FOREIGN DIRECT INVESTMENT AND DEVELOPING ECONOMY: NIGERIA EXPERIENCE (2010-2020)

[1]Ismail Alani Busari &[2]Ilesanmi Akanbi Ajibode
[1]Department of Accountancy, The Federal Polytechnic, Ilaro, Ogun State, Nigeria
[2]Mathematics and Statistics Department, The Federal Polytechnic, Ilaro, Ogun State, Nigeria
ismail.busari@federalpolyilaro.edu.ng, Ilesanmi.ajibode@federalpolyilaro.edu.ng

Abstract

The part played by Foreign Direct Investment (FDI) in the rate of economic growth of Nigeria is the focus of this study. Annual time series data covering forty-four quarters from Q1 2010 to Q4 2020 extracted from the statistical bulletin of the Central Bank of Nigeria (CBN) and Pro-share publications of the National Bureau of Statistics (NBS) was used for this study. It was intended in this study to investigate the level of FDI inflow into an economy with dearth of infrastructure which is one of the major economic drivers. ARDL *model was employed to relate foreign direct investment with GDP. Findings from the study revealed that FDI has significant and positive impact on Nigeria economy. It was concluded that government should endeavour to formulate and review extant policies that will encourage both domestic and foreign investors to invest more in Nigeria economy. Monetary policies that will address economic growth indices in order to increase per capita real income and reduce unemployment rate should as well be formulated.*

Keywords: Foreign Direct Investment, Developing Country, Sustainable Development

Introduction

Foreign direct investment (FDI) has been described as investments made by a party (corporate body) or individual in one country in another country with an intention to establishing a long-term business entity in that other country. The intention of establishing a business concern in the country of investment differentiate FDI from foreign direct portfolio which involves a passive holding of securities in the foreign country. FDI includes acquisition of voting shares in a foreign company; mergers and acquisition; joint venture holdings establishment of a domestic firm in a foreign country. Not all the types of FDI is advantageous to the host country (Susilo, 2018). The however stated further that some has positive correlation with the economy while others have negative effects.

With the characteristics of developing countries as including low per capita real income and high rates of unemployment, savings rate will be lower than in developed economy. Lack of enough national savings is one of the problems of developing countries (Demirhan & Masca, 2008). The need for finance from outside the country in the form of FDI (direct or indirect investment) is of great importance to developing countries.

Developing countries stands to benefits greatly from FDI inflow for her financing needs because the source will support domestic savings which may not be forthcoming due to the low per capita real income of large percentage of the populace. According to Denisia (2010) the effects of FDI are complex and that they are often regarded as generators of employment, high productivity, competiveness, and technology spill overs. These benefits are especially important for the least developed countries,

Benefit accruable from FDI to host country includes transfer of technology from inflow of capital in different varieties which cross country trading in goods and services cannot provide. It is believed that Africa and most especially Nigeria has one of the biggest markets with abundant business opportunities that can attract a lot of investors including those that can bring in FDI. However, some factors may affect the amount and rate of FDI inflow into potential host countries. A country with low credit ratings and high borrowing cost may be avoided by would be investors. Likewise, countries bereft of infrastructure may lose investment whatever the amount of natural resources in such a country has. Political instability may negatively affect the rate and amount of FDI inflow.
The required stimulation expected for the economy can only be achieved if certain policy hypothesis is in place. According to North (1990) theory of institution institutional factors is germane to the effectiveness of FDI in growing any country's economy (as cited in Faundez, 2016). According to Yusuf, Shittu, Akanbi, Umar and Abdulrahman (2020) opined institution that is succinctly, proficient and well established that will offer an appropriate environment

for growth-enhancing activities, such as investment, innovation and entrepreneurship. Countries with socio-political problems may not be a suitable route for FDI. Yusuf et al (2020) stated that democracy that is expected to promote economic growth is doing so in West Africa "many occasions in West Africa, individuals saddled with the responsibility of maintaining law and order have themselves perpetually engaged in abuse of and disproportionate use of force against the civilians" (Acemoglu, Naidu, Restrepo, & Robinson, 2015; Marc, Verjee & Mogaka, 2015). They stated further that the fundamental freedoms of several citizens have been desecrated via indiscriminate arrests, detentions and even murders, especially in atmospheres where the state fails to hold the perpetrator of such heinous acts accountable. From the forgoing, the study intends to ascertain whether FDI inflow has any significant effect on the Gross Domestic Products on the economy of Nigeria for the period (2010-2020).

Globalisation has made interconnection of countries possible in all aspect including economics and commerce. Business activity between countries, companies and individual business entrepreneurs has been made possible. It has as well made possible the identification of countries with surplus investible finance and those with deficit investible finance. One of the characteristics of developing countries is lack of finance to improve on infrastructure that will encourage commerce and attract invest from outside the country to bring in FDI for expansion of existing companies or establishment of new ones.
One of the major factors for economic growth is the level of economic activity within the economy, however, inadequacy of enabling environment will not encourage business. Infrastructure that can facilitate economic activities. Developing economy will lack the finance to provide appropriate infrastructure and therefore will require financial support in the form of FDI because domestic savings will not be forthcoming or may be too low. In many developing countries, foreign direct investment is considered as a source of economic development through its direct and indirect contribution (Ayenew, 2022). Developing countries, because of their characteristics, will benefit more from use of FDI to support funding for her infrastructural development.

Taiwo, Achugamonu, Okoye and Agwu (2017) stated that many countries and continents (especially developing country like Nigeria) now see attracting FDI as an important element in their strategy for economic development. Economic growth is the aggregate production of goods and services in an economy. It is measured in either nominal or real (adjusted for inflation) terms. The measurement is in terms of Gross National Product (GNP) or Gross Domestic Product (GDP). One of the ways by which economic growth is generated is when physical capital goods in the economy increases. An addition of capital to the economy will enhance productivity of labour. Production of economic growth can as well arise from technological improvement. Both physical capital, technology and technological improvement can be derived from FDI inflow. An increase in economic growth can also be achieved by growing the labour force through enhancement of their capacity and capability. A developing country with large population like Nigeria should have a robust labour market.

The theory of the big push was propounded by Paul Rosenstein-Rodan in 1943 which emphasises that underdeveloped countries require large amounts of investments to break the shackles of backwardness and launch upon economic development (Orji, Nwagu, Ogbuabor, & Anthony-Orj, 2021). Providing for the required finance will require the support of investors from within and outside the country. Finance via FDI will be more appropriate because investment therefrom is long lasting which differentiate it from FDI from foreign portfolio (securities held in foreign country).

Dependency theory was first proposed by Argentine economist and statesman Raul Prebisch in late 1950s but gained prominence in 1960s and 1970s. The theory was premised on the notion that poor and underdeveloped nation's resources are moved to a core of wealthy country thereby enriching the developed nations at the expense of the developing ones thereby compounding their problems. The theorist believed that the poor nation impoverishment are escalated and further enriching the wealthy nation.

In the view of the classical theorist which was propounded by Scotittish economist Adam Smith in 18th and 19th century affirmed that FDI wholly confer benefits on the host country. They are of the opinion that it is the host country that benefits more from the opportunities offered by FDI. The premise of their assertion was that the capital inflow from the investment helps to promote development in the host country. As well FDI in the form of technology, employment opportunities derived therefrom is believed will enhance rate of economic growth. The portfolio investment type of FDI was the basis of classical theorist's discussion because Marandu and Ditshweu (2018) posits the classical theory that, all things being equal, capital tends to flow from low returns to high returns countries in order to gain the best returns. Host countries with high cost of doing business may nor attract much FDI because

expected returns may be drastically reduced by the cost. Ekpo (1997), stated that Keynesian theory maintains that high interest rate discourages private investment.
Theories of economic growth include the endogenous model which believes that growth of the economy of a country can be achieved within the system itself. The theory noted that the improvement in the nation's human capital will accelerate the rate of economic growth via improved technology that can make methods of production more effective. Enhancing human capital will require investment from government and private investors. Host country with low level of savings will require support from outside investors like FDI.

The neoclassical growth theory was first introduced by Rober Solow and Trevor Swan in 1956 differs on economic growth. The theory states that faster innovation coupled with more investments will give rise to improved productivity. The theorists believed that achieving a steady economic growth rate emanate from the output of three driving forces of labour, capital and technology. Yusuf et al (2020) quoted the (Cobb & Douglas, 1928) production function in which it was asserted that the level of output will be enhanced in the long-run if improvement in level of technology is complementing factor inputs (labour and capital) is constantly added.
Given the benefits derivable from use of FDI by host economy, it is an important source of finance to developing economy.

Studies from various economies on the interrelationship of FDI and economic growth have been written with differing conclusions. These differences will be due to the level of economic development; available natural resources; and level of others factors of production in each of the economy.
Shah, (2014) investigated the extent to which availability of infrastructure will encourage inflow of FDI in developing countries. The market size, economic development, microeconomic stability, population, language, regional and income groupings were considered as part of factors that influence FDI inflow. Panel data for 90 developing countries for years 1980 to 2007 was used in the study. The Hausman (1978) specification test was conducted in choosing between the fixed and random model because of diverse cross-section of countries used for the study. In testing for the heteroskedasticity the Breusch-Pagan / Cook-Weisberg test was carried out. The author observed from the study that the GDP per capital of a country is a strong and statistically significant positive determinant of FDI location. Further to the observation from the study the author discovered that inflow of FDI will decrease if consumer prices increase indicating that improper management of macroeconomic policies and inflation may deprive FDI host economy of the needed finance for economic growth. In the final analysis, Shah (2014) stated that the study confirms the assertion that countries with large well liberalised domestic market, economic development has positive effect in attracting FDI inflow. In addition, geographic regional and lingual characteristics of host country significantly has effect on the multinational firms' decision in locating their investment.
Yusuf et al (2020) examined the part FDI inflow, financial development and political (in)/stability in West African economic growth. Time series secondary data for years 1996 to 2016 was obtained for the study on which the dynamic fixed effects technique was applied in analysing. The empirical findings by the authors from the study shows a positive and significant impact of FDI inflow on economic growth of West African (W. A.) sub region at 1% increase resulting into 26% increase in GDP. Political instability has significant negative impact on the growth rate of W. A. sub region economy. The impact of labour on the GDP growth rate was significant. In conclusion the authors stated that the outcome of the study affirmed the assertion that FDI is important to the growth of developing nations' economic. However, they continued, this will hold true in countries with adequate rule of law, political stability and economic freedom. They therefore implored government of W.A. sub region to institute policies that help to increase FDI inflow into the region. In the same vein, they advised the W.A. sub region government to establish democratic practices and as well improve upon a stable and sustainable political environment in order to restore investors' confidence.
Okwu, Oseni and Obiakor (2020) appraised the economic growth enhancement capability of FDI focusing on 30 global economies. Panel data for years 1998 to 2017 used for the study was analysed with econometric methodologies that are appropriate to obtaining desired result. Variables used in the study includes domestic credit to private sector (DCPS), gross fixed capital formation (GFCF), inflation–consumer prices index (INFPC), trade openness (TOPNESS), and youth unemployment (UEMPYT). The outcome of the analysis revealed that FDI statistically significant and positive impact on growth rate of the economy. The impact of GCFC on the economy is greater in all the countries of study. TOPNESS and UEMPYT has positive impact but INFPC and DCPS negatively impact on the economy. The final conclusion from the study was that with suitable microeconomic state FDI will positively help in the growth of the economy. Okwu et al (2020) suggested that the government of these countries should continue in ensuring revitalisation, strengthening and implementation of policies that will engender the encouragement of increased FDI inflows which in turn will fasten the growth rate of the nations' economy.

Susilo (2018) did a causal study of the implications of FDI for the United State economy. Time-series data for the period from year 2000 to 2017 was used for the study and analysed using multiple linear regression model. The analysis was based on 10 sectors of the economy on which the author applied FDI simultaneously. Susilo (2018) observed from the outcome of the study that significant correlation exists between FDI and growth rate of the sectors under study because 90.4% growth of real GDP was explained by FDI while the remaining 9.6% was explained by other variables. No advice was given or suggestion made at end of this study.

Dogan (2014) examined the causality between FDI and economic growth of Zambia. Annual time-series data of FDI and real GDP from year 1970 to 2011 was obtained for the study. Test for non-stationary of the time-series data was done with ADF unit root test. Johansen co-integration equilibrium and Granger causality test was carried out as well. The outcome of the causality test shows a one-way causality effect from FDI to GDP. Dogan (2014) sated that unidirectional linkage exist between FDI and GDP running from the former to thelatter. The main point of the study is that a one-way long-run statistically significant relationship exist between FDI and GDP.

Ijirshar, Anjande, Fefa and Mile (2019) appraise the differentials in the impact of domestic investment and FDI on economic growth in Africa. The study covers 41 African countries and data used was obtained from the repository of world development indicator covering years 1970 to 2017. Descriptive statistics was used to explain characteristics of each of the model; correlation analysis used to test perfection of each regressors in representing one another in order to prevent multicollinearity. In ascertaining integration of variables of order M2 or not, the panel root test was carried out. Findings from the study was that FDI and domestic investment positively impacted significantly on the economic growth of African countries in the long-run. The African countries has speedy adjustment to convergence indicating strong level of convergence towards log-run equilibrium when faced with any distortions. The study therefore, recommended that government of these countries should put in more efforts at encouraging domestic savings using interest rate a tool. The government of each country should as well avoid crowding out investment by implementing appropriate expansionary fiscal policies because savings rate in African is low. Additionally, they should consider FDI as supplement to domestic investment by encouraging them through investment incentives and creating enabling environments for business survival. In order to successfully and beneficially implement policies the government should endeavour to adopt prudent spending habits because of its negative influence on economic growth of African countries economy.

Sarker and Khan (2020) examined the connection between FDI and Bangladesh economy. Standardised time-series data for FDI and GDP was obtained from the World Bank's world development indicators' database from year 1972 to 2017. In analysing the data several time-series analytical tools of the econometric such as augmented Dickey-Fuller, Kwiatkowski-Phillips-Schmidt-Shin for generalized least square, and for stationarity test Lee-Strazicich unit root tests was used, augmented autoregressive distributed lag (augmented ARDL) bounds for cointegration test, and Granger causality in exploring the causality direction. The study outcome revealed a long-run interrelationship between the variables and unidirectional causality with GDP causing FDI. This outcome, the study conforms to the stability in the economic growth of Bangladesh being experienced for decades and still reflecting in this study. The authors drew some policy implications from this outcome one of which is the need for policy makers to continue with policies that will ensure the maintenance of the steady economic growth. In the same vein, policy makers should institute policies appropriate for a sound microeconomic position for a well-developed socioeconomic infrastructure to further liberalise the financial sector. Policies that will help to further develop human capital should be emphasised and efforts should be made to ensure stability in the polity.

Alabi (2019) investigated the implications of FDI inflow into Nigeria on GDP. Secondary time-series data for year 1986 to 2019 obtained from the statistical bulletin of published by CBN for 1986 to 2018 and from World Development indicator for 2019 was used for the study. The author applied the regression analysis method as the estimation technique for the data used in the study. The study outcome revealed that positive and significant impact was exerted on the economic growth of Nigeria by FDI and domestic investment as well has insignificant positive impact on GDP. Also interest rate and exchange rate impacted positively on GDP but impact of the former was significant while that of the latter was insignificant. Alabi (2019) therefore recommended going by the outcome of the study, that more avenue be created by policy makers to encourage foreign investors in order to enhance transfer of technology, create more job opportunities and as well improve on productivity in the economy. In the same vein, the author suggested that policy makers should encourage domestic investors and potential ones as well by formulating appropriate policies.

Also, Okonkwo, Egbunike and Udeh (2015) examined the implications on the economic growth of Nigeria by FDI inflow. Time-series secondary data was obtained from the CBN statistical bulletin and annual reports and accounts for period covering year 1990 to 2012. Analysis of the data was carried out using the OLS estimation techniques.

Each of the explanatory variables was correlated to explanatory variables. There was a positive relationship between GDP and export, exchange rate, technology and export while a negative relationship exist between the dependent variable and inflation and interest rate. An inverse relationship exists between GDP and FDI meaning that it negatively impacts on GDP. The study therefore recommended that in order to encourage improved inflow of FDI and goods and services the government should institute positive economic and political policies. The authors believed that with stability in the polity, a conducive socioeconomic environment that will encourage investors will be made possible.

Ayenew (2022) empirical investigation of the interrelationship of FDI and the rate of economic growth of Sub-Saharan African countries. 22 nations of the sub-Saharan Africa were the basis of the study. Panel data for these nations cover years 1988 to 2019 and obtained from world development indicator 2021 database. The Pooled Mean Group ARDL model estimation in Eview (PMG/ARDL) was employed in analysing data used in the study. The author observed from the study that FDI has long run statistically significant positive impact on the economic growth of sub-Saharan African countries. Ayenew (2022) recommended based on the outcome of the study that the government of sub-Saharan African countries should put in more efforts in attracting FDI inflows. Such efforts should include subsidies development of infrastructure and creation of a stable political environment.

2 Methodology

The research design for this study was ex post facto adopted to enable a robust achievement of the study objectives. The time-series data obtained from the publications of CBN and Pro-share/National Bureau of Statistics (NBS) was analysed using (ARDL) model technique spanning over period of forty four (44) quarters i.e. Q12010 to Q42020. The mixed order of integration of the variables when subjected to unit root test i.e. I(1) and I(0) for both endogenous and exogenous variables respectively was the reason for using ARDL.

Model Specification

The ARDL econometric model was adopted in this study following the assertion of Nkoro and Uko (2016) that notwithstanding if the underlying variables are I(0) or I(1) or a combination of the two and that if there is variables with I(2) then unit root test should be carried out to avoid crashing of ARDL. In this study GDP is assumed to be a function of FDI. The functional relationship of this model is specified thus:

$$lnGDP = \beta_0 + \beta_1 \ln FDI + e_i \quad (1)$$

Where
GDP = Gross Domestic Product used in measuring economic growth
FDI = Foreign Direct Investment
β_0 and β_1 are parameters to be estimated
e_i error term $\left(e_i \sim IID(0, \sigma^2)\right)$
An ARDL equation for testing the existence of long run relationship among the variables can be expressed from equation (1). Equation (2) tests for the long run relationship.

$$\Delta lnGDP_t = \gamma_0 + \sum_{i=1}^{k} \gamma_i \Delta \ln (GDP)_{t-i} + \sum_{i=m}^{k} \alpha_i \Delta \ln (FDI)_{t-i} \quad (2)$$

Method of Data Analysis

In carrying out the set objectives of this research, ADL unit root test was used to ascertain the degree of stationarity of the variables employed. This is specified as:

$$\Delta y_t = a_0 + a_1 y_{t-1} + \sum_{i=1}^{p} a_i \Delta y_{t-i} + \varepsilon_i \quad (3)$$

It must be noted that in order to select each model's optimal lag length we maximize the log-likelihood function of the corresponding model. That is done by selecting the model with the lowest SBIC (Schwartz Bayesian Information Criterion). Cross-checking of the results using the Akaike Information Criterion (AIC) ensures accuracy.
Since one of the objectives of this paper is to find out the causality of either variable of FDI and GDP, this paper adopted Granger Causality approach. The G-causality is normally tested in the context of linear regression models.

Considering a bivariate linear autoregressive model of two variables $X_1$and $X_2$where X_1represent GDP and X_2 represent FDI for the purpose of this study. The G-causality equation is given in equation (4) and (5) for the two bivariate variables as:

$$X_1(t) = \sum_{j=1}^{p} A_{11},j\, X_1(t-j) + \sum_{j=1}^{p} A_{12},j\, X_2(t-j) + E_1(t) \quad (4)$$

$$X_2(t) = \sum_{j=1}^{p} A_{21},j\, X_1(t-j) + \sum_{j=1}^{p} A_{22},j\, X_2(t-j) + E_2(t) \quad (5)$$

In this regard,

$\boldsymbol{p}$ represents the maximum number of lagged observations included in the model

A represents matrix containing the model coefficients i.e. the contributions of each lagged observations to the predicted values of $X_1(t)$ and $X_2(t)$.

E_1 and E_2 are residuals for each time series.

It is pertinent to note that if the variance of E_1 or E_2 is reduced by the inclusion of the X_2or X_1terms in equation (4) or (5), then it is said that X_2or X_1granger causes X_1or X_2. This can be tested by performing an F-test of the null hypothesis that:

H_0: $A_{12} = 0$; vs. H_1: $A_{12} \neq 0$;

Given the assumptions of covariance stationarity on X_1 and X_2.

3 RESULTS

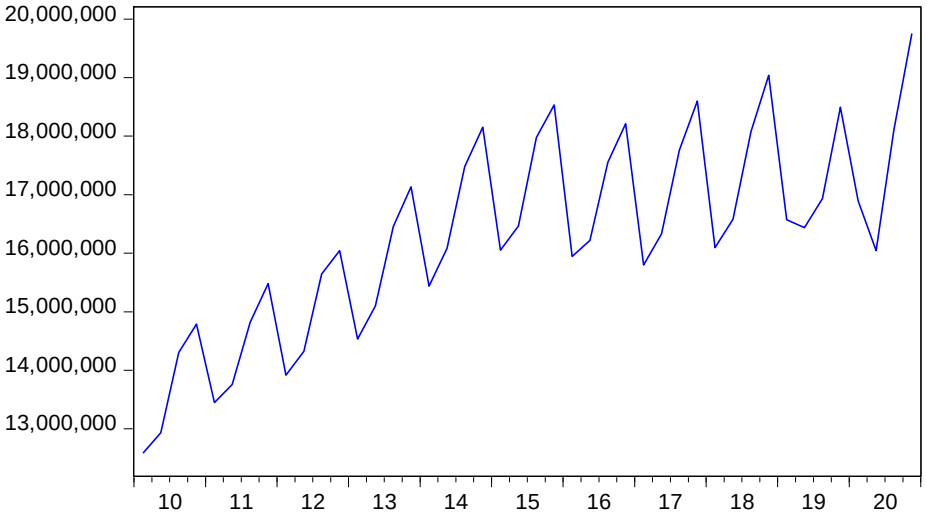

Figure 1: *Trend line of Quarterly GDP between years 2010 to 2020*

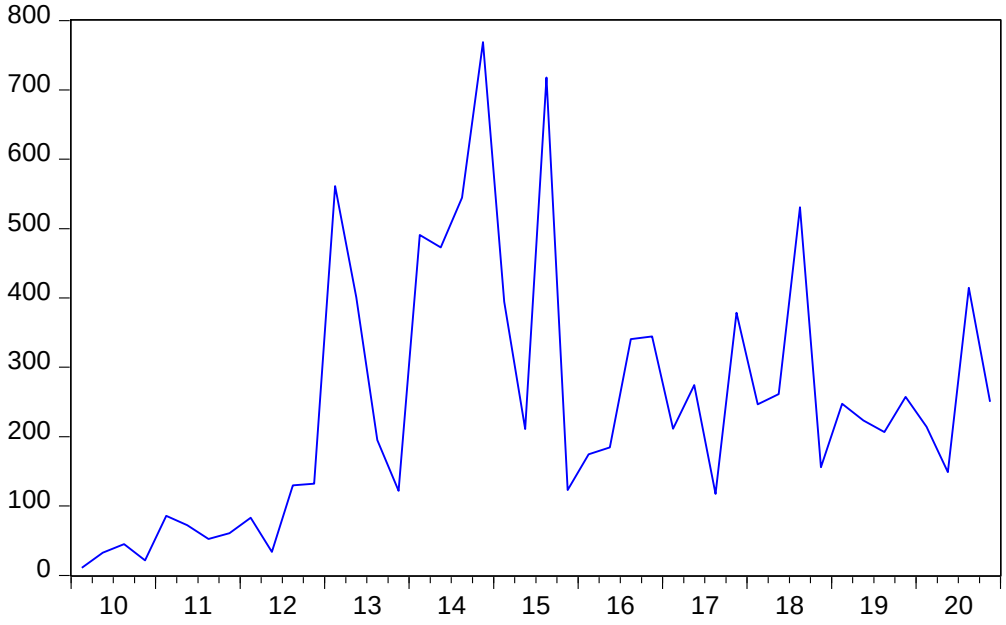

Figure 2: *Trend line of Quarterly FDI between years 2010 to 2020*

Time plot of aggregate GDP and FDI can be depicted in figure 1 to 2. It can be seen that the yearly series of Growth in FDI are stochastic in nature and time invariant as they do not provide the same information from time to time. The irregularity GDP as an output variable can be attributed to sudden change in the economy policy of Nigeria. Due to different characteristics embedded in these variables, it can be evidenced that testing the variables for stationarity cannot be ruled out.

Table 1: DescriptiveStatistics

	GDP **(N' Billion)**	FDI **(N' Billion)**
Mean	16293209	248.7718
Median	16276631	211.2600
Maximum	19753164	768.8600
Minimum	12583478	11.09000
Std. Dev.	1687593.	185.9771
Skewness	-0.187492	0.981715
Kurtosis	2.494997	3.414969
Jarque-Bera	0.725341	7.383298
Probability	0.695816	0.024931

Source: *Extracted from Eviews Output, Version 10*

Descriptive statistics of table 1 provided information on the average, median, maximum and minimum GDP and FDI during the period under study. It can also be evidenced from the Jarque-Bera test statistic that measures FDI is non-normally distributed (p-value 0.0249 < 0.05) while GDP between the years of study was found to be normally distributed (p-value 0.6958 > 0.05). The implication of the non-normality of FDI is that the variables may be stochastic in nature which do not allow for ordinary linear regression modelling in the confirmatory analysis of FDI and its causal effects on economic growth during the period under study.

Table 2: ADF Unit Root Test

Variable	Test @ Levels	ADF Critical Values @5%	Test @ 1st Diff.	ADF Critical Values @ 5%	Remark
GDP	-1.458707	-2.938987 (0.5436)	-6.693900	-4.443649 [0.0001]	I(1)
FDI	-4.311132	-2.931404 (0.0014)	-	-	I(0)

( ) signifies P-values @levels; [ ]signifies P- values @first order difference
GDP was stationary at structural break date 2011Q1
***Source**: Extracted from Econometric Views 10 Output*

The ADF unit root result in table 2 indicated that GDP was stationary at first order differencing while FDI achieved stationarity at level 1, hence resulting in mixed order of integration of the variables. As a result of this, the ARDL estimates are as presented in table 3.

Table 3: ARDL Result for Dynamic Regressors
Dependent: GDP; Selected Model: ARDL (2, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ln(GDP(-1))	0.497949	0.155974	3.192504	0.0029***
ln(GDP(-2))	-0.281641	0.147365	-1.911175	0.0638
ln(FDI)	0.019701	0.016655	1.182917	0.2444
ln(FDI(-1))	0.043497	0.016754	2.596210	0.0134**
C	12.68727	2.576976	4.923317	0.0000***

*** ** and * denote level of significance at 1%, 5% and 10% respectively*
R^2 = 0.5606; Adj. R^2= 0.5131; F-stat =11.8016 (p-value =0.000); DW = 1.6777
Source: Extracted from E-views Version 10.0

The R-square of 0.5606 in table 4 revealed that 56.1% variation in Nigeria GDP can be accounted for by contribution from FDI. Adjusted $R^2$of 0.5131 implies 51.3% variation of GDP when other predictors are added to the model. F-statistic of 11.8016 with an associated p-value 0.0000 < 0.01 level of significance indicating that the ARDL model (2, 1) is adjudged a good fit among other iterated models, hence statistically significant. Significance of this model implies that FDI significantly affect Nigeria economy growth taking into account the gross domestic product.
However, it can be seen that coefficients of the estimated model parameters indicated that 1% increase in lag one of FDI in the next one year tend to 49.79% increase in GDP in the current year (p-value 0.0000 < 0.05). In addition, lag two of the GDP showed that 1% increase in GDP in the next two years result to 28.16% decrease in GDP in the current year. These imply that current FDI level may not have significant effect on the rate of GDP growth in the next two years (p-value 0.0638 > 0.05).
Findings also revealed that FDI do not have significant effect on GDP (p-value 0.244 > 0.05) as one year lagged value of FDI significantly influences the response variable.

Table 5: Pairwise Granger Causality Tests

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause FDI	42	0.29987	0.7427
FDI does not Granger Cause GDP		1.65799	0.2044

***Source**: Extracted from Eviews, Version 10*

Table 4 depict the result of causal relationship existing between FDI and GDP. As both hypotheses are not rejected (p-values > 0.05 level of significance), we can infer that GDP and FDI are independent from each other. This implies that there exists no substantive evidence to infer causal relationship between the two aforementioned variables.
The R-square of 0.5606 in table 4 revealed that 56.1% variation in Nigeria GDP can be accounted for by contribution of FDI. Adjusted $R^2$of 0.5131 implies 51.3% variation of GDP when other predictors are added to the model. F-

statistic of 11.8016 with an associated p-value 0.0000 < 0.01 level of significance indicating that the ARDL model (2, 1) is adjudged a good fit among other iterated models, hence statistically significant.

4 Discussions

The nexus existing between FDI and the rate of economic growth in Nigeria was the basis of the empirical study carried out in this paper. Period of coverage of this paper is from Q1 2010 to Q4 2020 of which data was obtained from the statistical bulletin of CBN and Pro-share/NBS publications.
The findings of this study showed that more than 50% of changes affecting the economic growth of Nigeria was accounted for by FDI inflow. This confirms the assertion from extant literatures that economic and industrial development of developing countries of which Nigeria is one depend on foreign direct investment inflow.

5 Conclusion

Based on the above findings, the study therefore concludes that;

1. Government should formulate policies or review extant ones so as to encourage foreign investors into the country.
2. Government should also control determinants of per capital income that can have indirect effect in increasing the country's credit rating. An increase in per capital income can as well attract FDI inflow.
3. Other monetary policies that encourage domestic savings is also important in other to support the impact of FDI on the economy.
4. Government also needs to improve the power sector and create enabling environment for foreign investors' business survival.

References

Acemoglu, D. Naidu, S., Restrepo, P. & Robinson, J. A. (2015). *Democracy, redistribution, and inequality.* Handbook of income distribution, (2), 1574-0056, http://dx.doi.org/10.1016/B978-0-444-59429-7.00022-4

Alabi, K.O. (2019). The Impact of Foreign Direct Investment on Economic Growth: Nigeria Experience. *Open Journal of applied sciences*, (9), 372-385. https://doi.org/10.4236/ojapps.2019.95031 Online: 2165-3925

Ayenew, B. B. (2022). The effect of foreign direct investment on the economic growth of Sub-Saharan African countries: An empirical approach. *Cogent Economics & Finance* https://www.tandfonline.com/loi/oaef20

Berberi, A. (2013). The role of foreign direct investments (FDI) as a promoter of growth – attractiveness of Albania for FDI. *European Scientific Journal*, 9(22), 1857-7881.

Demirhan, E., Masca, M. (2008). Determinants of foreign direct investment flows to developing countries: a cross-sectional analysis. *Prague Economic papers*.

Denisia, V. (2010). Foreign direct investment theories: An oerview of the main FDI theories. *European Journal of Interdisciplinary Studies* Volume 2

Dogan, E. (2014). Foreign direct investment and economic growth in Zambia. *International Journal of Economics and Finance*; 6(1), www.ccsenet.org/ijef

Ekpo, A. H. (1997). Foreign direct investment in Nigeria: Evidence from time series data. *CBN Economic & financial review*, 35(1), 59-78

Faundez, J. (2016). Douglass North's Theory of Institutions: Lessons for law and development. *Hague J Rule Law*, (8), 373-419. DOI 10.1007/s40803-016-0028-8

Haudi, H., Wijoyo, H. & Cahyono, Y. (2020). Analysis of most influential factors to attract foreign direct investment. *Journal of Critical Reviews*, (7), *2394-5152*.

Ijirshar, V. U., Anjande, G., Fefa, J. & Mile, B. N. (2019). The growth-differential effects of domestic investment and foreign direct investment in Africa. *CBN Journal of Applied Statistics*, 10(2), 139

Kaur, M., Khatua, A. & Yadav, S. S. (2016). Infrastructure development and FDI inflow to developing economies: Evidence from India. *Researchgate*. https://www.researchgate.net/publication/293195136

Marandu, E. E., & Ditshweu, T. (2018). An overview of the key theories of foreign direct investment: The way forward. *Advances in Social Sciences Research Journal,* 5*(12)* 30-39.

Marc, A., Verjee, N & Mogaka, S. (2015). The challenges of stability and security in West Africa. *Africa Development Forum*; Washington, DC: World Bank; and Agence Française de Développement. https://openknowledge.worldbank.org/handle/10986/22033

Nkoro, E. & Uko, A. K. (2016). Autoregressive distributed Lag (ARDL) cointegration technique: application and interpretation. *Journal of Statistical and Econometric Methods*, 5(4), 63-91. ISSN 1792-6939 (online).

Okonkwo, R. I, Egbunike, F.C. & Udeh, Francis N. P. (2015). Foreign direct investment and economic growth in Nigeria.*Developing Country Studies*. ISSN 2225-0565 (Online) 5(9), www.iiste.org

Okwu, A. T., Oseni, I. O. & Obiakor, R. T. (2020). Does foreign direct investment enhance economic growth? Evidence from 30 leading global economies. *Global Journal of Emerging Market Economies*, 12(2), 217-230.

Orji, A., Nwagu, G. U., Ogbuabor, J. E. & Anthony-Orj, O. I. (2021). Foreign direct investment and growth nexus: further evidence from Africa's largest economy. *Journal of Infrastructure Development,* 13(1), 65–78.

Sarker, B. & Khan, F. (2020). Nexus between foreign direct investment and economic growth in Bangladesh: an augmented autoregressive distributed lag bounds testing approach. Springer open access. https://doi.org/10.1186/s40854-019-0164-y

Săvoiua, G & Ţaicu, M (2014). Foreign direct investment models, based on country risk for some post-socialist Central and Eastern European economies, *Procedia Economics and Finance,* (10) 249-260. www.sciencedirect.com

Shah, M. H. (2014). The significance of infrastructure for FDI inflow in developing countries. *Journal of Life Economics,* 2

Susilo, D. (2018). The impact of foreign direct investment on economic growth (a Causal study in the United States). *Jurnal Pendidikan Bisnis dan Ekonomi* https://jurnal.uns.ac.id/bise e-ISSN 2548-7175.

Taiwo, J. N., Achugamonu, B. U., Okoye, O. & Agwu, M. E. (2017). Foreign direct investment: Catalyst for sustainable economic development in Nigeria. *Saudi Journal of Business and Management Studies*. Scholars Middle East Publishers ISSN 2415- 671 (Online). http://scholarsmepub.com/

Yusuf, H. A., Shittu, W. O., Akanbi, S. B., Umar, H. M. & Abdulrahman, I. A. (2020). The role of foreign direct investment, financial development, democracy and political instability on economic growth in West Africa. *International Trade, Politics and Development*, 4(1), e-ISSN: 2632-122X.