IMPACT OF OVERSEAS DEVELOPMENT ASSISTANCE ON ECONOMIC GROWTH IN NIGERIA (1981-2021)

Peace Onyeyiri Aganbi[1] and Asheikh Alhaji Maidugu[2*]

[1]Department of Economics, Baze University, Abuja, Nigeria.
Email: aganbipeace1@gmail.com

[2]Department of Economics, Baze University, Abuja, Nigeria.
Email: asheikh.maidugu@bazeuniversity.edu.ng

[*]Corresponding Author's Email: asheikh.maidugu@bazeuniversity.edu.ng

ABSTRACT: *Nigeria currently has the largest economy in Africa with a GDP of $477.38 billion (Michael, 2023). However, the country's great fortune, which is majorly driven by petroleum exports, has not successfully translated into a sustained economic development, as the nation continues to endure widespread poverty and income inequality for decades due to many contributing factors, including rapid population growth, low standard of education, and corruption. Consequently, Nigeria has looked to Overseas Development Assistance (ODA) as one of many means to address its economic problems, and this ODA phenomenon has raised debates among scholars with regards to its positive or negative impact, and the significance of such impact on the Nigerian Economy. This study investigated the amount of ODA received by Nigeria for the period 1981-2021, and the changes that such assistance has effected on the GDP of the nation. The study examined the empirical research by other scholars, for the same study, under a spectrum of economic, geographic and political climates. The Auto Regressive Distributed Lag (ARDL) Bounds Cointegration Test and the Granger Causality test were adopted for this study, and the results revealed that ODA impacted Nigeria's GDP significantly and positively in the period of study. This study therefore recommends that the Federal Government of Nigeria, as well as other stakeholders, should pursue and maintain more favourable relationships with the international multilateral and bilateral donors, in order to boost economic growth in Nigeria.*

KEYWORDS: Overseas Development Assistance, Economic Growth, Foreign Direct Investment, Nigeria.

INTRODUCTION

Nigeria's economy grew rapidly in the early 1970s by more than 1000%, as the prices of petroleum heightened in the wake of the Arab-Isreali (Gulf) war, an opportunity that should have hoisted Nigeria on the path of a lasting economic growth and fostered the nation's development (Worldometer, 2023). Rather, by 1994, the Nation's per capita GNP had plunged by 70% at $240 with a population growth rate of 3% per annum, adding 3.7 million people every year (Todaro & Smith, 2003). The World Bank (2022) data shows that Nigeria's current population is over 211 million with an average GDP growth rate of 2.64% between 2011 and 2022 while the nation's per capita GDP remains low at 2421.62 USD in 2021 (Trading Economics, 2022), as poverty, significant inequality of wealth, and high unemployment persist in Nigeria alongside other developmental inadequacies in healthcare, education, and infrastructure. Hence, in addition to the other economic policy measures employed by the leadership of Nigeria, the nation has also turned to international aid as a means of stimulating the economy, in an attempt to alleviate poverty and promote growth.

Overseas Development Assistance (ODA) is defined by Odedokun (2003) as the development-motivated official foreign grant or loan from developed to developing countries, which are concessional in nature, being that the grant element of the loans, evaluated on 10% discount rate, is not less than 25% of the loan's face value. Todaro and Smith (2003) also define foreign aid as a general term for both "public (official) bilateral or multilateral development assistance and private (unofficial) assistance provided by non-government organizations." The OECD (2021) defines ODA as government financing given to developing countries, to promote economic development and welfare of the recipient countries of which the resources provided can be disbursed through the government of the recipient country or through other organizations.

ODA is traditionally provided by the International Aid System (IAS), which consists of the 38-member countries of the OECD, the European Commission, The United Nations (UN), The World Bank, and The International Monetary Fund (IMF) (Development Initiatives, 2012). These organisations have done a lot of work in providing foreign aid to the poor nations of the world, but certainly in exchange for cultural, political and moral influence on their beneficiaries, thereby enjoying absolute economic and social power in those regions for many years (Gilpin, 2021).

However, other non-traditional aid providers who do not belong to the OECD, such as China (OECD, 2015) and Brazil (OECD, n.d.), have emerged in more recent years. China, in particular, according to Carter (2017), has become a big player in the foreign aid sector and is now considered an alternative to the traditional aid system, engaging majorly in bilateral aid relationships with its beneficiary countries, including Nigeria (Carter, 2017).

Although there are many tentacles to the elements that generate growth in an economy, ReCom position paper by UNU WIDER (2014) suggests that the receipt of foreign aid, which is equal to 10% of a country's GDP over a sustained period, will boost growth by approximately 1% on average. Arndt et al. (2013) also found that aid in the long term stimulated growth, produced structural change, improved social indicators and alleviated poverty over a 40-year period. It has also been argued by Gates and Gates (2014) that "foreign aid is a phenomenal investment.

Foreign aid does not simply save lives; it also lays the groundwork for lasting, long-term economic progress." Contrary to the opinions above, however, Peter Bauer argues that foreign aid not only fails to speed up growth in a developing economy but actually hurts it (Shleifer, 2009). A more recent report by UNU-WIDER also presented mixed results whereby, in some cases, foreign aid is growth enhancing but, in other cases, has no effect on growth. This lack of a significant empirical effect of aid on economic growth was attributed to the fact that development assistance is provided for a number of different reasons, including: recipient need, recipient merit, and donor self-interest (Hoeffler & Justino, 2003).

According to World Bank's data, Nigeria has received over US$3 billion of ODA in grants, concessional loans, debt cancellations, technical assistance, equipment supply, skill transfer, etc. (TheGlobalEconomy.com, 2021). Anther information from Nigeria's Minister of State for Budget and National Planning, Mr. Clement Agba reveals that Nigeria received US$26.942 billion from foreign donors between 2015 and 2020 (Abuh, 2020).

This paper intends to achieve three objectives. First, it shall attempt to examine the relationship between ODA and economic growth in Nigeria. Second, it shall show the relationship between FDI and economic growth in Nigeria. Third, it shall determine the causal relationship between ODA and economic growth in Nigeria.

For studying the relationship between ODA and economic growth in Nigeria, we test the following hypotheses:

Hypothesis 1
H_0: ODA has no significant impact on economic growth in Nigeria.
H_1: ODA has a significant impact on economic growth in Nigeria.

Hypothesis 2
H_0: FDI has no significant impact on economic growth in Nigeria.
H_1: FDI has a significant impact on economic growth in Nigeria.

Hypothesis 3
H_0: There is no causal relationship between ODA and economic growth in Nigeria.
H_1: There is a causal relationship between ODA and economic growth in Nigeria.

The rest of the paper is organised as follows: Section 2 discusses the review of the relevant literature, Section 3 states the methodology and the model of the study and Section 4 contains a brief discussion of the data. The result of the study is presented in Section 5 and Section 6 contains the conclusion and recommendations.

LITERATURE REVIEW

There have been a number of studies that investigated the relationship between ODA and economic growth in a number of countries. The result from these studies are diverse and to a large extent indicated mixed results, though most of the findings were widely skewed in the affirmative. These studies are briefly summarised in this section of the paper.

Theoretical Review

The relevant theories that explain the relationship between ODA and economics growth in the literature have been reviewed by several studies. The discussion in this section presents the Two-Gap theory and the Big Push theory. These two theories attempt to explain the relationship between ODA, investment in infrastructure and human capital development in the growth process.

The Two-Gap Theory

This theory seeks to justify foreign aid as a requisite for a sustainable economic growth, industrial development, and eradication of poverty. According to the theory, foreign exchange reserves and domestic savings are the two main constraints on economic expansion. The savings gap, explained as the difference between domestic saving and the necessary investment needed to attain a specific level of growth, is the first gap this theory describes. The second is the foreign exchange earnings gap, which is the difference between the amount of imports needed to reach specific output levels and the foreign exchange earnings. The Two-Gap theory states that foreign aid bridges the foreign exchange and savings gaps (Kassim & Beceren, 2022).

The Big Push Theory

The big push theory was developed in the 1940s and is regarded as one of the earliest theories of development economics. The theory provided an explanation of how poor countries can achieve industrial development by accumulating the required capital resources. Studies have shown that developing countries lack the capital required that will jump-start economic development and lead to sustained economic growth. Thus, the Big Push theory became the justification for ODA. Then, as now, there were economists who advocated a big push involving a combination of a large increase in aid, and a simultaneous increase in investment in numerous sectors, leading to economic growth and poverty reduction (Easterly, 2006). The Big Push theory's central proposition is that only massive, expansive investment projects have the capacity to promote or facilitate economic expansion. This implies that in order for an under performing economy to recover, a certain amount of funds must be set aside and committed to development initiatives (Kassim & Beceren, 2022). The Big Push theory also emphasizes the importance of savings and capital to economic growth. The theory further acknowledges the vicious cycle of poverty, which keeps poor countries trapped and can only be broken through foreign aid (Kassim & Beceren, 2022).

There were economists who advocated a "Big Push" to get countries out of a "poverty trap," foreign aid to fill the "Financing Gap," and action on all fronts through comprehensive "planning." According to Sachs (2005), the role of foreign aid is to increase the capital stock enough to cross the threshold level (the Big Push): "If the foreign assistance is substantial enough, and lasts long enough, the capital stock rises sufficiently to lift households above subsistence…Growth becomes self-sustaining through household savings and public investments supported by taxation of households."
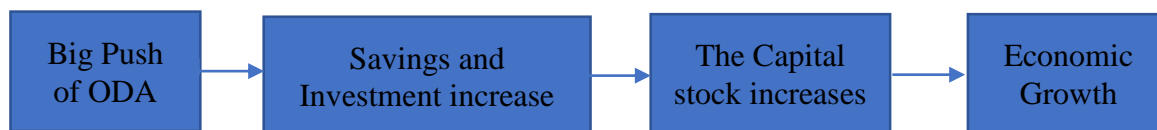
Figure 1: The Relations between a Big Push of ODA, Capital Stock and Economic Growth
Source: Adapted from Sachs (2005).

Theoretical Framework

The theoretical framework for this study is the Big Push theory (Rosenstein-Rodan, 1943; 1961). The theory specifically and directly identifies foreign aid as the solution for filling the savings and foreign currency gaps in the economy, thereby stimulating economic growth. ODA raises the inflow of capital and increases household incomes by acting as an income transfer. ODA has different purposes and runs through different channels. For instance, humanitarian and food aid goes directly to households while development aid mainly finances government budgets and public investments (Sachs, 2005).

Theoretically, a big push of ODA and investment in infrastructure should lead to economic growth. In fact, according to Kilman and Lundin (2014), many studies have documented the positive relationship between ODA and economic growth in many countries. (See, e.g., Burnside & Dollar, 2000; Hansen & Tarp, 2001; Dalgaard & Hansen, 2010; Collier & Dollar, 2002; Clemens et al., 2004.) However, some argue that this result is conditioned on a good policy environment (See, e.g., Burnside & Dollar, 2000; Collier & Dollar, 2002.)

Empirical Review

There are ample empirical studies on the relationship between ODA and economic growth in developing countries including Nigeria. Scholars have employed different models to investigate and analyze this relationship as summarised in the following subsections.

Overseas Development Assistance and Economic Growth

Using time series data on official development assistance and economic growth from 1986 to 2018, Farahmand (2021) studied the relationship between economic growth and foreign aid in Afghanistan. The series' stability was assessed using the Phillips-Perron (PP) unit root test and the Augmented Dickey-Fuller (ADF) test. The scholar also employed the Granger causality test, which was predicated on the error correction model, to assess the causality between variables, and the Johansen co-integration test to ascertain whether the variables in question had a long-term relationship. The study found that foreign aid plays a significant role in the eradication of poverty and that there is a positive relationship between it and economic progress.

Ugwuanyi, Ezeaku, and Ibe (2017) used the ARDL and error correction model (ECM) to estimate the long-run and short-run dynamics, respectively, in order to evaluate the effect of official aid on the reduction of poverty in Nigeria from 1981 to 2014. To check for a long-run relationship between the model's variables, they used the bound test. The outcome of the bound test demonstrated that government aid flows and poverty have a long-run relationship.

According to the estimations of both short- and long-term regression, official assistance has a non-significant positive effect on reducing poverty during the given period.

Ugwuegbe et al. (2016) investigated the effects of ODA on the development of the Nigerian economy over a period of 34 years (1980 to 2013) using the Ordinary Least Squares (OLS) method, and their result showed that foreign aid was positively correlated with GDP. However, the correlation between the two variables was statistically insignificant.

Azam, Haseeb and Samsudin (2016) empirically analyzed the impact of foreign remittances along with some other variables like foreign aid, debt, human capital, inflation, and income on poverty alleviation in 39 countries, including the lower middle, upper middle, and high-income countries. They did this using data covering the period of 1990-2014 and the Panel fully modified OLS (FMOLS) method. According to the FMOLS estimations, poverty did decline as income increased. Remittances from abroad helped reduce poverty, although their effects were only statistically significant in higher middle-income nations. The results also showed that debt and foreign aid had positive effects on poverty, suggesting that both variables have a positive role in the spread of poverty.

Foreign aid had a positive but insignificant effect on investment in Kenya, according to Ojiambo's (2013) analysis using ARDL estimation procedure, and time series data covering the years 1966 to 2010. The explanatory variables included real per capita income, private investment, foreign aid, tax revenue, policy index, aid predictability index, foreign debt, and the interaction between aid and policy index as well as the interaction between policy index and aid predictability index.

Fasanya and Onakoya (2012) also examined the effects of foreign aid on economic growth in Nigeria between 1970 and 2010, and their study involved a combination of various strategies from contemporary econometric estimating methods. Their research shows that official assistance flows had a major impact on economic growth in Nigeria. Domestic investment increased as a result, showing that assistance flows provide free resources to boost domestic investment.

Background of Overseas Development Assistance in Nigeria

Overseas Development Aid to Nigeria dates back to 1960, soon after the nation's independence. One of the earliest notable foreign assistance to Nigeria was the United States of America's Government grants, given to four major U.S. State Universities: Colorado State, Kansas State, Wisconsin State, and Michigan State, for the purpose of building Colleges of Agriculture in selected Nigerian Universities, namely, the University of Ibadan, University of Ife, University of Nigeria, Nsukka, and Ahmadu Bello University, Zaria (USAID, n.d.). USAID also donated about $343 million in logistical support and commodities to displaced people fleeing from the unrest at North-Eastern Nigeria, for their feeding, access to basic health needs and human rights (U.S. Mission Nigeria, 2021).

Sino-Nigeria relations, was also formally established in 1971, and China's ODA to Nigeria began in 1973 in form of grants, concessional loans, and technical assistance. Nigeria has continued to benefit from China's cheaper credit loans for infrastructural advancements, their

strategic partnerships in development projects, and technology transfer. Some of the major development aid provided by China to Nigeria include: $500 million loan agreement between China and Nigeria in 2012 for Airport Terminal construction in Abuja, Kano, Port Harcourt and Enugu. Earlier in 2009, a N107.4 million agreement was made between the Nigerian government and the Chinese government to construct four rural primary schools in Katsina, Kaduna and Ogun States, and the Federal Capital Territory (FCT). The project eventually cost N500 million naira and the Chinese government spent about N308 million.

The United Kingdom (UK) has been one of the major providers of ODA to Nigeria, although their assistance is not directly given to the Nigerian government, but mainly channeled through the Non-Governmental Organisations (NGOs), up to 70%, while the other 30% of UK aid are delivered through multilateral organisations, e.g., the World Bank (Internet Geography, 2022). Some of the areas of support from the UK to Nigeria include: health services, access to clean water and sanitation, access to modern family planning, child education, humanitarian interventions in crisis regions, etc. (DFID, 2017).

Some other major sources of foreign aid to Nigeria over the years include the multilateral agencies: The World Bank, the European Union (EU), the United Nations (UN), the IMF, etc. The World Bank has amassed a foreign aid portfolio of about $8.5 billion, dispensed across Nigeria, including humanitarian and developmental support to the crisis region of North-Eastern Nigeria (The World Bank, 2023). The UN has equally supported Nigeria significantly through its Sustainable Development Goals, which target zero poverty, zero hunger, health, quality education, gender equality, and economic growth, among 10 other goals (United Nations Nigeria, 2023).

Foreign Direct Investment and Economic Growth

In a 2016 study, Bhavish, Nitisha, and Sheereen used both dynamic panel estimates and static panel regression approaches to examine the relationship between foreign direct investment and economic growth in sub-Saharan Africa. The study's findings provided evidence that total foreign direct investment does, in fact, significantly and positively affect economic growth. The analysis found that even while the 2009 EuroZone Crisis had a negative effect on economic development; its inclusion did not alter the results based on static random effects. It is noticed that foreign direct investment makes a substantially larger contribution than local investment.

The study conducted by Uma, Eboh, and Nwaka (2015) centered on the impact of foreign investors' resource utilization and its effect on Nigeria's economic growth between 1980 and 2012. Results demonstrated that unemployment does, in fact, impede growth. All other factors together with foreign direct investment had a major impact on economic development. According to the innovation accounting, unemployment over the longer period of roughly 21% accounts for a larger portion of the fluctuations in RGDP. This suggests that giving the populous jobs accelerates economic progress.

The impact of foreign direct investment on Nigeria's economic growth from 1990 to 2012 was examined by Okonkwo, Egbunike and Udeh (2015). Ordinary least squares (OLS) estimation techniques were employed in the study to analyze the secondary data. The outcome demonstrated that export assumes a positive sign, suggesting a positive relationship between

export and economic growth. In conclusion, foreign direct investment has increased Nigeria's exports.

Causality between Overseas Development Assistance and Economic Growth

Using data for Bangladesh from 1980 to 2013, Amin (2017) also performed a Granger Causality test using VECM between economic growth, foreign aid, and other variables, and found no statistical evidence for short-run causality between economic growth and foreign aid, but did find evidence for unidirectional causality from economic growth to foreign aid in the long run.

Adeleke, Olowe and Fasesin (2014) examined how foreign direct investment (FDI) affected Nigeria's economic growth from 1999 to 2013. They discovered a statistically significant and direct relationship between FDI inflow and economic growth, indicating that both FDI and economic growth are fueled by strong economic performance.

Tekin (2012) looked at the causal relationships between trade openness, economic growth, and foreign aid in African LDCs from 1970 to 2010. He used Zellner's (1962) Seemingly Unrelated Regressions (SUR) estimator, and the findings provided scant support for the idea that foreign aid and economic growth are causally related.

METHODOLOGY

Methods of Data Collection

This study utilized annual time series data over the period of 40 years from 1981 to 2021, obtained from the Central Bank of Nigeria (CBN) statistical bulletin and the World Bank. The dependent variable in this study is GDP as a proxy for economic growth, while the independent variables include total ODA received, foreign direct investment (FDI) inflows, exchange rate, and inflation.

Model Specification

ODA, as it relates to Nigeria's economic growth, can be specified in a multiple linear regression model.

Objective 1 (Model 1)

$$LogGDP = \beta_0 + \beta_1 LogODA_t + \beta_2 LogEXC_t + \beta_3 LogINF_t + U_t \qquad (1)$$

where:

LogGDP:	Logarithm of Gross Domestic Product
LogODA:	Logarithm of Official Development Assistance
LogEXC:	Logarithm of Exchange Rate
LogINF:	Logarithm of Inflation
β_0:	constant term
U_t:	the error term/disturbance

β_1, β_2 and β_3 are the coefficient of the variables.

Objective 2 (Model 2)

$$LogGDP = \beta_0 + \beta_1 LogFDIt + \beta_2 LogEXCt + \beta_3 LogINFt + Ut \qquad (2)$$

where:
LogGDP: Logarithm of Gross Domestic Product
LogFDI: Logarithm of Foreign Direct Investment
LogEXC: Logarithm of Exchange Rate
LogINF: Logarithm of Inflation
β_0:   constant term
Ut: the error term/disturbance
β_1, β_2 and β_3 are the coefficient of the variables

Objective 3 (Model 3)

$$\Delta GDP_t = \alpha_1 + \sum_{i-1}^{k} \emptyset_{1\,i} \Delta GDP_{t-i} + \sum_{i-1}^{K} \theta_{1\,i} \Delta ODA_{t-1} + \delta_1 \varepsilon_{t-1} + u_{1\,t}$$

$$(3)$$

$$\Delta ODA_t = \alpha_2 + \sum_{i-1}^{k} \emptyset_{2\,i} \Delta GDP_{t-i} + \sum_{i-1}^{k} \theta_{2\,i} \Delta ODA_{t-i} + \delta_2 \varepsilon_{t-1} + u_{2\,t}$$

Method of Data Analysis

Econometric methods are used for data analysis in this study, namely, Autoregressive Distributed Lag (ARDL) test, which examines the long-run equilibrium relationship or the cointegration of the time series variables; and the Granger-Causality test, which estimates the causal relationship between the variables. The E-views statistical tool is used to analyze the data.

Descriptive Statistics

This section shows the summary of the characteristics of the data set used in this study, which includes the distribution, central tendency and variability of the data set.

Unit Root Test

Preceding the empirical analysis, the time series properties of each variable in the study is examined in order to determine their order of integration, in other words, to establish the stationary or non-stationary nature of the variables. This test examines the unit root properties of the variables, using 3 specifications:
- none,
- constant,
- constant and trend (as shown in the Equations 3, 4 and 5 below)
$\quad x$t $= \beta x$t$-1 + \varepsilon$t   …………………………………………………..(4)

$$x\mathrm{t} = \beta0 + \beta1x\mathrm{t}{-}1 + \varepsilon\mathrm{t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(5)$$
$$x\mathrm{t} = \beta0 + \beta1x\mathrm{t}{-}1 + \beta2\mathrm{t} + \varepsilon\mathrm{t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(6)$$

where x is the variable of interest, εt is the residual, $\beta0$ is the constant, $\beta1x\mathrm{t}{-}1$ represents the lag values of the variables of interest, $\beta2$t. A variable with constant mean and variance ($\beta<1$) is a stationary time series, while a non-stationary time series has different properties over time ($\beta = 1$), or is explosive and non-stable ($\beta >1$). The Augmented Dickey-Fuller (ADF) test will be used in this study. The null hypothesis for the ADF test states that there is a unit root in the series and if the P-value of the series is greater than 5% critical value, i.e., $p>0.05$, we cannot reject it. This test is required to establish whether the variables are integrated of the same order or not (at a level or first difference) before the Autoregressive Distributed Lag Model (ARDL) is further employed to determine the long- and short-run relationship between the variables.

Auto Regressive Distributed Lag (ARDL) Bound Cointegration Test

Cointegration test determines whether a long-run equilibrium relationship exists in the time series. ARDL test was chosen for this study because it is suitable for testing variables with mixed orders of integration at level and at first order, which is a stochastic process model suitable for capturing the inter-dependencies among multiple time series; and the model can be written as follows:

$$\Delta GDP = \beta_\circ + \sum_{i-1}^{k} \beta_1 \Delta GDP_{t-1} + \sum_{t-1}^{k} \beta_2 \Delta ODA_{t-1}$$
$$+ \sum_{t-1}^{k} \beta_3 \Delta EXC_{t-1} + \sum_{t-1}^{k} \beta_4 \Delta INF_{t-1} + \alpha_i \; \alpha_i x_{t-1} + \; \varepsilon_t$$
$$a_1 GDP_{t-j} + a_2 ODA_{t-j} + a_3 EXC_{t-j} + a_4 INF_{t-j} + \; \varepsilon_t$$
$$(7)$$

$$\Delta GDP = \beta_\circ + \sum_{i-1}^{k} \beta_1 \Delta GDP_{t-1} + \sum_{t-1}^{k} \beta_2 \Delta FDI_{t-1}$$
$$+ \sum_{t-1}^{k} \beta_3 \Delta EXC_{t-1} + \sum_{t-1}^{k} \beta_4 \Delta INF_{t-1} + \alpha_i \; \alpha_i x_{t-1} + \; \varepsilon_t$$
$$a_1 GDP_{t-j} + a_2 FDI_{t-j} + a_3 EXC_{t-j} + a_4 INF_{t-j} + \; \varepsilon_t$$
$$(8)$$

where GDP is Gross Domestic Product, ODA is Overseas Development Assistance, FDI is Foreign Direct Investment, EXC is Exchange Rate, and INF is Inflation Rate. $\beta_\circ$ is the constant, and ε_t is the error term.

In this study, the lag length was selected based on the Schwartz information criterion. The equation tests the null hypothesis $H_o : a_1 = a_2 = a_3 = a_4 = 0$; there is no cointegration between the variables against the alternative hypothesis $H_o : a_1 \neq a_2 \neq a_3 \neq a_4 \neq 0$, using the bounds test method, which is based on the joint F-statistic test.

However, when the null hypothesis of the no cointegration is rejected as given by the F-statistics with values higher than the upper and lower bound, we estimate the conditional ARDL long-run model.

ARDL Short-run and Long-run Analysis

The short-run relationship can be established, using the ARDL short run and long analysis, which is stated as follows:

$$\Delta GDP = \beta_\circ + \sum_{i-1}^{k} \beta_1 \Delta GDP_{t-1} + \sum_{t-1}^{k} \beta_2 \Delta ODA_{t-1} + \sum_{t-1}^{k} \beta_3 \Delta EXC_{t-1} + \sum_{t-1}^{k} \beta_4 \Delta INF_{t-1} + \delta ECM_{t-1} + \varepsilon_t$$

(9)

$$\Delta GDP = \beta_\circ + \sum_{i-1}^{k} \beta_1 \Delta GDP_{t-1} + \sum_{t-1}^{k} \beta_2 \Delta FDI_{t-1} + \sum_{t-1}^{k} \beta_3 \Delta EXC_{t-1} + \sum_{t-1}^{k} \beta_4 \Delta INF_{t-1} + \delta ECM_{t-1} + \varepsilon_t$$

(10)

ECM is the error correction term and δ_δ is the error correction coefficient, which measures the speed of adjustment to the long-run position. δ_δ should be negative and significant for the short-run convergence to occur.

Granger Causality Test

This test is also known as the Block Exogeneity Wald test and is used to determine the causal relationship between the variables.

To determine the causal effect between ODA, EXC, INF, and GDP and that of FDI, EXC, INF and GDP in the specified models, the dependent variable GDP is positioned against each of the independent variables; then the p-value and 0.05 critical value are compared. When p-value is below 0.05 critical value, it indicates the existence of causal effect between variables; on the other hand, when p-value is above 0.05 critical value, it indicates non-existence of causal effect between variables.

The three forms of causal relationships include unidirectional causality, bidirectional causality, and no causality. For unidirectional causality, a variable x Granger causes y or variable y Granger causes x and not vice-versa. For bidirectional causality, a variable x Granger causes y, and variable y Granger causes x. In no causality, the variables x and y are independent; therefore, there is no causal relationship between them in any direction. The VAR of two variables can be represented thus:

$$\Delta y_t = \alpha_1 + \sum_{i-1}^{k} \emptyset_{1\,i} \Delta y_{t-i} + \sum_{i-1}^{K} \theta_{1\,i} \Delta x_{t-1} + \delta_1 \varepsilon_{t-1} + u_{1\,t} \quad (11)$$

$$\Delta x_t = \alpha_2 + \sum_{i-1}^{k} \emptyset_{2\,i} \Delta y_{t-i} + \sum_{i-1}^{k} \theta_{2\,i} \Delta x_{t-i} + \delta_2 \varepsilon_{t-1} + u_{2\,t} \quad (12)$$

where x represents the variable of interest, which include GDP, ODA, FDI, EXC, and INF. x also includes u_t, the residual. The Granger causality test hypothesis states that ($H_0: \emptyset_1 = 0$), meaning x does not Granger cause y_t against the ($H_0: \theta_2 = 0$), meaning y does not Granger cause x_t. If the probability is greater than the level of significance, then the null hypothesis will be rejected.

RESULTS AND DISCUSSIONS

Table 4.1 shows the descriptive statistics and trend analysis of the data collected for the study.

Result of Descriptive Statistics and Trend Analysis

Table 4.1: Descriptive Statistics

	LGDP	LODA	LFDI	INF	EXC
Mean	25.62361	1.340589	21.10117	18.94905	108.0578
Median	25.37474	0.985448	21.35137	12.87658	111.2313
Maximum	27.07622	4.372068	22.90267	72.83550	399.9636
Minimum	24.04658	-0.969235	19.05813	5.388008	0.617708
Std. Dev.	0.966204	1.376399	1.126896	16.65937	109.8910
Skewness	0.127012	0.094481	-0.040804	1.854161	0.975990
Kurtosis	1.448856	2.068290	1.841711	5.306526	3.178589
Jarque-Bera	4.220567	1.543975	2.303334	32.58085	6.563616
Probability	0.121204	0.462094	0.316109	0.000000	0.037560
Sum	1050.568	54.96415	865.1480	776.9110	4430.369
Sum Sq. Dev.	37.34197	75.77900	50.79581	11101.39	483041.0
Observations	41	41	41	41	41

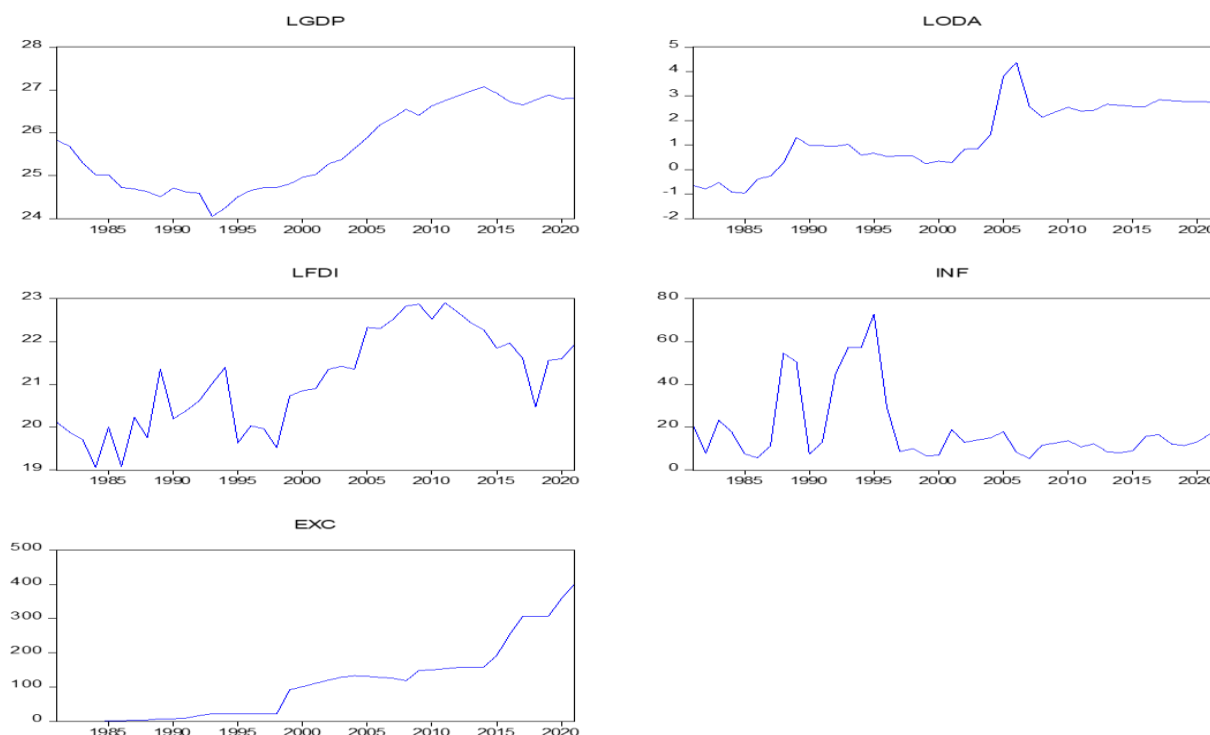**Source:** Authors' computation (2024) using E-views 10 statistical tool.

Figure 4.1: Trend analysis of the variables from 1981 to 2021
(**Source:** Authors' computation using E-views 10 statistical tool)

Results of the Unit Root Tests

Table 4.2: Result of ADF Unit Root Test

Variables	Level I(0)		1st Difference I(1)		Stationarity
	T-values	**P-values**	**T-Stat**	**Prob**	**Stationarity**
LGDP	-3.168512	0.1053	-4.641244	0.0033**	**I(1)**
LODA	-3.480452	0.0556**	-	-	**I(0)**
LFDI	-2.995675	0.1460	-10.01394	0.0000**	**I(1)**
EXC	0.074468	0.9959	-4.773139	0.0023**	**I(1)**
INF	-4.102235	0.0131**	-	-	**I(0)**

Note: *, **, and *** represent 1%, 5% and 10% significance level respectively.
(**Source:** Authors' computation (2024) using E-views statistical tool)

Table 4.2 presents the result of the ADF unit root test conducted for the variables at levels using intercept and trend specifications. The result shows that LGDP, LODA and LFDI are non-stationary in levels at 5% significance level; therefore, we fail to reject the null hypothesis of the unit root test. However, the variable INF is stationary, and hence, we reject the null hypothesis of the unit root test at 5% significance level. The result shows that LGDP, LODA and LFDI are stationary at 1st difference; we therefore reject the null hypothesis. In all, the result of the unit root test showed that the variables employed in the model have mixed order of integration, (i.e., I(0) and I(1)), hence the justification for the use of ARDL model for the estimation of the relationships.

Results of Short-run and Long-run Analysis for Models 1 and 2

Table 4.3: Result of the ARDL Bound Test (Model 1)

Test Statistic	Value	K
F-Statistic	5.802479	3
Critical Value Bounds		
Significance	l0 Bound	l1 Bound
10%	2.37	3.2
5%	2.79	3.67*
2.5%	3.15	4.08
1%	3.65	4.66

Source: Authors' computation (2024) using E-views statistical tool.
Note: * indicates significant at 5% level

The result of the ARDL bound test is shown in Table 4.3 above, and it indicates that the F-statistic is 5.802479, which is greater than the upper and lower bounds at 5% levels of significance. This then implies that a cointegration exists between the variables, i.e., there is a long-run relationship among the variables.

Table 4.4: Result of the ARDL Bound Test (Model 2)

Test Statistic	Value	K
F-Statistic	8.847559	3
Critical Value Bounds		
Significance	l0 Bound	l1 Bound
10%	2.37	3.2
5%	2.79	3.67*
2.5%	3.15	4.08
1%	3.65	4.66

Source: Authors' computation (2024) using E-views 10 statistical tool.
Note: * indicates significant at 5% level

The result of the ARDL bound test is shown in Table 4.4 above, and it indicates that the F-statistic is 8.847559, which is greater than the upper and lower bounds at 5% levels of significance. This implies that a cointegration exists between the variables, i.e., there is a long-run relationship among the variables.

Table 4.5: Results of the ARDL Short-run Analysis (Model 1)
Short-run Coefficients
Dependent Variable LGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.543753	1.216448	3.735263	0.0007
LGDP(-1)*	-0.180850	0.048359	3.739768	0.0007
LODA**	0.085467	0.029062	2.940797	0.0059
EXC(-1)	0.000975	0.000475	2.053448	0.0478
INF**	-0.004032	0.001690	2.053448	0.0227
D(EXC)	-0.003138	0.001389	-2.259091	0.0304

** Variable interpreted as Z= Z(-1) + D(Z).
Note: * indicates significant at 5% level
(**Source:** Authors' computation (2024) using E-views 10 statistical tool)

The result of the ARDL short-run analysis for Model 1 is shown in Table 4.5. The coefficient of error correction term -0.180850 is negative and significant at 5% level. This signifies that there is a short-run convergence between the variables. The result shows, firstly, that the coefficient of the Overseas Development Assistance has a significant and positive relationship with economic growth in the short-run, which implies that an increase in ODA can lead to an increase in the growth of Nigeria's economy. The result also indicates that inflation and exchange rate both have significant and negative relationships with GDP growth in the short run.

Table 4.6: Results of the ARDL Short-run Analysis (Model 2)
Dependent Variable: LGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.515827	1.063272	3.306611	0.0023
LGDP(-1)*	-0.247387	0.048845	-5.064725	0.0000
LFDI(-1)	0.133309	0.030321	4.396555	0.0001
EXC(-1)	0.001410	0.000382	3.693256	0.0008
INF**	-0.004512	0.001542	-2.926068	0.0062
D(LFDI)	0.050197	0.035139	1.428519	0.0292
D(EXC)	-0.002895	0.001270	-2.280126	0.0292

** Variable interpreted as Z= Z(-1) + D(Z).
Note: * indicates significant at 5% level
(**Source:** Authors' computation (2024) using E-views 10 statistical tool)

The ARDL short-run analysis for Model 2 result in Table 4.6 shows that the coefficient of error correction term -0.247387 is negative and significant at 5% level. Foreign Direct Investment has a positive and significant influence on economic growth. The result also indicates that inflation and exchange rate both have significant and negative relationships with GDP growth in the short run.

Table 4.7: Results of the ARDL Long-run Analysis (Model 1)
Dependent Variable: GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LODA	0.472584	0.172691	2.736588	0.0098*
EXC	0.005392	0.002280	2.365341	0.0239*
INF	-0.022295	0.008569	-2.601711	0.0136*
C	25.12447	0.279784	89.79968	0.0000*

Note: * indicates significant at 5% level
(**Source:** Authors' computation (2024) using E-views 10 statistical tool)

The result of the ARDL long-run analysis is shown in Table 4.7. According to the signs and magnitude of the coefficients, the long-run result implies that ODA is positively and significantly related to GDP. The result shows that a unit increase in ODA will lead to 0.47 units increase in GDP. EXC also has a positive and significant relationship with GDP. However, inflation has a negative and significant influence on GDP with a value of -0.02, according to the result. This signifies that a unit increase in inflation will lead to 0.02 units decrease in the Nigeria's GDP growth.

Table 4.8: Results of the ARDL Long-run Analysis (Model 2)
Dependent Variable: GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LFDI	0.538868	0.114804	4.693808	0.0000*
EXC	0.005701	0.001279	4.455815	0.0001*
INF	-0.018239	0.005564	-3.278156	0.0025*
C	14.21183	2.352468	6.041243	0.0000*

Note: * indicates significant at 5% level
(**Source:** Authors' computation (2024) using E-views 10 statistical tool)

The coefficient of FDI is positive and significant, and as shown in the result, a unit increase in FDI will lead to 0.54 units increase in GDP. EXC also has a positive and significant relationship with GDP. On the other hand, inflation has a negative and significant influence on GDP with a value of -0.02, according to the result.

Results of Granger Causality Test for Model 3

Table 4.9 shows the result of Granger causality test. The decision rule requires that we reject the null hypothesis of no causal relationship when the p-value is < 0.05 and also the F-statistics > 3. Therefore, following the results, we reject the null hypothesis that ODA does not Granger cause GDP as the probability is < 0.05, but we fail to reject the null hypothesis that GDP does not Granger cause ODA. Therefore, a change in ODA leads to a significant change in GDP, but a change in GDP does not lead to a significant change in ODA. This therefore means that the causal relationship between ODA and GDP is unidirectional causality.

Table 4.9: Result of the Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
LODA does not Granger Cause LGDP	40	12.3344	0.0012*
LGDP does not Granger Cause LODA		0.80202	0.3763
LFDI does not Granger Cause LGDP	40	12.1588	0.0013*
LGDP does not Granger Cause LFDI		1.70210	0.2001
INF does not Granger Cause LGDP	40	0.41928	0.5213
LGDP does not Granger Cause INF		2.58109	0.1166
EXC does not Granger Cause LGDP	40	6.63873	0.0141*
LGDP does not Granger Cause EXC		0.00205	0.9642

Note: * indicates significant at 5% level
(**Source:** Authors' computation (2024) using E-views 10 statistical tool)

Also, the result rejects the null hypothesis that FDI does not Granger cause GDP as the probability is < 0.05 but we fail to reject the null hypothesis that GDP does not Granger cause FDI because the probability is >0.05. Therefore, a change in FDI leads to a significant change in GDP, but a change in GDP does not lead to a significant change in FDI. This shows that the causal relationship between FDI and GDP is unidirectional causality.

Furthermore, the result fails to reject the null hypothesis that inflation does not Granger cause GDP as the probability is > 0.05, and we also fail to reject the null hypothesis that GDP does not Granger cause inflation, because the probability is > 0.05. Therefore, a change in inflation does not lead to a significant change in GDP, and vice versa. Hence, the causal relationship between inflation and GDP is no causality.

Lastly, the result rejects the null hypothesis that EXC does not Granger cause GDP as the probability is < 0.05 but we fail to reject the null hypothesis that GDP does not Granger cause EXC because the probability is > 0.05. Therefore, a change in EXC leads to a significant change

in GDP, but a change in GDP does not lead to a significant change in EXC. This shows that the causal relationship between EXC and GDP is unidirectional causality.

Results of Stability Test for Model 1 and 2

The CUSUM (cumulative sum of recursive residuals) and the CUSUMSQ (CUSUM of squares) tests are used to assess the stability of the parameters. (Pesaran & Pesaran, 1997). The CUSUM test is used to identify systematic changes in the coefficients, while the CUSUMSQ test is used to detect sudden changes from the constancy of the coefficients.

The results in Figure 4.2 show that the coefficients of Model 1 are relatively stable and consistent, because the plots of the CUSUM and CUSUMSQ lie within the 5% confidence intervals of parameter stability, indicating the existence of stability in the coefficients over the period of study. (See Figure 4.2.)
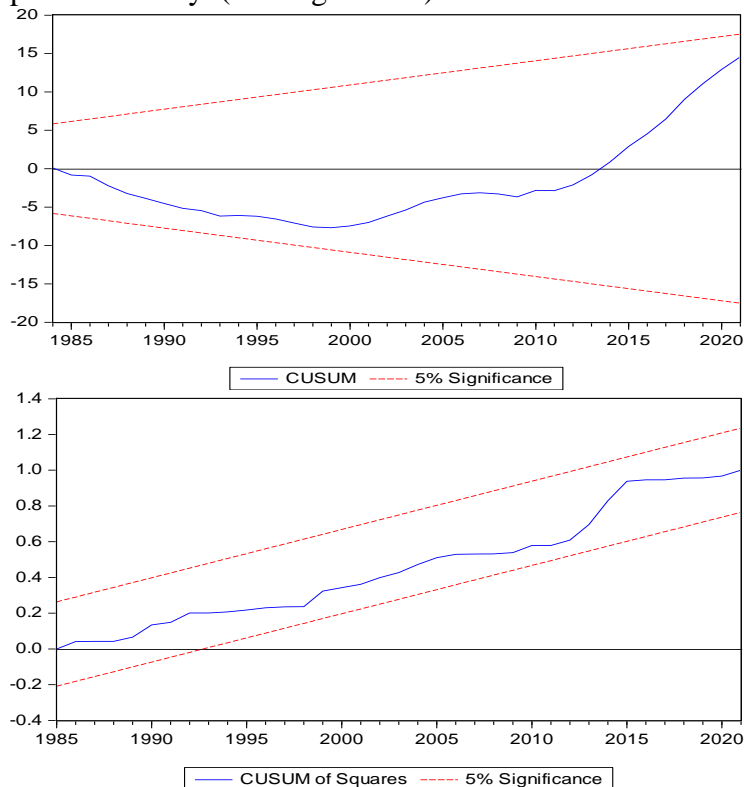

Figure 4.2: Result of CUSUM and CUSUMSQ Test for Model 1

The result in Figure 4.3 shows that the coefficients of Model 2 are relatively stable and consistent, because the plots of the CUSUM and CUSUMSQ lie within the 5% confidence intervals of parameter stability, indicating the existence of stability in the coefficients over the period of study. (See Figure 4.3.)
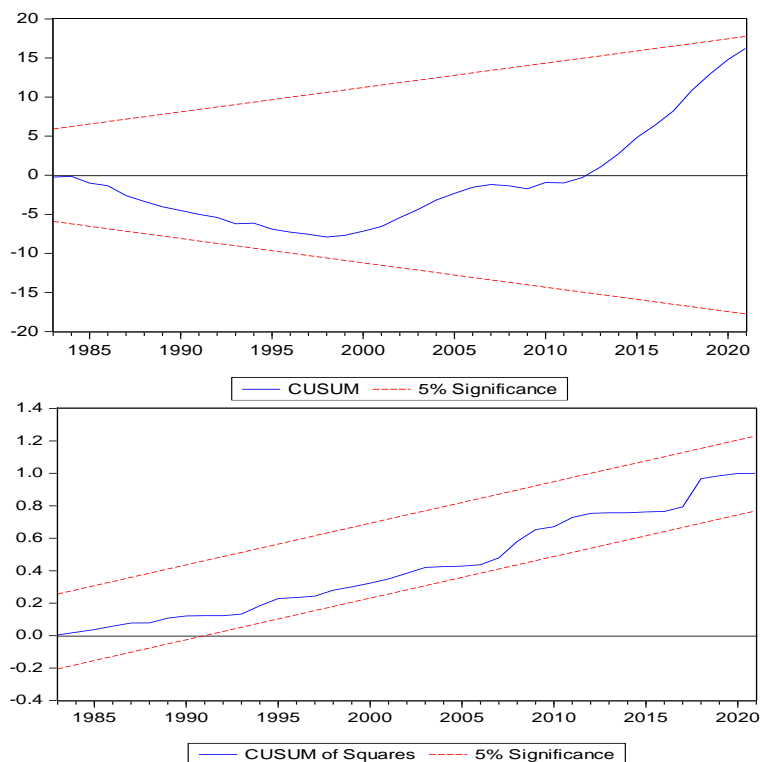
Figure 4.3: Result of CUSUM and CUSUMSQ Test for Model 2

Hypotheses Testing

The hypotheses for this research and the findings are as follows:

Hypothesis 1
H_0: ODA has no significant impact on economic growth in Nigeria.

Hypothesis 2
H_0: FDI has no significant impact on economic growth in Nigeria.

Hypothesis 3
H_0: There is no causal relationship between ODA and economic growth in Nigeria.

The result of the ARDL short-run analysis shows that ODA has a significant relationship with economic growth, and also that FDI, inflation and exchange rate all have a significant relationship with economic growth. The result of the long run analysis shows that ODA and FDI, and EXC all have positive relationships with economic growth in Nigeria, while inflation rate has a negative effect on economic growth.

The result of the granger causality test reveals that the variables, ODA, FDI and EXC have a significant effect on economic growth, while inflation rate has no significant effect on economic growth. The granger causality test also revealed ODA, FDI and EXC Granger causes GDP but inflation rate does not Granger cause GDP. The test also reveals that GDP does not Granger cause ODA, FDI, EXC or inflation rate.

Based on these findings, it can be deduced that ODA has a significant effect on Nigeria's economic growth, which means that an increase in foreign aid will bring about an increase in economic growth. Therefore, we reject the null hypothesis of Hypothesis 1 of the study, because Overseas Development Assistance has a significant effect on economic growth in Nigeria. It can also be deduced that FDI has a significant effect on the economic growth of Nigeria, which means that an increase in foreign direct investment in Nigeria will bring about an increase in economic growth in Nigeria. Therefore, we reject the null hypothesis of Hypothesis 2 of the study. It can also be deduced that there is a causal relationship between ODA and economic growth, as the study shows that ODA granger causes economic growth. Therefore, we also reject the null hypothesis of Hypothesis 3 of the study.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study mainly aimed is to investigate the effects of Overseas Development Assistance on the economic growth of Nigeria, and the analysis of the study has revealed that ODA or foreign aid is a determinant of economic growth in Nigeria. The findings of the study led to the conclusion that a short-run and long-run relationship exists between ODA and economic growth in Nigeria. This result suggests that an increase in ODA will certainly induce growth in the economy.

The study therefore concludes that because there is a direct causal relationship between ODA and economic growth, ODA has a significant effect on economic growth, as the ODA level determines the amount of money and other resources allocated to capital projects in the economy which stimulates the economy and causes growth.

Recommendations

Based on the results of the study, the following is recommended:
- The Federal Government of Nigeria should pursue and maintain more favourable relationships with the international multilateral and bilateral donors in order to boost economic growth.

- The Federal Government and citizens of Nigeria should work to maintain peace and security in the country in order to attract Foreign Direct Investments, which would also boost Nigeria's GDP growth.

- Lastly, the Federal Government of Nigeria and individuals responsible should also make judicious use of all ODA received by investing in productive sectors of the economy, creating an enabling environment for the development of the private sector and ultimately promoting economic growth in the country.

REFERENCES

Abuh, A. (2020): Nigeria Received $26b Foreign Aid in Six Years, Says Minister. *The Guardian*.

AFRODAD (2008): Mapping Chinese Development Assistance in Africa. *An Analysis of the experiences of Angola, Mozambique, Zambia and Zimbabwe A Synthesis*.

Amin, S. B. (2017): An Empirical Analysis of Multivariate Causality between Electricity Consumption, Economic Growth and Foreign Aid: Evidence from Bangladesh. *The Journal of Developing Areas,* 51(2), 369-380.

Arndt et al. (2013): Aid, Growth, and Development: Have We Come Full Circle? *Journal of Globalization and Development,* 1(2): 1-29.

Azam, M., Haseeb M., & Samsudin, S., (2016). The impact of foreign remittances on poverty alleviation: Global evidence. *Economics and Sociology*, vol. 9, no 1.

Bhavish, J. , Nitisha, C., & Sheereen, F. (2016). Foreign Direct Investment & Economic Growth in Sub Saharan Africa: An Empirical Study. *Theoretical Economics Letters*, 6

Carter B. (2017): A literature Review on China's Aid. *Institute of Development Studies*.

Department for International Development. (2017): DFID Nigeria. *assets.publishing.service.gov.uk*.

Development Initiatives (2012): Official Development Assistance: *An Essential Guide. Development Initiatives*.

Farahmand, M. (2021): The Relationship Between Economic Growth and Foreign Aid: The Case of Afghanistan. *Journal of Economic Policy*. 8(2), 141-154.

Fasanya, I.O., & Onakoya, A.B. (2012): Does Foreign Aid Accelerate Economic Growth? An Empirical Analysis for Nigeria. *International Journal of Economics and Financial Issues*, 2(4), 423 – 431.

Gates B. & Gates M. (2014). Three Myths on the World's Poor. *Wall Street Journal, 17 January*.

Gilpin S.I. (2021): China, Africa and the International Aid System: A Challenge to (the Norms Underpinning) the Neoliberal World Order? *Journal of Asian and African Studies*. 1-21.

Hoeffler, A., & Justino, P. (2023): Aid and Fragile States. WIDER Working Paper 2023/83. *United Nations University UNU-WIDER*.

Kassim, K. T., & Beceren, E. (2022): The Impact of Foreign Aids on Poverty Reduction: An International Literature Review. *Journal of Economics, Finance and Accounting (JEFA)*, 9(2), 130-144.

Odedokun, M. (2003): Is Overseas Development Assistance (ODA) Dying or Just on a Life Support? *UNU Wider*.

Odusanya, I. A., Logile, A. I., & Akanni, L. O. (2011): Foreign Aid, Public Expenditure and Economic Growth: The Nigerian Case. *Journal of Applied Business Research (JABR)*, 27(3), 33-42.

OECD (2015): Highlights. China and the OECD. *OECD.*

Ojiambo, E. V. (2013). Effect of Foreign Aid Predictability on Investment and Economic Growth in Kenya. *Kenyatta University.*

Sachs, J., 2005. The End of Poverty: Economic Possibilities for Our Time. New York: The Penguin Press.

Shleifer A. (2009): Peter Bauer and The Failure of Foreign Aid. *Heinonline.*

Tekin, R. B. (2012): Development Aid, Openness to Trade and Economic Growth in Least Developed Countries: Bootstrap panel Granger Causality Analysis. *Procedia – Social and Behavioral Sciences,* 62(2012), 716-721.

TheGlobalEconomy.com (2021): Nigeria: Foreign Aid. *TheGlobalEconomy.com*

Todaro, M. P. & Smith S.C. (2003): Economic Development. *Diverse Structures and Common Characteristics of Developing Nations*. (35-36).

Trading Economics (2022): Nigeria GDP Annual Growth Rate. *Trading Economics*.

Trading Economics (2022): Nigeria GDP Per Capita. *Trading Economics*.

Ugwuanyi, U. B., Ezeaku, H. C., & Imo, G. I. (2017). The impact of official aid on poverty reduction: Empirical evidence from Nigeria (1981-2014) using the ARDL and bound test approach. *European Journal of Sustainable Development*, 6, 2, 111-120.

Ugwuegbe, S. U., Okafor I. G., Akarogbe C. A. (2016): Effect of External Borrowing and Foreign Aid on Economic Growth in Nigeria. *International Journal of Academic Research in Business and Social Sciences,* 6(4) 2222 - 6990.

Uma, K. E., Eboh, F.E & Nwaka, I.D. (2015). Foreign direct investment and resources utilisation: implications for Nigeria's economic development. *British Journal of Economics, Management & Trade,* 6(2), 112-128,

United Nations Nigeria (2023): The Sustainable Development Goals in Nigeria. *United Nations Nigeria.*

UNU WIDER (2014): Position Paper: Aid, Growth and Employment. *Research and Communication on Foreign Aid.*

U.S. Mission Nigeria (2021): Sixty Years of Development Assistance to Nigeria. U.S. Embassy and Consulate in Nigeria. *U.S Mission Nigeria.*

Worldometer (2023): African Countries by Population (2023). *Worldometer.*

Worldometer (2023): Population of China. *Worldometer.*

Zellner, A. (1962): An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias. *Journal of American Statistical Association*, 57(298), 348-368.