Impact of Foreign Direct Investment on Economic Growth in Nigeria 2000 - 2023

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Abstract

The quest for sustainable economic growth has made most emerging economies to keep seeking Foreign Direct Investment (FDI) as one of the catalysts that will help them achieve this goal. This study is an ex-post facto research design and it examined the impact of Foreign Direct Investment on economic growth in Nigeria between 2000 and 2023. Economic growth which is the dependent variable was proxied by Gross Domestic Product per Capita Growth (GDPCG) while FDI was proxied by FDI, Nominal Exchange Rate (NEXR), and Interest rate (INTR) as the independent variables. The data for these variables were extracted from different sources including the Central Bank of Nigeria (CBN) Statistical Bulletin, National Bureau of Statistics and World Bank Data Bank. Some econometric techniques like descriptive statistics, ADF unit root test and the Autoregressive Distributive Lag (ADRL) bounds test were used to estimate the relationship among the variables in the study and the result revealed that FDI has a significant impact in determining the trend of economic growth in Nigeria hence the study concluded that FDI variables used in this study are profound predictors of economic growth in developing countries including Nigeria. The major recommendation is that the government should keep formulating policies that will encourage cross-border transactions and investment as this will help in sustaining the growth of Nigeria's economy.

Keywords: Foreign Direct Investment, Economic Growth, Exchange Rate, Interest Rate

Introduction

Foreign Direct Investment (FDI) refers to any investment that is made by a company or individual from one country into a business or organisation existing in another nation. It usually involves long-term and cross-border investments where the investor has a significant degree of management control and influence over the investment in a foreign land (Obizue, 2019). FDI contributes to economic growth of nations by bringing new capital, transfer of technology, management expertise, job opportunities into the receiving nation.

The global economy has witnessed significant shift in recent decades with emerging markets and developing economies increasingly playing vital roles in international trade and investment. It is important to note that Foreign Direct Investment (FDI) has been a key driver of this trend. According

to Ekeagwu and Amaechima (2023), foreign direct investment has emerged as a catalyst for growth, innovation and technological advancement in many countries and the quest for sustainable economic growth and development has led many developing countries to see FDI as the way out with various multinational organisations seeking to maximise new opportunities and leverage competitive advantages in different regions. Nigeria which is seen as the largest economy and most populous nation in Africa and also a major player in the global economy, has been very active in seeking to attract FDI so as to fuel her economic ambitions as well as address pressing development challenges like dependence on oil exports, inadequate infrastructure, limited economic diversification and others. As a significant player in the global market, Nigeria's potential to harness FDI effectively can have far-reaching implications for her economy by reducing unemployment, poverty, inflation with overall impact on her development (Asiedu, 2001). Experience have shown that foreign direct investment is a vehicle that has propelled growth and development in many developing countries like Nigeria and its spill-over effect in the areas of knowledge, skill, technology and employment generation has actually resulted tremendously to the growth and development of many developing countries. In the same vein, Ndugu, Otiwu and Uzowuru (2021) observed that from the inception of political independence in most of West African countries, inflows of foreign investment and multinational firms' operations have been partly useful in evaluating the economic performance of member countries. Some outstanding economic changes that involve trade, capital formation and investment flows among different countries of the world have positive remarks in international economics with economic theories of comparative advantage suggesting that free trade leads to a more efficient allocation of resources with all economies involved in the trade benefiting.

Nigeria has implemented various means of accelerating growth and development in the local economy and one of the means is attracting the Foreign Direct Investment into the nation. Foreign direct investment has been seen as a vital mechanism for economic growth in the less developed nations as it influences the economic growth by promoting domestic investment, capital formation increase and also facilitating technology transfer in the recipient nations. Aswathappa (2015) advocated that foreign direct investment is recognised as a way of filling the gap between the domestically available supplies of savings, foreign exchange, government revenue and human capital, skills and the desired level of resources necessary to achieve growth and development targets. If domestic savings are inadequate to

generate enough investment, foreign capital is expected to fill the gap between targeted or desired investment and locally mobilized savings. Asiedu (2001) averred that many nations in the sub Saharan Africa have recognised the relevance and the obvious need for foreign direct investment in the continent even though their efforts to attract investments have sometimes remained fruitless, sending little hope of creating an enabling environment.

In corporate governance, ownership of at least 10% of the ordinary shares or voting stock is the criterion for the existence of a direct investment relationship and the ownership of less than 10% is recorded as portfolio investment (Aguda and Oladoja, 2017). World Bank (1996) asserted that foreign direct investment is an investment made to acquire a lasting management interest (normally 10% of voting stock) in a firm or an enterprise operating in a country other than that of the investor residency. Foreign direct investment is deemed very crucial for the sustainable economic growth of the emerging economies and Nigeria is not an exemption. It can take the form of merger and acquisition of new investment, reinvested earnings and loans and similar capital transfer between parent companies and their affiliates. The most strategic factor influencing economic growth in any country is investment which is characterized as the key to increased level of productivity. Foreign direct investment is expected to impact positively on the growth of Nigeria's economy as well as the global economy through increased investment, job creation, advancement and transfer of technology and human capital development. To validate this, Bolaji, Nwafor and Akpan (2022) posited that in scholarly theoretical and empirical studies conducted by development economists in both developing and developed economies of the world, a strong correlation between investment and economic growth has been revealed. However, in Nigeria, like most African countries, its contribution has been denigrating. Obizue (2019) observed that Nigeria as a country is identified with a market that is highly volatile due to some inimical and undesirable factors such as political instability, bad governance, insecurity, ethnic bigotry, poor infrastructural development, poor financial system, unstable macroeconomic policies among others which have to some extent restrained and deterred inflow of investments and cash flows into the country. Despite all the incentives to stimulate growth which include the repeal of some stringent laws that are inimical to foreign investment growth and the rebranding campaign among others, the performance of the economy in terms of per capita income, employment level, standard of living to mention but a few is still very unimpressive and indeed disappointing in Nigeria.

It is against this backdrop that this study seeks to determine the impact of foreign direct investment on the economic growth of Nigeria so as to be able to proffer suggestions that could enhance inflows of foreign investments that may be capable of inducing growth in the Nigerian economy.

This study has come with the main objective of examining the impact of foreign direct investment on the Nigerian economy growth with three specific objectives which include:

1. To determine the relationship that exist between foreign direct investment and real gross domestic product per capita growth in Nigeria.
2. To examine the effect of exchange rate on real gross domestic product per capita growth in Nigeria.
3. To ascertain the impact interest rate has on real gross domestic product per capita growth in Nigeria.

Research Questions in this study are:

1. What is the relationship between foreign direct investment and real gross domestic product per capita growth in Nigeria?
2. To what extent does exchange rate affect gross domestic product per capita growth in Nigeria?
3. What is the impact of interest rate on real gross domestic product per capita growth in Nigeria?

In line with that research specific objectives and research questions, the following null hypotheses were postulated and tested in this study.

H_{01}: There is no significant relationship between foreign direct investment and real gross domestic product per capita growth in Nigeria.

H_{02}: Exchange rate does not significantly affect real gross domestic product per capita growth in Nigeria.

H_{03}: Real domestic product is not a significant function of interest rate per capita growth in Nigeria.

Review of Related Literature

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This chapter is concerned with the review of related literature on foreign direct investment and the growth of Nigeria's economy which is classified under three sections; conceptual, theoretical and empirical literature reviews.

Conceptual Review

Foreign Direct Investment

Foreign Direct Investment is a cross-border investment where a company/ies and/or individual/s make investments in a foreign business or company. Foreign direct investment is said to have occurred when a firm invests directly in facilities to produce a product or even buys an existing enterprise in a foreign country. According to Bankole and Adeoye (2019) posited that foreign direct investment is evident in a country when a person, business or entity that is resident in one nation makes an investment in a corporation resident in another country over which they have management and control. He further emphasised that such investments may be in form of mergers and acquisitions, the provision of start-up money for a new business or a strengthening of the financial foundation of an existing one. International Monetary Fund (2008) explained FDI as the long term investment reflecting a lasting interest and control by a foreign direct investor or parent enterprise of an enterprise entity resident in an economy other than that of the foreign investor.

According to Ndugbu et.al (2021), Foreign Direct Investment is an investment that involves the injection of foreign funds into an enterprise that operates in a different country of origin from the investor. Adeleke et.al (2014) in Omaku and Okwori (2019) definedForeign Direct Investment (FDI) as an investment in the production or in the business of a country that is handled by individual or company of another nation, either by purchasing a company in a particular country of interest or increasing the production of the established venture in that nation. Foreign Direct Investment can as well be seen as the degree of ownership of productive assets like land, mines and factories Omaku and Okwori, 2019). Aguda and Oladoja (2017) observed that in corporate governance, what determines the existence of foreign direct investment is the ownership of at least 10% of the ordinary shares or voting stock by the criterion for the existence of direct investment relationship while ownership of less than 10% was recorded as portfolio investment.

According to Ademola (2022), foreign investment involves capital flows from one country to another granting extensive ownership stakes in domestic company assets. Obizue (2019) asserted that foreign direct investment is a form of Greenfield investment, new business commencement, merger and acquisition or other corporate agreements which have become a major source of skills, professional or expertise knowledge, technological equipment, productivity acumen and overall economic growth, which is majorly transferred from the developed countries to the under-developed and developing countries of the world. Dunning (1997), and Akudinobi, Okafor and Okere (2023) highlighted that this is based on the notion that domestic firms in developing countries benefit for the foreign direct investment externalities through improved productivity, employment, exports and international integration.

There are different types of foreign direct investment, which include the horizontal, vertical, conglomerate and platform foreign direct investment. The horizontal foreign direct investment exists when a firm duplicates its home country-based activities at the same value chain stage in a host country through foreign direct investment while the vertical foreign direct investment exists when a firm through foreign direct investment moves upstream or downstream in different value chains through FDI. In the view of Ndugbu et.al (2021), horizontal FDI is undertaken when the company wants to expand horizontally to produce the same or comparable goods in the host country as in the home country and that FDI becomes vertical when a company seeks to exploit raw materials or wants to be closer to the consumer by acquiring distribution outlets. According to them, the idea is to make the production process more cost-efficient by reallocating some stages to low-cost locations and by establishing their own network in the host country. Asiedu (2001), Dinda (2009), Aguda and Oladoja (2017) as well as Ademola (2022) shared the view that any foreign investment in a business that is not related to its existing business in the person's or organisation's home country is called Conglomerate foreign direct investment and that when an investor is entering an industry without any previous experience, it often takes the form of a joint venture with a foreign company already operating in the industry. Egwaikhide (2012) posited that this is uncommon as it requires overcoming two barriers to entry: entering a foreign country and entering a new industry or market. He further explained that the platform foreign direct investment is a business expansion or investment into a foreign country where the output from the foreign operations is usually exported to a third country and this is also known as

export-platform foreign direct investment and commonly takes place in low-cost locations inside free-trade areas. Scholars like Asiedu (2001), Obizue (2019) and Bankole and Adeoye (2019) generally agreed that the factors that affect the flow of foreign direct investment are; the size of markets, quality of labour, infrastructure and institutions, availability of resources, country risk, openness of an economy, institutional environment, availability of natural resources, concentration of other foreign investors, return on investment and macroeconomic policies.

Economic Growth

According to International Monetary Fund, IMF (2009), economic growth refers to the increase in the production of goods and services over time in an economy. It is measured by the percentage change in gross domestic product (GDP) or gross national product (GNP) and the key indicators are increase in GDP, rise in per capita income and improved standard of living. Traditionally, economic growth can be measured as the rate of percentage change in Real Gross Domestic Product. Growth can be computed in actual term so that the inflation – adjusted term can rule out the effect of inflation on the price of goods and services produced in a nation. Economic growth depends on the quantity of the factors of production such as land, labour, capital and entrepreneur and the amount of these factors is determined by the population growth, increase in investment and the land, and total growth in labour productivity Ekeagwu and Amaechina, 2023.

Foreign Direct Investment and Economic Growth in Nigeria

As an investment from one country into another country (normally by companies) that involves establishing operations or acquiring tangible assets, including stakes in other businesses in foreign nations, foreign direct investment has complex relationship with economic growth in Nigeria. Studies have shown that FDI can positively impact the various sectors of Nigeria's economy. It has the potential to boast economic growth and development of nations through capital formation and infrastructural development. Akalwei and Nbusima (2019) stated that foreign direct investment is an important source of capital that complements domestic savings, creates job opportunities, advancement of technology and transfer of expatriate knowledge which catalyses the rate of economic growth in developing nations. However, Ekeagwu and Amaechina (2023) observed that there are some inimical conditions like insecurity, political instability and corruption that can adversely affect the inflows of cash and investment into a foreign land. According to Asiedu (2001), Aswathappa (2015)

and Ademola (2022) the extent to which foreign direct investment contributes to growth depends on economic and social conditions of the host country; although, host countries with high rate of savings, open trade regime and high technological products would benefit from increased foreign direct investment in their economies.

Theories

This study is anchored on two theories; the Harrod-Domar Theory and the Ecletic Theory

Harrod-Domar Model

This model is developed by Roy Harrod and Evsey Domar in the 1930s and 1940s. This model has its roots in the Keynesian model of economic growth that explains correlation amongst investment, savings and economic growth. This model suggests that investment is the key driver force behind economic growth of nations. It emphasizes the importance of savings in financing investments and promotion of economic growth. It establishes that the rate at which an economy grows is dependent on saving and capital in the context of development economics. This is referred to as the mechanism by which more investment leads to more growth. This theory believes that investment creates income and augments the productive capacity of the economy by increasing the capital stock. In as much as there is net investment, real income and output will continue to expand. According to the concept, there is no inherent reason for an economy to experience balanced growth. According to the Harrod-Momar assumption about capital flows, local savings are insufficient to support intended and desired investments in capital receiving nations. Therefore, in order to close the gap between savings and investment and promote economic growth and development, external capital is required to supplement domestic savings. This provides a formula for calculating the warranted growth rate which is determined by the savings rate and capital-output ratio. According to this theory, for the economy to maintain full employment in the long-run and net investment must increase continuously as well as growth in the real income at a rate sufficient enough to ensure full capacity use of a growing stock of capital. It follows that any net addition to the capital stock in the form of new investments will bring about corresponding increase in the flow national output.

This model faced criticisms arising from the fact that it oversimplified the complex relationship between economic variables and that it has limited nature of applicability that it may not be applicable in all economies particularly those with institutional and structural features.

Despite these limitations, this model remains an important contribution with the importance savings and investment to the theory of economic growth and development

The Eclectic Theory

This theory which is also known as the OLI framework was developed by John H. Dunning in 1979 and provides a comprehensive framework for understanding the determinants of FDI. It is a holistic economic model to determine whether a business should expand abroad through foreign direct investment. The eclectic paradigm is a theory that provides a three-tiered framework when deciding whether they should invest abroad. The OLI are the three main components or advantages of this theory. O means Ownership advantage, L means location advantage and I means internalisation advantage. According to this paradigm, a company needs all the three advantages in order to successfully engage in foreign direct investment. If one or more of these advantages is absent, the focal company might want to use a different entry strategy. The three eclectic paradigm advantages are:

Ownership advantage talks about the competitive advantages of the company that seeks to engage in foreign direct investment must have as an edge over other companies such as proprietary technology, brand recognition and management expertise. The greater the competitive advantages of the investing firms, the more they are likely to engage in their foreign production.

Location advantage: the host country must offer specific advantages relating to location such as natural resources, skilled labour, favourable government policies so as to attract FDI. The more the immobile, natural or created resources which firms need to use jointly with their own competitive advantages favour a presence in a foreign location, the more firms will choose exploit their specific location advantages by engaging in FDI.

Internalization advantage means that firms must have the incentive to internalise their operations in the host country instead of relying on external market transactions like licensing and exporting. It further explains that out-sourcing is a good option for foreign companies to do a better job. Maybe they could do it more cheaply and have better knowledge. Firms may organize the creation and exploitation of their core competencies. The greater the net benefits of internalizing cross-border intermediate product

markets, the more likely a firm will prefer to engage in foreign production itself rather than license the right to do so.

Empirical Literature

Various studies have been carried out on foreign direct investment and the growth of Nigeria's economy with evidences of diverse results hence few related ones are examined in this study.

Adigwe, Ejeagba and Francis (2015) examined the relationship between foreign direct investment, exchange rate and gross domestic product, using time series data. Data for the study were sourced from CBN statistical bulletin for 2008 to 2013. Pearson correlation was used to test the hypotheses with aid of SPSS. Their findings revealed that there was a significant relationship between foreign direct investment, exchange rate and gross domestic product, indicating that economic growth in Nigeria was directly related to foreign direct investment and exchange rate.

Omaku and Okwori (2019) evaluated the nature and impact of Foreign Direct Investment on Nigerian economic growth between 1981 and 2017. Using time series data, econometric techniques like ADF Unit Root Test, Granger Causality test and ARDL Bound test were employed and the results indicated that there is a long run, though negative relationship between FDI and economic growth in Nigeria, and that FDI unidirectional granger causes economic growth. The study concluded that there is a long run and negative relationship between FDI and economic growth in Nigeria. The study therefore recommends that government provide a sound macroeconomic policy that ensures proper utilization of foreign direct investment, in addition to comprehensive adjustment of macroeconomic policies to achieve and maximize the expected positive impact of FDI on Nigerian economic growth.

Akalewi and Nbusima (2019) carried out a study on foreign direct investment (FDI) and economic growth in Nigeria from 1980 to 2020 using inflation, trade openness, exchange rate and interest rate to regress against real gross domestic product. exchange rate, inflation and interest rate and the ECM findings indicated that GDP had positive and significant association FDI and negatively correlated with the other variables leading to a mixed conclusion. The findings aligns with the conclusion of several scholars that FDI promotes and discourages growth in different circumstances. The authors advised that the government should emphasize more on policies that promote FDI.

Ndugbu, Otiwu and Uzowuru (2021) examined the relationship between foreign direct investment and economic growth in Nigeria using secondary data sourced from the Central Bank of Nigeria (CBN) statistical bulletin between the periods of 1986 to 2017. Using Vector Error Correction Model (VECM) and Pairwise Granger Causality test the study found that six exogenous variables used as an indicator of foreign direct investment, only the non-oil related foreign direct investment, trade openness and market capitalization were able to pass test of hypothesis and three established the fact that foreign direct investment is a vital stimuli in promoting economic performance in Nigeria with more emphasis on the non-oil related foreign direct investment. The study thus concluded that non-oil related foreign direct investment is more helpful to Nigeria's economy compared to oil related foreign direct investment inflows and recommended that both Nigeria's private and public sectors should intensify efforts to attract further foreign direct investment inflows into the non-oil related sectors of the economy.

Bolaji, Nwafor and Akpan (2022) investigated on the impact of foreign direct investment on economic growth in Nigeria from 1990 to 2020. And the study used the ordinary least square (OLS) approach estimate the relationship among the residuals. The variables were inflation, trade openness and exchange rate and the study findings indicated that foreign direct investment has a significant effect on economic growth except trade openness which recorded a significant negative impact on economic growth. The study concluded that foreign direct investment has a long-term effect on Nigeria's economic growth hence good determinant.

Akudindu, Okafor and Okereke (2023) investigated the impact of foreign capital inflows on economic growth in Nigeria within the periods of 1980 and 2020. The multiple regression models was adopted in this study and it was found that foreign direct investment, government tax revenue and savings positively and significantly impacted on gross domestic product during the period. The study concluded that foreign direct investment induced the inflow of capital, technical know-how and managerial capacity which can stimulate domestic investment and accelerate the pace of economic growth.

Ekeagwu and Amaechina (2023) conducted a comparative analysis on the determinants of FDI into the emerging economies using the Johansen co-integration framework and a multivariate VAR within a

vector error correction model, found evidence of a long-run equilibrium relationship between economic growth and foreign direct investment inflows. The study also revealed a positive and significant correlation between FDI, inflation and interest rate and GPD while trade openness and exchange rate negatively and significantly affect GDP. The study concluded that what determines the influence of FDI in emerging economies is country-specific and recommended that nations should seeks investment inflows to catalyse their economic growth. Different authors like Aguda and Oladajo (2017), Obizue (2019), Bankole and Adeoye (2019) and Ekeagwu and Amaechina (2023) have attributed the trend of economic growth in Nigeria to foreign direct investment over a period of time.

Methods

This research work is an expost-facto research design on the impact of FDI on economic growth in Nigeria between 2000 and 2023. Time series secondary data were taken from a mixture of multiple sources including, Central Bank of Nigeria (CBN) Statistical Bulletin 2020, World Bank Databank, National Bureau of Statistics and International Monetary Fund (IMF) Statistical Report. The choice of suitable analytical tool is very vital in any research work hence this study adopted ARDL model to statistically analyse the relationship among the residuals with the aid of STAT software version 14. The ARDL statistical tool was chosen because it does not require all the variables to be integrated of the same order hence the variables can exhibit mixed order of integration and be integrated level 1(0) and first difference I(1) as revealed in this study. This study combined the models in the studies of Sunday and Ango (2017) and that of Omaku and Okwori (2019) with some modifications. The model developed by Sunday and Ango (2017) is;

$GDP_t = \beta_0 + \beta_1 FDI + \beta_2 EXR + \beta_3 INF + \beta_4 INT + U_{t-1}$............ (1)

The model specified by Omaku and Okwori (2019) is thus;

$GDPCG_t = \beta_0 + \beta_1 FDI_{t-1} + z\beta_2 TOP_{t-1} + \beta_3 NEXR_{t-1} + \beta_4 INF_{t-1} + \beta_5 INTR_{t-1} + u_t$……..…….(2)

For the purpose of this study, a model was specified similar to the models in equations 1 and 2 with the exclusion of trade openness (TOP) and inflation (INF)

$GDPCG_t \quad = \quad \beta_0 + \beta_1 FDI_{t-1} + \beta_2 NEXR_{t-1} + \beta_3 INTR_{t-1} + u_t$……..…….(3)

Where GDPCG = Gross Domestic Products Per Capita Growth which is the proxy for economic growth (dependent or endogenous variable). The independent, explanatory or exogenous variables are;

FDI = Foreign Direct Investment expressed as a ratio of GDP, NEXR = Nominal Exchange Rate, INTR = Interest rate, $\beta0$ = Constant, $\beta1 - \beta3$ = Coefficient of explanatory variables, u = Error term, t = Time trend in years.

Apriori Expectation

This refers to the supposed relationship between and/or among the dependent and independent variables of the model as determined by the postulations of endogenous theory hence the coefficients of equation (3) are expected to be positively related and take the following signs as mathematically expressed below $\beta1, \beta2, \beta3 > 0$

Empirical Results and Analysis

Table 1: Descriptive Statistics of Percentage Changes in GDPCG, NEXR, FDI and INTR

Statistic	GDPCG	NEXR	FDI	INTR
Mean	0.517622	5.710998	13.39011	-2132.09
Median	1.609461	6.600290	4.413480	-40.1741
Maximum	17.81931	43.10167	341.0119	4595. 406
Minimum	-17.0163	-55.4149	-82.7439	-4405.04
Std. Dev.	6.761009	16.56134	97.609330	7359.2312
Skewness	-0.40593	-1.27638	1.936962	-5.8455
Kurtosis	4.372095	7.259611	6.731180	32.01944
Jarque-Bera	4.395622	41.75291	49.2787	1981.020
Probability	0.114034	0.000000	0.010100	0.101300
Sum	30.98115	239.412	1276.150	-44014.02
Sum Sq. Dev.	1710.241	11422.2	360801.4	2.14E+04
Observations	10	10	10	10

Source: Researcher's Desk 2025 (STAT 14 output)

The table displayed the mean values of the variables as: GDPCG (0.517622), NEXR (5.710998), FDI (13.39011) and INTR (-2132.09). Maximum value of the variables: GDPCG was 17.81931, NEXR got 43.10167, FDI was 341.0119 while INTR had the highest value of 4595. 406. The standard deviation measures was widely apart the data are from the mean. The standard deviation for GDPCG was

6.704749, NEXR was 16.66402, FDI was 97.59538 and INTR recorded 7375.322. Skewness: The data distribution may be symmetric or regularly distributed around the mean if it clusters on either side of the mean. Another possibility is that data points are distributed or lie to the right or left of the mean. Data that spreads to the right of the mean is skewed to the right (positively), whereas data that spreads to the left is skewed negatively. According to table 1, descriptive statistics, FDI is favourably skewed, but GDPCG, NEXR, and INTR are negatively skewed. Kurtosis: This term explainss how peaky a distribution is in comparison to a normal distribution. Kurtosis value that is below 3.0 is considered to approximate the normal distribution and might potentially be platikurtic (flat), whereas kurtosis beyond 3.0 is defined as leptokurtic. GDPCG, NEXR, FDI and INTR are all leptokurtic having recorded kurtosis values of 4.372095, 7.259611, 6.731180 and 32.01944 which are respectively higher than 3.0. The Jarque-Bera statistic indicated that GDPCG and INTR are the only variables that are normally distributed with a Jarque-Bera statistics of 4.395622 and 1981.020 and probability values of 0.114034 and 0.101300 which are respectively greater than 5% critical value.

Unit Root Test using Augmented Dicky-Fuller (ADF) Test cross-checked with Philip Paron Test

This is a test of stationarity and is the first test to be carried out before forming a model or running a regression. This test is aimed at knowing the order of integration of the variables, which is crucial for setting up an econometric model and doing inference. In this case, unit root tests are mainly a descriptive tool performed to classify time series data as stationary and non-stationary and be sure of a non-spurious regression. The ADF is the most common test for unit root but in this study the Philips Paron (PP) test was also conducted to confirm the results obtained from the ADF test. The decision rule is that if the absolute value of the calculated ADF statistics is greater than the critical value, we reject null hypothesis and conclude that the time series is stationary and alternatively, if the absolute value of the calculated ADF statistical is less than the critical value, then the null hypothesis is accepted with the conclusion that the time series is non-stationary.

Table 2: Result of Augmented Dicky-Fuller (ADF) Test for Stationarity

Variables	t-Statistics	Critical Value	Order of Integration	Remarks
GDPCG	-3.449	-3.032	I(0)	Stationary at level
FDI	-2.361	-4.342	I(1)	Stationary at 1st difference

| NEXR | -3.638 | -2.301 | I(0) | Stationary at level |
| INTR | -3.220` | -3.861 | I(1) | Stationary at 1ˢᵗ difference |

Source: Researcher's Desk 2025 (STAT 14 output)

Table 3: Result of Philip Paron (PP) Test for Stationarity

Variables	t-Statistics	Critical Value	Order of Integration	Remarks
GDPCG	-4.581	-3.636	I(0)	Stationary at level
FDI	-4.924	-4.233	I(0)	Stationary at level
NEXR	-3.946	-2.301	I(0)	Stationary at level
INTR	-3.220`	-4.019	I(1)	Stationary at 1ˢᵗ difference

Source: Researcher's Desk 2025 (STAT 14 output)

In table 2, the ADF result showed that GDPCG and NEXR are stationary at level or order zero while FDI and INTR were integrated at first difference. Consequently, this result was cross-checked using the Philip Paron test and it was confirmed that the variables were stationary at level except INTR which showed stationarity at first difference. The analysis of the two unit root test results in tables 2 and 3 evidenced the existence of a mixed order of integration among the variables hence the appropriate step is to test for long run relationship using the ADRL bounds test.

Cointegration Test using ARDL Bounds Test

This is used to test for the existence of a long-run relationship between or among variables and the ARDL was used for the analysis because, according to Pesaranet et al. (2001), it enables the researcher to mix regressors that are I(1) or I(0) and yet get reliable estimates of the long run coefficients that are asymptotically normal. Again, Harris (2003) states in Aboutorabi (2012) that this method provides unbiased estimates of the long run model and valid t-statistics even when some of the regressors are endogenous. According to Pesaran (1999), the dynamics' inclusion might aid in eliminating the endogeneity bias.

Table 4: Result of Long Run Conintegration Bounds Test

ADRL Bounds Test	f-Statistics	Critical Value Bounds 1%		Critical Value Bounds 5%		Critical Value Bounds 10%	
		Lower Upper Bond Bound I(0) I(1)		Lower Upper Bond Bound I(0) I(1)		Lower Upper Bond Bound I(0) I(1)	
	21.3021	2.31 3.11`		2.76 3.65		3.11 4.02	

Source: Researcher's Desk 2025 (STAT 14 output)

From the cointegration bounds test for long run relationship test in table 4 above, the F-statistics value of 21.3021 is greater than the different upper bound critical values of 3.11, 3.65 and 4.02 at the respective significant levels of 1%, 5% and 10%. This implies that there is a long run relationship among the variables. The study therefore rejects the null hypothesis which stated that there is no long run relationship between FDI and economic growth in Nigeria hence the alternative hypothesis is favoured.

Table 5: Estimates of the ADRL Model

Variables	Coefficient	Std Error	t-Statistics	Probability
FDI	0.644728	2.4566738	1.30	0.0213
NEXR	0.502893	3.9011363	2.19	0.0068
INTR	-0.821872	2.053917	-2.76	0.0601
Coint, Eq (-1)	-0.728191	2.869026	-3.42	0.0000
R^2	0.773290			
Adjusted R^2	0.784302			
F-Statistics	1.731192			0.0010
Durbin Watson	2.340316			

Source: Researcher's Desk 2025 (STAT 14 output)

The ARDL Model shows the sign, magnitude and the nature of statistical relationship between the variables and estimates or analyses the short run effects and the adjustment process by revealing the speed at which disequilibrium in variables are adjusted or rectified. From table 5, the coefficient of FDI inflow is 0.644728 with probability of 0.0213 while that of NEXR is 0.502893 and probability value of 0.0068. This implies that FDI and NEXR respectively correlated positively and significantly with GDPCG at 5% significance level. This means that a unit increase in the value of FDI and NEXR will increase GDPCG at the rate of 6.45 % and 5.03% respectively. Conversely, INTR exerted an inverse or negative relationship and statistically insignificant influence over GDPCG having recorded coefficient value of -0.821872 and 0.0601 probability above the 5% level of significance. The implication is that a unit increase in INTR will plummet GDPCG at the rate of 8.22%. According to Pesaran, Shin and Smith (2001) to be significant, the coefficient must be negatively signed with a statistically significant probability. The ADRL coefficient or cointigrating equation is appropriately signed having shown a negative coefficient value of -0.728191 and significant probability value of 0.0000. This indicates the speed of adjustment and therefore implies that the deviation from long run equilibrium will be corrected or adjusted back to equilibrium by 72.8% in each current period. The F-Statistics probability stood at 0.0010 which affirms that the FDI variables have joint impact on GDPCG. The adjusted R^2 value of 0.784302 depicts that 78.4% of variations in GDPCG is explained by the predictor variables. The Durbin Watson which recorded a coefficient of 2.340316 confirmed the absence of serial correlation which suggests that the model is credible and can reliably be used for analytical and decision making purposes.

Discussion of Findings

The study investigated the impact of foreign direct investment and the growth of Nigerian economy from 2000 to 2023. The findings in this study revealed a mixed order of integration and existence of long-term connection between the variables of foreign direct investment and economic growth in Nigeria. The ADRL analytical technique was used to ascertain the estimates of the parameters and the analytic results indicated that FDI and NEXR have positive and statistical significant impact on GDPCG and this gave credence to the apriori expectation. Conversely, INTR exhibited negative and insignificant influence over GDPCG which defied the apriori prediction. This particular result could be attributed to the high level of interest rate which can deter some unable investors from investing in

Nigeria hence down-playing on Nigeria's economic condition. The findings and conclusions from the investigations of several scholars aligned and laid credence to the findings in this present study. Particularly, this outcome is consistent hence validated the findings of some scholars like Obizue (2019), Akalewi and Nbusima (2019), Ndugbu, Otiwu and Uzowuru (2021) and Akudindu, Okafor and Okereke (2023) who also discovered mixed correlation in their different studies. Specifically, the study of Adigwe, Ejeagba and Francis (2015) examined the relationship between foreign direct investment, exchange rate and gross domestic product from 2008 to 2013. Using pearson correlation, their result showed a positive and significant relationship between foreign direct investment, exchange rate and gross domestic product which aligned with the result recorded in this study with regards to exchange rate. However, evidences obtained from some previous studies also concurred with the findings in this study having revealed direct positive and significant causation as indicated by Bolaji, Nwafor and Akpan (2022), Akudindu, Okafor and Okereke (2023). Ekeagwu and Amaechina (2023) discovered that foreign direct investment variables positively and significantly impacted on gross domestic product during the period of their study and reached the conclusion that foreign direct investment induced the inflow of capital, technical know-how and managerial capacity which can stimulate domestic investment and accelerate the pace of economic growth thereby affirming the positive aspect of the findings here concerning FDI and NEXR. However, the results from the investigations carried out by Omaku and Okwori (2019) and Ademola (2022) were not consistent with this study findings.

Conclusion

The study examined foreign direct investment and the Nigerian economy between the periods 2000 to 2023. Based on the objectives, foreign direct investment proved to be positive and significant. The researchers concluded that globalization have resulted to economic growth in Nigeria through different forms of foreign direct investments as revealed in the study that the performance of the economy is collectively and considerably determined by foreign investment flows which were proxied by FDI, NEXR and INTR in the study.

Recommendations

Based on the study findings, the following recommendations were proffered in this study.

1. Foreign direct investment should be encouraged by the government through the creation of conducive business environment so as to incentivise investors to invest in business opportunities, boost security revitalise power and provide investment opportunities.

2. To improve the health of the economy, the Nigerian government may have to rely on FDI as a profound catalyst for her economic growth and development by formulating policies that will encourage cross-border transactions and investment as this will help in sustaining the growth of Nigeria's economy.

3. Exchange rate should be closely managed and monitored so as to keep the economy competitive internationally by making domestic industries able to source raw materials cheaply as well as encourage more countries enter bilateral trade agreements with Nigeria so as to further boost the economy.

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