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International development assistance as a determinant of economic growth in Nigeria

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Abstract

This study examines whether international development assistance contributes to economic growth in Nigeria. The analysis is based on foreign aid inflows from 1986 to 2016. To ensure data reliability, a unit root test is conducted to check for stationarity. The study employs the Granger Causality Procedure, Johansen Co-Integration, and the Error Correction Model to assess both short-term and long-term dynamic relationships between the independent and dependent variables. The findings suggest that international development assistance positively impacts Nigeria's economy. Additionally, the study confirms a long-term equilibrium relationship between official development assistance and economic growth.

Keywords: International Development Assistance, Economic Growth, Nigerian Economy, Official Development Assistance, Investment.

INTRODUCTION

Foreign aid is often viewed as beneficial to a country's economy, as it facilitates capital inflows, investment, and technical assistance. However, in recent years, the effectiveness of foreign aid has been increasingly questioned. Experts have observed and reported that a significant portion of aid transferred from developed to developing nations is mismanaged or lost to corruption (Alesina & Dollar, 2000; Furuoka, 2008). While developed nations provide aid to foster development in recipient countries, political motivations often play a role as well. One of the primary arguments for foreign aid is its potential to accelerate economic growth in recipient nations. However, these expectations of aid-driven growth have frequently been unrealistic. This is because much of the aid is directed toward consumption rather than productive investments, ultimately discouraging domestic savings and investment. This study focuses on assessing the impact of foreign aid on Nigeria's economic growth. Nigeria has

long remained a developing country, ranking low on global indices such as the poverty index and per capita income index.

In the Nigerian context, foreign aid presents significant challenges for policymakers, as it can also lead to undesirable societal effects. Some of these negative consequences include aid-related conditions imposed by donors, declining economic performance, inefficient resource allocation, and an increase in the real exchange rate. A commonly used term in this regard is "Dutch disease," which describes the adverse effects of large foreign currency inflows on a country's economy.

Nigeria has been receiving foreign aid through the International Development Agency (IDA) program since the 1970s. The assistance includes both concessional and non-concessional loans. Under this loan arrangement, Nigeria is required to repay soft loans over a 30-year period, which includes a grace period and a service charge of 0.75 percent. Over the past few decades, the amount of foreign assistance provided under the IDA has increased significantly. By December 2016, the total loan volume had risen to approximately $1.5 billion. This study examines whether foreign aid has had a positive or negative impact on Nigeria's economy.

Objectives

- To examine the impact of international development assistance on Nigeria's economic growth.
- To analyze the long-term effects of international development assistance on Nigeria's economic growth.To test the long-term effects of international development assistance on economic growth of Nigeria.

LITERATURE REVIEW

Nigerian Economic Growth

A primary objective of Nigerian policymakers is to transform the country's economic structure by diversifying its economic base, reducing dependence on oil production, and improving key sectors of the economy. Despite various initiatives, Nigeria's economic performance remains weak compared to neighboring countries, especially considering its vast resource potential. The country has a population of approximately 197 million people and possesses significant reserves of at least 37 different types of solid minerals. Several factors contribute to Nigeria's economic challenges, including political instability, ineffective leadership, military influence, and insufficient human resource development. Some reports indicate that Nigeria's economy experienced an average growth rate of 7.4% from 1999 onward, which is considered favorable. However, this growth has not been evenly distributed, as a significant portion of the population continues to struggle with high poverty rates. Issues such as unemployment and crime further exacerbate economic difficulties. A major concern for Nigeria's economy is its heavy reliance on oil exports, with minimal diversification into other productive sectors. This dependence makes the country highly vulnerable to fluctuations in the global oil market, as well as disruptions caused by instability in the Niger Delta region. Additional challenges include corruption, poor governance, and economic inequality, which further hinder sustainable development.

International Development Association and the Nigerian Economy

The International Development Association (IDA) is a global financial institution that provides concessional loans and grants to the world's poorest developing nations. Established in the 1960s, the IDA was created to complement the International Bank for Reconstruction and Development (IBRD) by offering financial assistance to countries with the lowest gross national income, low per capita income, and weak creditworthiness. Together, the IBRD and IDA operate under the same executive leadership and share staff, collectively forming what is known as the World Bank.

The IDA provides financial support to developing countries, specifically for projects aimed at enhancing socio-economic conditions in sectors such as education, healthcare, and

infrastructure development. While the International Bank for Reconstruction and Development (IBRD) offers traditional, higher-interest loans, the IDA focuses on concessional financing, often referred to as "soft loans." IDA loans and grants typically have a maturity period ranging from 25 to 40 years, with a grace period of 5 to 10 years and an average interest rate between 1.25% and 3%. Countries that have established a strong track record with the IDA may qualify for interest-free loans for certain projects, particularly if they implement effective poverty reduction and pro-growth policies. The IDA allocates funding based on the World Bank's Country Policy and Institutional Assessment (CPIA) development indicators. Countries that demonstrate successful policies or are actively adopting effective economic strategies have a higher likelihood of securing loans compared to others.

KEY THEORIES RELATED TO THE FOREIGN ASSISTANCE

Harrod-Domar Model

The Harrod-Domar model proposes that a country's output is determined by its investment rate and the efficiency of investment. In open economies like Nigeria, investment is primarily funded through savings, which include both domestic and foreign sources. Foreign aid contributes to increasing overall savings, thereby boosting investment and ultimately fostering economic growth (Easterly, Levine, & Roodman, 2004).

Two-Gap Model of Growth

The two-gap model of growth, developed by Chenery and Strout (1966), explains the relationship between foreign aid and economic growth by identifying two major constraints: the savings gap and the foreign exchange gap. The savings gap occurs when a country's domestic savings are insufficient to meet the level required for a targeted growth rate. Similarly, the foreign exchange gap arises when a nation lacks adequate foreign currency inflows to finance essential imports for production. When either of these gaps exists, productive investment declines, slowing economic growth. To address these challenges, foreign aid plays a crucial role in bridging these deficits, making it a key instrument for promoting economic development in low-income countries.

The Three-Gap Model

The three-gap model expands on the two-gap model by introducing a third constraint known as the fiscal gap, in addition to the savings gap and foreign exchange gap. The fiscal gap refers to the shortfall between government revenues and planned expenditures. When this gap exists, the government may struggle to allocate sufficient resources to stimulate private investment due to excessive domestic borrowing and rising debt service obligations. In many cases, high public debt can limit a country's ability to invest in development initiatives. For instance, with an estimated public debt-to-GDP ratio of 70%, reducing the fiscal gap could attract greater foreign inflows in the form of budgetary support, thereby strengthening economic stability and growth.

Empirical Studies related to Impact of Foreign Aid on Economic Growth

Addison, Mavrotas, and McGillivray (2005) conducted a study on the impact of financial aid on the African economy from 1960 to 2002. Their findings indicated that foreign aid contributes to financial stability by reducing the revenue-expenditure gap, increasing the flow of money, and lowering the need for domestic borrowing.

Akonor (2008) also investigated the influence of foreign aid on the economic growth of a country. The study reported that there is an increasing dependence on foreign aid among African nations, resulting in a decline in their economic sovereignty.

Alesina (2002) conducted a study on the relationship between foreign aid and corruption. The results showed no significant difference between corrupt and less corrupt countries in terms of the amount of foreign aid received. The study also concluded that there is no substantial relationship between corruption levels and foreign aid inflows.

Alesina and Dollar (2000) conducted a study on the allocation of foreign aid by various donor countries. Their findings revealed that political and strategic considerations play a significant role in determining which countries receive aid.

Papanek (1973) investigated the relationship between various economic factors and growth in 34 less developed countries. The study found that one-third of GDP growth could be attributed to domestic savings and foreign inflows. Additionally, the results indicated a strong correlation between foreign aid and economic growth.

Burnside and Dollar (2000) examined the relationship between foreign aid and economic growth. Their findings showed a significant link between the two. However, the study also emphasized that receiving foreign aid does not necessarily indicate that a country has adopted sound macroeconomic policies. The researchers stressed that foreign aid can only be effectively utilized when supported by stable and appropriate domestic policies. In the absence of such policies, foreign aid is unlikely to yield positive outcomes.

Chowdhury and Das (2011) examined the relationship between foreign aid and per capita income in four South Asian economies: Pakistan, Bangladesh, Sri Lanka, and Nepal. Their findings indicated a positive long-term relationship between foreign aid and per capita income in these countries.

Ekanayake and Chatrna (2010) investigated the effects of foreign aid on economic growth in 85 developing countries across the Caribbean, Latin America, Africa, and Asia. By analyzing panel data from these nations, the study concluded that foreign aid has mixed effects on economic growth in developing countries.

Fasanya and Onakoya (2012) explored the impact of foreign aid on economic growth in Nigeria, using data from 1970 to 2010. Their results showed a significant positive relationship between foreign aid and economic growth in the Nigerian context.

Griffin and Enos (1970) examined the impact of foreign aid on domestic savings using the Harrod model of economic growth. Their findings suggested that as a country receives more foreign aid, domestic savings in the public sector decline. This, in turn, discourages government efforts to expand the tax base and increase revenue. From this perspective, economic growth cannot be guaranteed by foreign aid alone.

Hansen and Tarp (2000) investigated the effect of foreign aid on a country's economic growth, focusing on data from the mid-1990s. Their statistical and theoretical analysis concluded that foreign aid has a positive influence on economic growth.

Feeny and McGillivray (2009) studied the relationship between foreign aid and economic growth, emphasizing the importance of a country's absorption capacity. They argued that the effectiveness of foreign aid depends on the recipient country's ability to utilize it efficiently. Factors such as infrastructure quality and the availability of skilled labor play a crucial role in determining how well a country benefits from foreign aid as an external resource.

Karras (2006) conducted a study on the relationship between foreign aid and economic growth in developing countries. Using data from 71 aid-receiving countries between 1960 and 1997, the study concluded that foreign aid has a positive impact on economic growth.

Levy (1988) also examined the relationship between foreign aid and economic growth, focusing on low-income countries in the Sub-Saharan African region. The findings indicated that foreign aid positively influences economic growth in these countries.

Burnside and Dollar (2000) studied the relationship between foreign aid, economic growth, and poverty reduction in Africa. Their results showed a long-term relationship between real GDP, aid, investment as a percentage of GDP, and trade openness. However, when foreign aid was included in the model, it revealed a long-term negative relationship for most of the countries analyzed, suggesting that aid may not always lead to sustained economic improvements.

Model Specification

The primary objective of this study was to examine the effects of foreign aid under the International Development Assistance (IDA) program on Nigeria's economic growth. The study employed a modified version of the model developed by Malik (2008). The theoretical framework was based on the Harrod-Domar model, which analyzes the impact of fiscal and monetary operations on economic growth. Specifically, the study explored the ability of Official Development Assistance (ODA) to influence a country's level of economic growth. The following model is proposed based on the Ordinary Least Square:

$GDPGRt = \beta0 + \beta1WBLt + \beta2IDAGt + \beta3IFCLt + \beta4EXRt + ut$

In this model, β1 to β4 represent the coefficients of the parameters to be estimated. The variables are defined as follows:

- GDPGRt represents the gross domestic product growth rate and serves as the endogenous variable.
- WBL refers to World Bank loans extended to Nigeria in the form of financial assistance.
- IDAG denotes grants provided by the International Development Association (IDA).
- IFCL stands for loans issued by the International Finance Corporation (IFC).
- EXR represents exchange rates.
- ut denotes the error term.
- t represents the time period.
- βo is the intercept term in the model.

The modified econometric model of Aguwamba, Ogbeifun, & Ekeinabor [33] is as follows:

$CGDP\ t = \beta0 + \beta1\ ODAt + \beta2\ GEXPt + \beta3\ INTRt + \beta4LPt + \beta5CAPt + \beta6PUt + \mu\ t$

Where:

- βo = Constant intercept term
- CGDP = Gross Domestic Product per capita
- IDA = IDA official flow
- CAP = Gross fixed capital formation
- INTR = Interest rate
- GEXP = Government expenditure
- LP = Labour force participation
- PU = Political unrest
- μ = Stochastic error term

Estimation Technique and Procedure

A stationarity test is conducted for each variable using the augmented Dickey-Fuller (ADF) unit root test to determine the stationarity properties of the data and prevent spurious regression. A stationary time series implies that the data is stable, with its mean and covariance remaining constant over time, making it suitable for forecasting purposes. The general form of ADF is estimated by the following regression

$\Delta Yd_t = \beta0 + \beta1Yd_{t—1} + \sum \beta1\ \Delta Yd_t + \delta_t + U_t$

Where:

- Ydt is a time series
- t is a linear time trend
- Δ is the first difference operator
- β0 is a constant
- t-1 is the optimum number of lags in the independent variables

Data Analysis

The results of the unit root test conducted using the Augmented Dickey-Fuller (ADF) test are presented in the following table. The series includes an intercept but no trend, and the ADF test is performed against the null hypothesis of non-stationarity. As a rule, if the ADF statistic

is greater than the critical value at any chosen level of significance, the null hypothesis is rejected in favor of the alternative hypothesis, indicating that the data is stationary. Table 1 shows that all the variables are stationary at first difference at the 5% level of significance, except for GDP, which is stationary at level form. Based on these findings, this study concludes that all variables used in the analysis are stationary, ensuring that the results obtained are not spurious. A time series that is integrated of order zero, I(0), is one that admits a moving average representation. This means that its autocovariance decays to zero sufficiently and quickly, which is a necessary but not a sufficient condition for stationarity. Therefore, while all stationary processes are I(0), not all I(0) processes are stationary. A process is said to be integrated of order one, I(1), if differencing it once results in a stationary process.

Table 1
Unit Root Test (ADF)

Variable	ADF Statistic	Level of Significance	T-Critical Values	Remarks	Conclusion
CGDP	3.277	5%	-2.86285	I(0)	Stationary
ODA	-6.331137	5%	-2.86665	I(1)	Stationary
GEXP	-6.603615	5%	-2.861841	I(1)	Stationary
LP	-3.368805	5%	-2.86665	I(1)	Stationary
INT	-6.672866	5%	-2.86665	I(1)	Stationary
CAP	8.328269	5%	-2.888063	I(1)	Stationary
PU	Dummy	5%	Dummy	Dummy	Stationary

The stationarity of all variables at first difference, except for CGDP, is clearly observable from the table. CGDP was found to be stationary at level form. Since most of the variables are stationary at first difference, a cointegration test was conducted to examine the stationarity of residuals. This was done to determine whether a long-run stable relationship exists among the variables, allowing for the application of the error correction model (ECM).

Test for Cointegration

The cointegration test was conducted, and the results indicate that the residual is stationary. Using the Augmented Dickey-Fuller (ADF) test, it can be concluded that a long-run linear relationship exists among the variables in the model. This suggests that despite short-term fluctuations, the variables move together over time, supporting the validity of the model in analyzing the impact of foreign aid on Nigeria's economic growth.

Table 2
Test for Cointegration

Date: 05/28/17 Time: 17:38
Sample (adjusted): 1988 2015
Included observations: 28 after adjustments
Trend assumption: Linear deterministic trend
Series: CGDP ODA LP GEXP INT CAP PU
Lags interval (in first differences): 1 to 1
Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
None *	0.827777	280.6721	225.6253	0.0000
At most 1 *	0.706269	226.6564	85.75465	0.0007
At most 2 *	0.587284	72.45479	68.72777	0.0045
At most 3 *	0.548043	56.78447	47.75623	0.0055
At most 4 *	0.455543	44.58456	28.78706	0.0239
At most 5 *	0.450446	27.57247	25.48471	0.0239
At most 6 *	0.277066	5.480701	4.742465	0.0281

Trace test indicates 7 cointegrating eqn. (s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
At most 1	0.605259	24.20251	40.06655	0.1825
At most 2	0.586184	25.45050	22.86585	0.2544
At most 3	0.548043	22.28881	26.58423	0.2053
At most 4	0.455543	16.02207	21.12151	0.1607
At most 5	0.250427	12.08067	14.25449	0.1064
At most 6 *	0.168055	5.480601	2.841454	0.0180

Max-eigenvalue test indicates 1 cointegrating eqn.(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Error Correction Model

The presence of cointegration necessitates the construction of an error correction mechanism (ECM) to model the dynamic equilibrium relationship and correct short-run disequilibrium. The results from the ECM indicate that the coefficient of the error correction term (the lagged residual) is 0.27, implying that the system adjusts its previous period's disequilibrium at a rate of 27% per year. However, the error correction coefficient has a positive sign and is not statistically significant, suggesting that the long-run equilibrium relationship between economic growth and the explanatory variables, as proposed by the Solow growth model, is not valid in this case.

Table 3
Shortrun Dynamic Model

Variable	**Coefficient**	**t-statistic**	**Prob.**
C	45641.61	0.122122	0.8037
ODA	0.000122	8.108687	0.0000
GEXP	85.5655	6.280232	0.0000
LP	-1314.582	-0.186232	0.8342
INT	-2.4542	-0.303632	0.7434
CAP	5.6564	0.866631	0.3882
PU	14630.06	1.230630	0.3333

R-squared	*0.991122*
Adjusted R-squared	*0.988806*
S.E. of regression	*18642.01*
Sum squared resid	*7.99E+08*
Log likelihood	*-333.5777*
F-statistic	*428.0022*
Prob(F-statistic)	*0.000000*

The static regression results indicate that the coefficient of international development assistance is statistically significant, as the p-value is less than 0.05. This leads to the acceptance of the alternative hypothesis.

For the second hypothesis, the results based on F-statistics suggest that economic growth causes an inflow of international development assistance.

Regarding the third hypothesis, the trace and maximum eigenvalue statistics indicate the presence of at least one co-integrating variable in the relationship between Real Gross

Domestic Product (RGDP) and the independent variables. This confirms a long-run relationship between international development assistance and the Nigerian economy.

The R-squared value of the model suggests that 99% of the changes in CGDP are explained by the proposed independent variables. Examining the coefficients of the independent variables, the results indicate that a unit change in Official Development Assistance leads to a 0.000123 increase in the Nigerian economy. A unit change in government expenditure results in an 85.5655-unit increase in Nigerian economic growth. However, a one-unit increase in the interest rate leads to a decrease of 2.4542 units in economic growth. Capital formation positively impacts the Nigerian economy, with a coefficient of 5.6564, although the results are not statistically significant. Additionally, the impact of political unrest remains statistically insignificant.

DISCUSSION

The study concludes that international development assistance contributes to economic growth in Nigeria. However, the literature also highlights that without adequate infrastructure, political stability, and systematic governance, the received aid may be mismanaged, leading to inefficiencies in its utilization. This suggests that while foreign aid can play a positive role in economic development, its effectiveness depends on the country's institutional framework and governance quality.

Recommendations

- The financial aid received under international assistance programs should be primarily allocated to long-term developmental and capital-intensive projects.
- Strict measures and monitoring mechanisms must be implemented to ensure that aid is used solely for the country's development and does not fall into the wrong hands.

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