ,\ FDev_{it}\ ,\ Z_{it)}) \qquad (1)$$

Where FDI_{it} refers to foreign direct investment as a share of GDP; $FDev_{it}$ is a measure of financial development;; and Z_{it} is a set of policy control variables However, the Appendix describes in details the data used in the empirical analysis.

The model regress the measures of economic growth (Y_{it}) for country i on a measure of FDI, financial development indictors, and a measures of policy variables.

In the model above, we estimate the impact of FDI on growth and accordingly two versions of the model can be tested. In the first version, we estimate an empirical model in which the growth of real per capita GDP varies with FDI, $FDev_{it}$ and other explanatory variables. In the second version, we interact FDI flows variables with an indicator of financial development to test for the significance of the interacted coefficient. A positive interaction would imply that the growth effects of FDI are enhanced in deeper financial systems, supporting complementarity of FDI and FDI. Therefore, we shall run the following regressions:

Baseline Model:

$$GPGDP = \beta_{0i} + \beta_1 FDI_{it} + \beta_2 FDev_{it} + \beta_4 Z_{it} + \varepsilon_{it} \quad (2)$$

Model with FDI-Finance Interaction:

$$GPGDP = \beta_{0i} + \beta_1 FDI_{it} + \beta_2 (FDI_{it} * FDev_{it}) + \beta_5 Z_{it} + \varepsilon_{it} \quad (3)$$

3.2 Econometrics Methodology

For the estimation of our model, we use a data-set which consists of *N* cross-sectional units, denoted *i = 1,….,N*, observed at each of *T* time periods, denoted *t = 1,….,T*. We have a total of *TN* observations and *y* is a *(TN×1)* vector of endogenous variables and *X* is a *(TN×k)* matrix of exogenous variables which does not include a column of units for the constant term. In our context, we use annual data for 5 NACs from 1980-2018 *(so N = 5; T =38).*

The generalized regression model provides our basic framework:

$$y_{it} = \alpha_i + \beta_i x_{it} + \varepsilon_{it}, \quad \text{where} \quad \varepsilon_{it} \sim i.i.d.\ (0.\sigma_i^2) \quad (4)$$

where α_i is a scalar, and β_i is a $(k \times 1)$ vector of slope coefficients. We assume similar variances between countries, *i.e.* $\sigma_i^2 = \sigma_\varepsilon^2 \ \forall i$, and zero covariances between countries, *i.e.* $Cov\ (\varepsilon_{it}\ \varepsilon_{js}) = 0$ for $i \neq j$. We distinguish two cases of (4.1):

The fixed effects model*:*

The fixed effects (or least squares dummy variables model, or within model) is based on the notion that differences across countries can be captured in differences in the constant term:

$$y_{it} = \alpha_i + \beta' x_{it} + \varepsilon_{it}, \quad (5)$$

The fixed model is a reasonable approach when we can be confident that the differences between countries can be viewed as parametric shifts of the regression function.

The Random effects model*:*

If we believe that sampled cross sectional units are drawn from a large population, it may be more appropriate to use the random effects model (or variance components model), in which individual constant terms are randomly distributed across cross sectional units:

$$y_{it} = \alpha + \beta' x_{it} + \mu_i + \varepsilon_{it}, \quad (6)$$

where $E(\mu_i = 0)$, $E(\mu_i^2) = \sigma_\mu^2$, $E(\mu_i \mu_j) = 0$ *for* $i \neq j$, *and* $E(\varepsilon_{it}\ \mu_j) = 0$, *for all i, t, and j.* Thus, μ_i is a random disturbance which characterizes the *ith* observation and is constant through time; it can be regarded as a collection of factors that are specific to region *i* and are not included in the regression..

4. Empirical Results

4.1 Descriptive Statistics

The descriptive statistics, minimum, minimum, mean, and standard deviation (Std. Dev.) recorded below in Table 1. Over the period 1980–2018, the average of the ratio of the OPN, M3_Y DCB amounted for 57, 49,and 46 with a high standard deviation among the group.

Table 1: Summary Statistics for the Main Variables

Variables	Mean	Median	Maximum	Minimum	Std. Dev.
GDPGR	1.37E+08	4.939210	3.24E+09	-6.281044	4.13E+08
FDI	1.757785	1.275403	9.424248	-1.192224	1.825810
CBS	45.93719	45.81932	112.6769	-12.69827	32.88334
PSC	32.95090	18.33713	81.15532	1.615531	25.65244
GOV	23.75673	16.57133	79.80156	4.579278	19.92216
OPN	57.19868	55.26564	115.3961	11.08746	23.17069
M3_Y	49.06813	46.17885	120.8551	0.297131	31.75395

Table 2 shows the correlation matrix. The correlation indicates a positive correlation between the GDPGR and all the other variables except for GOV.

Table 2: Correlation matrix

	GDPGR	FDI	DCB	DCP	GOV	OPN	M3_Y
GDPGR	1.000000						
FDI	0.394428	1.000000					
CBS	0.253605	-0.030695	1.000000				
PSC	0.410532	0.123094	0.861685	1.000000			
GOV	-0.112347	-0.320299	0.154600	0.055820	1.000000		
OPN	0.556668	0.280342	0.552300	0.683205	0.088342	1.000000	
M3_Y	0.082554	0.301815	0.484897	0.397641	-0.449175	0.362172	1.000000

4.2 Panel Unit Root Test

Table 3 shows the following

Table 3 show that all variables GDPGR, FDI, M3, FDI* CBS, FDI*PSC OPN and GOV have a unit root at the level according to ADF test (P-value > 0,05). The other tests such as Levin, Lin & Chu, and PP-Fisher have confirmed the same, except for FDI where it indicates a non-existence of a unit root for this variable.

- For the first difference, all the three tests have confirmed that all series have no unit root at first difference.

Table 3: Panel unit root test results

The variables	Level		First difference	
	ADF Statistics	P-value	ADF Statistics	P-value
GDPGR	15.9054	0.1024	491.925	0.0000
FDI	19.8585	0.0306	267.147	0.0000
FDI*M3	10.1776	0.4251	131.160	0.0000
FDI* CBS	5.78476	0.8330	90.7564	0.0000
FDI*PSC	8.90193	0.5414	61.7475	0.0000
OPN	0.35734	0.3604	9.90339	0.0000
GOV	1.04482	0.1481	12.1776	0.0000

Levin, Lin & Chu t and PP - Fisher Chi-square showing no unit root

The results indicated that all the mentioned variables are non-stationary at level, however, they are stationary at first difference, In other words, the variables have the same integration order I(1).

4.3. Panel Cointegration results

Having confirmed the order of integration of the panel series, the next step is to check the possibility of long-run relationship between variables. So, both Pedroni (1999) and Kao (1999) cointegration tests are applied to check for Cointegration. The null hypothesis for both tests is that there is no Cointegration in the series, and the alternative hypothesis is that there is Cointegration in the series. Table 4 and Table 5 report the results of the panel Cointegration tests.

The Results of Pedroni (1999) test[5] are reported in Table 4. Since all the coefficients are statistically significant at 5% level percent, we can reject the null hypothesis of no Cointegration, and accept the alternative hypothesis of cointegration,

Table 4. Results of Pedroni's Residual Cointegration

	No deterministic trend		Deterministic intercept and trend		No deterministic intercept or trend	
Alternative hypothesis: common AR coefs.			**(within-dimension)**			
	Statistic (Prob.)	**Weighted Statistic (Prob.)**	**Statistic (Prob.)**	**Weighted Statistic (Prob.)**	**Statistic (Prob.)**	**Weighted Statistic (Prob.)**
Panel v-Statistic	-2.061022 0.9803	-0.759131 0.7761	-1.586237 0.9437	-0.337000 0.6319	-1.180010 0.8810	-0.798530 0.7877
Panel rho-Statistic	1.920032 0.9726	-0.666752 0.2525	0.518623 0.6980	-1.759579 0.0392	0.449526 0.6735	-3.588269 0.0002
Panel PP-Statistic	-1.165942 0.0429	-5.053426 0.0000	-2.256014 0.0120	-6.539712 0.0000	-2.161110 0.0153	-9.278747 0.0000
Panel ADF-Statistic	-1.717667 0.0429	-5.053426 0.0000	-2.755434 0.0029	-6.376422 0.0000	-2.694688 0.0035	-3.370234 0.0004
			(Between-dimension)			
Group rho-Statistic	-1.653574 0.0491		-2.503100 0.0062		-2.777582 0.0027	
Group PP-Statistic	-7.448446 0.0000		-9.602682 0.0000		-9.048070 0.0000	
Group ADF-Statistic	-7.967164		-10.24687		-3.114012	

[5] The Pedroni approach tests variables separately, calculating in-group and among-groups statistics meaningful statistical estimates derived from Panel v (Variance ratio), Panel ρ (Phillips–Perron Type ρ), Panel PP (Phillips–Perron Type t) and Panel ADF (Dickey–Fuller Type t) are used for in-group statistics; while Group ρ- (Phillips–Perron Type ρ), Group PP -(Phillips–Perron Type t) and Group ADF (Dickey–Fuller Type t) are used in among-group statistics to verify the cointegration relation between the variables..

0.0000	0.0000	0.0009

The result of Kao (1999) as presented in Table showed that the p-values is less than 5% therefore we can reject the null hypothesis of no cointegration, and accept the alternative hypothesis of cointegration

Table 5: Results of Kao's Residual Cointegration Test

	t-Statistic	**Prob.**
ADF	-7.178905	0.0000
Residual variance	1.79E+22	
HAC variance	6.20E+21	

4.4. FMOLS and DOLS results

The results of both FMOLS and DOLS are reported in Table 6. Based on the evidence of the long association and cointegration between the variables at 5% significance level, we can proceed further to estimate the magnitude of the long run relationship between the variables by applying panel Fully Modified Ordinary Least Squares (FMOLS) and panel Dynamic Ordinary Least Squares (DOLS) estimators.

Table 6*:* Results of FMOLS and DOLS

Method: Panel Fully Modified Least Squares (FMOLS)

Dependent Variable: GDPGR

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
FDI	-63484216	19469512	-3.260699	0.0014
FDI_ CBS	-4922894.	716429.6	-6.871427	0.0000
FDI_PSC	3421861.	663840.4	5.154643	0.0000
FDI_M3_Y	4937812.	230166.5	21.45322	0.0000
OPN	26139.23	389745.0	0.067068	0.9466
GOV	4712029.	5360947.	0.878955	0.3810

Method: Panel Dynamic Least Squares (DOLS)

Dependent Variable: GDPGR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	-1.11E+08	8537386.	-12.99921	0.0000
FDI_ CBS	-6556492.	703370.9	-9.321529	0.0000
FDI_PSC	4949833.	667637.9	7.413949	0.0000
FDI_M3_Y	6006462.	218980.1	27.42927	0.0000
OPN	-587121.3	409579.2	-1.433475	0.1546
GOV	3347334.	1865176.	1.794647	0.0755

The results of both FMOLS and DOLS are reported in Table 6. The results show some similarities between the two tests. All the variables except the control variables are statistically significant as p-values are less than 10%, 5% and 1% significance levels

4.5 Fixed Effect Results

To decide between fixed effect model or random effect model, we run simple Hausman test where the null hypothesis is that the random effect model is more appropriate vs. the alternative hypothesis the fixed effect model is more appropriate

H0: Random Effect Model is appropriate
H1: Fixed Effect Model is appropriate

Table 7 show the result of the hausman test as the p-value < 0.05 then Ho is rejected, so we select the fixed effect model (FEM).

Table 7. Hausman Test Result

Test Summary	**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Prob.**
Cross-section random	69.636056	4	0.0000

As the Hausman test is in favor of fixed effect model, we run regression for panel fixed effect and the results are given in Table 8.

As the initial step, we examine the impact of FDI on economic growth. It is found that FDI have a positive and significant effect on growth for NACs countries. Bur financial development indicators are insignificant. The starting point in the empirical exercise is testing for the base regression.

Table 8: Growth Effects of FDI as a Share of GDP: NACs Countries: Basic Regression (1980-2018)

Dependent Variable: GDPGR				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-1.83E+08	1.89E+08	-0.965969	0.3354
FDI	62184464	15515472	4.007900	0.0001
CBS	2362968.	1975004.	1.196437	0.2332
PCS	-2369518.	2217293.	-1.068654	0.2867
M3_Y	-1423310.	1907869.	-0.746021	0.4567
OPN	4332193.	2618554.	1.654422	0.0999
GOV	71034.58	5813975.	0.012218	0.9903

Next step we regress we examine the role of FDI on growth through financial development indicators. As reported in Table 9 the interaction term is found to be positive and statistically significant across all the three measures of financial market development. This results confirm the complementarity between between the different components of financial intermediary and FDI, and their effect on economic growth

Table 9: Growth Effects of FDI as a Share of GDP: NACs Countries: Basic Testing of the Financial Market Channel (1980-2016

Dependent Variable: GDPGR				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	28024011	1.52E+08	0.184121	0.8541
FDI	9942825.	20712979	0.480029	0.6318
FDI_ CBS	-2731696.	648128.8	-4.214742	0.0000
FDI_PSC	7249690.	1033672.	7.013531	0.0000
FDI_M3_Y	-942730.3	295896.4	-3.186015	0.0017
OPN	-730119.5	1963135.	-0.371915	0.7104
GOV	-646504.7	3768316.	-0.171563	0.8640

5. Conclusion And Policy Implications

The paper is concerned with the growth impact of foreign direct investment in NACs. By employing a panel data methodology for the period of 1980–2018 the study investigates whether the FDI have a positive effect on receiving NACs. In the regression, we test for the impact of FDI on growth, through their interaction with financial development. In doing so, the study used panel unit root test to initially used to test for the stationarity of the series and employ a panel cointegration tests of Kao (1999(and Pedroni (1999).

The empirical results show the support of the fixed –effects method as the random effects model is rejected based on Hausman test result. The results of fixed effect show positive and statistically significant measures of the interaction terms of financial market development indicators with FDI. These results confirm the complementarity between the different components of financial intermediary and FDI, and their effect on economic growth. The panel cointegration tests confirm the fact that there is a positive, significant and long period relationship among finanacial depth indicators, FDI and economic growth.

This study concludes that for countries in NACs region, to utilize the benefits from FDI more emphasis and concern should be directed to the pre-country conditions for attracting FDI, mainly financial sector development.

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APPENDIX A

A. Data Sources and Description

The panel data set used for this analysis covers 5 NACs FDI receiving countries and runs from 1980-2018. The database has been built using a number of different sources. The main source was the World Development Indicators (WDI) database, compiled by the World Bank (2018), unless other indicated. All values used in the analysis are expressed in US dollars in real terms. Next, we describe the data used in the empirical analysis, specifically the measures of financial market development, economic growth, and a number of controlling variables typically used in growth regression.

Foreign Direct Investment. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. Gross FDI figures reflect the sum of the absolute value of inflows and outflows accounted in the balance of payments financial accounts. Our model focuses on the inflows to the economy; therefore, we prefer using the net inflow as a share of GDP. Source of data is World Bank Development Indicators (WDI), (2018).

Measures of Financial Development**:** The selection of key variables to measure the level of financial services produced in the economy and to measure the extent and efficiency of financial intermediation is the major problem in an empirical study of this nature. Construction of financial development indicators is an extremely difficult task due to the diversity of financial services catered for in the financial system. More generally, proxies for financial development can be classified into two broad categories: those relating to the banking sector and those relating to the stock market (see Levine, Loayza, anf Beck, 2000; and King and Levine, 1993). Owing to the lack of comparable and sufficient time series for stock market data in our sample countries, we mainly rely on the former category of financial markets, and follow King and Levine (1993a). Four variables included in this study.

(1) ***Liquidity (M3/GDP)****:* Liquid liabilities of the financial system (currency plus demand and interest-bearing liabilities of the financial intermediaries and non-bank financial intermediaries) divided by GDP. Source: World Bank Financial Structure Database.

(2) ***Private* sector *credit (PSC):*** The value of credits by financial intermediaries to the private sector divided by GDP. It excludes credit issued by central and development banks. Furthermore, it excludes credit to the public sector and cross-claims of one group of intermediaries on another. Source: World Bank Financial Structure Database.

(3) ***Bank credit (CBS):*** *Private sector c*redit extended by deposit money banks as a share of GDP. Source: World Bank Financial Structure Database.

Government Size: It is measured as the average of government expenditure as a ratio to GDP. Like inflation, government expenditure is also used as a measure of macroeconomic instability. (Source: World Development Indicators (WDI), World Bank (2016)

Trade openness: A country's trade policies may increase the incentives to invest in the country if these policies increase the profitability of investment. Foreign investors may be attracted to a country with an export-oriented strategy (i.e., an open trade policy) if the government provides incentives to produce export goods. However, if a country adopts an import-substitution strategy, foreign investors may also be attracted if they can produce and sell their products in the domestic markets under government protection. Thus, the more open a country's trade policy the more it is likely to attract foreign capital investors. So, openness is measured as the sum of imports and exports as a percentage of nominal GDP (Levine et al., 2000). (Source: World Development Indicators (WDI), World Bank (2018))

APPENDIX B

Table 1: Variables and Expected Signs

Code of Variable	Definition of Variables	Expected sign
Dependent variable	Growth Rate of Real	
GPGDP	per Capita GDP	
Independent Variables		
• *Financial Development*		
M3Y	***Liquidity (M3/GDP)***	+
CBS	Bank Credit (% GDP)	+
PSC	Private sector credit (PSC):	+
FDI	Foreign Direct Investment (% GDP)	+
• *Control Variables*		
OPN	Trade Openness (% GDP)	+
GOV	Government Spending (% GDP)	- or +