FOREIGN DIRECT INVESTMENTAND ECONOMIC GROWTH IN NIGERIA: A Revisit.

Abstract

Thecrave over the years by successive government administrations in Nigeria for foreign direct investment to bridge the saving-investment gap and to facilitate economic growth calls for a critical evaluation. This study examined the impact of foreign direct investment (FDI) on economic growth in Nigeria from 1981 to 2022, using annual time series data from Central Bank of Nigeria, Statistical Bulletin (2022) and the World Bank Data Bank (2020). Real gross domestic product growth rate (RGDPGR) was the proxy for economic growth while log of foreign direct investment (LFDI), log of gross fixed capital formation (LGFCF), log of per capita income (LPCI) and exchange rate (EXR) were the explanatory variables. To assess the impact of FDI on economic growth through these channels the data were tested for stationarity using the Augmented Dickey Fuller (ADF) test for unit root. Based on the order of integration of the series, the autoregressive distributed lag (ARDL) was used to estimate the model.The eclectic paradigm and endogenous growth theory served as the theoretical framework for the study. The results revealed that in the long run LFDI as well as LPCI and EXR were positive but statistically insignificant to RGDPGR, while LGFCF was both negative and insignificant. However, in the short, LGFCF had significant negative impact on RGDPGR in the second lagged year showing that a unit increase in GFCF decreased RGDPGR by approximately 10.21% while LPCI exhibited significant positive impact on RGDPGR in the reporting year, as well as the second and third lagged years. Consequently, the study recommended that the Nigerian government should consider to attract the inflow of FDI into other sectors such service and agriculture to derive the impact on the economy due to the insignificant negative impact of GFCF on RGDPGR in the long run with significant negative impact in the short run.

Keywords:*Foreign Direct Investment, Economic Growth, Eclectic Paradigm, Endogenous Growth Theory, ARDL, Nigeria.*

1. Introduction

The phenomenon of Foreign Direct Investment (FDI) is complex and dynamic, capturing the spirit of globalization and the interdependence of contemporary economies. Foreign Direct Investment, refers to the investment made by a person or an entity from one country (often called the home country) into a business or assets located in another country (often referred to as the host country) (UNCTAD, 2020). This investment is typically made with the goal of establishing a lasting interest or significant degree of influence or control in the foreign business or assets. Foreign direct investment (FDI) can take many different forms. Scholars, business leaders, and members of the international economics worldwide agree that emerging nations often require large inflows of foreign cash to boost its economic activities. Some examples of FDI includes starting new activities often called green investment, or investment in real estate by foreigners. The global economy depends heavily on foreign direct investments, because it makes cross-border transfers of capital, technology, and skills possible. Though, it is evidenced that the Nigeria's economy is heavily dependent on imports, with oil serving as the country's main export good and source of foreign earning as a result of

lack of production capacity that could have pushed the economy to be fully integrated into a global market, thus, making the extractive industry has the major influx of foreign direct investment in the country.Following the decrease in oil prices and the election of a new administration in 1999, the emphasis shifted from the extractive industries to manufacturing and other profitable ventures, and from import substitution to export promotion. This was mainly because government recognized how important foreign direct investment was to closing the savings-investment imbalance that would set off export activity.

Nigerian government policies pertaining to incentives have been put into place over the years in an effort to boost FDI inflows. These included the 1995 passage of the Foreign Exchange (Monitoring and Miscellaneous Provisions) Act and the Nigerian Investment Promotion Commission Act, as well as the privatization of several industries, including those in the manufacturing, transportation, telecommunication, and electrical sectors. According to data from the National Bureau of Statistics, foreign direct investment into Nigeria decreased from $2,277.04 million in 2014 to $1,446.62 million in 2015 and from $1,044.02 million in 2016 to $981.75 million in 2017. The principal destination for capital investment in the nation has been the United Kingdom.Foreign direct investment is expected to stimulate economic growth in Nigeria by providing capital for productive companies. Therefore, as Jude and Levieuge (2013) noted, a variety of institutional and macroeconomic factors influence capital development. Several scholars, like Esew and Yaroson (2014), believe that the development index includes a range of characteristics, such as market size, human capital, political risks, and the business climate. Following the uncertainties in the country in very recent times with respect to security, particularly the activities of insurgency, Boko-haram, bandits, farmers-herdsmen clashes and crude oil bunkering in most parts of the North, the East and the Niger Delta, there have been significant divestment in FDI across most sectors of the economy including mining and quarrying, manufacturing, construction etc. This is amidst the extremely low inflow of FDI to RGDP and GFCF ratios in the country. Table 1 shows the abysmal inflow of FDI in Nigeria in relation to real gross domestic product and gross fixed capital formation from 1981 to 2020.

Table 1. Ratio of Average FDI to RGDP and GFCF and Exchange Rate in Nigeria (1981 – 2020)

Period	FDI (₦Million)	GFCF (₦Billion)	EXR	RGDP (₦Billion)	FDI as % of RGDP	FDI as % of GFCF
1981 – 1985	5,662.50	111.56	0.73	17,408.694	0.033	5.10
1986 – 1990	10,396.42	169.99	5.20	18,812.662	0.055	6.12
1991 – 1995	57,929.9	627.78	30.48	21,898.444	0.265	9.23
1996 – 2000	143,008.54	1,928.91	90.64	23,753.386	0.602	7.41
2001 – 2005	216,125.82	3,978.97	129	32,969.024	0.656	5.43
2006 – 2010	603,720.76	8,168.23	138.8	47,012.886	1.284	7.39

2011 – 2015		1,004,314.40	11,872.24	163.8	63,367.300	1.585	8.46
2016 – 2020		1,175,319.40	26,700.02	316.2	69,526.900	1.690	4.40

Source: Central Bank of Nigeria (2022) Statistical Bulletin.

Table 1 presents FDI inflows in millions of Nigerian Naira, GFCF is reported in billions of Nigerian Naira alongside the exchange rate (EXR), real gross domestic product (RGDP) and the ratios of FDI to RGDP and GFCF for average of 5year period ranging from 1981 to 2020. Between 1981 and 1985 known as the period of austerity in Nigeria following the global crude oil price crash, FDI inflow was ₦5,662.50 million at the average exchange rate of 0.73 Naira to $1US Dollar. Real GDP during this period was ₦17,408.694 billion. FDI represented only 0.003% of RGDP. On the other hand, GFCF was ₦111,560 billion of which FDI represented 5.10%. According to UNCTAD (2021), gross fixed capital formation is often considered as a meaningful indicator of future business activity, business confidence and pattern of economic growth. Thus, the ratio of GFCF to RGDP is vital to FDI inflows in the economy. It could be seen in table 1 that over successive periods, the increase in FDI was associated with exchange rate depreciation. Consequently, the ratio of FDI to RGDP only rose from 0.033 in the 1981 – 1985 period to 1.690 or approximately 1.7% in the 2016 – 2020 period representing 1.667 % increase over a period of 40years. This implies that Naira depreciation accounted for the rise in the figures of FDI into the Nigerian economy over the period. Gross fixed capital formation on the other hand showed fluctuation over the entire period as FDI represented 5.10% of GFCF between 1981 and 1985, it rose to the peak of 9.23% between 1991 and 1995 and then fell consistently to 5.43% between 2001 to 2005. It rose again consistently to 8.46% between 2011 to 2015 and fell to all period low becoming 4.40% between 2016 and 2020. With respect to GFCF and RGDP, the ratio of GFCF to RGDP can be derived from the data on table 1. Between 1981 and 1985, the ratio of GFCF to RGDP was 0.64. it was 0.9 between 1986 and 1990. It rose consistently over the periods to 38.40 between 2016 and 2020. From the foregoing, it could be seen that in spite of several decades of government policies aimed at attracting FDI into the Nigerian, actual FDI inflows in relation to the size of economy has been abysmal while GFCF as shown consistent increase in relation to RGDP. Notably, research in Nigeria, including that done by Otepola (2002), Oyeyide (2005), and Akinlo (2004), has looked at the ways that foreign direct investment (FDI) helps the economy grow and has explored the role that FDI plays in promoting growth over time. But given the obstacles the nation faced, which persisted in impeding the government's attempts to achieve sustainable growth and development through FDI inflows despite the government's best efforts, and the pitiful FDI inflows as previously mentioned, this study aims to address the following research questions: (a) to what degree do FDI inflows have an impact on economic growth in Nigeria? and (b) what are the channels through which foreign direct investment impact on economic growth in Nigeria?To shed light on the aforementioned research inquiries, the investigation was directed by the subsequent particular goals: (i) to investigate how inflows of foreign direct investment affect Nigeria's economic growth. (ii) to evaluate the mechanisms by which the influx of foreign direct investment affects Nigeria's economic growth. The remainder of this work is organised as follows: The theoretical background and empirical literature are covered in section two.

The content and technique are described in depth in Section 3. Data analysis and results presentation are covered in Section 4, and recommendations and the conclusion are covered in Section 5.

2. Literature Review

This section focused on the review of theories related and relevant to foreign direct investment and economic growth from where the theoretical framework for this study was chosen and then the empirical literature was also explored in this section.

2.1 Theoretical Literature

The relevant theories with which this study is anchored on are the eclectic paradigm and the endogenous growth theory.

2.1.1Eclectic Paradigm Theory

The Eclectic Paradigm (O-L-I), developed by John Dunning in 1980, is a comprehensive framework that combines three key factors - Ownership (O), Location (L), and Internalization (I) advantages. This theory aims to explain why firms engage in Foreign Direct Investment (FDI) based on these three elements. These reasons are abbreviated as O-L-I framework which are explained below.

a). Ownership Advantage (O): This element refers to the specific advantages that a firm possesses, such as technology, brand recognition, or unique management skills. Firms engage in FDI when they have ownership advantages that give them a competitive edge in foreign markets. These advantages can be either firm-specific or industry-specific.

b). Location Advantage (L): The location advantage refers to the benefits offered by the foreign market or host country. Firms are motivated to invest in a particular location when it provides unique advantages, such as access to a large consumer base, lower production costs, or proximity to key suppliers. The host country's characteristics and resources play a crucial role in attracting FDI.

c). Internalization Advantage (I): Internalization advantages relate to the benefits of controlling certain activities within the firm rather than outsourcing or licensing them to other entities. Firms may engage in FDI to internalize specific functions or activities, such as research and development, manufacturing, or distribution, when it is more efficient to do so. Internalization helps the firm maintain control over critical resources and knowledge.

The Eclectic Paradigm suggests that FDI occurs when a firm possesses Ownership, Location, and Internalization advantages. When these advantages align with the opportunities offered by a specific host country, it becomes an attractive destination for FDI. Hence, the eclectic paradigm is used in this study as one of the theoretical bases.

2.1.2 The Endogenous Growth Theory

The Endogenous Growth Theory, notably developed by Paul Romer (1986), departs from the Neoclassical Growth Theory by emphasizing that economic growth is not solely driven by exogenous factors (such as capital accumulation) but is endogenously generated within the economic system. This theory focuses on knowledge, innovation, and human capital as central drivers of growth.

a). Human Capital: In the Endogenous Growth Theory, human capital (skills, education, and knowledge) is a critical factor in economic growth. FDI can promote human capital development in the host country through training programs, technology transfer, and knowledge spillovers. These investments in human capital contribute to increased productivity and economic growth.

b). Knowledge Creation: FDI often brings advanced technology, research and development activities, and innovation to the host country. This fosters knowledge creation and technological progress. The theory posits that knowledge is non-rivalrous, meaning one entity's use of knowledge does not diminish its availability to others. As a result, knowledge can be a source of continuous growth and innovation.

c). Increasing Returns to Scale: The Endogenous Growth Theory suggests that increasing returns to scale are possible when knowledge is involved in the production process. Unlike the Neoclassical theory, which assumes diminishing returns, the Endogenous Growth Theory allows for continuous returns to scale. FDI can amplify these increasing returns by bringing advanced knowledge and technology to the host country

d). Technological Spillovers: FDI facilitates the flow of knowledge and technology from foreign firms to domestic firms in the host country. These technological spillovers lead to diffusion of innovation and can boost the host country's overall productivity and growth.

e). Innovation Policies: The theory underscores the role of innovation policies, including investment in research and development, patent protection, and education, as crucial drivers of endogenous growth. FDI can act as a catalyst in these areas, as foreign investors often engage in research and development activities and contribute to technological advancement.

In summary, the Endogenous Growth Theory emphasizes that FDI can significantly contribute to economic growth by fostering knowledge creation, innovation, human capital development, and increasing returns to scale. It underscores the idea that knowledge and technology are central drivers of sustained economic development. Thus, the theoretical framework for this study is the eclectic paradigm and the endogenous growth theory.

2.2 Empirical Literature

The relationship between foreign direct investment and economic growth—both in Nigeria and overseas—has been the subject of numerous studies. In order to comprehend the trend in the literature about the behaviour of FDI on economic growth, this part assesses the research efforts' findings. In the light of this, Yaqub, Adam, and Jimoh (2013) empirically analyzed the nexus between FDI and Nigeria's economic growth using Vector Auto-regression (VAR). The empirical analysis revealed that FDI doesn't have a Granger-causal effect on economic growth. Furthermore, it couldn't be statistically proven that FDI significantly determines real GDP in Nigeria. Instead, real GDP growth is primarily driven by its own internal dynamics.This suggested a weak connection between real GDP and FDI in terms of policy. Therefore, there's a need for policies that prioritize infrastructure development to maximize the potential benefits of FDI in Nigeria.

Akanegbu and Chizea (2017) investigated the influence of foreign direct investment on economic growth in Nigeria from 1991 to 2014 using annual time series data while adopting

the ordinary least squares econometric technique of analysis and neoclassical production function as the theoretical foundation. (where FDI, capital, and labour are all treated as production inputs). The outcome demonstrates that FDI has a small but favourable effect on Nigeria's economic growth.

Alabi (2019) used data from 1986 to 2017 to investigate how foreign direct investment (FDI) affected Nigeria's economic growth. Descriptive and regression methods were used for estimation, and the data sources were the World Development Indicator (2019) and the Central Bank of Nigeria Statistical Bulletin (2017). According to the study's findings, local investment has a positive but not statistically significant impact on Nigeria's economic growth at the 5% alpha level, whereas foreign direct investment has a positive and significant impact.

In their study on the factors influencing foreign direct investment (FDI) in Nigeria, Akinwalere and Chang (2023) looked at important variables affecting FDI that comes into the nation from abroad. UNCTAD provided data from 1970 to 2014, which were then subjected to auto-regressive distributed lag tests (ARDL) for analysis. The results show that long-term FDI is highly impacted by interest rates, GDP growth, external debt, and oil rents. Remarkably, FDI is not much impacted by trade or exchange rate volatility, despite what previous research suggests. In order to diversify economic growth, the report makes policy recommendations and emphasises the need of improving the non-oil sector's performance through investments in manufacturing and agriculture.

The effect of foreign direct investment (FDI) on economic growth in Sub-Saharan Africa (SSA) was examined by Olagbaju and Akinlo (2018), with particular attention to the function of financial development as an absorptive capacity in the relationship between FDI and economic growth. The study evaluated the independent impact of FDI on economic growth and the interactive link between FDI and financial development in SSA using panel data econometric methodologies and an imbalanced dataset covering 1989-2013. The results show that FDI by itself does not cause SSA's economy to grow. Nonetheless, the development of the banking sector and the financial system in general amplifies the influence of foreign direct investment on regional economic growth.This finding suggests a causal association between FDI and the development of the banking sector, with a higher correlation in the low-income subsample than in the middle-income subsample or the SSA sample as a whole. The study also identified the critical financial development thresholds required to produce the anticipated FDI-economic growth effect. In the end, the study suggested that initiatives to strengthen the local financial sector in SSA should be included to attempts to draw in international investment.

Hyungsun and Ramirez (2017) studied the relationship between income distribution and foreign direct investment (FDI) in seven Southeast Asian nations between 1990 and 2013. The research looked at whether FDI has a non-linear effect on income inequality using panel data and cointegration analysis. The (ADF) and (PP) tests yielded substantial evidence of panel cointegration in the analysis. The study employed the fully modified ordinary least squares (FMOLS) group-mean approach for objective and consistent long-run estimations,

and it showed accuracy even when dealing with panels that had endogenous regressors, fixed effects, and a variety of serial correlation dynamics.The results corroborate the theory that, while FDI inflows initially cause a short-term rise in income inequality, they ultimately result in a decrease. According to the study, there is significant absorptive capacity in the sample countries because the Gini index begins to decline once FDI inflows reach 5.6% of GDP. The pro-globalization claims that FDI is generally more advantageous than detrimental is supported by this, which suggests a quick shift into a new technological paradigm.

Giwa, George, Okodua, and Adeniran (2020) conducted an empirical investigation into the impact of foreign direct investment (FDI) inflows into Nigeria on the growth of the country's real gross domestic product (RGDP), with a specific focus on achieving Goal-17.3. The study estimated a model that addressed the endogeneity and autocorrelation issues that are inherent in conventional least squares using a robust Generalised Method of Moments (GMM) estimation technique.In line with theoretical predictions, the results showed a positive and considerable impact of labour quality on RGDP. Furthermore, the research revealed a noteworthy adverse effect of capital intensity on Nigeria's RGDP.In order to provide the groundwork for economic growth via the trickle-down effects of foreign direct investment, the study advises Nigerian policymakers to integrate increases in capital intensity into general policy considerations.

Sokang (2018) carried out research to look at the connection between FDI and economic expansion in Cambodia. The study employed a correlation matrix and multiple regression analysis to examine annual time series data from 2006 to 2016. The outcomes showed that the association was favourable.

In their 2020 study, Emmanuel, Xiang, Mavis, and Bekoe investigate the connection between trade openness, FDI, and economic growth in Ghana, with a particular emphasis on the years following liberalisation from 1975 to 2017. Regression analysis, descriptive analysis, Pearson correlation, and the Augmented Dickey-Fuller (ADF) test for unit root were used in the study to investigate these associations. All variables were integrated of order one, according to the ADF test results, which means that after the first difference, they became stationary. The study discovered that trade openness is the main factor influencing GDP growth (annual%) in Ghana using the Ordinary Least Squares (OLS) estimator. Although they were not statistically significant, inflation and foreign direct investment had (-, or +) effects on GDP growth.
The report suggested actions to encourage trade openness, such as easing export restrictions and drawing foreign direct investment by fostering an environment that is conducive to corporate expansion in Ghana.

Using time series data from 1990 to 2017, Ntamwiza and Masengesho (2022) investigate the effects of gross capital creation and foreign direct investment on economic growth in Rwanda (1990-2017). In order to analyse the data and fill the knowledge gap on the elements and drivers of economic growth in Rwanda, with an emphasis on increasing production and the reduction of poverty, a variety of analytical and econometric techniques were used. The research validates a positive correlation between capital creation, foreign direct investment

(FDI), and economic growth in Rwanda over the short and long terms, as evidenced by the presence of a long-term co-integrating connection and short-term interactions. The study emphasized how capital formation has a long-term positive impact on GDP and how important it is to take these factors into account when formulating economic policies in order to promote economic growth.

From the above literature exploration, a potential literature gap could be identified in the area of the nuanced impact of Foreign Direct Investment (FDI) on economic growth in Nigeria. While the existing studies, such as the one conducted by Giwa, George, Okodua, and Adeniran (2020), contributed valuable insights, there is a need for further research that delves deeper into the specific factors influencing the relationship between FDI and economic growth. The existing literature acknowledges positive associations between FDI, GDP growth, and certain variables like real exchange rates and capital intensity. However, a more detailed examination of the intricate dynamics, potential thresholds, and contextual variations is essential.

3. Material and Methodology

This study employedthe Ex post facto researchdesign. Hence, annual time series data on real gross domestic product growth rate (RGDPG) was used as the dependent variable, while annual time series data on gross fixed capital formation (GFCF), manufacturing capacity utilization rate (MCUR), exchange rate (EXR), interest rate (INTR) and dummy variable for economic policy reform (DEPR) were used as explanatory variables and were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin of various years. The datasetspanned the period of 1975 – 2022.

3.1. Model Specification

Following the eclectic paradigm by Dunning (1980) and endogenous growth theory by Romer (1986), the model specification for this study involved the determination of the explained and explanatory variables. Thus, the model is specified based on the information relating to the phenomenon being studied and the behavior of the time series data with respect to the order of integration of the series. Consequently, the functional specification of the foreign direct investment model is stated as

$$y_t = f(X_t) \qquad 3.1$$

where:

y_t = economic growth at time t, measured by real gross domestic product growth rate.

X_t= a vector of explanatory variables including foreign direct investment that interact within the economy to determine the impact of FDI on economic growth. The choice of these variables was guided by the eclectic paradigm and the endogenous growth theory as well as the empirical realities in Nigeria.

In the Eclectic Paradigm associated with the acronym O-L-I (Owners Advantage; Location Advantage and Internalization Advantage), the location advantage which focuses on the FDI recipient economy evaluates access to a large consumer base, lower production costs, or proximity to key suppliers. The GFCF was used in this study as an index of lower production cost. This is because GFCF consists of new additions to infrastructural investments by the government which ultimately creates the enabling environment for foreign direct investment. Another explanatory variable in our vector of explanatory variables is per capita income

(PCI). The PCI is used to measure access to a large consumer base under the location advantage as pointed out in the Eclectic Paradigm as well as human capital development in the Endogenous Growth Theory. Exchange rate (EXR) on the other hand was included in the vector as a control variable. Basically, the direction of exchange rate indicates how innovative and productive the economy is. Exchange rate depreciation (i.e, when more Naira is exchanged for one US Dollar) indicates low innovation, low production and low export, while exchange rate appreciation (i.e, when less Naira is exchanged for one US Dollar) indicating high innovation, high production and high export. Consequently, our new functional model is stated as:

$y_t = f\,(fdi, gfcf, pci, exr)$ 3.2

The variables are expressed in different units of measurement. Economic growth (y_t) was proxied by real GDP. Millions of Naira were used to measure foreign direct investment (fdi), billions of Naira were used to measure gross fixed capital formation, and US dollars were used to measure per capita income (i.e., the ratio of the total population to the national income). To avoid discrepancies in the data, the monetary measures such as *fdi, gfcf and pci*were logged. Thus, equation 3.2 becomes:

$RGDPGR = f\,(LFDI, LGFCF, LPCI\ EXR)$ 3.3

Based on the behaviour of the time series data with respect to stationarity propertieswhich the series either integrated of order zero I(0) and order one I(1), the autoregressive distributed lag (ARDL) econometric regression technique was found appropriate to estimate the impact of the set of explanatory variables on the dependent variable in this study. Consequently, the ARDL specification of the model is stated as:

$$RGDPGR_t = \alpha + \sum_{i=0}^{n} \beta_{1i}\Delta RGDPGR_{t-i} + \sum_{i=0}^{n} \beta_{2i}\Delta LFDI_{t-i} + \sum_{i=0}^{n} \beta_{3i}\Delta LGFCF_{t-i} + \sum_{i=0}^{n} \beta_{4i}\Delta PCI_{t-i} + \sum_{i=0}^{n} \beta_{5i}\Delta EXR_{t-I} + \beta_6 RGDPGR_{t-1} + \beta_7 LFDI_{t-1} + \beta_8 LGFCF_{t-1} + \beta_9 MCU_{t-1} + \beta_{10} EXR_{t-1}\ \varepsilon_{1t} \quad (3.4)$$

Where:Δ is the first difference operator,β_{1i},……,β_{7i}, indicate the short-run dynamics of the model,β_8,……β_{14}, denote the long-run association and$\varepsilon_{1t}$is the random termin equation 3.4. The specific form of error correction mechanism (ECM) estimated for RGDPGR as a measure of economic growth in this study is expressed as:

$$RGDPGR_t = \beta_0 + \sum_{i=0}^{n} \beta_1 RGDPGR_{t-1} + \sum_{i=0}^{n} \beta_2 \Delta X_{t-1} + \beta_3 ECM_{t-1} + \varepsilon_{3t} \quad (3.5)$$

Where:X_t is the vector of explanatory variables, ECM_{t-1} is the error correction term and it captures the speed of adjustment back to the long run after a short run shock and ε_{3t} is the stochastic error term.

3.2 Estimation Technique and Procedure

The study used the Augmented Dickey Fuller (ADF) unit root test to empirically determine the order of integration of the series. Next, the autoregressive distributed lag (ARDL) regression technique was utilised to investigate the effects of the explanatory variables on the dependent variable. The Breusch-Godfrey serial correlation LM test, the Jargue Bera residual normality test, the Breusch-Pagan-Godfrey heteroscedasticity test for residual, and the Ramsey rest test for model specification were among the diagnostic tests.

4. Empirical Results and Discussion

4.1 Descriptive Statistics

Data for 42 years from 1981 to 2022, were included in Table 2, which summarized the descriptive statistics for the five macroeconomic variables in this study. In terms of average measured by the mean values, the average value of real gross domestic product growth rate (RGDPGR) is approximately 3.5% for the period under study.The average value of foreign direct investment was 372,724.5 million Naira for the same period. Over the time, the average gross fixed capital formation was around 9,321.2 billion Naira, per capita income was $1,375.1 billion Naira, and the average exchange rate was 124 Naira to $1 USD. The maximum and minimum values for theses series are clearly seen as presented in table 2. The standard deviations of the series from their respective means showed that FDI was the most volatile (approximately 472,814.3) million Naira, while real GDP growth rate was the least volatile at 4.5% approximately.

Table 2: Summary of Descriptive Statistics

Variable	No of Obs.	Mean	Maximum	Minimum	Std. Dev
RGDPGR	42	3.495238	15.33000	-10.93000	4.698955
FDI	42	417,072.0	1,416,506.0	3,757.900	472,814.3
GFCF	42	9,321.180	65,227.13	87.14000	15,038.98
PCI	42	1,375.078	3,223.000	270.0000	885.5419
EXR	42	123.9350	428.0000	0.610000	117.7045

Source: Author's computation

4.2 Unit Root Test Result

The null hypothesis that a variable's series has a unit root is the foundation of the unit root test for stationarity of the series using the Augmented Dickey Fuller technique. The ADF test critical value at 5% was compared with the ADF test statistic. The results revealed that RGDPGR was integrated of order zero I(0) while all the explanatory variables were integrated of order one I(1) as presented in table 3.

Table 3: ADF Unit Root Test Result

Variable	ADF Statistics			Probability		I(d)
	5% Critical value	Levels	First Difference	Levels	First Difference	
RGDPGR	-2.935001	-3.972945	Ψ…….	0.0037	Ψ…….	I(0)
LFDI	-2.935001	-1.851990	-2.854056	0.3510	0.0599	I(1)
LGFCF	-2.936942	-0.035744	-4.204947	0.9494	0.0020	I(1)
LPCI	-2.936942	-0.966381	-4.505056	0.7560	0.0008	I(1)
EXR	-2.935001	2.183489	-4.881210	0.9999	0.0003	I(1)

Source: Author's computation

4.3The ARDL Bound Test for Cointegration Result

This section looked at the long-term relationship between the variables using cointegration and the autoregressive distributed lag (ARDL) bound test. The ideal lag length of (1,2,0,1,0) was found for the ARDL bound test by applying the Akaike Information Criteria (AIC), as recommended by Pesaran et al. (2001), through the vector autoregression (VAR) lag length selection criteria. Thus, table 4.displays the bound test result. At the traditional 5% threshold of significance, the F-statistic (6.981274) was found to be more than the upper critical bound value (3.49) and, consequently, bigger than the upper bound value of 4.37 at the 1% level of significance. Consequently, the results affirmed a long runnexus amongst the variables in the model.

Table 4. Bound Test for Cointegration Result

F-Statistics = 6.981274

K = 4

	Critical Bounds Value	
Significance	Lower Bounds I(0)	Upper Bounds I(1)
10%	2.2	3.09
5%	2.56	3.49
2.5%	2.88	3.87
1%	3.29	4.37

Source: Author's computation

4.4 Estimation and Discussion of Findings

This sub-section examined the empirical results from the ARDL regression and discusses the findings beginning from the estimates of the long run results and then the short run results.

4.4.1 The ARDL Long Run Results

Following the optimal lag selection criteria and the selected model: ARDL (1,0,3,4,0), the long-run elasticities were estimated and the results were presented in table 5.As can be seen from the table's probability, none of the explanatory variables had any statistically significant effect on economic growth, as measured by the real gross domestic product growth rate (RGDPGR).

However, in terms of sign and magnitude, log of foreign direct investment (LFDI), log of per capita income (LPCI) and exchange rate (EXR) were positively related to RGDPGR, while log of gross fixed capital formation (LGFCF) was negatively related to RGDPGR.

Table 5. ARDL Long Run Results Estimate

Dependent Variable: RGDPGR

Selected Model: ARDL(1,0,3,4,0)

Variable	Coefficients	Std. Error	t-Statistics	Probability
LFDI	0.261765	1.171255	0.223491	0.8250
LGFCF	-4.226806	2.743118	-1.540876	0.1359
LPCI	2.125775	1.461243	1.454772	0.1582
EXR	0.036167	0.025832	1.400066	0.1738

C	15.42878	9.543733	1.616640	0.1185

Source: Author's computation using Eviews 10

4.4.2 The ARDL Short Run Estimates and Error Correction Mechanism (ECM).

Table 6 displays the findings of the error correction model (ECM) and the ARDL short run estimation. The ECM model was represented by CointEq(-1) exhibits a high value of -0.903293, statistically significant and negatively signed, suggesting that 93% of the short-run disequilibrium is corrected to the long-run equilibrium. After controlling for degree of freedom, the adjusted R-squaredvalue of 0.715922 showed that the explanatory variables explained almost 72% of the variation in the dependent variable.The short-term estimations showed that log of gross fixed capital formation (LGFCF) was positive but statistically insignificant to RGDPGR in the reporting year and one-year lag. It however, became negative and statistically significant to RGDPGR in the second lagged year indicating that a one percent increase in GFCF decreased RGDPGR by approximately 10.21 percent. This result is contrary to a priori expectation that increase in GFCF increases RGDPGR. log of per capita income is found positive and statistically significant to RGDPGR in the reporting year as well as second and third lagged years. The first lagged year was positive but statistically insignificant. More specifically, a one percent increase in PCI increased RGDPGR by approximately 18.5 percent in the reporting year, and by 8.5 percent and 8.8 percent in the second and third lagged years. The LPCI result confirms the a priori expectation that increase in per capita income increases RGDPGR. It is also show in table 6 that Akaike information criteria (AIC) provided least value (4.767922) among the other criteria includingSchwarz Information criteria (5.112677) and Hannan-Quinn Criteria (4.890583) for selecting the optimal lag for this study

Table 6.ARDL Short Run Estimates Result

Dependent Variable: RGDPG

Selected Model: ARDL(1,0,3,4,0)

Variable	Coefficient	Std. Error	t-Statistics	Probability
D(LGFCF)	0.351157	2.761709	0.127152	0.8998
D(LGFCF(-1))	1.015764	2.860734	0.355071	0.7255
D(LGFCF(-2))	-10.20773	3.001440	-3.400946	0.0023
D(LPCI)	18.48236	2.488338	7.427592	0.0000
D(LPCI(-1))	4.637512	3.077388	1.506963	0.1444
D(LPCI(-2))	8.491791	2.484148	3.418392	0.0022
D(LPCI(-3))	8.811292	2.642239	3.334783	0.0027
CointEq(-1)*	-0.903293	0.127407	-7.089794	0.0000
Adjusted R^2			0.715922	
Breusch-Godfrey Serial Correlation LM Test			0.211469 [0.8997]	
Breusch-Pagan-Godfrey Heteroscedasticity Test			0.679411[0.7548]	

Source: Author's computation using Eviews 10

4.5 Diagnostic Test Results

The Breusch-Godfrey Serial Correlation LM test and the Breusch-Pagan-Godfrey Heteroscedasticity test results in table 6 demonstrate that the model did not exhibit serial correlation or heteroscedasticity because their respective probabilities were greater than 0.05 or the five percent level of significance. Therefore, we agreed with the null hypotheses that the model is heteroscedastic and lacks serial correlation. Similarly, the Jarque-Bera test for residual normality in figure 1 showed a P-value greater than 0.05 indicating that the errors were normally distributed. Hence, the null hypothesis, according to which the errors are normally distributed, is thus accepted.

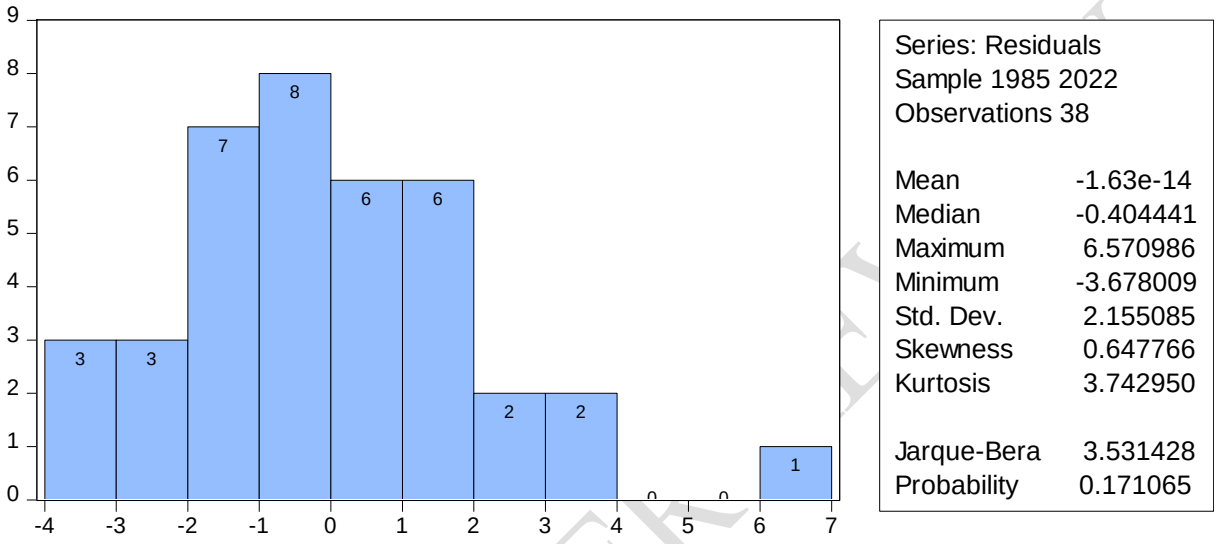

Figure 1. Residual Normality Test Result.

4.5.1 Model Stability Test Results

The cumulative sum of squares test and the cumulative sum (CUSUM) test were used to assess the stability of the model used in the investigation. The results are displayed in Figures 2 and 4.3, respectively. The test result demonstrated the stability of the model's regression coefficients. The CUSUM line, which is located between the upper- and lower-5 percent crucial lines, makes this clear. As a result, the null hypothesis that the coefficients are stable is accepted.

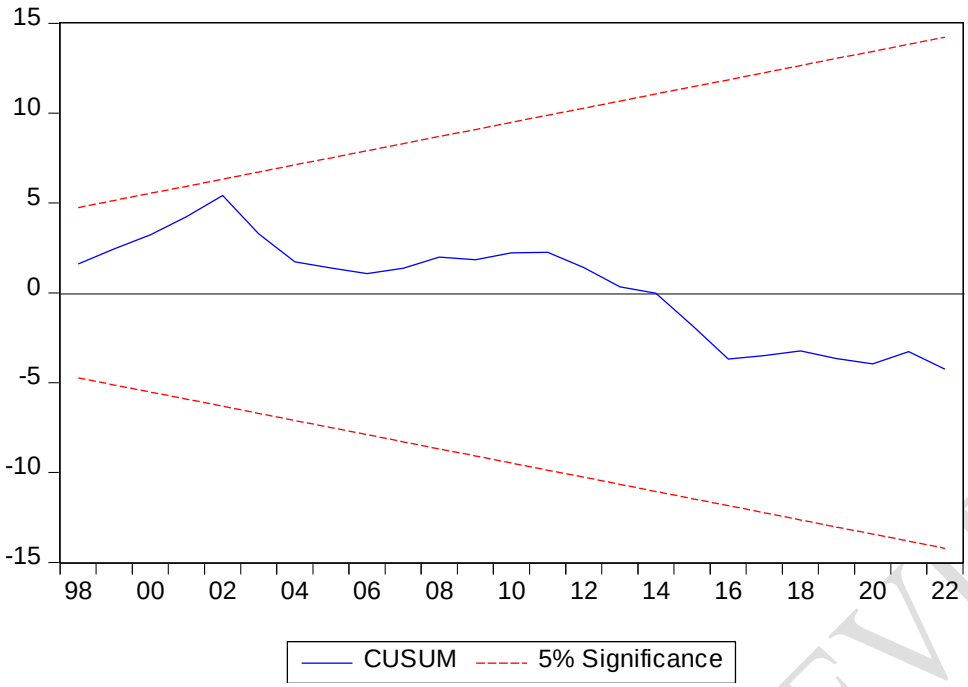

Figure 2. Model Stability Test Result: Cumulative Sum (CUSUM) test.

Similarly, the model showed no structural breaks given that the CUSUM of squares line lies between the upper and lower critical lines, this is shown in figure 2. As a result, the null hypothesis—which states that the model contains no structural breaks—is accepted.

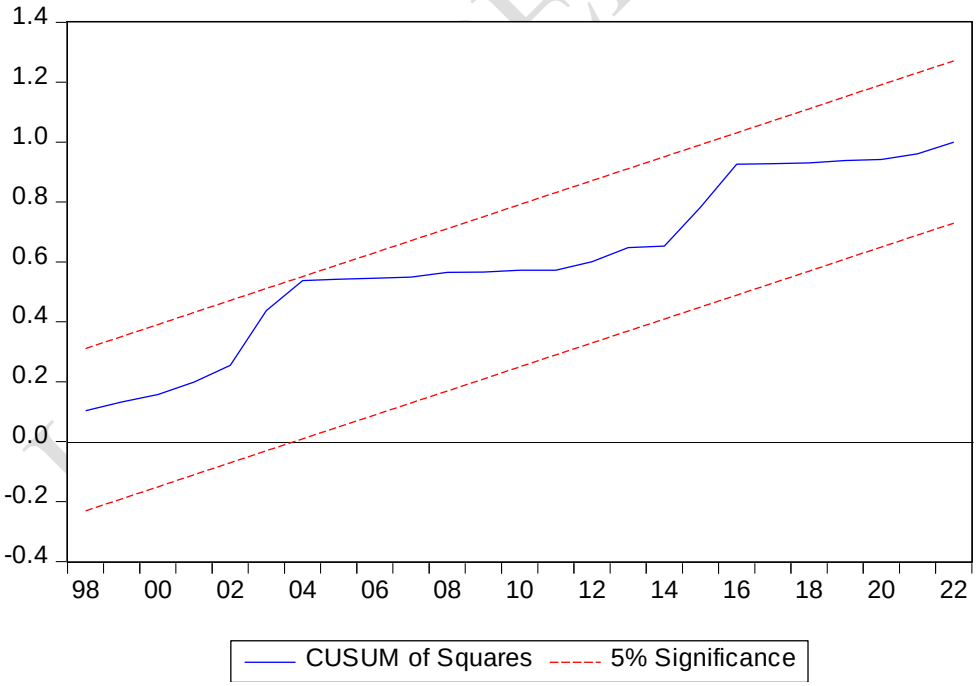

Figure 3. Model Stability Test Result. CUSUM of Squares Test

5. Conclusion

Using annual time series data from the World Bank Data Bank and the Central Bank of Nigeria, this study looked at how foreign direct investment affected economic growth in Nigeria from 1981 to 2022. The real GDP growth rate proxy economic growth in Nigeria, while the exchange rate, gross fixed capital formation, per capita income, and inflows of foreign direct investment served as explanatory factors. The study's theoretical underpinnings were the endogenous growth theory and the eclectic paradigm. The results of both foreign and Nigerian investigations were found to be inconsistent after a comprehensive analysis of the empirical literature. That is to say, although some Nigerian studies (Yaqub, Adam & Jimoh, 2013; Akanegbu&Chizea, 2017; Adokwe, Agu & Maduka, 2019; Olagbaju&Akinlo, 2018) concluded that foreign direct investment (FDI) had no effect on economic growth, Kolade, 2019; and Olasehinde& Ajayi, 2022 concluded that FDI had a positive impact on economic growth in Nigeria. Per capita income was utilised, along with FDI and the other explanatory variables utilising the autoregressive distributed lag analytical technique, to proxy market size and human capital development in the eclectic paradigm and endogenous growth theory framework in order to add to the body of knowledge.The findings showed that, at the 5 percent significance level, neither FDI nor any of the explanatory variables were statistically significant in the short term. Table 4 showed that the coefficients of FDI, PCI, and EXR were positive at different magnitudes. However, the short results showed that while there was no significant impact in the reporting year or the first delayed year, log of gross fixed capital formation (LGFCF) had a substantial negative influence on RGDPGR in the second lagged year. In the near term, RGDPGR was significantly impacted by per capital.We draw the conclusion that FDI has no direct bearing on Nigeria's economic growth based on the study's findings. On the other hand, for the Nigerian economy, the positive and significant impact of per capita income on RGDPGR indicates that FDI can improve on human capital development. This is because, from the perspective of foreign investors, the market size, as measured by per capita income, potentiates a strong signal for gains in investment in Nigeria.

6. Recommendations

As a result of the findings of this study, the following recommendations are made for policy consideration:

(i) As a meaningful indicator of future business activity, GFCF signals FDI. Having received more foreign direct investment in the mining and quarrying as well as the manufacturing sectors in Nigeria over the years with nuance effect on the economy, the Nigerian government should consider to attract the inflow of FDI into other sectors such as service and agriculture to derive the benefits on the economy due to the insignificant negative impact of GFCF on RGDPGR in the long run with significant negative impact in the short run.

(ii) Per capita income was found positive but insignificant to RGDPGR in the long run, while it exhibited significant positive impact on RGDPGR in the short run. As a signal of market size for the inflow of FDI and particularly as a signal of human capital development, the government should increase her investment in the human capital development particularly in the area of technical skills relevant in manufacturing and service to engender growth in per capita income which will attract FDI and economic growth in Nigeria.

(iii) A positive but insignificant impact of exchange rate (EXR) on RGDPGR in the long run implies that exchange rate depreciation (i.e, more Naira exchanged for

US $1) led to decrease in RGDPGR. However, the insignificant impact of EXR on RGDPGR indicates that a depreciated currency is not sufficient for the inflow of FDI. Thus, government should focus on developing the productive base of the economy to attract FDI and then achieve economic growth in the long run.

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