Foreign Direct Investment and Nigeria Economy Growth

Rasheed Abolaji FOLARIN[1]

Abstract

Foreign Direct Investment (FDI) is key to the success of world economic system and a major impetust for development, flow of capital and human resources from one country to another. This study examines the nexus between Foreign Direct Investment (FDI) and some macroeconomic variables in Nigeria during the period of 2010-2017. Ordinary Least Square (OLS) technique was used to assess the relationship. The study reveals that Foreign Direct Investment (FDI) has positive relationship with chosen economic variables namely Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF) and Export (EXP). The study recommends that government should formulate policies to attract foreign investors, create enabling environments and strengthen the institutional factors.

Keywords: *Foreign direct investment, Economic growth, Gross domestic product, Technology innovation, Export*

JEL classification: *M 120, M 12, M 52, L 83*
DOI: 10.24818/RMCI.2021.4.608

1. Introduction

The Organization for Economic Co-operation and Development (OECD), (2008) described Foreign Direct Investment (FDI) as follows: an integral part of the international economic system and a major catalyst for development or the flow of human capital resources from one among countries of the world. Foreign direct investment (FDI) is thus part of the economic system that induces economic growth through development of infrastructure. Foreign direct investment inflows as investment vehicle for economic growth in most countries, is a strong indicator of the economic growth of nations.

The discussion over the years on the role of foreign investment as catalyst for economic growth has received the attention of policy maker, researchers and international organizations. Globalization facilitated by improved information technology has led to expeditious and huge movement of capital across economies. Such international capital flows are usually motivated by investors' desire to optimize their investments by seeking destinations that offer higher returns at affordable levels of risk.

Investment is an enabler of economic growth through increase in productivity levels (Aurangzeb and Ul Haq, 2012). Foreign direct investment is

[1] Rasheed Abolaji Folarin, Ministry of Transportation, Ogun State, Nigeria, rasheedfolarin77@gmail.com

accompany by increase technology use and create employment for people. It introduces innovative methods of production, increase productivity by bringing competition in the economy and improve the quality of labou force.

OLoyede and Obamuyi (2000) investigate the effect of direct foreign private investment on some macro-economic indicators in Nigeria. They found that direct foreign private investment responds positively to the chosen economic indicator of gross domestic Product, gross capital formation, Export and industrial production. They suggested that government should design attractive package to encourage foreign investors, create the enabling political and economic environments and strengthen the institutional factors.

The ability of Nigeria to sustain growth and development and meet her external obligations depends on adequate inflow of foreign investment resources (Folarin, 2020). Given the low level of per capital and real income, high average and marginal consumption, low savings and restricted new capital formation. Hence, the existence of a gap between the domestically supply of savings, foreign exchange, government revenue and skills, and the planned level of this resources necessary to achieve development targets. This gap necessitates the need for external resources to augment domestic resources in the country.

2. Literature Review

Significant scholarly efforts have been made to study the role of Foreign Direct Investment (FDI) in the Nigerian economy. Olofin et al., (2019) in their research 'Analysis of Foreign Direct Investment and Economic Growth in Nigeria' work on the controversy surrounding the determinants of foreign direct investment (FDI) inflow among countries. Their study revealed that countries' locations do not play important role in determining FDI inflow to Nigeria.

Ugochukwu et al. (2013) study the nexus between Foreign Direct Investment and economic growth in Nigeria. They found that foreign direct investment has a ppositive but a weak impact on economic growth of Nigeria. They recommend that government should create enabling environment by solving the security problem, improve regulatory framework among others to attract foreign investors. Uwubanmwen and Ajao looked at the determinant of foreign direct investment in facilitating economic growth in Nigeria. The result of the study show that macroeconomic variables such as exchange rate, inflation rate, interest rate, and openness of the economy are catalyst for the inflow of FDI into Nigeria. They recommend stable macroeconomic policies and infrastructural development as ways to increase economic growth of Nigeria.

Apostolov (2016) examine the effects of foreign direct investments on the development of the South East Europe economy and found that foreign direct investments is an essential pillar that drives the society toward developed market economy. Bayar and Gavriletea (2018) study the interactions between foreign direct investment inflows and financial sector development in European Union countries. They found that foreign direct investment inflows had no significant effect on the development of financial sectors, but financial development had significant impact on foreign direct inflows in Central and Eastern European countries. Akinlo (2004) found out that foreign capital has a small and no statistical impact on economic growth in Nigeria. However, these studies do not control that FDI was concentrated in the extractive industry.

Logun (2020) study the relationship between foreign direct investments, exports and economic growth. Their study revealed that export is an essential factor for foreign direct investments. Bayraktar (2013) investigate the link between foreign direct investment and ease of doing business as one of the sources for the change in direction of FDI towards developing countries. The result reveals that countries with good record of ease of doing business attract more foreign direct investment. Therefore, better ease of doing business indicator in developing countries is one the determinant of higher foreign direct investment flows to these countries.

Ebekozien et al. (2015) assess the effect of increased flow of foreign direct investment on the construction industry in Nigeria using time series archival data from the central bank of Nigeria and the National Bureau of Statistics. They found that there is insignificant flow of foreign direct investment into construction industry in the country when compared to other sectors of the economy. They also recommend increase investment in infrastructure and creating enabling environment by formulating good investment policies and strengthening the existing laws.

3. Method of Data Analysis

The period covered by the study was 2010-2017. The choice of the period is informed by the developments in the Nigerian economy during this period, which is being used to predict future trends. The study employs data collected from Central Bank of Nigeria Statistical Bulletins. Three linear models were developed using the following variables: Foreign Direct Investment (FDI), and dependent variables of Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF) and Export (EXP). The main issue is an investigation of relationship between direct foreign investment and each of the macro-economic variables such as the gross domestic product, gross capital formation and export.

The ordinary least square regression technique was used in analysing the developed models. The least square regression formula and equation is presented thus:

$$Y = a + bx$$

$$a = \frac{\sum y}{n} - b\frac{\sum x}{n}$$

$$b = \frac{n\sum xy - (\sum x)(\sum y)}{n\sum_x 2 - (\sum x)^2}$$

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum_x 2 - \sum x^2 \times n\sum_y 2 - \sum y^2}}$$

Model Specification:
The models are presented thus

I. GDP = f(FDI)
GDP = a + b (FDI) + U...(1)

II GCF = f(FDI)
GCF = a + b (FDI) + U..(2)

III EXP = f(FDI)
EXP = a + b (FDI) + U..(3)

3.1 Data Analysis and Results

3.1.1 Relationship Between Gross Domestic Product (GDP) and Foreign Direct Investment (FDI)

Results for OLS Analysis on Excel

Table 1

Year	**GDP (Y)**	**FDI (X)**	**XY**	X^2	Y^2
2010	55469.35	759.48	42127862	576809.87	3.08E+09
2011	63713.36	928.17	59136829	861499.55	4.06E+09
2012	72599.63	1115.89	81013201	1245210.5	5.27E+09
2013	81009.96	1348.38	1.09E+08	1818128.6	6.56E+09
2014	90136.98	1740.74	1.57E+08	3030175.7	8.12E+09
2015	95177.74	2297.9	2.19E+08	5280344.4	9.06E+09
2016	102575.42	3958.25	4.06E+08	15667743	1.05E+10
2017	114899.25	4364.18	5.01E+08	19046067	1.32E+10
N= 8	$\sum Y$ =675581.69	$\sum X$ =16512.99	$\sum XY$ =1.57E+09	Σ:47525979	Σ:5.99E+10

$$Y = a + bx$$
$$b = \frac{1.44 \times 10^9}{1.08 \times 10^8}$$
$$b = 13.39918$$
$$\frac{\sum Y}{n} = 84447.71$$
$$\frac{\sum X}{n} = 2064.124$$
$$a = 84447.71 - 13.39918(2064.124)$$
$$a = 56790.15$$

Therefore:

GDP = 56790.15 + 13.399 FDI ....(1)
$R = 0.924201$
$R^2 = 0.854147$
$F\ Calculated = 210.1956$
$F\ Critical\ Value = 3.79$

3.1.2 Relationship Between Gross Fixed Capital Formation (GFCF) and Foreign Direct Investment (FDI)

Results for OLS Analysis on Excel

Table 1

Year	GFCF (Y)	FDI (X)	XY	X^2	Y^2
2010	9183.06	759.48	6974350.41	576809.9	84328590.96
2011	9897.2	928.17	9186284.12	861499.5	97954567.84
2012	10281.95	1115.89	11473525.2	1245210	105718495.8
2013	11478.08	1348.38	15476813.5	1818129	131746320.5
2014	13595.84	1740.74	23666822.5	3030176	184846865.3
2015	14112.17	2297.9	32428355.4	5280344	199153342.1
2016	15104.18	3958.25	59786120.5	15667743	228136253.5
2017	16908.13	4364.18	73790122.8	19046067	285884860.1
N=8	$\sum Y$ =100560.6	$\sum X$ =16512.99	$\sum XY$ =232782394	Σ:47525979	Σ:1317769296

$Y = a + bx$
$b = \frac{201702808}{107528992}$
$b = 1.88$
$\frac{\sum Y}{n} = 12570.07625$
$\frac{\sum X}{n} = 2064.12375$
$a = 12570.76 - 1.88(2064.12)$
$a = 8698.19$
Therefore:
GFCF = 8698.19 + 1.876 FI ....(2)
$R = 0.93833376$
$R^2 = 0.88047025$
$F\ Calculated = 3.99629977$
$F\ Critical\ Valuu = 3.7$

3.1.3 Relationship Between Export (EXP) and Foreign Direct Investment (FDI)

Results for OLS Analysis on Excel

Table 3

Year	EXP (Y)	FDPI (X)	XY	X^2	Y^2
2010	14013.84	759.48	10643231	576809.9	1.96E+08
2011	19961.27	928.17	18527452	861499.5	3.98E+08
2012	22824.41	1115.89	25469531	1245210	5.21E+08
2013	14622.22	1348.38	19716309	1818129	2.14E+08
2014	16616.87	1740.74	28925650	3030176	2.76E+08
2015	10151.95	2297.9	23328166	5280344	1.03E+08
2016	9455.52	3958.25	37427312	15667743	89406858
2017	15134.03	4364.18	66047631	19046067	2.29E+08
N= 8	$\sum Y$ =122780.1	$\sum X$ =16512.99	$\sum XY$ =2.3E+08	Σ:47525979	Σ:2.03E+09

$Y = a + bx$
$b = \dfrac{-1.9 \times 10^8}{1.08 \times 10^8}$
$b = -1.73706$
$\dfrac{\sum Y}{n} = 15347.51$
$\dfrac{\sum X}{n} = 2064.12$
$a = 15347.51 - (-1.74)(2064.12)$
$a = 18933.02$
Therefore:
EXP = 18933.02 – 1.737 FDI ....(3)
$R = 0.53281$
$R^2 = 0.28389$
$F\ Calculated = 10.62871$
$F\ Critical\ Value = 3.79$

3.2 Findings

From equation (1), the coefficient of correlation (r) of the regression is 0.92 which indicates a very strong positive correlation between GDP and FDI. The result further shows that one naira increase in the value of foreign direct investment will lead to 13 naira increase in the gross domestic product. The value of the coefficient of determination (r^2) 85 percent, showing that 85 percent of the variation in the dependent variable have been explained by the independent variable while 15 percent remained unexplained. 85 percent (r^2) further confirmed the strong relationship between GDP and FDI. The F –Calculated is 210.2 which is greater than the F- Critical Value at 95 percent confidence level of 3.79. Therefore the null (H_0) hypothesis is rejected while the alternative (H_1) hypothesis is accepted.

The coefficient of correlation of the regression (r) of 0.94 in equation (2) also show a very strong relationship between gross fixed capital formation and Foreign direct investment. It also reveals the level of development of capital goods industry and foreign direct investment. The result indicates that every naira increase in foreign direct investment, generates additional 1.88 naira in gross capital formation. The coefficient of determination (r^2) shows that 88 percent of the variation in the dependent variable gross fixed capital formation has been explained by the independent variable while 12 percent is unexplained.

For the test of reliability, the F –Calculated is 4.0 which is greater than the F- Critical Value of 3.79. This attest to the fact that foreign direct investment has led to the development of capital goods industry in Nigeria.

Finally, equation (3) coefficient of correlation (r) is 0.53 showing a positive relationship between export and foreign direct investment. The regression results show that everyone naira of the direct foreign private investment in the country generates 1.74 naira of exports. One benefits of this relationship is that the increase in export will assist the country to generate more foreign exchange needed for servicing external debt and boost the value of naira, thereby enhancing overall economic development.

4 Conclusion and Recommendations

The inter-relationship between foreign direct investment and some macroeconomic variables, such as gross domestic product, gross capital formation and export is a fact of economic necessity, just as the direction of relationship bears crucially on the timing of economic policies for effective result. However, the results of the study reveal the functional relationship between gross capital formation and foreign direct investment actually performs best, although the result for gross domestic product and foreign direct investment is very close.

Finally, the study show that foreign direct investment have been acknowledged as a major propellant of growth through transfer of technology, technological innovations, and other externalities

Based on the findings of this study, the following recommendations are made:

1. It is important for the Nigeria government to create incentive directed at attracting foreign private investment.
2. The foreign investors must be encouraged to produce machinery and spare parts within the country and make use of the available materials, so as to develop capital goods industry in Nigeria.
3. Government should invest in human and physical capital as well as encourage innovation and technology transfer which are necessary for promoting and sustaining economic growth.

4. Government should develop and strengthen institutions to support its economic development programs.

References

1. Akinlo E. A. (2004). Foreign direct investment and growth in Nigeria: An empirical investigation. Journal of Policy Modelling. doi:10.1016/j.jpolmod.2004.04.011.
2. Apostolov M (2016) Effects of foreign direct investments. Evidence from Southeast Europe. Cuadernos de Economía, 39, 99-111
3. Aurangzeb D., & UI Haq, A. (2012). Impact of Investment Activities on Economic Growth of Pakistan, Business and Management Review, **2**(1), 92-100
4. Bayar Y and Gavriletea M. D., (2018). Foreign Direct Investment Inflows and Financial Development in Central and Eastern European Union Countries: A Panel Cointegration and Causality. Int. J. Financial Stud., 6, 55; doi:10.3390/ijfs6020055.
5. Bayraktar N., (2013). Foreign Direct investment and Investment Climate. Procedia Economics and Finance 5, 83-92
6. Ebekozien, Andrew, Ugochukwu, Stanley Chukwudi and Okoye Peter Uchenna (2015). An Analysis of the Trends of Foreign Direct Investment Inflows in the Nigerian Construction Sector. American International Journal of Contemporary Research, 5, 1
7. Folarin R.A (2020). Analysis of Real Sector Contributions to Economic Growth in Nigeria. Journal of Academic Research in Economics, Vol 12, No 2
8. Logun A (2020). Foreign Direct Investments, Exports And Economic Growth: Panel ARDL and Causality Analysis for E7 Countries. Journal of Academic Research in Economics, 12, 1
9. OECD. (2008). OECD Benchmark Definition of Foreign Direct Investment, fourth edition.
10. Organization for Economic Cooperation and Development.
11. Olofin P. O, Ayegbusi O. O. and Adebayo A. A. (2019) Analysis of Foreign Direct Investment and Economic Growth in Nigeria: Application of Spatial Econometrics and Fully Modified Ordinary Least Square (FMOLS). Sage Journal Pulication https://doi.org/10.1177%2F0015732519851631
12. Oloyede J. A and Obamuyi T. M. (2000). The Impact of Foreign Investment on the Nigeria Economy. Nigeria Journal of Banking and Finance Issues, 3(1), 1-21
13. Ugochukwu U. S, Okore O. A and Onoh J. O (2013). The Impact of Foreign Direct Investment on the Nigerian Economy. European Journal of Business and Management, 5, 2
14. Uwubanmwen A. E *and* Ajao M. G (2012). The Determinants and Impacts of Foreign Direct Investment in Nigeria. International Journal of Business and Management; Vol. 7, No. 24