

The Impact of Chinese FDI on Economic Growth in North Africa

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Abstract

Recently, the eyes of the world have been steadfastly concentrating on the different sources of economic progress in developed and developing countries. This paper aims to examine, the impact of Chinese foreign direct investments (FDI) on economic growth. Using panel data estimation fixed effect on six North Africa countries of the period from 2003 to 2015. The study findings show that Chinese-FDI inflows have no significant impact on economic growth.

Keywords: key words, FDI; GDP; Chinese-FDI; random effect & fixed effect.

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1. Introduction

The foreign direct investment (FDI) has turned into the most imperative source of external finance in developing countries (Amendolagine et al., 2019). The significance of this source is clear in the endeavors by numerous from developed and developing countries to attract FDI. Where the majority of developing countries lean toward FDI due to its apparent job in advancing monetary advancement through employment creation, innovation exchange, expanded profitability and financial development (Michael, 2018). Furthermore, FDI is more relative stability other than different sources, also it is low sensitive to economic fluctuations (Kamara, 2013).

Accordingly, in the 1990s, the majority of countries have been facilitating the restrictions towards FDI (Carkovic and Levine, 2005) which is led increase the investments flows of around \$162.9 billion in 1992 (UNCTAD, 1999). Then, these investments have fluctuated until the global crisis, but it recovered and increased markedly in 2017 to \$1.43 trillion (UNCTAD, 2018).

In context, a theory the endogenous growth models and empirical studies, the paper has focused on the major factors which determinant and promotion of economic growth in North Africa. Therefore, we have generally focused on foreign direct investment (FDI), human capital, trade openness, financial development, inflation, and population.

Although China is considering one of the developing countries, which joined the World Trade Organization in the early 2000s, they have encouraged economic engagement beyond China's territorial borders. The Chinese-FDI and trade have risen exponentially in both Africa and Latin America (Narins, 2016). UNCTAD, as shown in Figure 1, indicate that the significant increase in the flow of Chinese FDI to North African countries. Where Chinese-FDI that is increasing at an increasing rate during the period of study. Therefore, the study is a contribution in literature because few studies investigate the impact of FDI flows on economic growth on all North Africa countries at the same time.

United Nations Commission on trade and development (UNCTAD) reported that the flows of Chinese-FDI to North Africa countries also fluctuated between the increase and the decrease. For instance, the value of investments in 2003 started \$5 billion. In 2005, this number has been increased to ~\$190 billion and then by 2012 the FDI has to bake down to \$365 billion in North Africa.

Sources; UNCTAD

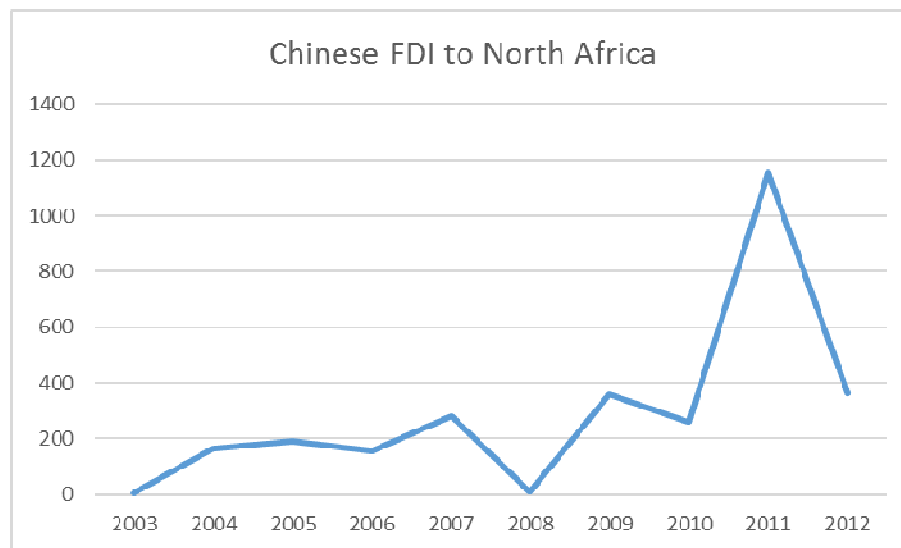


Figure 1. The Chinese-FDI flows to North Africa countries.

Herein, in this paper the impact of Chinese-FDI on economic growth in six Africa countries for the period 2003 to 2015. The studying has been utilized by panel data estimate the fixed effect. We have structured our paper as following: In section 2, the Lecturer review that is divided into positive and negative studies. In section3, the data used have described and presents the specification of the econometric model. In section 4, we show our results; Finally, Section 5 shows conclusion.

2. Lecturer review

There is increasing empirical literature that is focused on the relationship between foreign direct investment (FDI) and economic growth. However, still, there is a debate around both positive and negative impact on GDP. This paper examines the effect of foreign direct investment (FDI) on economic growth and determines how the regulatory regime of the countries affects the FDI-growth relationship in 22 sub-Saharan African countries of the period 1980–2011. The findings show that both FDI and regulations do not have an independent significant effect, however, their interaction has a significant positive effect on economic growth. Over the period 1990 and 2008,(Weisbrod and Whalley, 2011) examines the contribution of Chinese-FDI on GDP in sub-Saharan Africa. The result found Chinese-FDI has a positive impact on economic growth.

Similarly, as regards the possibility that Chinese FDI could positively contribute to economic growth in Africa. The results of causality tests shows that the relationship between African GDP and Chinese FDI is bi-directional, while uni-directional relationships were established between Chinese FDI and African infrastructure and corruption, respectively(Claassen et al., 2011).

On the other hand, the results of investigating how Chinese trade, FDI and aid in Africa effect on economic growth in the period from 1991 to 2011. The results indicate there is evidence for displacement effects of African firms due to competition from China (Busse et al., 2016). Addition to, (Kaplinsky et al., 2007) who found Chinese involvement in SSA has a negative effect on commodity-exporting economies, that is destined for domestic and export markets. On the same token, (Eric Evans Osei Opoku, 2018) the study reexamine the impact of FDI on economic growth in Africa relying on panel data from 38 African countries over the period 1960-2014 using GMM method. The paper shows FDI is only significant for the agricultural, service sectors and for most part, is negative for the manufacturing sector albeit insignificantly.

3. Data and Methodology

3.1 Data

Through the annual data that cover the periods from 2003 to 2015, we have based our work according to the previous economic growth literature to test the impact FDI on economic growth of six North Africa countries.

Our study has attempted copulated these variables from different resources to estimate the models such as the United Nations Commission on trade and development (UNCTAD) and the World Bank. Firstly, we use GDP as a dependent variable that is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products (World Bank).

Chinese-FDI pointing to direct investment flows to other countries. It is the sum of equity capital, reinvestment of earnings, and other capital. Direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy (World Bank). Furthermore, some studies have found that growth positively affected by FDI flow. On the other hand, other studies have found FDI flows negative impact on economic growth.

Accordant to the data of human capital, we have used tertiary school enrolment as a measure for human capital. The trade openness has been measured by total imports and exports as proportion GDP. Herein, we use financial development that is domestic credit to the private sector. It is referred to financial resources provided to the private sector by financial corporations, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable. (World Bank). The inflation is the continuous rise in prices level of goods and services. It knows that inflation is a real signal to status macroeconomic stability in the country or not.

Moreover, the population is about the total counts of all residents regardless of legal status or citizenship. Although, some studies have found that population size could increase productivity, therefore, increase economic growth through the creation of large markets for goods and services (Adams and Opoku, 2015). However, other studies as (Aisen and Veiga, 2013) showed a higher population may be a negative impact on economic growth.

Table 1: Sample countries

North Africa countries					
Algeria	Egypt	Libya	Morocco-	Sudan	Tunisia

3.2 Methodology:

In this paper, we describe the econometrics model to show the impact of FDI on economic growth in six North African countries. The dynamic panel procedure is utilized for the period from 2003 to 2015. Furthermore, we have selected Random-Fixed effects estimation for a number of reasons. (I), panel data suggest that countries are heterogeneous. (II), it may be important to incorporate dynamic effects and these models provide a means to study the dynamics of adjustment (Greene, 1997). Where it is important that the models take into consideration possible heterogeneity across countries in order to reduce the risk of obtaining biased estimates. Our empirical model as.

$$y_{it} = \alpha_i + \beta X_{it} + \mu_{it} + v_{it} \quad (1)$$

Where y is GDP in country i at time t, X is a matrix of independent variables (FDI, Human capital, Trade openness, finance development, Inflation and Population) α and β are coefficients of the estimate. In addition, μ_{it} are country specific effects and v_{it} are random errors (Gujarati, 2004).

4. Empirical Results

4.1 Descriptive statistics

Table 2 depicts the descriptive statistics of different variables in the model as following. It can be seen that the mean-values, standard deviation, minimum and maximum values which explain the values of the highest and lowest observations. On average, the mean value of Chinese-FDI to North Africa countries is around 57.7. Similarly, the average of GDP is 9.39 and SD are 141.9, 7.12 for FDI and GDP respectively. The highest and lowest value of investment flows is 912 and-162. While the Highest and lowest value of trade openness are 1.49and 0.19.

Table 2: Descriptive statistics between variables.

Variable	GDP	FDI	Human capital	Trade openness	Development finance	Inflation	Population
Mean	9.39	57.7	2.68	0.74	49	6.8	3.31
Std. Dev	7.12	141.9	1.28	0.29	43	7.56	2.56
Min		-162	0.91	0.19	6.07	-4.3	32.15
0.47							
Max	3.33	912	8.4	1.49	3.76	36.9	9.38

4.2 Correlation

The correlation between the variables has found in Table 3. It can be seen the correlation between Chinese -FDI inflow and growth is 0.25. As well as, the correlation of both human capital and trade openness with economic growth are 0.23 and -0.41, respectively. Whereas, the correlation between developments finance, inflation, population, and economic growth are a range (0.77 to -0.15).

Table 3: Correlation between variables.

	GDP	Chinese - FDI	Human capital	Trade openness	Finance development	Inflation	Population
GDP	1.0000						
Chinese-FDI	0.2465	1.0000					
Human capital	0.2347	0.5012	1.0000				
Trade openness	-0.407	-0.369	-0.103	1.0000			
Development finance	-0.1514	0.108	0.164	-0.1085	1.0000		
Inflation	0.0926	0.271	-0.052	-0.5551	0.111	1.0000	
Population	0.765	0.183	-0.019	-0.614	-0.1481	0.28	1.0000

The results of the panel data estimation "fixed effects" were chosen depending on the result of the Hausman test, these results are described in Table 4. Indeed, our main variable is FDI and we found that Chinese-FDI is insignificant effect on economic growth in North Africa countries. This effect happens when we use the main variables that are dependent on the endogenous growth models. Although, the result is not consistent with the theory endogenous growth models. It is consistent with the Solow model and some empirical studies.(Carkovic and Levine, 2005) has found storing evidence of foreign direct investment flows has no independent effect on economic growth.

Moreover, (Angelopoulou and Liargovas, 2014), (Agbloyor et al., 2014) have been shown an impact FDI on economic growth was negative. Also, (Jude and Leveuge, 2017b) is found a forcing direct investment alone has no significant impact on economic growth. Similarly, (Belloumi, 2013) the impact of FDI on economic growth in Tunisia for the period 1970 -2008 has been studied using ARDL approach. The result was missed to confirm any benefit from FDI inflows to Tunisia. The result maybe is because of FDI works on crowding out the local investments. In the same context, probably FDI flows went to investment in serves sectors, not to main sectors that are not doing on the improved productivity in North Africa countries.

Similarly, we have found human capital and trade openness have no significant effect on economic growth. The result is consistent with (Omri and Sassi-Tmar, 2015) which did have the negative impact of trade openness on

economic growth in North African countries. On the other hand, finance development that is an important matter for increasing economic growth. We found finance development has a positive and significant effect

The estimation coefficient of inflation rate has negative and significant statistically. Where inflation is one-real-signal to a status of macroeconomic stability in the country. The result was confirmed population is a positive and significant impact on growth. The results are consistent with {Adams, 2015 #2}, {Agbloyor, 2014 #1} show the population growth drives consumer spending therefore encourage economic activities and production, consequently improve economic growth.

Table 4: Fixed effect estimations (robust standard errors)

Independent Variables	Fixed Effects
Cons	-3.509***
Chinese-FDI	-367,19 (1.709)
Human capital	-0.013 (0.019)
Trade openness	-8.703 (1.54)
Development finance	9,179*** (909.6)
Inflation	-7.11* (3.69)
Population	13,66*** (746.9)
F- Stat	91,5
Prob.>F	0.000
R-Squared	0.89

Notes: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

5. Conclusion

This study investigates the impact of Chinese-FDI on six North Africa countries in the period 2003 - 2015. The paper was done based on panel data estimates random and fixed effect estimation, where, panel models allow both the cross-section and the time series aspects of the data in estimates. Addition to, these models are effective to incorporate dynamic effects. Our finding confirmed that Chinese-FDI has no significant impact on economic growth in North Africa countries. Similarly, in our analysis, human capital and trade openness have no significant impact on economic growth. On the other, finance development and population have a positive and significant effect on growth; these are an important tool of encouraging economic activities. There no doubt the inflation rate is the real signal to status macroeconomic stability in the country, here, inflation has a significant and negative effect on GDP.

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