Original Research Article

Foreign Direct Investment and Poverty Reduction in Nigeria: Implication for Sustainable Development

ABSTRACT

The study examined the impact of Foreign Direct Investment on poverty reduction with implication on Sustainable development in Nigeria using Autoregressive Distributed Lag (ARDL) model technique on times series data collected from 1985 to 2020. Unit root test using Augmented Dickey-Fuller (ADF) found that Poverty Head Count Ratio (PHCR), Gross fixed capital formation (GFCF) and Real Exchange rate (REXR) are integrated of order 1(1) while Foreign Direct Investment (FDI) is integrated of order 1(0). The results show that FDI has a negative impact on poverty reduction in Nigeria and ARDL Bounds test result shows that there is a long run relationship among all the variables. Finally, lag value result indicates that gross fixed capital formation has a significant impact on poverty head count ratio in Nigeria. In view of these findings, the study concluded and recommended that FDI policies must be checked closely in order to make FDI growth enhancing in Nigeria so as to achieve Sustainable Development Goals (SDGs) one. Government should also encourage gross fixed capital formation to reduce poverty in Nigeria.

Keywords: *ARDL, Foreign Direct Investment, Gross Fiscal Capital Formation, Poverty Reduction, SDGs*

1. INTRODUCTION

Poverty has been described as a multidimensional global problem that impacts every country on planet in one way or the other and at varying degrees of severity. It is currently seen as the greatest threat to peace and stability, surpassing terrorism and other well-publicized conflicts (Oloyede, 2014 as cited in Anigbogu, Edoko & Okoli, 2016). United Nations Development Project (UNDP) stated that in 2010 about one billion people were living in severe poverty and 93 percent of these people were living in three regions: East Asia, South Asia and Sub-Saharan Africa. And more than eight million people die each year because they are too poor to keep alive. In recent times, poverty is a major issue confronting Nigeria and

available evidence shows that poverty is endemic in Nigeria in such a way that the majority of its populace could not afford basic necessity of life such as quality education, food and the host of others (World Poverty Clock, 2018; Adebayo, 2018; Aderemi et al., 2020:a). Report of poverty level in Nigeria demonstrates that the country is among the poorest in the world. Before the Covid-19 crisis, around 4 out of 10 Nigerians were poor, and millions were on the verge of sliding into poverty due to slow and unequal growth. According to the National Bureau of Statistics, about 39.1 percent of Nigerians live below the international Poverty line of $1.90 per person per day(2011PPP) in 2018/19. Additional 31.9 percent of Nigerian had daily consumption levels between $1.90 and $3.20, putting them at risk of sliding into extreme poverty in the event of a shock. Nigeria has struggled to generate the broad-based development needed to combat poverty due to persistent oil dependence, a high population growth rate and inadequate job creation (World Bank Group,2021).

Nigeria's poverty rate has risen steadily in recent decades. Poverty in Nigeria,for example,increased from 28.1 percent in 1980 to 46.3 percent in 1985. It was 42.7 percent in1992, but it soared to 65.6 perc ent in 1996 before plummeting to 54.4 percent in 2004. Between 2004 and2010, an estimated 160 million individuals (160 million) were reported to be impoverished, with roughly 120 million of them being children. Moreover, in 2018 and 2020, poverty rate were 39.1% and 40% respectively (NBS,2020). Combating poverty in Nigeria has become a continuous assignment in tandem with the advocacy of the sustainable development goal one – poverty reduction. Meanwhile, achieving poverty reduction in any economy like Nigeria where the actual savings and investments could not metamorphose to the desire investment requires viable means of augmenting the investment gap in the economy. One of the viable means of bridging the investment gap created by deficient locally mobilized savings and net export earnings is to open up the economy to Foreign direct investment (Adeola, 2017; Abidemi, Adegboye, Ogbebor & Egharvba,2014).

Foreign Direct Investment (FDI) in Nigeria is an investment made by a company that is entirely or partially controlled by a foreign company.The Foreign Exchange (Monitoring and Miscellaneous Provision) Decree ,also adopted in 1995, and the Investment Code, which established the Nigerian Investment Promotion C ommission (NIPC)(Decree No.16 of 1995), provide complete support for FDI in Nigeria. Nigeria has a great potential for attracting large amounts of international private investment. Because of its well-known benefits as a tool for economic development, most governments attempt to attract FDI. As indicated by the development of the New Partnership for Africa's Development (NEPAD) which has the attraction of foreign investment to Africa as a prominent component, Africa and Nigeria in particular have joined the rest of the globe in seeking FDI. In both developed and developing countries, FDI has a direct impact on host economies (Louis Kouamé Caningan, 2012). Indeed, FDI may generate technology spin-offs, contribute to the development of human capital, promote integration into international trade, and foster the construction of a more competitive business climate, all while working in

tandem with local businesses to help them grow. FDI can assist host countries improve their environmental and social situations (Demery, 2003). Aside from positive effects, FDI can also have some negative consequences, which primarily affect the costs borne by the host countries and are generally manifested by worsening of the balance of payments due to profit repatriation (Ikiara, 2003). Foreign direct investment has been classified in a variety of ways. According to policymakers, it has a positive impact on host economies. Economic rents accrue to old technologies and traditional management styles when FDI is conducted in high-risk sectors or new industries. These are extremely advantageous to the economy of the receiver. Furthermore, FDI aids in closing the capital gap and complementing local investment, particularly when it flows to high risk areas of new businesses where domestic resources are scarce. Foreign direct investment (FDI) is beginning to migrate away from manufacturing and toward services, which are becoming more conventional. FDI has created numerous opportunities, such as job creation, infrastructure and technology transfer, higher productivity, etc.
FDI enhances domestic investment by providing much-needed financial capital, transfer of valuable technology and knowledge through its externalities.

Since 1981, Nigeria has been in a state of stagnation and relative decline, with per capita GDP falling from US$1,200 in1981 to around US$300 in 2000. In 1992,34.1 percent of the population lived in poverty; in 2000, almost 70 percent of the population lived in poverty, and the number is still rising; the majority of the population lives in rural areas, and Nigeria is known as the world's poverty capital (World Bank, 2008). Many Nigerians' quality of life has deteriorated rather than improved because of inflation, rising food prices, and rising transportation costs, the average worker's pay N36,000 (about US$72.00) which is the national minimum wage is insufficient to maintain a family. The federal government's proposed monthly budget falls considerably short of what is required to fund housing, food, education, health care and transportation. The availability of water and electricity in major cities is sporadic. Many rural communities' water supplies are infected with disease-carrying worms and energy services which are subsidized by the government are scare. There is far too much poverty in the country, which has resulted in a “brain drain" to other parts of the globe. Government mismanagement and corruption squandered the nation's wealth, while access to sufficient shelter, water and sanitation facilities, as well as communication, was extremely limited, and income disparity deteriorated during the same period Individuals with minimal or no formal education, large families,farm communities and groups engaged in informal sector activities have been disproportionately affected by the worsening situation in rural areas.

Federal government of Nigeria had mapped out some measures to tackle poverty, such as: National Directorate of Employment (NDE), National Agricultural Land Development Authority (NALDA), Family Economic Advancement Programs (FEAP), National Poverty eradication Program (NAPEP), Directorate of Food, Roads and Rural Infrastructure (DFRRI),National Board for Community Banks (NBCB), Better

Life Program for Rural women (BLP), Nigerian Agricultural and Cooperative Bank (NACB), Peoples Bank of Nigeria(PBN), YOUWIN and lately N-Power. . Despite government's poverty eradication campaigns, national development plans and seasonal papers; poverty is still a major challenge. Even when Nigeria's economy was growing with a lot of Foreign Direct Investment (FDI) flows into the country, poverty still soared higher and this remains a paradox. Empirical research has been conducted on the relationship between foreign direct investment and poverty reduction in Nigeria. But most of these studies like Ogunniyi and Igberi (2014) and Adigun et al (2021), made use of OLS estimation techniques which is not adequate in generating consistent and robust coefficient estimates about the study variables, thereby providing a gap in the methodology used. This paper adopted the more advanced ARDL method, which allows for a more robust co-integration that plays well with small sample sizes. Through this method, it becomes methodologically possible to deal with model selection, estimation, inference and to determine the long run and short run impact of foreign direct investment on poverty reduction in Nigeria. Also, the ARDL method posits the speed of adjustment to restore the economy to long run equilibrium growth path after a shock. Also, most of the empirical work chose their control variables at random thereby showing their shortcoming by not using most of the important variables stated in the literature. For example, Omorogbe (2007) used GDP per capita while Gohou and Soumare (2012) used HDI as a proxy to measure poverty. This paper will employ poverty head count ratio as a proxy to measure poverty. This is to help overcome variable omission bias and guide against the identified gap in variables used from previous studies. The broad objective of this study is to determine the impact between Foreign direct investment and Poverty reduction in Nigeria with implication on sustainable development. The paper is divided into five parts, introduction, literature review, research methodology, results and discussion while the last part deals with policy implication, conclusion and recommendations.

1.1 Research Objectives

1. To examine the impact of the selected macroeconomic variables like Foreign direct investment, Gross fixed capital formation and Real Exchange rate on poverty reduction in Nigeria.

1.2 Contribution to Knowledge

Most literature that studied the impact of foreign direct investment on poverty reduction such as Okpe and Abu (2009) and Gohou and Soumare (2012) found that foreign direct investment have positive and significant impact on poverty reduction in Nigeria. This study will add to literature as it tries to have a deeper insight on the impact of foreign direct investment on poverty reduction using ARDL and also using poverty head count ratio which is an important variable to measure poverty which were not used in the previous studies. These will show whether foreign direct investment through gross fixed formation and real exchange rate has any impact in reducing poverty in Nigeria.

2. LITERATURE REVIEW

Foreign Direct Investment and poverty have inspired a lot of theoretical and empirical effort. This section examines the review of some related literature on FDI and poverty reduction in Nigeria.

2.1 Conceptual Literature

Foreign Direct Investment (FDI)

Babasanya (2018) defined foreign direct investment as an investment into production of goods and services by a citizen of another country, either by buying a company or expanding operations of an existing business in another country. Todaro and Smith (2003) defined Foreign Direct Investments as an overseas investment by private multinational corporations. Foreign direct investment also include opening of a subsidiary, acquiring an existing foreign business, or through a means of merger or joint venture with a foreign company (Aladelusi & Olayiwola, 2021). Foreign Direct Investment represents a veritable source of foreign exchange and technological transfer, especially to a developing economy like Nigeria (Akubueze, 2020). The United Nations defined foreign direct investment (FDI) as investment in enterprise located in one country but effectively controlled by residents of another country (UNCTAD, 2009 cited in Akubueze, 2020). Ogunniyi and Igberi (2014) asserted that FDI helps in a poverty reduction as it adds to domestic savings and it is often accompanied with technology and managerial skills which are indispensable in economic development. Okafor (2019) defined FDI as a multinational issue whereby an investor who resides in the domestic country, seeks for a long-term influence in the control of an affiliate firm in the recipient country. This definition has been widely accepted because; it was conceptualized by IMF/OECD in 2011 with the purpose of giving a basis to domestic department of statistics, charged with the responsibility of gathering FDI statistics.

Poverty

According to the World Bank, poverty can be defined in terms of the number of people living on less than US$ 1.90 dollars per day. Poverty as a situation where a person lacks access to basic needs such as food, shelter, clothing and education. Oloyede (2014) stated that the issue of poverty is a global phenomenon, which affects nations in so many ways. He asserted that poverty is a condition when one lacks the basic standard of living. According to Omoniyi (2013), poverty can be explained in three different dimensions. The first is extreme poverty which means the household cannot meet basic needs for survival. Here, people are perpetually hungry, lack access to basic amenities like education, healthcare, pipe borne water and housing facilities. Moderate poverty on the other hand refers to conditions of life in which basic needs are met, but just barely. Relative poverty is defined as a household income level below a given proportion of average national income. According to Oke and Olayemi (2014), the issue of poverty is worrisome because despite the huge human and material resources that have been committed to poverty reduction by the governments, no evident success has been achieved in this

direction. Evidence from World Development Indicators (WDI, 2021), shows that for many years, Nigeria's Human Development Index (HDI), has not surpassed 0.55, implying a low human capital development. This reveals that Nigeria is one of the poorest among the poor countries of the world. The poverty head count ratio for Nigeria is 40.1 as at 2021 which shows that about 40% of Nigeria's population live below the poverty line.

2.2 Review of Basic Theories

a) Endogenous Growth Theory

The theoretical link between FDI and poverty can be seen within the endogenous growth theory. The theory states that an increase in productivity and economic growth will alleviate poverty and welfare. The proponents of this view postulate that an increase in national income has the tendency to benefit the most impoverished population, particularly in countries with low-income inequality (Koopmans, 1965; Lucas, 1988; Solow, 1956). In addition to the traditional growth theories, Meyer (2004) argues that FDI's impact on poverty can be divided into two categories, namely vertical and horizontal. The horizontal spillover effect occurs from the technological spillover from foreign firms to local firms (Farole & Winkler, 2012). Görg & Greenaway, 2004 and Meyer, 2004, opined that knowledge effect takes place via movement of labour and domestic firms trying to imitate the product innovation of foreign firms. The horizontal spillover also occurs through the employment of local labour and the training provided to the labourers (Calvo & Hernandez, 2006; Meyer, 2004). This improves the extent of human capital and the welfare of the worker in the host countries. The improvement in human capital has two impacts on the welfare of labour. Firstly, it improves the quality of human capital for the local labour. Secondly, the workers are paid competitive wages (Borensztein et al., 1998). The vertical spillover, in line with Meyer (2004), results from the interaction between the overseas companies and economic agents in the host country.

b) Theory of Eclectic Paradigm

This paper adopts the theory of eclectic paradigm developed by John Dunning (1993). The theory combines the main components that are significant to other assumptions of FDI; Location-specific advantages (L), Internalization advantages (I), and Ownership-specific advantages (O) (Aladelusi & Olayiwola, 2021). According to them, the latter refers to those assets of a firm that allow successful competition in foreign markets despite lack of knowledge and the costs of setting up of a subsidiary abroad. Right advantage must be present in a host country that is sufficient enough to counter challenge competition with firms in their home country (Sean-Leigh, 2007 cited in Aladelusi & Olayiwola, 2021). This also explains the benefits in terms of effective productivity and marketing and at the same time having foreign competitive advantage over local companies. On the other hands, location advantages involve those benefits that a host country can offer a business. These include large markets, good infrastructure, low labour or production costs or both. In the view of Wall & Ress (2004) as cited in Aladelusi & Olayiwola (2021), there must be rise in profits from exploiting a firm's ownership advantage in a distinguished

location than its local market and thereby leading to either cultural, economic, or market prospects benefits. Internalization advantage involves transaction-costs, and arises when it is cheaper to exploit ownership and location advantages through FDI rather than exporting. With internalization, companies have ample opportunities to fully exploit the ownership advantage which emanate from the know-how of advertising and marketing a commodity. Succinctly, internalization and ownership advantages are investor specific determinants while the location advantage is specific to the host country (Aladelusi & Olayiwola,2021). Succinctly, internalization and possession benefits are investor unique determinants whilst the place gain is unique to the host country (Aladelusi & Olayiwola, 2021).

2.3 Empirical Literature

FDI helps to boost economic activities in the country, thereby raising the standard of living of populace. It provides critical resources to developing countries such as technology, managerial skill, and entrepreneurial ability and fills the gap between the locally accessible funds, foreign exchange and revenue generated by government. There are so many literature that establishes the link between FDI and Poverty. For instance,

Adeolu (2007) explored empirically the relationship between FDI and economic growth in Nigeria using the ordinary Least Square estimation technique. The results showed that FDI in Nigeria induces the nation's economic growth. Notwithstanding, the all-round effect of FDI on the whole economy may not be significant, some factors of FDI positively affect economic growth and needs to be encouraged. Omorogbe (2007) also carried out a uniform study to investigate the impact of FDI on poverty reduction in Nigeria. He used per capita GDP as a proxy for poverty and an ordinary least square regression method, the outcome showed an average performance of FDI on per capita GDP in Nigeria.

Okpe and Abu (2009) investigated the nexus between foreign direct investment and poverty reduction in Nigeria from 1975 to 2003 using regression analysis for the period, they discovered that inflow of foreign direct investment and foreign loans into Nigeria alleviate poverty. Gohou and Soumare (2012) examined how foreign direct investment reduces poverty in Africa and if there are regional differences. They carried out their analysis using FDI net inflows per capita, the United Nation Development Program's and Human development index as the principal variables, it was discovered that there is a strong, positive and significant relationship between FDI net inflows and poverty reduction among African regions. It was also discovered that FDI has a significant impact on welfare in poor countries than it does in advanced countries.

Olusanya (2013) examined the impact of Foreign Direct Investment inflows and economic growth in a pre and post deregulated Nigerian economy from 1970 - 2010 using a Granger causality test. The result of the causality test showed that there is causality relationship in the pre-deregulation era that is (1970-

1986) from economic growth (GDP) relative to foreign direct investment (FDI) inflows, which means that GDP drives FDI, but there is no causal relationship in the post deregulation era which is (1986-2010) between economic growth (GDP) and inflow of foreign direct investment (FDI) which means GDP causes FDI. However, between 1970 and 2010 it showed that there is causality relationship between economic growth (GDP) and foreign direct investment inflow (FDI). This means that economic growth induces foreign direct investment inflow into the country.

Adesiyan (2014) studied the impact of foreign direct investment on poverty reduction in Nigeria from 1980 to 2009, the ECM-based estimation results showed that, while poverty reduction is positively correlated with FDI, government expenditure and infrastructure, it is negatively correlated to inflation, national debts and human capital. Simon-Oke (2014) in his study on foreign private investment, capital formation and poverty reduction in Nigeria using co-integration and error correction mechanism (ECM) and granger causality tests with annual time series data covering the period between 1978 and 2008, discovered that FDI in Nigeria has not significantly contributed to poverty alleviation in Nigeria. Ogunniyi and Igberi (2014) studied the relationship between FDI and poverty reduction in Nigeria spanning 1980 to 2012. Using time-series secondary data, Ordinary Least Square technique were employed. The results showed that FDI has a positive but not significant impact on real per capita income and hence does have the potential of reducing poverty in the country. Fowowe and Shuaibu (2014) carried out an empirical investigation on foreign direct investment (FDI) inflows and poverty in some selected African economies using system generalized method of moment, it was discovered that FDI inflows have significantly contributed to poverty reduction in African countries. The result also showed that better institutional quality and human capital development are associated with reducing poverty and better functional financial systems enhance the efficiency of FDI in reducing poverty. Adigun et.al (2021) analyzed the impact of FDI on poverty reduction in Nigeria. The result showed that FDI has a significant negative effect on poverty reduction in Nigeria in the short run.

3. METHODOLOGY

This study employed annual secondary data between 1991 and 2020. The data were collected from Central Bank of Nigeria (CBN), NBS statistical database and World Development Indicator database.

3.1 Model Specification

The main focus of this study is to examine the impact of foreign direct investment on poverty reduction in Nigeria. From our literature review, the model is hereby specified following the work of Fowowe and Shuaibu (2014) with some modifications in a functional form as follows:

PHCR = f(FDI,REXR, GFCF) …… (1)

Where:

PHCR - Poverty head count ratio

FDI - Foreign direct investment

REXR - Real Exchange rate.

GFCF – Gross fixed capital formation

The econometric form of this model is therefore specified thus;

$PHCR_t = \beta_o + \beta_1 FDI_t + \beta_2 REXR_t + \beta_3 GFCF_t + U_t$……(2)

Where: u_t is the error term that is assumed to be normally distributed with the mean of zero and constant variance; β_0 = Constant term/intercept; β_1 ; β_2; β_3; = Slope coefficient.

3.2 Estimation Technique

The study employed the Autoregressive Distributed Lag (ARDL) technique to examine the relationship between foreign direct investment and poverty reduction in Nigeria. Autoregressive Distributed Lag (ARDL) is a long-established method of estimating co-integrating relationships, such as Engle-Granger (1987) method which requires all variables to be order on I(1), or require specification and prior knowledge of which variables are order zero I(0) and order one I(1). To solve this problem, Pesaran and Shin (1999) showed that co-integrating systems can be estimated as ARDL models, with the advantage that the ARDL cointegration technique is adopted irrespective of whether the underlying variables are I(0), I(1) or a combination of both, and cannot be applied when the underlying variables are integrated of order I(2). However, to avoid crashing of the ARDL technique and effort in futility, it is advisable to tests for unit roots since variables that are integrated of order I(2) leads to the crashing of the technique. In order to establish a long run relationship among the variables the first thing to do is to check the existence of the long run relation between the variables under investigation by computing the Bounds F-statistic (bounds test for cointegration).

$$\Delta \ln PHCR = \alpha_0 + \sum_{i=1}^{p} \alpha_{1i} \Delta \ln PHCR_{t-1} + \sum_{i=1}^{q} \alpha_{2i} \Delta \ln FDIt\text{-}1 + \sum_{i=1}^{q} \alpha_{3i} \Delta \ln EXRt\text{-}1 + \sum_{i=1}^{q} \alpha_{4i}$$

ΔlnGFCFt-1 + α5lnPHCRt-1 + α6lnFDIt-1 + α7lnEXRt-1 + α8lnGFCFt-1 + μt …….(3)

Where,

Δ is the first difference operator, p is the optimal lag length for the dependent variable, q is the optimal lag length for the regressors, α_1,α_2,α_3…… α_5 represent short-run dynamics of the model, α_6, α_7, α_8, α_9 and α_{10} represent the long-run elasticity.

4. DATA ANALYSIS AND DISCUSSION OF RESULT

4.1 Test for Stationarity

Table 1: Summary of ADF Unit Root Test

Variables	ADF Statistics	Probability	Order of Integration
PHCR	-5.189369	0.0010	1(1)
FDI	-3.797586	0.0313	1(0)
EXR	-4,445635	0.0062	1(1)
GFCF	-4.420121	0.0014	1(1)

Source: Author's computation using E-views 10

The first step to analyze time series data is to ensure the variables are stationary so as to avoid spurious regression. To do this, ADF unit root test was conducted and the result is shown in the table above. From the result, poverty head count ratio (PHCR), exchange rate (EXR) and gross fiscal capital formation (GFCF) are stationary at first difference that is, they are integrated of order 1(1) while foreign direct investment is stationary at levels, that is, integrated of order zero I(0). In order to test for cointegration among the variables, bound test was carried out through autoregressive distributed lag model (ARDL) as proposed by Pesaran et al (2001).

4.2 COINTEGRATION TEST

Table 2: Summary of ARDL Bounds Test

Null Hypothesis:Long-run relationships exist

Test Statistic	value	k
F-statistic	3.658011	3
Critical value bounds		.
Significance	10 Bound	11 bounds
10%	2.37	3.2
5%	2.79	3.67
2.5%	3.15	4.08
1%	3.65	4.66

Source: Author's computation using E-views

The result of the ARDL Bounds test is presented in table 2. From the result, the F-Statistic of 3.658011 is greater than 1(0) value of 2.79 at 5 per cent level of significance. This shows that there is a long run relationship among all the variables; therefore we reject the Null Hypothesis. Based on this, the Short run ARDL model was conducted and the result is presented in table 3.

4.3 ARDL MODEL RESULT

TABLE 3: SUMMARY OF ARDL RESULT

Dependent Variable: PHCR
Method: ARDL
Date: 07/08/22 Time: 12:07
Sample (adjusted): 1989 2020
Included observations: 32 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): FDI GFCF REXR
Fixed regressors: C
Number of models evalulated: 500
Selected Model: ARDL(4, 4, 4, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
PHCR(-1)	0.307006	0.224280	1.368853	0.1912
PHCR(-2)	-0.084875	0.167291	-0.507350	0.6193
PHCR(-3)	-0.115336	0.128853	-0.895101	0.3849
PHCR(-4)	-0.124842	0.077492	-1.611037	0.1280
FDI	5.37E-11	7.25E-11	0.740133	0.4706
FDI(-1)	-8.57E-11	6.20E-11	-1.383906	0.1866
FDI(-2)	-1.22E-10	7.35E-11	-1.655689	0.1186
FDI(-3)	-8.89E-11	6.91E-11	-1.286383	0.2178
FDI(-4)	-8.06E-11	6.85E-11	-1.177095	0.2575
GFCF	-3.55E-12	1.15E-11	-0.307295	0.7628
GFCF(-1)	2.20E-11	1.53E-11	1.436778	0.1713
GFCF(-2)	-2.41E-11	1.46E-11	-1.650699	0.1196
GFCF(-3)	1.37E-11	1.71E-11	0.798364	0.4371
GFCF(-4)	4.85E-11	1.98E-11	2.448543	0.0271
REXR	-0.004357	0.004390	-0.992324	0.3368
REXR(-1)	-0.009073	0.004999	-1.814861	0.0896
C	1.436709	0.477777	3.007067	0.0088

R-squared	0.921274	Mean dependent var	1.009783
Adjusted R-squared	0.837299	S.D. dependent var	0.732779
S.E. of regression	0.295575	Akaike info criterion	0.705025
Sum squared resid	1.310467	Schwarz criterion	1.483697
Log likelihood	5.719600	Hannan-Quinn criter.	0.963133
F-statistic	10.97088	Durbin-Watson stat	2.833029
Prob(F-statistic)	0.000015		

*Note: p-values and any subsequent tests do not account for model selection.

Source: Author's Computation using Eview

The above result indicates that poverty head count ratio, foreign direct investment, GFCF and real exchange rate are not statistically significant at 5 percent level of significance since their

P-values are greater than 0.05. Also, the lag value of gross fiscal capital formation is statistically significant and has a negative effect on poverty head count ratio. If foreign direct investment, gross fiscal capital formation and real exchange rate changes by 1%, poverty head count ratio increases by 5.37% for

foreign direct investment while it decreases by 3.55% and 0.0% for gross fiscal capital formation and real exchange rate respectively. The R-squared in this result shows that foreign direct investment, gross fiscal capital formation and real exchange rate has 92% explanatory power on poverty head count ratio which is our dependent variable. While the adjusted R- squared is approximately 0.84. This implies that all the independent variable namely, foreign direct investment, gross fiscal capital formation and exchange rate explains about 84% variations noticed in the poverty head count ratio. The F- statistics is to know the overall significance of the model. The probability of F-statistics is 0.000015 which indicates that the model is statistically significant. The durbin watson statistics result (DW) is 2.83 indicating there is no presence of autocorrelation in the model.

4.4 Diagnostic Tests

This subsection shows the results of the residual diagnostic tests conducted after estimation. **4.4.1 Serial Correlation Test**

Table 4: Breush-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	7.813965	Prob. F(2,13)	0.0059
Obs*R-squared	17.46874	Prob. Chi-Square(2)	0.0002

Source: Author's computation using E-views 10

From the result in table 4, the F-Statistic and Obs*R-squared values of 7.813965 and 17.46874 with p values of 0.0059 and 0.0002 respectively are lesser than the critical values of 0.05 level of significance. Hence, we conclude that there is serial correlation in the model.

4.5 Heteroscedasticity Test

Table 5: Heteroscedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.007297	Prob. F(16,15)	0.4966
Obs*R-squared	16.57423	Prob. Chi-Square(16)	0.4137
Scaled explained SS	3.006183	Prob. Chi-Square(16)	0.9998

Source: Author's computation using Eviews 10

The P values of F-statistics and Obs* R- squared are greater than the critical value of 5% level of significance. It means that the model is free from heteroscedasticity, that is, the mean, variance and covariance are constant over time.

4.6 Stability Test

To test whether the model is stable or not, both the cumulative sum and the cumulative sum of squares tests are conducted.

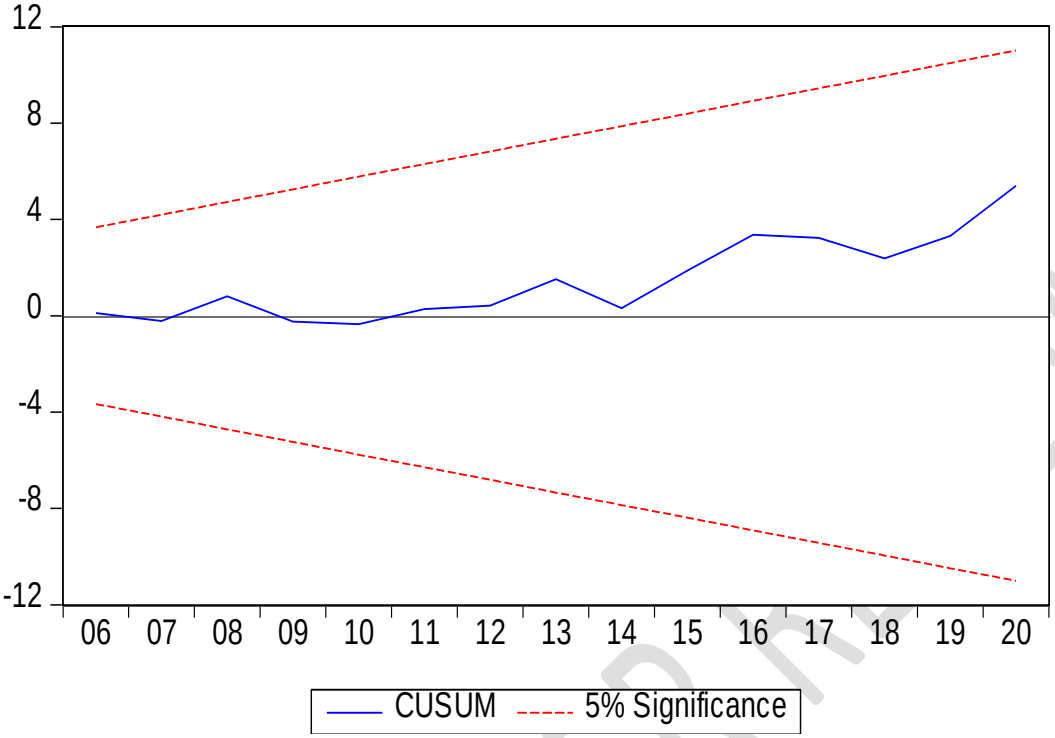

Figure 1 Plot of Cumulative sum

Source: Author's computation using E-view

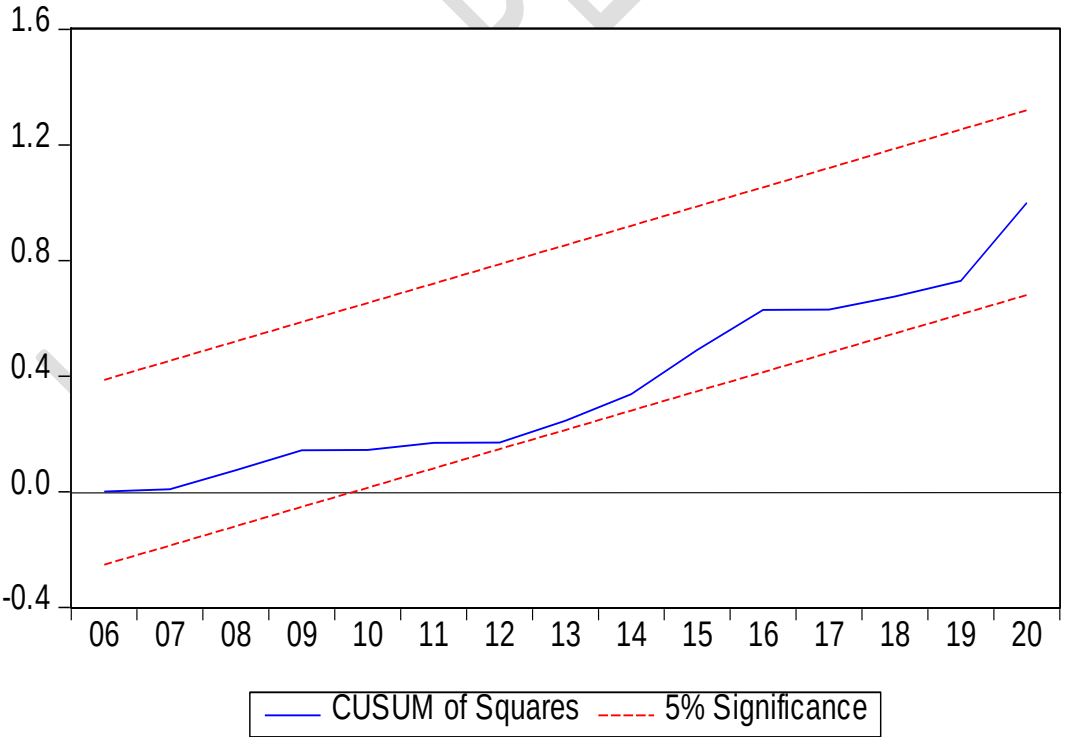

Figure 2: Plot of cumulative sum of squares

The result in figure 1 which is cumulative sum shows that the model and the estimated parameters are stable because the graph moves within the 0.05 critical values. Likewise, cumulative sum of squares test in figure 2 shows that the model and the estimated parameters are largely stable throughout the period under investigation since the blue line curves within the red lines indicating 5% level of significance.

5. CONCLUSION AND RECOMMENDATIONS

This paper examined the impact of foreign direct investment in driving one of the key goals of sustainable development-poverty reduction in Nigeria. In achieving the objective of this study, annual data between 1985 and 2020 were utilized with the application of autoregressive distributed lag (ARDL) model for its empirical analysis. The results show that FDI has a negative impact on poverty and hence does not reduce poverty in the country. Also, lag value result indicates that gross fiscal capital formation has a significant impact on poverty head count ratio in Nigeria. Moreover, out of the majority of the components of foreign direct investment only GFCF contributed immensely to the reduction of poverty in Nigeria. This implies that FDI have little capacity to propel the achievement of Sustainable Development Goal one - poverty reduction in Nigeria. Finally, the result of ARDL Bounds test shows that there is a long run relationship among all the variables. Thus, it is important for this study to make the following recommendations for the policymakers in Nigeria. The fact that FDI does not contribute to poverty reduction has an important implication for policy makers, especially trade and FDI policies must be checked closely in order to make FDI growth enhancing in Nigeria. Also, government should encourage gross fixed capital formation to reduce poverty in Nigeria.

REFERENCE

1. Abidemi, C.; Adegboye, A.; Ogbebor, O. & Egharvba, M. I. (2014). External capital flows and economic growth in Nigeria. Journal of Research in National Development, 12 (2).
2. Adebayo, B. (2018). Nigeria overtakes India in extreme poverty ranking. https://edition.cnn.com/2018/06/26/africa/nigeriaovertakesindiaextreme-poverty-
3. Adekunle, W. (2018). A Re-examination of the Relationship between Foreign Capital Flows and Economic Growth in Nigeria. Journal of Economics and Sustainable Development, 9(9), 33-48.
4. Adeola, O. O. (2017). Foreign capital flows and economic growth in selected Sub-Saharan African economies. Dissertation presented for the degree of Doctor of Philosophy in Development Finance, Faculty of Economics at Stellenbosch University.
5. Adeolu, B. A. (2007). FDI and Economic Growth: Evidence from Nigeria. *African Economic Research Consortium (AERC) Paper 165 Nairobi.*
6. Aderemi, T. A.; Amusa, B. O.; Elufisian, O. O. & Abalaba, B. P. (2020). Does Capital Flight Move Nigeria to the World`s Poverty Headquarters? An Implication for Sustainable Development.

Journal of Academic Research in Economics, 12(1), pp. 31-44.

7. Adesiyan, O.I. (2014). Impact of foreign direct investment on poverty reduction in Nigeria, (1980-2009). *Journal of Economics and Sustainable Development, 5(20): 34-45.*

8. Adigun, A.O., & Oke, D.F. (2021). Poverty reducing impact of Foreign direct investment in Nigeria, *Journal of Research in National development,(JORIND), 16(1).*

9. Anigbogu, T. U; Edoko, T. D & Okoli, I. M (2016).Foreign Direct Investment and Poverty Reduction in Nigeria. International Journal of Business and Management Invention, 5(6), 19-28

10. Akubueze, G.I. (2020). Foreign Domestic Investments on the performance of entrepreneurship development in South-East, Nigeria. *International Journal of Innovative Social Sciences & Humanities Research,* 8 (4), pp. 118-130.

11. Aladelusi, K.B.,& Olayiwola, H.O.(2021). Foreign direct investment and employment generation in nigeria. Canadian Social Science, 17(1), 16 - 24.

12. Babasanya, A.O. (2018). Foreign direct investment and employment generation in Nigeria. *Journal of Economics and Sustainable Development,* 9 (4), pp. 42-47.

13. Borenzstein, E.J; Jong, L. (1998). "How does Foreign Direct Investment Affect Economic Growth?"Journal of International Economics, Volume 45, pp. 115-135.

14. Calvo, C. C and Hernandez, M. A. (2006). Foreign Direct Investment and Poverty in Latin America. In Fifth Annual Postgraduate Conference (p. 14). University of Nottingham.

15. Engle,R.F., and Granger, G.W (1987). "Co- integration and Error Correction: Representation, Estimation and Testing".Econometerica,55:251-276

16. Farole, T and Winkler, D. (2012). Foreign firm characteristics, absorptive capacity, and the institutional framework: The role of mediating factors for FDI spillovers in low-and middle-income countries. The World Bank.

17. Fowowe, B., & Shuaibu, M.I. (2014). Is foreign direct investment good for the poor? new evidence from African countries. Eco Change Restruct, vol. 47.

18. Görg, H and Greenaway, D. (2004). Much ado about nothing? Do domestic firms really benefit from foreign direct investment? The World Bank Research Observer, 19(2), 171–197. https://doi.org/10.1093/wbro/lkh019

19. Gohou, G., & Soumare, I. (2012). Does foreign direct investment reduce poverty in Africa and are there regional differences? World Development, Volume. 40

20. Ikiara, M. M. (2003). Foreign Direct Investment (FDI), Technological Transfer and Poverty Alleviation: Africa's Hopes and Dilemma. ATPS Special Paper Series No. 16.

21. Koopmans, T. C. (1965). On the concept of optimal economic growth. In Econometric approach to development planning (pp. 1–76). North-Holland Publishing

22. Louis Kouamé Caningan (2012). Foreign Direct Investment and sustainable development. The case of Côte d'Ivoire »

23. Lucas, R. (1988). The Mechanisms of Economics development. Journal of Monetary Economics, 80, 155-173

24. Meyer, K. E. (2004). Perspectives on multinational enterprises in emerging economies. Journal of International Business Studies, 35(4), 259–276.

25. National Bureau of Statistics, 2020

26. Ogunniyi, M. B., & Igberi, C. O. (2014). The Impact of Foreign Direct Investment on Poverty Reduction in Nigeria. *Journal of Economics and Sustainable Development*, 5(14), 73-83.

27. Okafor, J. (2019). Accessing threshold issues in the impact of Foreign Direct Investment on economic growth: Evidence from Sub-Saharan African countries. *Amity Journal of Economics,* 4 (1), pp. 49-64.

28. Oke, S., & Olayemi, O. (2014).Foreign Private Investment, Capital Formation and Poverty Reduction in Nigeria. *European Journal of Business and Social Sciences*, 2(10), 157-168.

29. Okpe, I. J., & Abu, G. A. (2009). Foreign Private Investment and Poverty Reduction in Nigeria (1975 to 2003). *Journal of Social Sciences*, 205-211.

30. Oloyede, B.B. (2014). Effect of Poverty Reduction Programmes on Economic DevelopmentEvidence from Nigeria. *Arabian Journal of Business andManagement Review*, 4(1),26-37.

31. Olusanya, S.O. (2013). Impact of foreign direct investment inflow on economic growth in a pre and post deregulated Nigeria economy. A granger causality test (1970-2010). *European Scientific Journal, 9(25): 335-355.*

32. Omoniyi, M.B.(2013).The Role of Education in Poverty Alleviation and Economic Development: A Theoretical Perspective and Counselling Implications. *British Journal of Arts and Social Sciences*, 15(2), 176-185.

33. Omorogbe, V.O. (2007). Foreign Direct Investment and Poverty Reduction in Nigeria. *Journal of Research in National Development, 5(2)*

34. Pesaran, B. and Pesaran, MH. 2009. Time-series Econometrics Using Microfi*t 5.0*. Oxford University Press, Oxford.

35. Pesaran, MH., Shin, Y and Smith, RJ. 2001. Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics 16(3), 289-326. https://doi.org/10.1002/jae.616

36. Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. The Quarterly Journal of Economics, 70, 65-94. https://doi.org/10.2307/1884513

37. Todaro, M.P., & Smith, S.C. (2003), Economic Development. Pearson Education Limited, 2003.

38. World Poverty Clock (2018). https://worldpoverty.io/headline/.

39. World Bank Group (2021). Africa Western & Central Nigeria. Poverty data.worldbank.org