

# The Impact Of External Debt On Economic Growth In Nigeria.

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DOI: 10.29322/IJSRP.10.04.2020.p10077

<http://dx.doi.org/10.29322/IJSRP.10.04.2020.p10077>

**Abstract-** This study empirically investigated the impact of external debt on economic growth in Nigeria between 1981 and 2018 using ARDL estimation technique. The variables used in the study were tested for stationarity using the Augmented Dickey Fuller. The result revealed that EDS, DDS, FDI and GOVE were stationary at first differencing while GDPGR was stationary at level. The study revealed that external debt and foreign direct investment positively affect economic growth while domestic debt and government expenditure hinders economic growth in Nigeria. The error correction model coefficient which is -0.969 means that nearly 96.9 percent of any disequilibrium in economic growth is corrected by the external debt, domestic debt, foreign direct investment and government expenditure within one period (one year). The study recommends that the country can borrow from external sources when the need arise, however, caution should be taken to avoid putting the country into debt crises. Also, government should reconsider her spending structure to favour infrastructure development which would motivate both local and foreign investors to invest and in turn enhance economic growth. Lastly, government and policy makers should formulate policies that would attract foreign investors and provide enabling environment vis-à-vis security of lives and properties.

**Index Terms-** external debt, dual gap, economic growth, ARDL

**JEL Classification:** H62, H50, O40

## I. INTRODUCTION

One of the characteristic of developing countries Nigeria inclusive is insufficient domestic funds (revenue) needed for investment that would propel economic growth and development. In Nigeria, the inability to diversify her revenue sources coupled with corruption and mismanagement compels Nigeria to have inadequate fund for growth and developmental projects such as roads, electricity pipe borne water and so on (Udeh, Ugwu and Onwuka 2016). In order to overcome this financial shortage, Nigeria resorted into external borrowing. Udoffia and Akpanah (2016) defined external debt as packages that consist of a combination of financial, technical vis-a-vis managerial requirements emanating from outside the country, aimed at supporting economic growth and development and are repayable at determined future date in foreign currency. External borrowing sourced from other countries are called bilateral loan while loans from multinational countries like World Bank, International Monetary Fund, Africa Development Bank, London Club, Paris

Club etc. are called multilateral loan. Soludo (2003), opined that countries borrow for two main broad reasons namely: (1) macroeconomics reason which is either to finance higher investment, to finance higher consumption or to finance transitory balance of payment deficit in order to lower nominal interest rates abroad lack of domestic long term credit (2) to circumvent hand budget constraint. This implies that countries borrow in order to enhance economic growth and development as well as reduce poverty. The rate of external borrowing in Nigeria has been on steady increase, rising from \$28 million in 1958 to over \$30 billion in 2005 before debt relieve thereafter the loan keep increasing again, however, the economic growth has not been on a steady increase and the government is planning to borrow more. It is important to state that when more emphasis is on the negative impact of debt it will lead to morbid fear of debt which would result into debt avoidance when it would have promote the economy by bringing in the much needed capital for investment and economic growth, so this study would investigate to determine if external debt promotes economic growth or otherwise in Nigeria and appropriate recommendation would be made to the government. Also, there is conflicting empirical evidence among researchers on the impact of external debt on economic growth scholars like Sulaiman and Azeez (2012), Odubuasi, Uzoka and Anichebe (2018), Ndubuisi (2017) and Elwasila (2018) all found that external debt had positive impact on economic growth, while reserachers like Ajayi and Oke (2012), Forgha, Mbella, and Ngangnchi (2014) and Onakoya and Ogunade (2017) found that external debt had negative impact on economic growth. Also, Inna and Viktoriia (2018) found that external debt has no impact on economic growth. Given such contradiction, the debate on the impact of external debt on economic growth remains inconclusive so the need to investigate further.

The history of external borrowing in Nigeria can be traced to 1958 when the country borrowed \$28 million from World Bank for the construction of railway, throughout the decade and the subsequent one the Nigeria external borrowing was kept low. The oil boom of 1971's and the desire to rebuild the country after the civil war vis-à-vis implementation of the first and second economic plan propelled the country into huge borrowing with the believe of repayment from the revenue generated from oil. However, in 1982, oil prices crashed and this made the country not to be able to pay off the loans it borrowed, as a result Interest payments spiked, penalties rose, then loan crisis began. This does not stop Nigeria government from sourcing for loans despite of the huge debt it owed so the debt crises keep rising which then started

causing financial burden on the economy and crowding out investment (DMO, 2005). This pattern continued to the point that as at December 31, 2004 Nigeria owed a total of US\$35.994 billion, Nigeria's debt to GDP was about 58%, almost double the recommended level of 30%, debt to total government revenue amounts to 412%, and debt/export ratio stood at 152%, these all indicated that the country cannot develop with the serious debt crises. During this period Nigeria spends more on interest payments than it does on health care and education. In solving this crisis Nigeria sought for debt relief and the effort yielded result on June 29, 2005, when the Paris Club and Nigeria agreed on an US\$18 billion debt relief package. The relief helped the country as the resources that would have been used to service the debt were used to fund critical priority sectors such as health, basic education, water, power, road networks and other infrastructure to stimulate the economy.

Due to the inadequacy of government revenue to finance the critical sector successive government started borrowing again and the debt started rising again. As at 2018 the country owed over 21.5 trillion naira and pays over 2.3 trillion naira to service the debt only in 2018. The ratio of debt services to total expenditure is 29.8855%, this implies that almost 30% of government expenditure is expended on debt services which would crowd out investment, retard economic growth.

## II. LITERATURE REVIEW

Onakoya and Ogunade (2017), investigated the impact of external debt on economic growth in Nigeria between 1981 and 2014, the study used Autoregressive Bounds testing method Distributed Lag (ARDL) and Ordinary Least Squares technique. The study revealed that external debt had negative impact on economic growth.

Ekperiware and S. I. Oladeji (2012), analyzed the structural break relationship between external debt and economic growth between 1980 and 2009 on economic growth in Nigeria. The result revealed that the 2005 external debt relief caused a structural break economic growth relationship with external debt in Nigeria and that the external debt relief did make available resources for economic growth in Nigeria.

Ajayi and Oke (2012), examined the effect of the external debt on economic growth in Nigeria. The study employed OLS regression analysis and it was revealed that external debt burden had negative impact on the nation income and per capital income of the nation, also, huge external debt led to continuous industrial strike and poor educational system, increase in retrenchment of workers and devaluation of the nation currency.

Forgha, Mbella, and Ngangnchi (2014), investigated the impact of External Debt and Domestic Investment on Economic Growth in Cameroon between 1980 and 2013. The study made use of two Stage Least Squares estimation technique. The study revealed that domestic investment positively affect economic growth while external debt had negative affect economic growth. Sulaiman and Azeez (2012), investigated the effect of external debt on the economic growth of Nigeria between 1970 and 2010 using Johansen Co-integration estimation technique, the study revealed that there is a long run relationship among the variables and external debt had positive impact on economic growth.

Ndubuisi (2017), examined the impact of external debt on economic growth of Nigeria between 1985 and 2015 using Johansen Co-integration and error correction estimation technique. The Findings showed that debt service payment had an adverse and insignificant impact on economic growth while external debt stock had positive impact on economic growth, also, the causality test revealed that there is unidirectional causality running from external debt to GDP.

Odubuasi, Uzoka and Anichebe (2018), analysed the effect of external debt on the economic growth of Nigeria from 1981 to 2017 using Granger Causality and Johansen Co-integration estimation technique. The study revealed that external debt stock and government capital expenditure have positive on Nigeria's economic growth while external debt service had no significant impact on economic growth.

Inna and Viktoriia (2018), investigated the nexus between external debt and economic growth in emerging economies between 2006 and 2016 and made use of ADL model and correlation analysis. The study revealed that external debt had no impact on the economic growth of the countries that were examined.

Amassoma (2011), analysed the nexus between external debt, domestic debt and economic growth in Nigeria from 1970 to 2009 using a Vector Autoregressive (VAR) and a Vector Error Correction (VEC) estimation technique. The VAR result revealed that there is a bi-directional causality between domestic debt and economic growth while that of the VEC model revealed a unidirectional causality from economic growth to external debt in Nigeria.

Elwasila (2018), investigated the effect of external debt on economic growth of Sudan from 1969 to 2015 and made use of Johansen cointegration method and the Vector Error Correction Method (VECM) estimation technique. The study showed that external debt had had positive impact on economic growth of Sudan whereas exchange rate and foreign direct investment had adverse effects on the economy.

### 2.1. Theoretical framework

#### Dual gap model

The model was propounded by (Chenery, 1966) and it is an extension of Harrod-Domar growth model. Harrod-Domar model deal with a close economy while Dual gap model is applicable in an open economy. Two gap model stated that development of less developed countries is constrained due to presence of two gaps namely: (1) gap between domestic savings and investment, where domestic savings are inadequate to support the level of growth. (2) Gap between export revenues and imports, or foreign exchange gap, where import purchasing power (value of imports + capital transfers) is inadequate to support the level of growth.

This model is generally been used to analyse the requirements of foreign aid or foreign borrowing of capital in bridging the two gaps that prevail in the less developed and developing countries. If the gap is reduced it becomes easier for the economics to reach the stage of take-off as postulated by Rostow in his theory, Stages of economic development.

Harrod -Domar model defines growth as:

$$g=s/k$$

(1)

where g= growth rate

s =savings rate  
k= capital-output ratio  
Two-gap model defines growth rate as:  
 $g=s/k+f/k$  (2)

where f is foreign capital inflow ratio.

### III. METHODS

#### 3.1 Model specification

Guided by empirical finding reviewed in this study and sequent to its logical structure as observed in the theoretical framework, the model specification therefore followed the models of Pattillo, Ricci, and Poirson (2001) with modifications.

$$GDPGR = (\text{EDS}, \text{DDS}, \text{FDI}, \text{GOVE}) \quad 3$$

Where: EDS means external debt stock  
DDS means domestic debt stock  
FDI means foreign direct investment  
GOVE means government expenditure  
GDPGR means gross domestic product growth rate been proxy for economic growth.  
Linearizing equation (3) becomes:

$$GDPGR_t = \beta_0 + \beta_1 EDS_t + \beta_2 DDS_t + \beta_3 FDI_t + \beta_4 GOVE_t + \epsilon_t \quad 4$$

For an appropriate coefficient for the GDPGR with respect to the explanatory variables to be produce I would transform the model equation (4) on log-linear econometrics form as seen below. Variable with negative value cannot be log so RGDPGR was not log which made the model to be log-linear.

$$GDPGR_t = \beta_0 + \ln\beta_1 EDS_t + \ln\beta_2 DDS_t + \ln\beta_3 FDI_t + \ln\beta_4 GOVE_t + \epsilon_t \quad 5$$

#### 3.2 Data and source

The study employs annual data covering the period 1981-2018. Data for the work were sourced from Debt Management Office (DMO), from Central Bank of Nigeria (CBN) statistical Bulletins and World Bank Data Base.

### IV. RESULT AND DISCUSSION

#### 4.1. Results of the Unit Root Test

Unit root test is used to test for statistical property of variables. Most time series data are often non-stationary, therefore there is need to test for its stationarity to avoid spurious result. This study employed Augmented Dickey-Fuller (ADF) test to check for the unit root in the data and the result is presented below.

#### 4.1 UNIT ROOT TEST TABLE

VARIABLE	AT LEVELS			1ST DIFFERENCE			LEVEL OF INTEGRATION
	ADF-Test	1% C.V	5% C.V	ADF-Test	1% C.V	5% C.V	
LOG(DDS)	-1.464	-3.627	-2.946	-4.453	-3.627	-2.946	I(1)
LOG(EDS)	-1.664	-3.627	-2.946	-4.654	-3.627	-2.946	I(1)
LOG(FDI)	-1.744	-3.621	-2.943	-10.967	-3.627	-2.946	I(1)
GDPGR	-4.106	-3.621	-2.943	-9.932	-3.627	-2.946	I(0)
GOVE	-1.484	-3.627	-2.946	-1.921	-3.646	-2.954	I(1)

Augmented Dickey-Fuller (ADF) results of the test at both levels and first difference are shown in the table above. The null hypothesis is that there is a unit root in each of the series that is each variable is non stationary. At 5% critical value the result showed that variables like DDS, EDS, FDI and GOVE are integrated of order I(1), GDPGR is stationary at level

#### 4.2 Co-integration test

Co-integration test is used to test for long-run equilibrium relationship between or among series. Based on the Unit root test result, the most appropriate estimation technique is ARDL – Bound testing method of co-integration analysis because it allows combination of different orders of integration. The Bounds Cointegration test result is provided thus:

Table 2: ARDL Bounds Test

Test Statistic	Value	k
F-statistic	12.75425	4
Critical Value Bounds		

Significance	I0 Bound	I1 Bound
10%	2.2	3.09
5%	2.56	3.49
2.50%	2.88	4.37
1%	3.29	4.37

Since the result shows that the value of F-statistic is greater than both the lower bound I(0) and upper bound I(1) at 5% significant level therefore there is existence of long-run relationship among the variables.

#### 4.3 ARDL Analysis

This subsection presents the result obtained from estimating the ARDL unrestricted error correction (short run or dynamic) model and the ARDL long-run (static) model in equation. Following this result, this study examines and estimates both short-run dynamics and the long-run relationships between external debt, domestic debt stock, foreign direct investment and government expenditure

**Table 3**  
**long run multiplier coefficient of ARDL**

Variables	Coefficient	Std. Error	t-Statistic	Variables
LOG(EDS)	2.931	0.898	3.262	LOG(EDS)
LOG(DDS)	-9.759	2.101	-4.644	LOG(DDS)
LOG(FDI)	5.499	1.954	2.814	LOG(FDI)
LOG(GOVE)	4.639	2.360	1.966	LOG(GOVE)
C	-90.825	37.003	-2.455	C

**Long-Run ARDL Model analysis**

The result from the above table revealed that EDS, FDI and GOVE had positive relationship with GDPGR, while DDS had an adverse effect on GDPGR. Also, all the variables were significant. The co integration equation is:  
 $GDPGR = -90.825 + 2.931LOG(EDS) - 9.759LOG(DDS) + 5.499LOG(FDI) + 4.639LOG(GOVE).$

**4.4 ARDLECM**

Sequent to the existence of cointegration relationships among the variables as shown in the ARDL Bound test, Auto-Regressive Distributed Lag Error Correction Model estimation technique is the appropriate technique to be used to determine the short-run behavior of the variables. The below table shows the result of the short run dynamics of equation.

**Table 4: ARDLECM TABLE**  
**Table 4: ARDLECM TABLE**

Variables	Coefficient	Std. Error	t-Statistic	Prob.*
DLOG(DDS)	-6.096	2.664	-2.289	0.032
DLOG(FDI)	1.436	0.832	1.726	0.098
DLOG(EDS)	6.467	2.175	-4.826	0.001
DLOG(GOVE)	-10.424	2.325	-4.483	0.002
CointEq(-1)*	-0.969	0.100	-9.652	0.000
R-squared	0.796	Mean dependent var		0.367
Adjusted R-squared	0.753	S.D. dependent var		4.185
S.E. of regression	2.395	Akaike info criterion		4.762
Sum squared resid	160.628	Schwarz criterion		5.073
Log likelihood	-76.328	Hannan-Quinn criter.		4.869
Durbin-Watson stat	2.145			

**Short-Run (Dynamic) ARDL Model analysis**

The result revealed that FDI and EDS had positive relationship with GDPGR while DDS and GOVE had negative effect on GDPGR.

The study shows that foreign direct investment had a positive significant effect on economy growth. This implies that as more foreign direct investment flows to the country the economy grows further. This conform to the apriori expectation.

In the same vein, External debt stock was found to have a positive and significant relationship with economic growth rate at 10% significant level. The result implies that as more fund are been borrowed from external sources the economy grows. This conform to the apriori expectation. This could be because most of external debt are tagged to projects and are more supervised by the creditor thereby minimizing diversion.

However, domestic debt stock was found to have negative significant effect on economic growth. The result implies that as more fund are been borrowed from domestic sources the country's

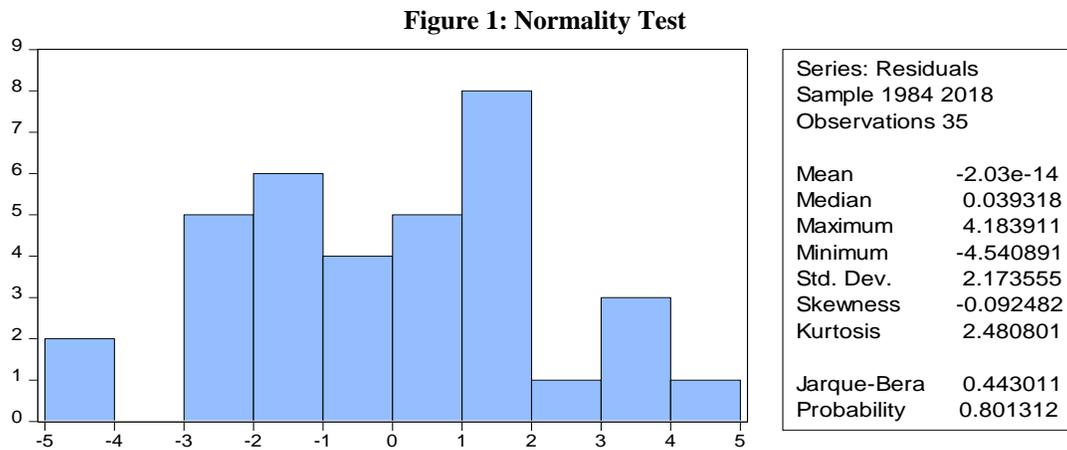
economy decline. This does not conform to the apriori expectation.

Government expenditure showed that it had a negative significant relationship with economic growth. The result implies that as government spending increases the country's economy decline. This does not conform to the apriori expectation.

ECM coefficient which is an important coefficient in short run analysis. ECM term is well defined, that is negative and statistically significant at 5% level. The coefficient is -0.968586 which indicates approximately 96.86 percent of the previous year's disequilibrium in economic growth is been corrected by EDS, DDS, FDI and GOVE. This also showed the speed at which the model converges to equilibrium. The magnitude of this coefficient implies that nearly 96.86 percent of any disequilibrium in economic growth is corrected by the some of the selected variable within one period (one year). The implication is that the present value of economic growth will adjust to changes in EDS, DDS, FDI and GOVE.

Also, some diagnostic tests (such as normality and heteroscedastic ARCH tests) were carried out to ascertain the validity of the regression estimates. The result of the normality test on figure 1 shows that the probability value of the Jarque-Bera statistics is greater than 5%, indicating that the residuals from the

estimates are normally distributed. The heteroskedasticity (ARCH test) also showed (see tables 5) the absence of serial correlation in the estimates, this is because the probability value is greater than 0.05. The results of the diagnostic tests showed the appropriateness of the regression estimates.



**Table 5: Heteroskedasticity Test: ARCH**

F-Statistics	0.920363	Prob. F(1,31)	0.4139
Obs*R-squared	2.820636	Prob. Chi-Square(1)	0.2441

## V. CONCLUSION AND RECOMMENDATIONS

### 5.1 Conclusion

This paper examined the impact of external debt on Nigeria economic growth between 1981 and 2018. Based on the result obtained, it was revealed that there is both long-run and short-run relationship between Nigeria economic growth on one hand and external debt stock, domestic debt stock, foreign direct investment and government expenditure on the other hand.

It is also concluded from the result that, foreign direct investment and external debt stock have positive and statistically significant impact on economic growth. The result also found that domestic debt stock and government spending have negative and statistically significant impact on economic growth. Moreover, it is concluded that Bound test confirmed that the variables cointegrated.

### 5.2 Recommendations

Based on the findings of this study, the following recommendations were made:

The study revealed that external debt contributes more to economic growth therefore, the government should can borrow when the need arise however, caution should be taken to avoid putting the country into debt crises.

Since foreign direct investment positively affect the economic growth, government and policy makers should formulate policies that would attract foreign investors and provide enabling environment vis-à-vis security of lives and properties.

The study revealed that domestic borrowing hinders economic growth, therefore government should ensure proper utilization of domestic fund as most of the country's debt is locally

sourced. Also government should frequent and prompt payment of debt services to avoid accumulating more debt.

Since government expenditure inhibit economic growth, government should reconsider her spending structure to favour infrastructure development which would motivate both local and foreign investors to invest and in turn enhance economic growth.

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