Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

# IMPACT OF FOREIGN DIRECT INVESTMENT ON ECONOMIC GROWTH IN NIGERIA

**[1]Oghenefejiro L. Akpobaro, [2]Professor Peter C. Egbon**
*[1]Department of Economics, Delta State University, Abraka, Delta State, Nigeria*
*[2]Professor, Department of Economics, Delta State University, Abraka, Delta State, Nigeria*

**ABSTRACT**
*Foreign Direct Investment complements domestic investment, creates new jobs opportunities and in most cases, enhance technology transfer, which of course boosts economic growth. Nigeria has attracted significant FDI over the years, as one of the economies with great demand for goods and services. Based on this, the study examines the Impact of Foreign Direct Investment and Economic Growth in Nigeria from 1980 to 2022 by employing the method of Descriptive Statistics, Johansen co-integration test and the Vector Autoregressive (VAR) Model Estimation techniques. The findings from the study reveal that the one period lag of GDPGR, FDIO, as well as FDII have a positive relationship with GDPGR equation, same with their second period lag except that of FDIO which have a negative impact. The FDII equation showed that GDPGR and FDIO as well at its own lagged variables have a positive relationship with FDII. As before only second period lag of FDIO have a negative impact on FDII. In the third equation, the one period lagged values of GDPGR, FDIO, as well as the second period lag of FDII and FDIO have a positive relationship with FDIO. While the first period lag and the second period lag of GDPGR have a negative relationship with FDIO. Therefore, the study recommends that Government should improve the investment climate in the country by addressing issues that impedes on investment like insecurity, since investment is crime shy. Make concerted efforts to ensure foreign investors and their investment are protected from internal macroeconomic shocks like inflation, and exchange rate imbalances. Also, enabling environment that attracts foreign direct investment into the productive sector of the economy as this will ensure sustainable economic growth. Furthermore, government should ensure that there is easy repatriation of profit by foreign investors.*

**KEYWORDS:** *Foreign Direct Investment inflow, Foreign Direct Investment outflow, Vector Autoregressive (VAR) Model, Economic Growth.*

## INTRODUCTION

Over the past two decades, there has been a significant growth in the international business literature on foreign direct investment (FDI), in particular into and from the emerging economies (Borin & Mancini, 2016; Neumayer et al., 2016; Nielsen et al., 2017; Pinto & Zhu, 2009). Defined as "the establishment of a lasting interest in, and significant degree of influence over, the operations of an enterprise in one economy by an investor in another economy" (OECD, 2015), the particular attention afforded FDI in the emerging economy context is hardly surprising. As highlighted by Mokuolu (2018), developing economies from an investment perspective, have better prospect of higher growth opportunities when compared with some of their developed counterparts, they have proven especially attractive for inward FDI with their result. Data from the International Monetary Fund (IMF) confirms the growth pattern among emerging economies, making them an important engine for overall global growth (IMF, 2018). Furthermore, from the World Bank data (2019), presented in the most recent Global Economic Prospects Report, show that the real Gross Domestic Product (GDP) growth of emerging economies between 2016 and 2017 outstripped both the real GDP growth of developed economies, and that of the world average. Thus, in the year 2016 and 2017 while world GDP growth rates were 2.4% and 3.1% respectively, the rates for emerging economies stood at 3.7% and 4.3% while the equivalent rates for developed economies were 1.7% and 2.3%. Specifically, the 24 countries in Africa classified by the World Bank as oil and mineral-dependent have, on average, accounted for nearly three quarters of annual FDI inflows over the past two decades (UNCTAD, 2015). In spite of the abundance of natural resources in Africa, the investment response

has been poor, despite the application of some economic reforms that aimed at creating an investor-friendly environment. Obadan (2004) argues that investment is low in Africa because of the closed trade policy, inadequate transport and telecommunication infrastructure, low productivity and corruption.

It is often argued that FDI is an important source of capital; that it complements domestic investment, creates new jobs opportunities and is in most cases, related to the enhancement of technology transfer, which of course boosts economic growth. While the positive FDI-growth linkage is still a subject of debate, macroeconomic studies nevertheless support a positive role for FDI especially in a particular environment (Darazo and Adaramola, 2021). Empirical research studies also support the assertion that FDI positively contributes to the enhancement of the economies of host countries. According to Darazo and Adaramola (2021), the technology that comes with FDI is newer compared to that sold through licensing. Other studies also found contradictory results. In some instances, economic growth has been found to prospect or leads to an increase in FDI and not vice versa. The Nigerian economy suffers from different types of deficiency which brought so many limitations for growth sustainability and poverty reduction. The major problems are partial diversification of production, exports, and budget revenue. In the country, there is prevalence of infrastructure deficit. In Nigeria, there is an increase the cost of transport and doing business due to bad roads and this impede trade (World Bank 2020). Poor governance and dysfunctional political institutions are several problems faced by Nigeria.

In light of the foregoing the study therefore aims at examining the determinants of inward and outward FDI and its relationship with economic growth. Specifically, the study seeks to;

i. Examine the extent of impact inflow of foreign direct investments has on economic growth in Nigeria
ii. Investigate critically the impact outflow of foreign direct investments has on economic growth in Nigeria
iii. Investigate the direction of causality between FDI flows and economic growth
iv. Investigate the existence of a long run relationship among FDI flows and economic growth

## LITERATURE REVIEW

Olasehinde and Ajayi (2022) examined the relationship between foreign direct investment (FDI) and economic growth (GDP) in Nigeria between 1981 and 2020, using Autoregressive Distributed Lag Bound technique (ARDL). From their findings, there existed a long-run significant relationship among the variables employed. Foreign direct investment (FDI) and real exchange rates (REXCR) showed positive significant short, and long-run impacts on economic growth (GDP) which is aligned with John (2016). While interest rates and trade openness have insignificant short and long-run impacts on the economic growth. The Pairwise Granger Causality exhibited bidirectional causality between foreign direct investment (FDI) and economic growth (GDP), demonstrating the influence of these two variables on each other, as supported by Mounic and Atef (2018). Umezurike, Ananwude and Mbanefo (2021) investigated the impact of foreign direct investment on the growth of the Nigerian economy. The Autoregressive Distributive Lag (ARDL) technique was used to analyze data spanning the years 1986 to 2019. The preliminary findings of the ARDL suggested that foreign direct investment and economic development in Nigeria had a long-run link. Darazo and Adaramola (2021) examined international trade and Nigerian economy between 1981 and 2018, using ARDL estimation technique. From the findings, exports showed insignificant impacts on economic growth among other variables like import, Foreign Direct Investment and exchange rate. Also, it was disclosed that import had insignificant impact on economic growth. Eze (2020) examined foreign direct investment and national growth in Nigeria, using primary and secondary data to achieve the objective set for the time series from 1983 2003 based on Taro Yamanic formular, Pearson product moment correlation coefficient, Chi-square and ANOVA approach. The findings discovered a decline in oil prices and increased government expenditure, leading to economic instability in Nigeria within the time series of the study. And, it was realized that reduction in foreign direct investment and related matters constituted to financial predicaments in Nigeria. Giwa, Goerge, Okodua and Adeniran (2020) examined the effects of FDI on Nigerian real gross domestic products (RGDP) between 1981 and 2017, using the robust GMM technique. The study established that quality of labour exhibited significant impacts on RGDP while the use of capital demonstrated negative effects on RGDP in Nigeria within the time series used. Therefore, the external inflows could help to achieve the goals for enhancing emerging economy. There have consistent arguments regarding the impact of FDI on economic growth in an economy, which has resulted in mixed evidence. The opinion that FDI spurs economic growth, leading to economic prosperity have been supported by some authors (Ehimare, 2011; Mokuolu, 2018; Sokang, 2018). The other school of thought in contrast (like Akinlo, 2014; Nwanji et al., 2020) believes that economic

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

growth is not significantly impacted by FDI. Similarly, Sokang (2018) assessed the impact of FDI on Cambodia's economic growth. Using data from 2006 through 2016, he found that FDI has a significant positive relationship with Cambodia's economic growth. A recent study by Ogu (2020) examined the effect of exchange rate fluctuation, gross fixed capital formation, gross domestic product, interest rate and inflation on foreign direct investment in Nigeria. The results indicated that exchange rate fluctuation has a positive relationship with foreign direct investment.

## METHODOLOGY

The ex-post facto design was adopted for this study. This design is employed in this study because the study is descriptive and quantitative in nature. This study therefore requires the use of more advanced statistical tools and will be making use of the Vector Autoregression (VAR) technique as the main tool for estimation of the model. The study adopts time series data from 1980 to 2020 sourced from the World Development Indicators. The variables are FDI inflows as a percentage of GDP, FDI outflows as a percentage of GDP and the growth rate of GDP in constant 2000 US dollars. Real FDI values are not used since the investment deflator is not available, instead we use FDI inflows/outflows as a percentage of GDP and GDP in constant 2000 US dollars from World Development Indicators (2021).

Based on the Chenery and Strout, 1966 theoretical framework, multi regression models are specified here in order to examine the determinants of FDI flows and its relationship to GDP. Blocks of models will be built subject to the number of the endogenous variables to be estimated derived from extant literatures such as Ozturk, (2012), Onuoha, (2013), Eniekeziemene (2012), Maku and Atanda (2009), (Fiador and Asare, 2012).

$$X_t = \mu X_{t-1} + Y_{t-1} + Z_{t-1} + \varepsilon_{1t} \quad (1)$$

$$Y_t = \mu X_{t-1} + Y_{t-1} + Z_{t-1} + \varepsilon_{2t} \quad (2)$$

$$Z_t = \mu X_{t-1} + Y_{t-1} + Z_{t-1} + \varepsilon_{3t} \quad (3)$$

Where;

*t* is the number of years, *k* is the optimal lag order, *d* is the maximal order of integration of the three variables, ε is white noise error terms, *X* is inward FDI, *Y* is growth rate of real GDP, *Z* is outward FDI.

## DATA ANALYSIS AND DISCUSSION OF FINDINGS

### Descriptive Statistics

The result for the descriptive statistics is presented in the table1 below;

**Table 1 Descriptive Statistics**

| | GDPGR | FDII | FDIO |
|---|---|---|---|
| **Mean** | 3.055069 | 1.431133 | 0.334661 |
| **Median** | 4.195924 | 1.087951 | 0.197063 |
| **Maximum** | 15.32916 | 5.790847 | 1.919487 |
| **Minimum** | -13.12788 | -1.150856 | -0.018912 |
| **Std. Dev.** | 5.387712 | 1.297450 | 0.444416 |
| **Skewness** | -0.825581 | 1.427514 | 2.251962 |
| **Kurtosis** | 4.621278 | 5.718061 | 7.868443 |
| **Observations** | 41 | 41 | 41 |

***Source:*** Author's computation (2023)

The descriptive statistics of the data used for the study is presented in table 1 above. From the result, the mean GDPGR is 3.055069, indicating that on average, the economy is growing by 3.05% per year. The median GDPGR is 4.195924, which is slightly higher than the mean, indicating that the distribution of GDPGR is negatively skewed. The standard deviation of GDPGR is 5.387712, which is relatively high, indicating that there is a significant amount of variability in the GDPGR values. The mean FDII is 1.431133, indicating that on average, the economy receives significant foreign investment. The median FDII is 1.087951, which is lower than the mean, indicating that the distribution of FDII is positively skewed. The standard deviation of FDII is 1.297450, which is relatively moderate, indicating that there is a significant amount of variability in the FDII values. The mean FDIO is 0.334661, indicating that on average, the domestic companies invest a moderate amount of capital in foreign economies. The median FDIO is 0.197063, which is lower than the mean, indicating that the distribution of FDIO is positively skewed. The standard deviation of

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

FDIO is 0.444416, which is relatively low, indicating that there is a significant amount of variability in the FDIO values.

**Unit Root Test**

It is important to carry out unit root test since we are applying time series data set for the study in order to check for stationarity of the data because the use of non-stationary data can result in spurious regression.

**Table 2: ADF Unit Root Test Result (at levels)**

| Variables | ADF Test Statistics | Critical Values | Prob. Value | Level of Significance | Remark |
|---|---|---|---|---|---|
| **GDPGR** | -3.332943 | -2.941145 | 0.0202 | I(0) | Stationary |
| **FDII** | -4.098447 | -2.936942 | 0.0027 | I(0) | Stationary |
| **FDIO** | -3.042115 | -2.954021 | 0.0413 | I(0) | Stationary |

***Source:*** Author's computation (2023)

In table 4.2 above the result of the ADF unit root test is presented. From the results, it can be observed that all the variables are integrated at order zero that is they are I(0) and are all statistically significant at the 5% level of significance.

**Co-integration Test**

The co-integration test provides information on the existence of a long run relationship between the dependent and explanatory variables and was performed using the Johansen methodology. The Johansen co-integration test was used to test for the long run relationship among the variables. The results of the Johansen co-integration test are shown in tables 3 below.

**Table 3: Johansen Co-integration Test**

| **Unrestricted Cointegration Rank Test (Trace)** | | | | |
|---|---|---|---|---|
| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
| None * | 0.476546 | 35.03337 | 29.79707 | 0.0114 |
| At most 1 | 0.173851 | 10.43574 | 15.49471 | 0.2487 |
| At most 2 | 0.080241 | 3.178474 | 3.841465 | 0.0746 |
| Trace test indicates 1 cointegrating eqn(s) at the 0.05 level | | | | |
| * denotes rejection of the hypothesis at the 0.05 level | | | | |
| **MacKinnon-Haug-Michelis (1999) p-values | | | | |

| **Unrestricted Cointegration Rank Test (Maximum Eigenvalue)** | | | | |
|---|---|---|---|---|
| Hypothesized No. of CE(s) | Eigenvalue | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
| None * | 0.476546 | 24.59763 | 21.13162 | 0.0156 |
| At most 1 | 0.173851 | 7.257267 | 14.26460 | 0.4592 |
| At most 2 | 0.080241 | 3.178474 | 3.841465 | 0.0746 |
| Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level | | | | |
| * denotes rejection of the hypothesis at the 0.05 level | | | | |
| **MacKinnon-Haug-Michelis (1999) p-values | | | | |

***Source:*** Author's computation (2023)

The result of the Johansen Multivariate co-integration test is reported in table 3 above. From the result both the trace and maximum eigenvalues test statistics suggests that there is one co-integrating equations, implying that there exist a long-run equilibrium relationship among the variables. Since the variables are co-integrated, the existence of a stable longrun relationship between Gross Domestic Product Growth Rate (GDPGR), Foreign Direct Investment Inward (FDII), and Foreign Direct Investment Outward is confirmed.

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

**Lag Length Criteria**

The lag length criteria is used to empirically select the optimal lag length to be employed in the study. It is important to check for the appropriate lag because too many lags may lead to the loss of degree of freedom. Too few lags can cause serial correlation in the error terms, multicollinearity, misspecification errors.

**Table 4: VAR Lag Order Selection Criteria**

**VAR Lag Order Selection Criteria**
Endogenous variables: GDPGR FDII FDIO
Exogenous variables: C
Sample: 1980 2020
Included observations: 39

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|---|---|---|---|---|---|---|
| 0 | -190.8995 | NA | 4.178569 | 9.943566 | 10.07153 | 9.989480 |
| 1 | -172.7756 | 32.53016 | 2.622720 | 9.475672 | 9.987537* | 9.659324* |
| 2 | -162.0221 | 17.64682* | 2.420343* | 9.385747* | 10.28151 | 9.707139 |

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

***Source:*** Author's computation (2023)

Table 4 contains the results for the lag selection criteria to be used and the optimal lag to be selected. From the result we will be employing the Akaike information criterion (AIC) with a lag order selection of two (2) since it is the criterion that gives the minimized figure amongst SIC, AIC and HQ.

**Granger Causality Tests**

The Granger causality test examines the causal relationships between among the variables. The result is presented in the table below:

**Table 5: Pairwise Granger Causality Tests (2 Lags)**

| **Null Hypothesis:** | **Obs** | **F-Statistic** | **Prob.** |
|---|---|---|---|
| FDII does not Granger Cause GDPGR | 39 | 0.53804 | 0.5888 |
| GDPGR does not Granger Cause FDII | | 1.57545 | 0.2216 |
| | | | |
| FDIO does not Granger Cause GDPGR | 39 | 1.24550 | 0.3006 |
| GDPGR does not Granger Cause FDIO | | 0.57520 | 0.5680 |
| | | | |
| FDIO does not Granger Cause FDII | 39 | 0.80635 | 0.4548 |
| FDII does not Granger Cause FDIO | | 0.85562 | 0.4340 |

***Source:*** Author's computation (2023)

$H_0$: X does not Granger Cause Y

$H_1$: X Granger Causes Y

The above hypothesis are based on the 5% significance level.

In table 5 above, the result of the Granger causality test is presented. The null hypothesis in Granger causality testing is that one variable does not Granger cause the other variable, meaning that past values of the first variable do not have any predictive power over the second variable beyond the information contained in the second variable's own past values. The F-statistic measures the overall significance of the Granger causality test, while the Prob. value represents the p-value associated with the F-statistic. Based on the result presented in the table above we can conclude that there exist to Granger causality among the variables used in the study. Since the p-value is greater than the typical threshold of 0.05, we cannot reject the null hypothesis at the 5% significance level.

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

**Table 6: Vector Autoregression Estimates**

| **Vector Autoregression Estimates** | | | |
|---|---|---|---|
| Sample (adjusted): 1982 2020 | | | |
| Included observations: 39 after adjustments | | | |
| Standard errors in ( ) & t-statistics in [ ] | | | |
| | GDPGR | FDII | FDIO |
| GDPGR(-1) | 0.336539 | 0.054784 | 0.010479 |
| | (0.14022) | (0.04338) | (0.01604) |
| | [ 2.40009] | [ 1.26293] | [ 0.65345] |
| GDPGR(-2) | 0.192619 | 0.014151 | -0.004309 |
| | (0.13438) | (0.04157) | (0.01537) |
| | [ 1.43341] | [ 0.34041] | [-0.28038] |
| FDII(-1) | 0.721983 | 0.258618 | -0.057433 |
| | (0.73122) | (0.22621) | (0.08363) |
| | [ 0.98737] | [ 1.14326] | [-0.68678] |
| FDII(-2) | 1.058100 | 0.055279 | 0.072509 |
| | (0.72222) | (0.22343) | (0.08260) |
| | [ 1.46506] | [ 0.24742] | [ 0.87787] |
| FDIO(-1) | 0.025065 | 0.635353 | 0.405445 |
| | (1.91015) | (0.59093) | (0.21845) |
| | [ 0.01312] | [ 1.07518] | [ 1.85597] |
| FDIO(-2) | -4.552695 | -0.456309 | 0.102771 |
| | (1.92992) | (0.59705) | (0.22072) |
| | [-2.35900] | [-0.76428] | [ 0.46562] |
| C | 0.649451 | 0.770930 | 0.138362 |
| | (1.02673) | (0.31763) | (0.11742) |
| | [ 0.63254] | [ 2.42712] | [ 1.17832] |
| | | | |
| R-squared | 0.509174 | 0.291027 | 0.253634 |
| Adj. R-squared | 0.417144 | 0.158094 | 0.113691 |
| Sum sq. resids | 437.8624 | 41.90560 | 5.726985 |
| S.E. equation | 3.699081 | 1.144356 | 0.423046 |
| F-statistic | 5.532703 | 2.189282 | 1.812403 |
| Log likelihood | -102.4963 | -56.73983 | -17.93034 |
| Akaike AIC | 5.615194 | 3.268709 | 1.278479 |
| Schwarz SC | 5.913782 | 3.567297 | 1.577067 |
| Mean dependent | 3.440535 | 1.525579 | 0.351513 |
| S.D. dependent | 4.845217 | 1.247181 | 0.449361 |
| Determinant resid covariance (dof adj.) | | 1.475018 | |
| Determinant resid covariance | | 0.814804 | |
| Log likelihood | | -162.0221 | |
| Akaike information criterion | | 9.385747 | |
| Schwarz criterion | | 10.28151 | |
| Number of coefficients | | 21 | |

***Source:*** Author's computation (2023)

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

The Vector Autoregression Estimates is presented in table 4.6 above from the table it can be observed that the model is for each of the endogenous variables and the appropriate lag criteria is the Akaike information criterion (AIC) since has the least value of the two criteria presented in the VAR estimate output. We therefore proceed to conduct the forecast error variance decomposition and the impulse response functions.

**Residual Diagnostics**

Several diagnostic test are carried out to check the robustness of the estimated relationship among the variable.

**Table 7: VAR Residual Serial Correlation LM Tests**

| Null hypothesis: No serial correlation at lag h | | | | | | |
|---|---|---|---|---|---|---|
| Lag | LRE* stat | Df | Prob. | Rao F-stat | Df | Prob. |
| 1 | 7.202082 | 9 | 0.6161 | 0.800702 | (9, 65.9) | 0.6169 |
| 2 | 5.288112 | 9 | 0.8085 | 0.579738 | (9, 65.9) | 0.8090 |

***Source:*** Author's computation (2023)

In table 7 above, the VAR Residual Serial Correlation LM Tests reveals that the variables in the series have probability of 0.6169 and 0.8090 for lag 1 and 2 respectively which clearly exceed the 5% level of significance. We thus accept the null hypothesis that the residual does not suffer from autocorrelation at both lags since their p-values exceed 5% level of significance.

**Table 8: VAR Residual Heteroskedasticity Tests (Levels and Squares)**

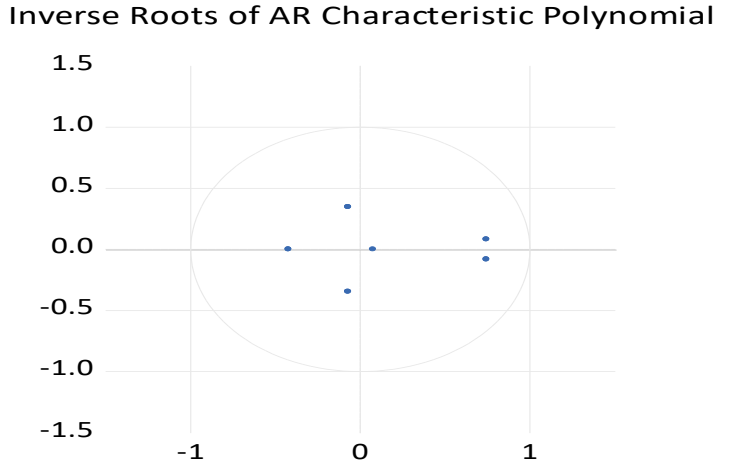
| Joint test: | | |
|---|---|---|
| Chi-sq | Df | Prob. |
| 83.22567 | 72 | 0.1721 |

***Source:*** Author's computation (2023)

In table 8, the VAR Residual Heteroskedasticity Tests (Levels and Squares) reveals that the variables in the series have probabilities of 0.1721 which exceed the 5% level of significance. We thus accept the null hypothesis that there is no evidence of heteroskedasticity in the residuals since their p-values exceed 5% level of significance.

**Stability Conditions**

The figure 1 below shows the inverse roots of AR polynomial. It can be observed from the figure above that all the inverse roots of AR polynomial have modulus less than one and lie inside the unit circle, hence we can infer that the estimated VAR is stable. The stability of the VAR system implies stationarity therefore all the diverse tests conducted on the VAR model will be valid as well as the impulse response standard errors.




***Source:*** Author's computation (2023)

**Forecast Error Variance Decompositions**

To further examine the short run dynamic properties of the of gross domestic product growth rate (GDPGR), foreign direct investment inflow (FDII) and foreign direct investment outflow (FDIO), we examined the forecast error

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

variance decomposition. The forecast error variance decomposition for the three variables was obtained and is reported in Table 9, 10 and 11. By definition, the variance decomposition shows the proportion of forecast error variance for each variable that is attributable to its own innovation and to innovations in the other endogenous variables.

**Table 9: Variance Decomposition of GDPGR**

| Period | S.E. | GDPGR | FDII | FDIO |
|---|---|---|---|---|
| 1 | 3.699081 | 100.0000 | 0.000000 | 0.000000 |
| 2 | 3.907321 | 95.90927 | 4.090357 | 0.000377 |
| 3 | 4.281928 | 87.04227 | 4.660935 | 8.296796 |
| 4 | 4.448778 | 82.75174 | 6.533307 | 10.71495 |
| 5 | 4.611069 | 80.31254 | 6.095474 | 13.59199 |

***Source:*** Author's computation (2023)

**Table 10: Variance Decomposition of FDII**

| Period | S.E. | GDPGR | FDII | FDIO |
|---|---|---|---|---|
| 1 | 1.144356 | 10.12241 | 89.87759 | 0.000000 |
| 2 | 1.248010 | 8.638519 | 88.98775 | 2.373727 |
| 3 | 1.264040 | 9.930469 | 87.74938 | 2.320153 |
| 4 | 1.276961 | 10.19494 | 87.22246 | 2.582604 |
| 5 | 1.285924 | 10.57382 | 86.45610 | 2.970079 |

***Source:*** Author's computation (2023)

**Table 11: Variance Decomposition of FDIO**

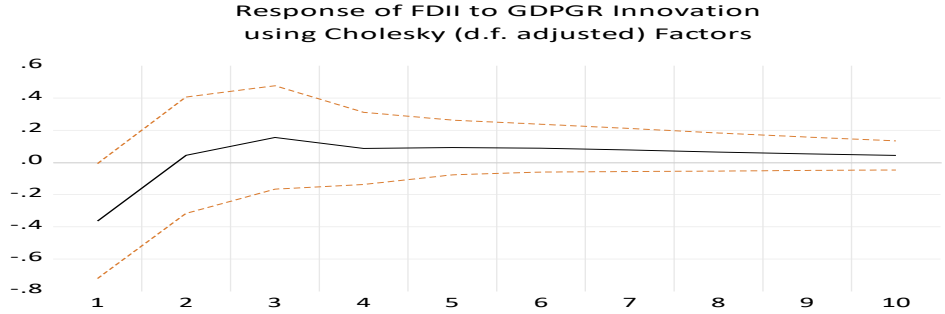
| Period | S.E. | GDPGR | FDII | FDIO |
|---|---|---|---|---|
| 1 | 0.423046 | 5.649796 | 43.17496 | 51.17525 |
| 2 | 0.443758 | 5.316176 | 40.52852 | 54.15530 |
| 3 | 0.463927 | 5.510625 | 42.67126 | 51.81811 |
| 4 | 0.472344 | 5.370860 | 43.83164 | 50.79750 |
| 5 | 0.475478 | 5.300318 | 44.29378 | 50.40591 |

***Source:*** Author's computation (2023)

**Impulse Response Function (IRF)**

The Impulse Response function simulates over time the effect of a one-time shock in one equation on itself and on other equations in the entire equation system; hence it is used to detect interaction among variables. Results of the estimated generalized impulse response functions (IRFs) are summarized in figure 4.9a and 4.9b. Examination of the graphs for GDPGR, FDII and FDIO shows that their movement with respect to the identified shocks is consistent with the results of variance decomposition analysis.

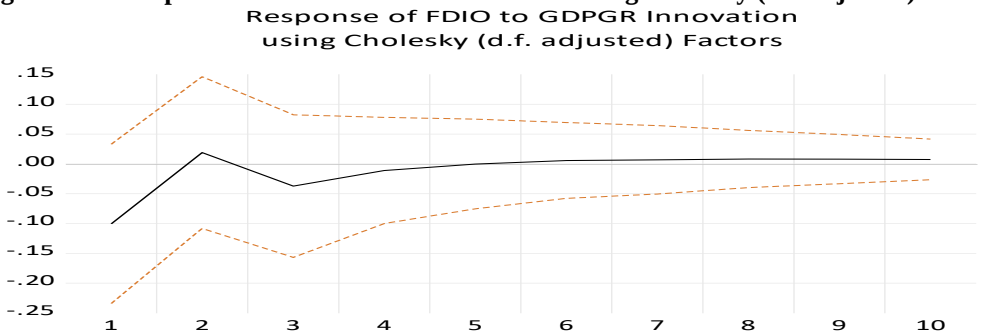
**Figure 4.9a: Response of FDII to GDPR innovation using Cholesky (d.f. adjusted) Factors**




***Source:*** Author's computation (2023)

Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2023): 8.048 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 10 | Issue: 8 | August 2023 -Peer-Reviewed Journal

**Figure 4.9b: Response of FDIO to GDPR innovation using Cholesky (d.f. adjusted) Factors**




***Source:*** Author's computation (2023)

Figure 4.9a above shows the response of FDII to a one standard deviation shocks in GDPGR. It can be observed that FDII responded to the movement associated with GDPGR. In the first period there was a sharp increase in FDII which further accelerated slightly between the third and fourth period. FDII however returned to its steady state throughout the rest periods. Likewise figure 4.9b above shows the response of FDIO to a one standard deviation shocks in GDPGR. In similar fashion with FDII, there was a sharp increase in FDIO which was preceded by a sharp decline. This was however followed with a gradual increase from period three till it achieved a steady state position.

## CONCLUSION AND RECOMMENDATIONS

The study analyses the Determinants of foreign direct investment and economic growth nexus in Nigeria. The findings from the study reveals that both foreign direct investment inflow and foreign direct investment outflow affects economic growth rate in Nigeria positively. Foreign direct investment inflow and foreign direct investment outflow responds sharply to changes in economic growth rate. Therefore the study sees the impact of foreign direct investment inflow and foreign direct investment outflow on the economy as a critical component in the development in Nigeria. Based on the foregoing recommendations are therefore made;

i. Government should improve the investment climate in the country by addressing issues that impedes on investment like insecurity, since investment is crime shy.
ii. Concerted efforts should be made by the government to ensure foreign investors and their investment are protected from internal macroeconomic shocks like inflation, and exchange rate imbalances.
iii. Government should therefore crate an enabling environment that attracts foreign direct investment into the productive sector of the economy as this will ensure sustainable economic growth.
iv. Government should ensure that there is easy repatriation of profit by foreign investors. Also local investors should not be hindered from diversifying some of their investment to foreign countries since this will increase foreign remittances.

## REFERENCES

1. *Akinlo, A. (2014). Foreign Direct Investment and Growth in Nigeria: An Empirical Investigation. Journal of Policy Modelling, 26, 627–639.*
2. *Asteriou, D. & Hall, G. (2007). Applied Econometrics: A Modern Approach Using Eviews and Microfit. Palgrave Macmillan; Revised Edition.*
3. *Borin, A. & Mancini, M. (2016). Foreign direct investment and firm performance: An empirical analysis of Italian firms. Review of World Economics, 152(4), 705–732. https:// doi. org/10. 1007/s10290- 016- 0255-z*
4. *Chenery, H., B. & Strout, A., M. (1966). Foreign Assistance and Economic Development. The American Economic Review, 12(4), 679-733.*
5. *Darazo, I. & Adaramola, A., O. (2021). Impact of International Trade and Foreign Direct Investment on Economic Growth: The Nigerian Perspective. International Journal of Interdisciplinary Research in Social Sciences, 1(1), 1-10.*
6. *Ehimare, A. (2011). The Effect of Exchange Rate and Inflation on Foreign Direct Investment and Its Relationship with Economic Growth in Nigeria. Annals of Dunărea de Jos University. Fascicle I: Economics and Applied Informatics, 1(1), 5–16.*
7. *Eniekeziemene, M. (2015). Does foreign direct investment generate economic growth in Sub- Saharan Africa? (Bachelor thesis, Sodertorn University, Sweden).*

8. *Eze C., N. (2020). Foreign Direct Investment. A Panacea to National Economic Development in Nigeria? International Kindle Paperwhite, Munich GRIN Verlag*
9. *Fiador, A. & Asare, I. (2007). Foreign direct investment and economic growth: Empirical evidence from sectoral data in Indonesia. Retrieved from ssrn.com*
10. *Giwa, B. A., George, E. O., Okodua, H., & Adeniran, O., S. (2020). Empirical Analysis of the Effects of Foreign Direct Investment Inflows on Nigerian Real Economic Growth. Implications for Sustainable Development Goal-17. Cogent Social Sciences, 6(1), 1-10. https://doi.org/10.1080/23311886.2020.1727621*
11. *IMF (2018). Regional Economic Outlook. Sub-Saharan Africa Resilience and Risks. World Economic and Financial Surveys. Www.imfbookstore.org. Investment statistics_2307437x.*
12. *John, E., I. (2016). Effect of Foreign Direct Investment on Economic Growth in Nigeria. Journal of Economic Development. 24(1), 147-153.*
13. *Maku H. & Atanda, S. (2013). Impact of foreign direct investment (FDI) on GDP: A case study from Pakistan. International Letters of Social and Humanistic Sciences, 16, 73-80.*
14. *Mokuolu, J., O. (2018). Effect of Exchange Rate and Interest Rate on FDI and Its Relationship with Economic Growth in Nigeria. 33–47. https://doi.org/10.5281/zenodo.1168515*
15. *Mounic, B. & Atef, S., A. (2018). The Impacts of Domestic and Foreign Direct Investment on Economic Growth in Saudi Arabia. Economies, 1-17. https://doi.org/10.3390/economies 6010018.*
16. *Neumayer, E., Nunnenkamp, P., & Roy, M. (2016). Are stricter investment rules contagious? Host country competition for foreign direct investment through international agreements. Review of World Economics, 152(1), 177–213. https:// doi. org/ 10. 1007/ s10290- 015-0231-z*
17. *Nielsen, B. B., Asmussen, C. G., & Weatherall, C., D. (2017). The location choice of foreign direct investments: Empirical evidence and methodological challenges. Journal of World Business, 52(1), 62–82. https:// doi. org/ 10. 1016/j. jwb. 2016. 10. 006*
18. *Nwanji, T. I., Howell, K. E., Faye, S., Otekunrin, A. O., Eluyela, D. F., Lawal, A., I. & Eze, S., C. (2020). Impact of foreign direct investment on the financial performance of listed deposit banks in Nigeria. International Journal of Financial Research, 11(2), 323-347. https://doi.org/10.5430/ijfr.v11n2p323*
19. *Obadan, M., I. (2004). Direct Foreign Investment in Nigeria. An Empirical Analysis. African Studies Review, 21(1), 12-34.*
20. *OECD. (2015). Measuring International Investment by Multinational Enterprises. OECD Publishing.*
21. *Ogu, C. (2020). Foreign direct investment and exchange rate in Nigeria. January 2019.*
22. *Olasehinde, I., O. & Ajayi, C., F. (2022). Foreign Direct Investment and Nigerian Economic Growth. Journal of Applied and Theoretical Social Science, 4(3), 313-327.*
23. *Onuoha. (2013). Impact of foreign direct investment on manufacturing sector output growth in Nigeria. International Journal of Applied Economics, Finance and Accounting, 5(2), 55-64.*
24. *Ozturk, A. (2012). Foreign direct investment, business environment and economic growth in Sub- Saharan Africa: Pooled mean group technique. Journal of Global Economics, 3(2), 1-5.*
25. *Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3), 289–326. https://doi.org/10.1002/jae.616*
26. *Pinto, P. M., & Zhu, B. (2009). Fortune or Evil? The Effect of Inward Foreign Direct Investment on Corruption. International Studies Quarterly, 60(4), 693–705. https:// doi. org/ 10. 2139/ ssrn. 13247 50*
27. *Sokang, K. (2018). The Impact of Foreign Direct Investment on the Economic Growth in Cambodia: Empirical Evidence. International Journal of Innovation and Economic Development, 4(5), 31–38. https://doi.org/10.18775/ijied.184975517020.2015.45.2003*
28. *Umezurike, C. M., Ananwude, A., C. & Mbanefo, P., M. (2021). Foreign Direct Investment and Economic Growth: Empirical Assessment of the Nigerian Economy (1986 – 2019). Journal La Bisecoman, 02(06), 023-033. DOI: 10.37899/journallabisecoman.v2i6.54*
29. *UNCTAD (2015). Foreign Direct Investment in LDCs: Investment Trends and Policies since LDC IV and the Way Forward. Available online at https://unctad.org/webflyer/foreign-direct- investment*
30. *World Investment Report (2019). Survey of Current Business. Washington D C. Bureau of Economic Analysis. World Bank pp. 10-21.*