



IMPACT OF FOREIGN AID ON ECONOMIC GROWTH IN NIGERIA: ROLE OF CORRUPTION

ABSTRACT

This study investigates the impact of foreign aid on Nigeria's economic growth, explicitly accounting for the moderating role of corruption. Despite decades of substantial aid inflows, Nigeria continues to face entrenched socio-economic challenges, raising critical questions about aid effectiveness. Employing the Autoregressive Distributed Lag (ARDL) model on annual data from 1993 to 2023, the findings reveal a weakly positive relationship between foreign aid and growth. Corruption exhibits a significant negative impact, confirming its role as a major impediment to development. Crucially, the interaction term between foreign aid and corruption is positive, suggesting that aid can foster growth even in a corrupt environment when coupled with oversight mechanisms. Contrary to theoretical expectations, Foreign Direct Investment (FDI) negatively impacts growth, likely due to its concentration in the extractive sector with limited local linkages. The study concludes that while foreign aid has a potential growth-enhancing effect, its efficacy is critically contingent on robust governance and anti-corruption measures. Policy recommendations are offered to strengthen institutions, diversify FDI, and enhance the efficiency of domestic investment to ensure external resources translate into sustainable economic development.

Keywords: Foreign Aid, Corruption, Economic Growth, Foreign Direct Investment

Introduction

Foreign aid has long been a significant source of external finance for developing nations, intended to bridge savings-investment gaps, support infrastructure, and foster socio-economic development. Nigeria, as one of Africa's largest economies and recipients of official development assistance (ODA), presents a compelling case study. Despite receiving substantial aid flows—estimated at \$4.4 billion in 2022—the country remains plagued by poverty, unemployment, and infrastructural deficits (World Bank, 2023). This paradox underscores the ongoing debate regarding the effectiveness of foreign aid. A central hypothesis for the muted impact of aid in Nigeria is the pervasive nature of corruption. Corruption diverts public resources, weakens institutions, and creates an environment where aid fails to reach its intended productive purposes (Adebayo & Kalmaz, 2020). While institutions like the Economic and Financial Crimes Commission (EFCC) exist, weak governance frameworks and political interference continue to hamper accountability. Nigeria's poor rankings on various governance indices—such as the Corruption Perceptions Index (146/180 in 2022) and the Human Development Index (161/189 in 2020)—paint a bleak picture of its institutional quality (Transparency International, 2023; UNDP, 2023).

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This study aims to empirically dissect the tripartite relationship between foreign aid, corruption, and economic growth in Nigeria. It moves beyond examining direct effects to analyze the critical interaction between aid and the domestic institutional environment. The research is guided by the following questions: What is the impact of foreign aid on economic growth in Nigeria? and What is the interaction effect of foreign aid and corruption on economic growth?

Literature Review

Conceptual Review

Foreign aids in its meaning and usefulness, represents an income transfer that may or may not generate growth; therefore, the outcome depends on its use by the recipient country (Mikael, 2020). As such, if aid is invested, it increases domestic output and if it is consumed, investment is halted or minimized. As a matter of fact, Azam & Feng (2021) define foreign aid to mean: "The additional resources that are used to enhance the recipient country's performance above its existing level." Nevertheless, development aid, in simple terms, means the transfer of resources/assets from developed countries or International Financial Institutions (IFIs) to less developed countries.

Ogundele & Opeifa (2019), describe corruption as consisting of several elements including deceit, trickery, cheating, international deception, dishonesty and the conscious premeditated action of a person or group of persons to alter the facts of a matter or transaction for the purpose of selfish personal gains. This means that corruption involves an intentional perversion of the truth or a deliberate manipulation of facts and situation at one's disposal to gain illegitimate material and nonmaterial advantages. This therefore entails that corruption is both immoral and illegal.

Empirical Review

Amenawo, *et al* (2020), investigated Foreign Aid, Corruption, Economic Growth Rate and Development Index in Nigeria: The ARDL Approach from 1990 to 2019. The ex-post facto research design was adopted and data obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin. The study adopted the autoregressive distributive lag (ARDL) techniques. It was revealed that as a result of the corruption index, there was a significant negative effect of foreign aid on the growth rate of Nigeria economy in the long-run, while having a significant positive impact on the human development index as well. In the short-run, foreign aids had a significant positive effect on the growth rate of the Nigerian economy, but an insignificant negative effect on the human development index. However, the government is encouraged to ensure that foreign aid is effectively channeled into agriculture, health, education, and other productive areas.

Mikael (2020) examined the Effectiveness of Foreign Aid on Corruption Eradication in Developing Countries' Institutions: Nigeria, as a case study. The research used two conceptualized variables of corruption; bribery and facilitate payment, which is considered the most common corruption trends in the Nigerian society, with the aim of analyzing the United Nations Office on Drugs and Crime's (UNODC) twelve-month survey report conducted in December 2019 in Nigeria. the methodology of a case study involves both the systematic methods of collecting the data and analyzing the data.

Adewale (2020) examined the moderating effect of institutional quality on the foreign aid and economic growth nexus in Nigeria from 1984 to 2018. Data used were sourced from central bank of Nigeria and world development indicators. And analyzed through the use of Johansen and canonical cointegration regression. Findings from the study indicate that while foreign aid has a separate positive effect on economic growth, the quality of institutions in the country diminishes and leaks out this positive effect. To this end, fiscal authorities in Nigeria need to review the existing institutional framework guiding the sourcing, disbursement and utilization of foreign aid with a view to detecting any loopholes and lapses that encourage diversion of

fund and institutionalized corruption, which prevent it from promoting growth. There is still gap to fill in this study, adding gross capital formation which boots economic growth, enhances productivity and creates employment opportunities.

Likewise, Amenawo, *et al* (2021) investigated Foreign Aid, Corruption, Economic Growth Rate and Development Index in Nigeria: The ARDL Approach from 1990 to 2019. The ex-post facto research design was adopted and data obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin. The study adopted the autoregressive distributive lag (ARDL) techniques. It was revealed that because of the corruption index, there was a significant negative effect of foreign aid on the growth rate of Nigeria economy in the long run, while having a significant positive impact on the human development index as well. In the short-run, foreign aids had a significant positive effect on the growth rate of the Nigerian economy, but an insignificant negative effect on the human development index. However, the government is encouraged to ensure that foreign aid is effectively channeled into agriculture, health, education, and other productive areas. Despite the fact that corruption was at added on the equation as independent variable. This this study will anchor corruption with foreign aid in order to find the moderating impact on economic growth in Nigeria.

Azam & Feng (2021) conduct a research wherein they evaluate the effect of external aid on the economic growth of transition countries. They applied a cross-sectional time series technique by using the fixed-effect regression, and analyzed up to thirty-seven countries in transition. They kept the countries in blocks of income categorization, namely upper middle-income, lower-middle income, and low-income. Their statistics results show two different results – firstly they find that a combination of all the income groups with foreign aid produces a positive influence on the economic growth of these countries. However, when they examined the relationship based on the income blocks, results indicate a mixed outcome. They find that foreign aid has limited effect on the low-income countries, the lower-middle income countries experience a positive effect of foreign aid and FDI on economic growth, and the upper middle-income countries experience a positive effect on growth from foreign direct investment; however, results for this income group show no positive relationship with economic growth. Researchers also note that countries with endowed natural resources more easily entice inflow of foreign capital explaining the presence of foreign investors in conflict countries such as Angola, DRC, Chad, Sudan, and Nigeria, even at the peak of conflicts. It therefore means that the recipient country has a role to play to make foreign aid influence economic growth. Hence, the following sections provide analysis of how foreign aid influences economic development in sub-Saharan Africa by mediating foreign aid with governance effectiveness variables.

Daud et al (2022) examined the relevance of the corruption trap hypothesis. Hence, Autoregressive Distributed-Lag (ARDL) models based on Cointegration and Granger-causality tests were utilized. Evidently, the findings indicate that both short and long-run causality exists between the two variables. Similarly, there is unidirectional causality flowing from corruption to foreign aid. The finding also reveals that neutral causality exists between foreign aid and economic growth, which negates theoretical expectations. Above all, the findings provide evidence that Nigeria is a victim of corruption trap. The research focused on macroeconomic variables behavior without considering the strength of institutional quality in Nigeria, particularly corruption which can shift resources externally aid from productive project to unproductive project. This study added corruption on the equation in order to capture it influence on economic growth of Nigeria as well.

Mary (2022) The Impact of Foreign Aid in Africa: A case study of Botswana and Somalia, Africa is the biggest foreign aid recipient. Every year, billions of dollars are sent in as foreign aid and development assistance to Africa with the aim to alleviate hunger, end poverty, foster economic development, democratic governance, and the rule of law without jeopardizing the peace of these countries. Unfortunately, little to no improvements have been made in terms of socio-economic or political development in the areas of rule

of law and democratic governance as Africa remains the poorest continent in the world according to Gross National Income (GNI) and the Human Development Index (HDI). This paper uses Botswana and Somalia as case studies to find clarity on why intended results have or have not been achieved considering the vast amounts of money received in foreign aid for development. Research shows that the positive impact of foreign aid is often marred by bad governance, weak rule of law, high levels of corruption, absence of strong democratic institutions, lack of accountability and information control by government officials. This was reiterated by James Wolfensohn, the former World Bank President when he stipulated that “corruption, bad policies and weak governance will make aid ineffective. The research failed to use any technique for data analyzes, hence this study will deployed scientific research methodology.

Eze, *et al* (2023) investigated the impact of foreign aid on economic growth in Nigeria from 1995 to 2017, this study therefore disaggregated foreign aid into health aid, education aid, industry aid, and economic infrastructure aid to ascertain how each aid affected Nigeria’s economic growth, using time series data. The Canonical Cointegrating Regression (CCR) procedure was employed to guarantee the robustness of the estimates. Empirical results indicate that within the study period, the impacts of education aid, health aid, industry aid, and economic infrastructure aid on economic growth varied. The study obtained evidence that only education aid drives economic growth significantly in Nigeria. However, the impact of health aid on growth was positive, its effect is insignificant; industry and economic infrastructure aid also impede economic growth. This led to the conclusion that foreign aid effect on the Nigerian.

Stanislav *et al* (2019) assessed the impact of foreign aid on the Nigerian economy with a specific interest in official development assistance from 1980 to 2019. it employed the ARDL bounds testing approach to cointegration and finds a long-run relationship among the variables employed. Furthermore, the estimated results suggest that official development assistance as a form of foreign aid and credit extensions does not contribute to the progress of the Nigerian economy, it rather retards it. Also, the study concludes both the short and long run that the labor force contributes to economic progress in Nigeria, whereas gross capital formation just like foreign aid retards growth. The Granger causality test reveals no sign of either unidirectional or bidirectional causal relationship between official development assistance and economic growth in Nigeria. The study recommends that adequate support through credit extensions to SMEs should be fostered to strengthen domestic capital formation. The originality of this work lies in its rigorous analysis of the long-term impact of official development assistance on the Nigerian economy, employing the ARDL bounds testing approach. The findings challenge conventional wisdom and offer valuable insights into the dynamics of foreign aid and economic growth in Nigeria. However, this study has certain limitation.

Richard & Collins (2024), analyzed Foreign Aid and Economic Development in Sub-Saharan Africa: The Mediating Role of Governance Effectiveness. Data on foreign aid, GDP and governance variables were from the World Bank governance archives covering five sub-Saharan African countries. The paper applied the OLS and fixed effect panel multiple regression analysis. From the first analysis, findings show a negative link between external aid and GDP per capita in sub-Saharan Africa. In the second analysis with governance moderating variables, findings indicate a positive relationship between foreign aid and GDP with rule of law providing a positive boost to foreign aid and GDP growth, but corruption and governance have a negative relationship with economic growth. The paper highlights policy implications for the need to bridle corruption and to strengthen governance institutions to enable foreign aid to function effectively toward economic growth. The paper suggests an agenda for further research to apply more governance institution variables in further analysis of aid effectiveness in sub-Saharan Africa economic growth.

Theoretical Framework

Two Gap Model Theory

The study anchored on the Two-gap model theory and North theory of institutional quality. The two-gap model considered an extension of the Harrod-Domar model. The Harrod-Domar model relates growth to national savings rate (or savings-income ratio) and the national capital-output ratio. The implication of the model is that higher rates of savings and investment engender higher rate of economic growth. However, for less developed countries (LDCs), there exists the possibility of a savings-gap arising from low level of savings (attributable to low level of income) which falls short of desired investment needed to accelerate economic growth. There is also the foreign exchange-gap arising from low level of exports and high import demand owing to low level of domestic output. These gaps constitute the focus of the two gap model. The savings-gap can be closed by inflow of foreign direct investment (FDI), while the foreign exchange-gap can be bridged by foreign aid (Akande & Oluyemi, 2010).

Methodology

Research Design and Data

This study employs an ex-post facto research design using secondary time-series data from 1993 to 2023. Data were sourced from the World Bank's World Development Indicators (WDI), Index Mundi, and Transparency International. The variables include: GDP: Gross Domestic Product per capita (constant US\$), the dependent variable, FOA: Foreign Aid (Net ODA received, constant US\$), CPI: Corruption Perceptions Index (rescaled 0-1, where higher values indicate less corruption), EXR: Official Exchange Rate (LCU per US\$), GKF: Gross Capital Formation (% of GDP), a proxy for domestic investment, FDI: Foreign Direct Investment, net inflows (% of GDP).

Method of Data Analysis

The Autoregressive Distributed Lag (ARDL) bounds testing approach developed by Pesaran et al. (2001) was adopted. This method is preferred because can be applied irrespective of the order of integration of the variables [I(0) or I(1)], provides unbiased estimates of long-run and short-run parameters simultaneously and is more efficient in small sample sizes.

Model Specification

The study estimates three models derived from an adapted framework of Mubarak et al. (2021).

$$GDPT = \alpha_0 + \alpha_1(FOA * CPI)_t + \alpha_2EXR_t + \alpha_3GKF_t + \alpha_4FDI_t + \epsilon_t$$

The corresponding ARDL and Error Correction Model (ECM) formulations were estimated to capture short-run dynamics and long-run equilibrium.

Results and Discussion

Table 1
Descriptive Statistics

	GDP	FOA	CPI	EXR	GKF	FDI
Mean	3.10E+11	2.57E+09	0.237821	186.0029	1.975852	1.249259
Median	3.51E+11	2.15E+09	0.245000	149.5888	3.306385	1.224957
Maximum	5.74E+11	1.27E+10	0.700000	473.0947	40.74386	2.900249
Minimum	5.91E+10	2.20E+08	0.069000	21.88443	-22.79282	-0.039127
Std. Dev.	1.56E+11	2.66E+09	0.106390	121.3014	12.81540	0.851464
Skewness	-0.197395	2.179379	2.770269	0.873590	0.460003	0.266119
Kurtosis	1.753708	8.878708	14.12314	2.878316	4.833365	1.954417
Jarque-Bera	1.993952	62.48430	180.1588	3.578690	4.908912	1.605941
Prob.	0.368994	0.000000	0.000000	0.167070	0.085910	0.447996
Sum	8.69E+12	7.18E+10	6.659000	5208.081	55.32385	34.97924
Sum. Squ. Dev.	6.56E+23	1.91E+20	0.305608	397278.8	4434.328	19.57478
Obs.	28	28	28	28	28	28

Source: Author's Computation Using E-views 9.0, 2025.

GDP showed significant growth from 1996 to 2023, with a negative skew. Foreign Aid (FOA) was highly volatile and positively skewed, indicating periods of very high inflows. The Corruption Perceptions Index (CPI) was consistently low on average, with a high kurtosis showing most data points were clustered at poor performance levels. The Exchange Rate (EXR) increased substantially over the period, reflecting persistent depreciation. Gross Capital Formation (GKF) was highly variable, even recording negative values, suggesting significant instability in domestic investment. Foreign Direct Investment (FDI) also showed volatility but with less extreme fluctuations than other variables. Most variables were not normally distributed, confirming the need for an econometric approach like ARDL that does not require normality.

Table 2
Augmented Dickey-Fuller (ADF) Unit Root Test Results

AT LEVEL							
		GDP	FOA	CPI	EXR	GKF	FDI
With Constant	t-statistic	-1.0905	-3.3390	-4.0859	-1.332	-8.6197	-1.3697
	prob.	0.7046	0.0233	0.0040	0.9980	0.0000	0.5812
		no	**	***	No	***	no
With constant and Trend	t-statistic	-1.3774	-3.776	-4.4615	-0.0941	-8.7118	-2.5649
	prob.	0.8446	0.0346	0.0076	0.9953	0.0000	0.2975
		no	**	***	No	***	no
Without constant and Trend	t-statistic	0.0269	-1.7861	-0.4828	2.8156	-7.7775	-0.6342
	prob.	0.6827	0.0707	0.4968	0.9979	0.0000	0.4328
		no	no	No	No	***	No
AT FIRST DIFFERENCE							
		d(GDP)	d(FOA)	d(CPI)	d(EXR)	d(GKF)	d(FDI)

With Constant	t-statistic	-3.5974	-5.3147	-8.7121	-3.5708	-6.5459	-7.4387
	prob.	0.0056	0.0002	0.0000	0.013	0.0000	0.0001
		***	***	***	**	***	***
With constant and Trend	t-statistic	-3.8607	-5.1947	-8.5769	-3.5494	-6.3966	-7.9929
	prob.	0.00291	0.0016	0.0000	0.0556	0.0001	0.0008
		***	***	***	*	***	***
Without constant and Trend	t-statistic	-4.0265	-5.3873	-8.8729	-2.4693	-6.6761	-7.5942
	prob.	0.0000	0.0000	0.0000	0.0157	0.0001	0.0000
		***	***	***	***	***	***

Note: ***, ** and * indicates significant at 1%, 5% and 10% respectively.

Source: Author's Computation Using E-views 9.0, 2025.

Based on the result of the Augmented Dickey-Fuller (ADF) unit root test presented in Table 2 it can be observed that the dependent variable Gross Domestic Product (GDP) was found to be non-stationary at level, with constant and trend, although some of the explanatory variables were stationary at level, like Corruption perception index (CPI), gross capital formation (GKF) and foreign aid (FOA). However, at first difference, all the variables including the dependent variable, gross domestic product (GDP) became stationary at first difference. Therefore, by the conditions of stationarity test, all the variables have met the condition for estimation using Autoregressive Distributed lag (ARDL) model.

Table 3

ARDL Estimation Result

Variables	Coefficients	Stan. Errors	t-stats	Prob.
GDP(-1)	0.555108	0.287701	1.929463	0.0857*
GDP(-2)	-0.427021	0.369167	-1.156716	0.2772
GDP(-3)	0.981486	0.313680	3.128944	0.0121**
FOA*CPI	9.268532	9.498861	0.975752	0.3547
FOA(-1)*CPI(-1)	-12.43238	10.84344	-1.146535	0.2811
FOA(-2)*CPI(-2)	22.68151	11.74251	1.931573	0.0855*
FOA(-3)*CPI(-3)	-22.99942	10.79983	-2.129609	0.0621*
EXR	-3.18E+09	2.83E+08	-11.24963	0.0000***
EXR(-1)	2.10E+09	6.98E+08	3.013840	0.0146**
EXR(-2)	-1.66E+09	9.43E+08	-1.766182	0.1112
EXR(-3)	3.09E+09	8.31E+08	3.715174	0.0048***
2GKF	-1.62E+09	7.54E+08	-2.149620	0.0601*
GKF(-1)	-1.34E+09	6.77E+08	-1.983721	0.0786*
GKF(-2)	-2.26E+09	8.54E+08	-2.648179	0.0266**
FDI	-2.20E+09	1.43E+10	-0.153415	0.8815
C	6.35E+10	4.14E+10	1.533713	0.1595
R ² = 0.99; Adj. R ² = 0.98		F- Stat = 104.6303 (0.0000)		D.W. = 2.2276

Note: ***, ** and * indicates significant at 1%, 5% and 10% respectively.

Source: Author's analysis using E-Views 9.0, 2025.

Based on the result of the ARDL estimation presented in Table 4.9, the first lag of the dependent variable Gross Domestic Product (GDP) has a positive and statistically significant impact. Its coefficient being 0.555108 suggests that the previous value of Gross Domestic Product (GDP) affects current value of the variable positively by 0.555108 units. The second lag of gross domestic product has a negative impact although it is not statistically significant. The third lag of gross domestic product (GDP) has a positive and statistically significant impact.

The interaction of foreign aid and corruption perception index (FOA*CPI) was found to have a positive impact on gross domestic product (GDP). The coefficient of the interaction being 9.268532 suggests that the interaction of foreign aid and corruption perception index exerts a positive but statistically insignificant impact on economic growth proxied by gross domestic product (GDP). A unit increase in the interaction term is associated with a 9.268532 units increase in gross domestic product. The first, second and third lag of the interaction have divergent impacts with the first lag having a negative impact, the second lag a positive impact and the third lag a negative impact.

The variable exchange rate (EXR) has a negative and statistically significant impact on economic growth proxied by gross domestic product (GDP). The coefficient of the variable being $-3.18E+09$ suggests that a 1 unit increase in exchange rate (EXR) will lead to a $3.18E+09$ units decrease in gross domestic product (GDP). The first lag of the variable has a positive impact on gross domestic product. The coefficient of the first lag is $2.10E+09$ which suggest that a 1 unit increase in exchange rate will lead to a $2.10E+09$ units increase in gross domestic product (GDP).

Gross capital formation (GKF) also exerts a negative impact on gross domestic product (GDP). The coefficient of the variable being $-1.62E+09$ suggests that a 1 unit increase in gross capital formation (GKF) will lead to $1.62E+09$ units decrease in gross domestic product (GDP). Similarly, the first and second lags of gross capital formation both have negative impact on gross domestic product (GDP). In the same vein, foreign direct investment (FDI) has a negative impact on gross domestic product (GDP) over the period of study. The coefficient of the variable being $-2.20E+09$ suggests that a 1 unit increase foreign direct investment will lead to a $2.20E+09$ units decrease in economic growth proxied by gross domestic product (GDP).

The R^2 of the model being 0.99 suggests that 99% of the variation in gross domestic product (GDP) is explained by the variables modeled in the study. The F-statistic of the model being 104.6303 with probability value of 0.0000 suggests that jointly, all the variables modeled in the study are statistically significant in explaining economic growth proxied by gross domestic product (GDP). Similarly, the value of the Durbin Watson (DW) statistic of the model being 2.2276 is greater than 2, which suggests the absence of positive serial correlation among the residuals of the explanatory variables modeled in the study.

Table 4

ARDL Bounds Test Result

Test Statistic	Value	K
F-Statistic	5.219391	5
Critical Values Bounds		
Significance	I(0)	I(1)
10%	2.08	3.00
5%	2.39	3.38
2.5%	2.70	3.73
1%	3.06	4.15

Source: Author's Computation Using E-views 9.0, 2025.

The result of the ARDL bounds test presented in Table 4.10 suggests a long-run equilibrium relationship among the variables modeled. This is because the value of the F-statistics obtained in the bounds test, being 5.219391 is greater than the I(1) critical values bounds at 2.5%, 5% and 10% levels of significance. Therefore, there is a long-run equilibrium relationship among the variables modeled in this study

Table 5

ARDL Short Run and Long Run Estimates

SHORT-RUN ESTIMATES				
Variable	Coefficient	Std. Error	t-statistic	Prob*
DLOG(GDP(-1))	-0.228622	0.172370	-1.326344	0.2213
DLOG(GDP(-2))	-0.352347	0.184321	-1.911597	0.0923*
D(CPI * FOA)	0.021400	0.000000	1.076868	0.3129
D(EXR)	-0.006253	0.001516	-4.123699	0.0033***
D(EXR(-1))	0.000539	0.002636	0.204539	0.8430
D(EXR(-2))	-0.007527	0.002378	-3.164773	0.0133**
D(GKF)	0.003125	0.002800	1.116194	0.2967
D(GKF(-1))	-0.023557	0.003309	-7.119744	0.0001***
D(GKF(-2))	-0.013861	0.002562	-5.411109	0.0006***
D(FDI)	-0.295065	0.066086	-4.464892	0.0021***
D(FDI(-1))	-0.478211	0.096856	-4.937327	0.0011***
D(FDI(-2))	-0.194541	0.087996	-2.210795	0.0580*
ECT(-1)	-0.418280	0.061698	-6.779450	0.0001***
LONG-RUN ESTIMATES				
FOA*CPI	0.000241	0.000000	0.997456	0.3478
EXR	0.007513	0.001792	4.192320	0.0030***
GKF	0.084252	0.040926	2.058629	0.0735*
FDI	0.385350	0.253459	1.520364	0.1669
C	24.698123	0.642754	38.425475	0.0000***

Source: Author's analysis using E-views 9.0, 2025.

Based on the short-run ARDL estimation result presented in table 4.11, the first lag of gross domestic product (GDP) has a negative impact on the current value of gross domestic product (GDP). Its coefficient being -0.228622 suggests that previous value of gross domestic product impacts current value negatively by 0.228622 units. The second lag of gross domestic product also has a negative impact.

The interactive term of foreign aid and corruption perceptions index (FOA*CPI) has a positive impact on gross domestic product (GDP) over the period of study. The coefficient of the interaction term being 0.021400 suggests that a 1 unit increase in the interactive term is associated with 0.021400 units increase in gross domestic product in Nigeria in the short run.

The variable exchange rate was found to exert a negative impact on gross domestic product in the short-run. The coefficient of exchange rate being -0.006253 suggests that a 1 unit increase in exchange rate is associated with a 0.006253 units decrease in gross domestic product in Nigeria.

The variable gross capital formation (GKF) also has a positive impact on gross domestic product (GDP) in the short run. The variable has a coefficient of 0.003125 which suggests that if gross capital formation should increase by 1 unit, gross domestic product (GDP) will increase by 0.003125 units. Foreign direct investment (FDI) also has a negative impact on gross domestic product. The coefficient of foreign direct investment (FDI) being -0.295065 suggests that a 1 unit increase in foreign direct investment will lead to a 0.295065 units decrease in gross domestic product over the period of study.

The Error Correction Term (ECT) of the model being -0.418280 is consistent with the theoretical expectation as it is negative, less than one and statistically significant as the probability of the ECT suggests (0.0000). This implies that the speed of adjustment after disequilibrium is 41%.

The long run results of the ARDL estimation suggests that in the long-run, the interactive term of foreign aid and corruption perceptions index (FOA*CPI) exerts a positive impact on gross domestic product. The coefficient of the interaction term being 0.000241 suggests that a 1 unit increase in the interaction is associated with 0.000241 units increase in gross domestic product (GDP). Exchange rate (EXR) was found to have a positive impact on gross domestic product in the long run. Its coefficient being 0.007513 suggests that a unit increase in exchange rate is associated with 0.007513 units increase in gross domestic product (GDP). Similarly, gross capital formation (GKF) also exerts a positive impact on gross domestic product (GDP). The coefficient of the variable being 0.084252 suggests that a unit increase in gross capital formation (GKF) is associated with a 0.084252 units increase in gross domestic product in Nigeria in the long run. Foreign direct investment with a coefficient of 0.385350 also has a positive impact on gross domestic product in the long run in Nigeria. Its coefficient suggests that a unit increase in foreign direct investment (FDI) is associated with a 0.385350 units increase in gross domestic product (GDP).

Table 6

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F- Statistic	1.181118	Prob. F (20, 4)	0.4229
Obs. R- Squared	17.56447	Prob. Chi- Square (20)	0.3500
Scaled Explained SS	1.150449	Prob. Chi-Square (20)	1.0000

Source: Author's Computation using E-views 9.0, 2024.

The result of the Breusch-Pagan-Godfrey Heteroskedasticity test presented in Table 4.13 suggests that there is no problem of Heteroskedasticity among the residual of the model. This is because the probability of the Chi-Square is greater than 0.05.

Post- estimation Tests

Various diagnostic tests were conducted after the ARDL estimation, which includes the Breusch-Pagan Serial Correlation LM test, the Breusch-Pagan- Godfrey Heteroskedasticity test, Normality of Residuals test, and the Cumulative Sum (CUSUM) and Cumulative sum of Squares tests (CUSUM of Squares). The results of these tests are presented in tables and figures, and thereafter interpreted.

Table 7

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.148877	Prob. F (2,3)	0.3781
Obs*R-squared	6.922818	Prob. Chi-Square (1)	0.0314

Source: Author's Computation using E-views 9.0, 2025.

The result of the Breusch-Godfrey serial correlation LM test presented in Table 4.12 suggests that there is a slight problem of serial correlation among the residual of the model. This is because the probability of the Chi-Square is less than 0.05.

Table 8

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F- Statistic	1.181118	Prob. F (20, 4)	0.4229
Obs. R- Squared	17.56447	Prob. Chi- Square (20)	0.3500
Scaled Explained SS	1.150449	Prob. Chi-Square (20)	1.0000

Source: Author's Computation using E-views 9.0, 2024.

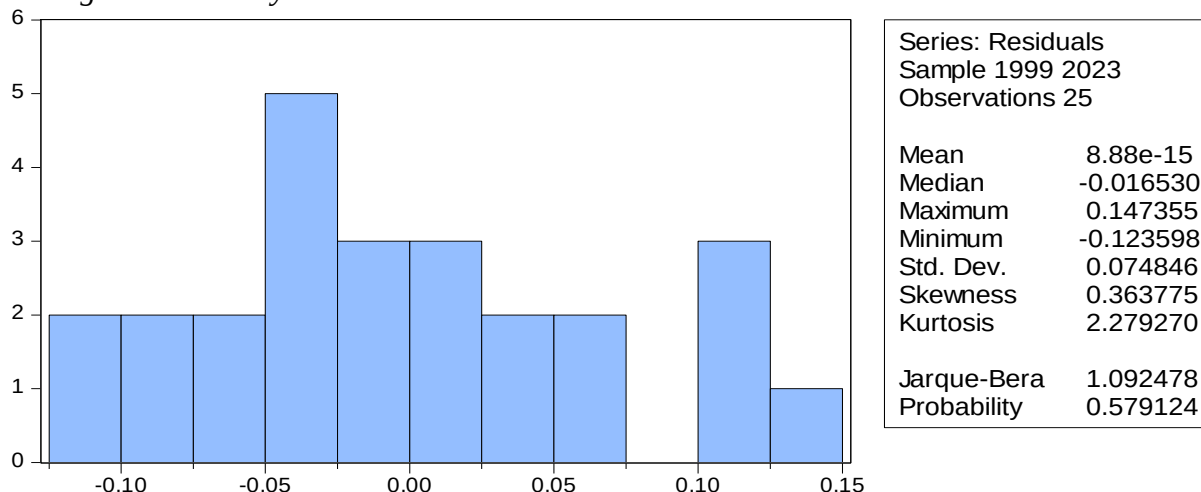
The result of the Breusch-Pagan-Godfrey Heteroskedasticity test presented in Table 4.13 suggests that there is no problem of Heteroskedasticity among the residual of the model. This is because the probability of the Chi-Square is greater than 0.05.

Normality of Residuals Test

As a post-estimation test, the normality of the residuals tested to know is the assumption is violated or not. The test is conducted using graphs of the residuals to see if they are normally distributed or not. The normality of residuals graph is presented in Figure 4.3.

Figure 1

Histogram Normality test



Source: Author's Analysis using E-View 9.0, 2025.

Based on the result of the normality of residuals test presented in Figure 4.1, it can be observed that the residual plotted on the histogram appear to follow the normal distribution curve. However, it is not absolutely in line with the normal distribution curve as the probability of the Jarque-Bera statistics suggests.

Stability Test

Figure 2

CUSUM and CUSUMSQ Results



Source: Author's analysis using E-views 9.0, 2025.

Based on the results of the CUSUM and CUSUMSQ test presented in Figure 4.4, the results suggests that there is a slight problem of parameter instability both in the CUSUM and the CUSUMSQ. This is because the CUSUM and CUSSUMSQ are slightly out of the 5% critical bounds line.

Discussion of findings

Nigeria's economic growth, suggesting it provides support but is insufficient without complementary reforms. Corruption consistently demonstrates a negative impact on growth by diverting resources and discouraging investment. A crucial finding is the positive interaction between foreign aid and corruption control, indicating that aid coupled with strong oversight mechanisms can mitigate corruption's adverse effects and contribute to growth. The exchange rate exhibits a dual role, with short-term depreciation harming growth through increased costs, while long-term adjustments may enhance competitiveness. Contrary to expectations, foreign direct investment exerts a negative influence, largely due to its concentration in the extractive sector with limited local economic linkages and significant profit repatriation. Domestic investment, measured by gross capital formation, shows a positive long-run effect, though short-term inefficiencies and governance challenges weaken its immediate impact. Causality tests further reveal a one-way relationship where FDI influences growth without being attracted by it, alongside interconnected

feedback loops between investment, exchange rates, and aid. The overarching conclusion emphasizes that governance quality is the decisive factor, as both foreign capital and domestic investment require institutional reforms to achieve their full potential for sustainable development in Nigeria.

Conclusion and Policy Recommendations

The central conclusion is that the effectiveness of foreign aid is not automatic but is critically contingent on the domestic institutional environment. While foreign aid exhibits a positive relationship with growth, its effect is weak, indicating that aid alone is an insufficient catalyst for development. The pervasive nature of corruption, as confirmed by its significant negative impact on growth, acts as a major impediment, diverting resources and undermining investment incentives.

A pivotal finding of this research is the positive, though modest, coefficient of the interaction term between foreign aid and corruption control (FOA*CPI). This demonstrates that even in a context of systemic corruption, foreign aid can foster economic growth when it is coupled with mechanisms that enhance oversight and accountability. This suggests that the quality of governance is the decisive filter through which the potential of aid is realized.

Furthermore, the study reveals counterintuitive results regarding investment. The negative impact of Foreign Direct Investment (FDI) underscores the limitations of an economic structure reliant on the extractive sector, which offers limited linkages to the broader economy and leads to significant profit repatriation. Meanwhile, the positive long-run impact of Gross Capital Formation (GKF) confirms the fundamental role of domestic investment, though its short-term inefficiencies highlight governance bottlenecks.

Policy Recommendations

Based on the empirical findings of this study, the following policy recommendations are proposed to enhance the effectiveness of foreign aid and foster sustainable economic growth in Nigeria:

1. **Strengthen Governance and Anti-Corruption Frameworks:** The government must prioritize institutional reforms that enhance transparency and accountability.
2. **Diversify and Strategically Channel Foreign Direct Investment:** Policymakers should move beyond a volume-based approach to FDI and focus on its quality and sectoral impact.
3. **Enhance the Efficiency of Domestic Investment:** To maximize the positive long-run impact of gross capital formation, the government must address the inefficiencies that weaken its short-term returns. Key actions include:
4. **Adopt a Strategic Exchange Rate Management Policy:** Recognizing the dual role of the exchange rate, the Central Bank of Nigeria should:

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