

# Effect of External Debt Service on Economic Growth in Nigeria

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## Abstract

External debt service is major debt variable in economic growth and public debt debate. However, this variable is often ignored in literature. This study investigated the relationship between external debt service and economic growth in Nigeria from 1981 to 2020. A quantitative research approach was adopted for this study. The method for estimation was the Auto-Regressive Distributed Lags (ARDL) model. The ARDL bound test results showed there was co-integration. The speed of change between the short-run and long-run of the co-integrating equations was 88.86%. The study used debt overhang theory, the neo-classical theory and endogenous theory as the theoretical framework. The study provided evidence of a negative relationship between external debt service and economic growth although this is not statistically significant. The result shows resource depletion effect of external debt services on growth. External debt stock has a positive but not significant relationship with growth. There is a positive but not significant relationship between external reserves to external debt ratio with growth. Debt service to export ratio has a positive relationship with growth. The study recommends that policy makers in Nigeria should develop a methodology to compare the return on external debt to be incurred with the cost of debt so that gains that may eventually offset the cost of debt service. This methodology should be a policy or legislation.

## Keywords

Public Debt, External Debt, Economic Growth, Nigeria

## 1. Introduction

External debt is any funding acquired from sources outside a country (Awan & Qasim, 2020; Elom-Obed et al., 2017; Ndubuisi, 2017). If revenues are inadequate to fund expenditures, there will be a need to borrow (Bulus, 2020). The

growth enhancing feature of public debt has important policy implications for economic growth. Economic growth requires expenditure in education, social welfare and health (Owusu-Nantwi & Erickson, 2016). The most common reason of the public debt in most countries is because of budget deficit (Karazijienè, 2015). Awan & Qasim (2020) defined debt servicing as the money which is mandatory for the repayment of interest and principal owed to creditors. Abuzaid (2011) opined that external debt-service is a direct impact of external debt.

Ali & Mustafa (2012) noted that debt service has a resource drain effect which retards economic growth and can lead to debt overhang. A drawback concerning external borrowing is the currency risk, because external debt service raises the demand for often scarce foreign exchange (Abbas & Christensen, 2010). El Aboudi & Khanchaoui (2021) opined that a high external debt-service can deplete foreign exchange that could have been used in the provision of social services. Depreciation in the local currency will amplify the external debt service which results to macroeconomic instability. More so, if the debt is contacted at a variable rate this exposes the country to changes in global interest rate which can lead to increases in debt services cost (Elhendawy, 2022; IMF, 2017).

Debt servicing is key to debt sustainability, because payment on existing debt determine the ability to incur debt in the future (Lwanga & Mawejje, 2014; Karazijienè, 2015). Also, Àkos & István (2019) contributed to the debate by stating that in the context of highly indebted countries debt servicing depletes the revenue to level in which achieving economic growth is slim even when these countries undertake economic reforms. External borrowing and debt services can lead countries exposed to externals shocks and macroeconomic crises (Anderu et al., 2019; Bekun & Alola, 2016; Dey & Tarequ, 2020).

In 1964, the Italian government gave Nigeria her first external loan. A sum of US\$13.1 was taken to build the Niger Dam. Years after the first external borrowing, the external debt was generally insignificant (DMO, 2005). However, during the years of the oil boom (1971-1980), there was significant increase of external debt. Ndubuisi (2017) noted that the borrowing by various tiers of government in Nigeria to finance reconstruction developmental projects after the civil war. These borrowing were continued by the civilian government. In fact, the federal government was guaranteeing many types of external borrowing undertaken by private entities, banks, sub-national governments and other government agencies (DMO, 2005). Many of these borrowing where not properly utilised. The oil glut price decline that followed from 1981 exposed Nigeria to many macroeconomic shocks. The main problem for countries embarking on external debt that is not used productively and revenue shortfalls leads to default and eventually to the accumulation of debt service obligations (Abuzaid, 2011; Didia & Ayokunle, 2020). Dey & Tarequ (2020) noted that external debt is not injurious if the country can produce higher income than the cost of borrowing. Also, increase in external debt service can lead to a raise in taxation or cutback in government expenditure to productive areas (Ndubuisi, 2017).

This study is different from past other studies. Most studies on external debt services are not country specific hence panel data comparing of more than one country is often used. This study is country specific. Also, previous studies in Nigeria focused only on variable external debt stock and external debt service and omitted variables like debt service to export ratio and external reserve to debt ratio. These variables were included in this study. In addition, this study included budget deficit, gross fixed capital formation growth and population growth rate suggested in the literature to have a nexus between public debt and economic growth.

The structure of the study organized as follows: first, a body of theories guiding the relationship between external debt and economic growth was reviewed; Secondly, empirical review of previous studies in Nigeria and other developing country was done. Thirdly, the methodology of the study and model framework was presented. The Fourth area covers the presentation and analysis of data. The last section contains the summary, conclusion as well as recommendations.

## 2. Literature Review

### 2.1. Theoretical Reviews

#### The Neo-Classical Theory

The theory states that budget deficit under full employment will lead to a rise current expenditure that will result to a rise in interest rates (Lwanga & Mawejje, 2014). The neo-classical economists posit that borrowing has an undesirable effect on the economy growth because it results to crowding out of investment which hinders capital formation (Dombi & Dedák, 2019). The theory postulates that increasing borrowings would result to more imports and less exports resulting to an adverse effect on the current account balance of a country.

Under the neoclassical theories a negative association between borrowing and growth is expected. Fiscal deficit leads to decrease in government savings, when the rise in private savings does not make up for a drop in government savings it raises the general interest rate which negatively affects on economic growth. The Neo-Classical theory argued that budget deficit and borrowing is harmful and countries should practice system of balanced budgeting (Lwanga & Mawejje, 2014). Faizulayev et al. (2020) stated that the neoclassical economic growth model posits external debt arises when capital-constraint countries seek for borrowing abroad.

#### Endogenous Growth Theory

The model posits that economic growth primarily depends on factors within the economy and not external factors (Greiner, 2007). The endogenous theory was propounded because of the shortcomings of the neoclassical growth model that believes exogenous factors determine long-term economic growth (Filippakis & Stamatopoulos, 2021). In the endogenous growth theory human capital is believed to have a key role in economic growth. The model posits that the use of technology alone cannot lead to economic growth. This is because economic

output per individual depends on each individual productivity levels. Although the productivity depends on technological change, technological change relies on quality human capital and innovations which are considered to be internal. [Sanni et al. \(2019\)](#) describes population growth as the rate at which the number of people increases in a city, state, or country. [Ugochukwu & Chinyere \(2013\)](#) defined gross capital formation as sum of all new capital goods in a given period.

### **The Theory Debt Overhang**

The debt overhang theory suggests that if a country is highly indebted to the extent that the debt is more than its repayment capacity, debt service will strangle investments and hinder economic growth ([Gordon & Cosim, 2018](#)). Debt overhang is a circumstance where the debt burden is so huge that a country cannot secure further debts to finance new project. [Coccia \(2017\)](#) stated that the theory posits that public debt and public debt servicing impact economic growth by making debt repayment priority rather than other expenditure. Excessive public borrowing has a dual effect to the domestic economy. The first is crowding out effect and also hike in increase interest rate. High interest payment obligation can raise a country's budget shortfall. Huge debt service will hamper growth by reducing the public resources productive spending to stimulate growth ([Yusuf & Mohammed, 2021](#)).

## **2.2. Empirical Review**

### **Evidence from Nigeria**

[Adamu & Rasiah \(2016\)](#) studied the effect of external debt on economic growth in Nigeria. The period of the study covered 1970 to 2013. The method of estimation was ARDL. The finding of the study showed that external debt is detrimental to growth despite the 2006 external debt relief.

[Ndubuisi \(2017\)](#) carried out a study to analyze the effect of external debt on economic growth of Nigeria from 1985 to 2015. The data was analyzed using OLS, Johansen cointegration and error correction test. The study found out that debt service payment has a negative link with growth. The study used two control variables exchange rate and external reserve. These variables showed a positive and significant connection with growth.

[Ezema et al. \(2018\)](#) made use of OLS model and Johansson cointegration estimation methodology and data from 1990-2016. The study confirmed external debt service negatively and considerably impacted on economic growth.

Furthermore, [Grace et al. \(2019\)](#) provided evidence in Nigeria on the negative connection that external debt service have with growth. The period covered by study was from 1981 to 2017. Similarly, [Muhammad & Abdullah \(2020\)](#) evaluated the association of external debt servicing and economic growth from 1985 to 2018 using ARDL model. Debt service was found to have harmful effect on economic growth, but statistically insignificant in the short and long-run.

[Ohiomu \(2020\)](#) modeled external debt and economic growth nexus for policy analysis on public finance and public debt management in Nigeria. The estima-

tion method used was ARDL method. Due to negative effect of external debt on growth the study confirmed the existence a debt overhang.

Didia & Ayokunle (2020) provided evidence that in the short-run and the long-run, external debts have positive relationship with the Nigerian economy but not statistically significant. Faizulayev et al. (2020) used data from 1981 to 2017 in their study. The result showed that debt services and external debt have a negative and significant effect on real growth. This was established in both the short and long run.

Adekunle et al. (2021) provided another dimension by adopting a non-linear approach. The study used foreign debt indicators debt service as percentage of GDP as the dependent variable. The study concluded that the threshold of external debt stock is 6.81% of gross national income GNI. Any level above 6.81% will exert negative consequences.

Ogbonna et al. (2021) adopted the ARDL model to study the relationship between external debt services and growth. The period of the study was from 1986 to 2018. The study concluded that there is a long run negative and significant link between external debt services and economic growth in Nigeria. The study recommends an optimal use of external debt in Nigeria.

#### **Empirical Evidence from Other Developing Countries**

Musibau et al. (2018) using data from 1980 to 2015 from ECOWAS member countries. The study confirmed that there is positive relationship between external debt in ECOWAS countries and economic growth. Awan & Qasim (2020) studied the impact of external debt and external debt services in Pakistan. Their study provided evidence that debt services and external debt have a negative impact on the Pakistani economy because of repayment burden in foreign currency.

Similarly, Getinet & Ersumo (2020) using the ARDL approach and using data from 1983 to 2018 in Ethiopia suggest that there is long run relationship external debt service stock to GDP and external debt stock to GDP. Although the relationship was negative significant in the short run it was not significant in the long run. In Morocco, El Aboudi & Khanchaoui (2021) using the ARDL estimation technique showed that external debt has a significant negative impact on economic growth in Morocco. Antoine et al. (2021) using time series data from 1986-2015 in Congo confirmed that external debt has a positive and significant effect on economic growth. Elhendawy (2022) using data from 1980-2019 provided evidence of a long run negative relationship between the Egyptian national currency (pound) and external debt service. The outcome of this study shows the resource drain effect of external debt service in Egypt. The study adopted Vector Error Correction as the estimation technique.

### **3. Methodology**

#### **3.1. Methods of Data Collection**

This study used secondary data. Yearly time series data from 1981 to 2020 was

collected from the Central Bank of Nigeria, and the World Bank data base.

### 3.2. Estimation Technique

The study used the ARDL model which is a multiple regression model. In carrying out this research time-series data was gathered. Econometric models were built on this data. ARDL approach takes into account the short and long run relationship simultaneously (Pesaran et al., 2001). The ARDL bounds testing model is a cointegration method developed by Pesaran et al. (2001) to test existence of the long run relationship between the variables. It has some advantages over other type of cointegration tests and it is relatively a new method. The approach is used irrespective of whether the series are I(0) or I(1) (Shrestha & Bhatta, 2018). Another advantage it has is that it allows the use of different optimal lags for the different variables which is not possible with other cointegration test like the Engle and Granger model Johansen cointegration test.

### 3.3. Model Specification

In order to examine the level of total public debt that enhances economic growth, the following model is specified:

The model shown in Equation (1) is the econometric equation of the model. Equation (2) shows the ARDL equation.

$$\text{GDPG} = \beta_0 + \beta_1 \text{DEXT} + \beta_2 \text{EXT} + \beta_3 \text{EXTDR} + \beta_4 \text{EXRS} + \beta_5 \text{BGD} + \beta_6 \text{POPG} + \beta_7 \text{GFCR} \quad (1)$$

$$\text{GDPG}_t = \beta_0 + \sum^m \beta_1 \text{DEXT}_{t-0} + \sum^n \beta_2 \text{EXT}_{t-i} + \sum^o \beta_3 \text{EXTDR}_{t-1} + \sum^p \beta_4 \text{EXRS}_{t-1} + \sum^q \beta_5 \text{BGD}_{t-1} + \sum^r \beta_6 \text{POPG}_{t-0} + \sum^s \beta_7 \text{GFCR}_{t-0} + e_t \quad (2)$$

where

GDPG is real GDP growth the dependent variable,

$\beta_0$  = constant,

$\beta_1$  to  $\beta_7$  is the coefficient of the independent variables,

DEXT is Debt service on external debt,

EXT is the total external debt stock,

EXTDR represents percentage debt service to export,

EXRS represents percentage external reserve to external debt,

BGD is budget deficit,

POPG is the growth rate of the population as a proxy for human capital,

GFCR is Gross fixed capital formation the proxy for investment,

$E_i$  = random error term.

**Table 1** shows the definition, measurement of the independent and dependent variables.

## 4. Discussion and Analysis of Findings

### Descriptive Statistics

The descriptive statistics was used to describe the features of the data. The stan-

standard deviation indicates variability and volatility in the variables. A higher standard deviation shows a greater spread in the data.

**Table 2** shows the average of each variable. The average value of the dependent variable was RGDP 3.0264, that of DEXT, EXT EXTDR was 2.53, 1973.40, 12.456 respectively. While EXRD had a mean value of 76.78. GFCR BGD and POP had  $-0.527$   $-716.58$  and 2.58 respectively. Also from **Table 2**, standard deviation POP with 0.067 was the least which spread around the mean and EXT with 2779.72 has the greatest spread around the mean.

**Table 3** shows the stationary test of all the variables. Also, the short run equilibrium of the model is presented in **Table 4**.

An ARDL Bound Test was conducted the result is shown in **Table 5**.

To make decision on the bound test result is necessary. The decision rule is reflected on **Table 6**.

**Table 1.** Variable definition.

S/N	Variable	Definition	Measurement	Source
1	Real GDP Growth rate	Annual Percentage change in Real GDP	Percentage	CBN
2	External Debt Service	Total debt service on external debt	Billions in Dollars	World Bank
3	External Debt Stock	External Debt	Billions in Dollars	CBN
4	External debt service to Revenue	Percentage debt service to exports	Percentage	World Bank
5	EXRS represents external reserve to debt ratio	Total reserves expressed in percentage of total external debt	Percentage	World Bank
5	Budget Deficit	Government Revenue less Government Expenditure	Billions in Naira	CBN
6	Population Growth	Annual percentage Growth	Percentage	World Bank
7	GFCR	Annual percentage growth	Percentage	World Bank

Source: Authors compilation.

**Table 2.** Descriptive statistics.

Variable	Count	Mean	Std. Dev.	of Mean
RGDP	40	3.026431	5.453066	0.862206
EXTDR	40	12.45680	9.806083	1.550478
POP	40	2.580769	0.066334	0.010488
BGD	40	$-716.5875$	1271.063	200.9726
GFCR	40	$-0.527899$	13.64538	2.157524
EXT	40	1973.402	2779.720	439.5123
EXTDR	40	12.45680	9.806083	1.550478
EXRD	40	76.78132	97.56380	15.42619
DEXT	40	2.53	1.80	2.85

Source: Eviews 10 output.



**Table 3.** Augmented dickey-fuller test result.

Variable	t-Statistic	Prob.*	Status
RGDP	-3.972177	0.0041	I(0)
LOG(PBB2)	-10.26711	0.0000	I(1)
LOG(EXT)	-4.725979	0.0005	I(1)
EXTDR	-5.263133	0.0001	I(1)
DEXT	-3.726973	0.0075	I(0)
GFCR	-4.657815	0.0006	I(0)
POP	-4.956091	0.0004	I(0)
EXRD	-4.300158	0.0016	(1)

Source: Authors computation.

**Table 4.** ARDL short run model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
EXTDR	-0.086944	0.155696	-0.558423	0.5810
LOGBGD2	-0.253820	0.307786	-0.824663	0.4165
LOGBGD2(-1)	-0.604093	0.338197	-1.786217	0.0849
LOGEXT	2.051143	1.174888	1.745819	0.0918
DEXT	8.76E-11	4.65E-10	0.188409	0.8519
GFCR	0.050307	0.053319	0.943519	0.3535
POP	102.3010	34.55490	2.960535	0.0062
POP(-1)	-65.95028	31.13449	-2.118239	0.0432
EXRD	-0.001992	0.012524	-0.159097	0.8747
C	-94.55165	47.86215	-1.975499	0.0581
R-squared	0.580879	Mean dependent var		3.440644
Adjusted R-squared	0.431193	S.D. dependent var		4.845096
S.E. of regression	3.654139	Akaike info criterion		5.662343
Sum squared resid	373.8764	Schwarz criterion		6.131553
Log likelihood	-99.41570	Hannan-Quinn criter.		5.830692
F-statistic	3.880644	Durbin-Watson stat		1.956702
Prob(F-statistic)	0.002195			

Source: E-views 10 output.

The result on **Table 7** shows the ECM result for the model. The ECT coefficient of  $-0.886$  is negative and significant at 5% level as signified by the p-value. Since, the coefficient is less than 1 it seen not to be ambiguous. The speed of



**Table 5.** ARDL bound test result.

F-Bounds Test		Null Hypothesis: No levels relationship			
Test Statistic	Value	Signif.	I(0)	I(1)	
Asymptotic: n = 1000					
F-statistic	4.57	10%	2.03	3.13	
k		5%	2.32	3.5	
		2.5%	2.6	3.84	
		1%	2.96	4.26	
Actual Sample Size		39	Finite Sample: n = 40		
			10%	2.26	3.534
			5%	2.676	4.13
			1%	3.644	5.464
Finite Sample: n = 35					
			10%	2.3	3.606
			5%	2.753	4.209
			1%	3.841	5.686
t-Bounds Test		Null Hypothesis: No levels relationship			
Test Statistic	Value	Signif.	I(0)	I(1)	
t-statistic	-5.524380	10%	-2.57	-4.23	
		5%	-2.86	-4.57	
		2.5%	-3.13	-4.85	
		1%	-3.43	-5.19	

Source: E-views 10 output.

**Table 6.** Bounds test decision rule.

Model	F-Statistic	Signif.	I(0)	I(1)	Decision
ARDL(1, 1, 0, 0, 0)	4.573952	5%	2.32	3.5	Estimate ECMLong Run Model
Model	t-Statistic	Signif.	I(0)	I(1)	Decision
ARDL(1, 1, 0, 0, 0)	-5.524380	5%	-2.86	-4.57	Estimate ECM Long Run Model

Source: Authors computation.

change between the short-run and long-run of the co-integrating equations is 88.86%. Also the R-squared shows that ECM explains the 48% of the relationship among the variables in model. The remaining 52% is explained outside the model.

In the long-run external debt services have a negative relationship with economic growth that was not significant at 5% level. This is the main variable of interest of this study. As shown in the results in **Table 7** an increase by one unit

**Table 7.** ECM model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DEXT)	-6.5011	4.14	-0.157159	0.8761
D(LOGEXT)	1.504713	1.538236	0.978207	0.3355
D(EXTDR)	0.084384	0.120160	0.702261	0.4878
D(LOGBGD2)	-0.008782	0.259103	-0.033893	0.9732
D(GFCR)	0.082996	0.038971	2.129693	0.0412
D(POP)	38.00232	26.10033	1.456009	0.1554
D(EXRD)	0.007031	0.017815	0.394636	0.6958
ECM(-1)	-0.886751	0.171784	-5.162010	0.0000
R-squared	0.480040	Mean dependent var		0.290715
Adjusted R-squared	0.362629	S.D. dependent var		4.764790
S.E. of regression	3.803993	Akaike info criterion		5.690662
Sum squared resid	448.5813	Schwarz criterion		6.031905
Log likelihood	-102.9679	Hannan-Quinn criter.		5.813097
Durbin-Watson stat	2.024760			

Source: E-views 10 output.

of external debt service leads to 6.50 units decrease in economic growth all things been equal. This is in line with the position of the Neo-classical theory and Debt overhang theory that suggests borrowing from external sources is detrimental to economic growth. For debt managers and policy makers this results provide a basis to external debt services will not support growth in Nigeria. Also, earlier studies found a similar results like [Ezema et al. \(2018\)](#), [Grace et al. \(2019\)](#), [Muhammad & Abdullahi \(2020\)](#) and [Ogbonna et al. \(2021\)](#) in Nigeria. It is also consistent with the findings of [Getinet & Ersumo \(2020\)](#) and [Elhendawy \(2022\)](#) in Ethiopia and Egypt respectively. The negative relationship of debt service on external debt and economic growth is consistent with a-priori expectations.

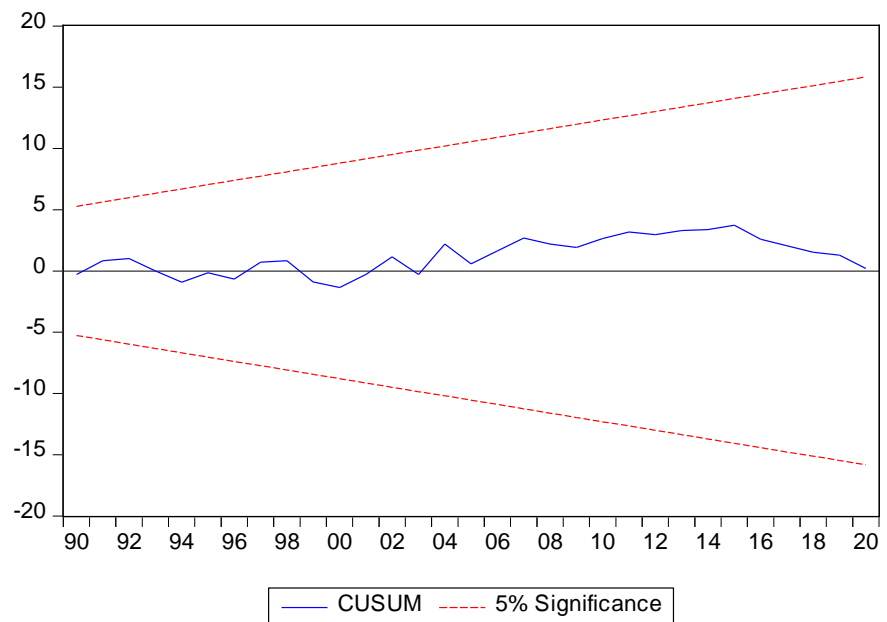
From **Table 7** long-run coefficient of external debt stock (LOGEXT) is positive but not significant at 5% level. This is contrary to a-priori expectation but it supports the findings [Musibau et al. \(2018\)](#) for ECOWAS member countries, [Didia & Ayokunle \(2020\)](#) in Nigeria and [Antoine et al. \(2021\)](#) in Congo. Debt service to export ratio (EXTDR) long-run coefficient of 0.084 is positive. This demonstrates the importance of export earnings on economic growth. The long-run coefficient of EXRS i.e. External reserve to external debt ratio is positive but not significant. This shows the importance of external reserve in economic growth. This is in line with the a-priori expectation. The result shows a unit increase in external reserve to external debt ratio of impacts positively on economic growth by 0.007 ceteris paribus.

Gross fixed capital formation the proxy for investment GFCR is positively related to growth and significant at 5% level. This means a percentage increase

**Table 8.** Breusch-Godfrey serial correlation lm test.

F-statistic	0.513693	Prob. F(1, 30)	0.4791
Obs*R-squared	0.656558	Prob. Chi-Square (1)	0.4178

Source: E-views 10 output.

**Figure 1.** CUSUM test. Source: E-views 10 output.

Gross fixed capital formation will lead to 8% growth of GDP in Nigeria all things remaining same. This is in conformity with the expectations and argument of the Endogenous growth model. It also further demonstrates the importance of investment in infrastructure to economic growth. Also, the long -run population coefficient is positive to economic growth and thus supports the assertion of Endogenous growth model. Budget deficit (BGD) has negative but not significant relationship. This is in line with neoclassical theory prediction and the a-priori expectation.

The result on **Table 8** shows that there no evidence of serial correlation. This because the Prob value of F-statistic is greater than 0.4791.

As shown in **Figure 1** the blue line is within the linear margins (red lines) hence the model is seen as stable.

## 5. Summary and Conclusion

External debt service is major debt variable in economic growth and public debt debate. However, this variable is often ignored in literature. This study investigated the relationship between eternal debt service and economic growth in Nigeria from 1981 to 2020. An econometric model was specified based on literature. The independent variable was real GDP growth and independent variables were variables that are related to external debt services found in literature. The

method for estimation was ARDL after achieving data stationary. ARDL Bound Test results showed there was cointegration. To ensure there is no mis-specification errors on the econometric model and model stability robustness and diagnostic test were performed. The test result showed that the model was stable and the estimates were reliable.

The speed of adjustment the co-integrating equations is fast at 88.86%, also it was not ambiguous. The study adopted the neo-classical theory; the endogenous growth theory and debt overhang as the theories guiding the study. The study provided evidence of the presence of a negative long run relationship external debt service and economic growth but is not significant. It appears that external debt service has a resource depletion effect. In the long-run external debt has a positive but not significant relationship with economic growth. There is positive but not significant relationship between external reserves to external debt ratio with growth; this shows the importance of external reserve in economic growth. Debt service to export ratio has positive long-run relationship with growth. As expected, budget deficit has a negative relationship with economic growth in Nigeria. This is in line with a priori expectations. The study recommends that policy makers should develop a methodology to compare the return on external debt to be incurred with the cost debt. Then it only incurs external debt on projects whereby that the gains will exceed the cost. This methodology should be a policy or piece legislation. This methodology should be in form of linking revenue projections and external borrowing. Also there is need for the evaluation current and future debt burden service indicators. This is to understand how external debt services burden evolve over time and assess the country's vulnerability to this burden. This will enable the country can meet current and future external debt obligations in full without recourse to rescheduling, arrears and without compromising growth. Also government should consider the degree of concessionality of all external debt. This will involve the use of quantitative elements like debt conditions, repayment capacity and new financing and qualitative means like use of judgment before external debt is incurred.

### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

### References

- Abbas, S. A., & Christensen, J. E. (2010). The Role of Domestic Debt Markets in Economic Growth: An Empirical Investigation for Low-Income Countries and Emerging Markets. *IMF Staff Papers*, 57, 209-255. <https://doi.org/10.1057/imfsp.2009.24>
- Abuzaid, L. E. M. (2011). *External Debt, Economic Growth and Investment in Egypt, Morocco and Tunisia*. Doctoral Dissertation, University of Gloucestershire.
- Adamu, I. M., & Rasiyah, R. (2016). External Debt and Growth Dynamics in Nigeria. *African Development Review*, 28, 291-303. <https://doi.org/10.1111/1467-8268.12206>
- Adekunle, W., Adeniyi, O., & Orekoya, S. (2021). Non-Linear Relation between External

- Debt and Economic Growth in Nigeria: Does the Investment Channel Matter? *Iranian Economic Review*, 25, 45-56.
- Àkos, D., & István, D. (2019). Public Debt and Economic Growth: What Do Neoclassical Growth Models Teach Us? *Applied Economics*, 51, 104-121.
- Ali, R., & Mustafa, U. (2012). External Debt Accumulation and Its Impact on Economic Growth in Pakistan. *The Pakistan Development Review*, 51, 79-95.  
<https://doi.org/10.30541/v51i4Ipp.79-96>
- Anderu, K., Omolade, A., & Oguntuase, A. (2019). External Debt and Economic Growth in Nigeria. *Journal of African Union Studies*, 8, 157-171.  
<https://doi.org/10.31920/2050-4306/2019/8n3a8>
- Antoine, N., Stanislas, E., & Rollfe, N. (2021). Effects of External Public Debt on Economic Growth: The Case of the Republic of Congo. *Open Journal of Business and Management*, 9, 1997-2012. <https://doi.org/10.4236/ojbm.2021.94108>
- Awan, A. G., & Qasim, H. (2020). The Impact of External Debt on Economic Growth of Pakistan. *Global Journal of Management, Social Sciences and Humanities*, 6, 30-61.
- Bekun, F. V., & Alola, A. A. (2016). Public Debt and Economic Growth Nexus Revisited: Insights from Nigeria. *European Journal of Managerial Research*, No. 1, 1-14.
- Bulus, G. C. (2020). Growth-Maximizing Public Debt in Turkey: An Empirical Investigation. *Economics and Business Review*, 6, 68-87. <https://doi.org/10.18559/ebr.2020.3.4>
- Coccia, M. (2017). Asymmetric Paths of Public Debt and of General Government Deficits across Countries within and outside the European Monetary Unification and Economic Policy of Debt Dissolution. *The Journal of Economic Asymmetries*, 17, 17-31.  
<https://doi.org/10.1016/j.jeca.2016.10.003>
- Dey, S. R., & Tareque, M. (2020). External Debt and Growth: Role of Stable Macroeconomic Policies. *Journal of Economics, Finance and Administrative Science*, 25, 185-204.  
<https://doi.org/10.1108/JEFAS-05-2019-0069>
- Didia, D., & Ayokunle, P. (2020). External Debt, Domestic Debt and Economic Growth: The Case of Nigeria. *Advances in Economics and Business*, 8, 85-94.  
<https://doi.org/10.13189/aeb.2020.080202>
- DMO (2005). <http://www.dmo.gov.ng/publications/other-publications/nigeria-debt-relief>
- Dombi, Á., & Dedák, I. (2019). Public Debt and Economic Growth: What Do Neoclassical Growth Models Teach Us? *Applied Economics*, 51, 3104-3121.  
<https://doi.org/10.1080/00036846.2018.1508869>
- El Aboudi, S., & Khanchaoui, I. (2021). Exploring the Impact of Inflation and External Debt on Economic Growth in Morocco: An Empirical Investigation with an ARDL Approach. *Asian Economic and Financial Review*, 11, 894-907.  
<https://doi.org/10.18488/journal.aefr.2021.1111.894.907>
- Elhendawy, E. O. (2022). Does External Debt Service Devalue Local Currency in the Long Run? Empirical Evidence from Egypt. *International Journal of Economics and Finance*, 14, 51-60. <https://doi.org/10.5539/ijef.v14n2p51>
- Elom-Obed, F. O., Odo, S. I., Elom-Obed, O., & Anoke, C. I. (2017). Public Debt and Economic Growth in Nigeria. *Asian Research Journal of Arts & Social Sciences*, 4, 1-16.  
<https://doi.org/10.9734/ARJASS/2017/36095>
- Ezema, C. A., Nwekwo, N. M., & Agbaji, B. C. (2018). Impact of External Debt and its Services Burden to Economic Growth in Africa: Econometric Evidence from Nigeria 1990-2016. *International Journal of Academic Research in Economics and Management Sciences*, 7, 232-250. <https://doi.org/10.6007/IJAREMS/v7-i3/4643>
- Faizulayev, A., Bakitjanovna, K. R., & Wada, I. (2020). Revisiting the Dynamic Impact of

- External Debt on Economic Growth in Nigeria: Cointegration and Conditional Causality Analysis. *Journal of Public Affairs*, e2538. <https://doi.org/10.1002/pa.2538>
- Filippakis, N., & Stamatopoulos, T. V. (2021). Public Debt and Economic Growth: A Review of Contemporary Literature. *South-Eastern Europe Journal of Economics*, 19, 33-50.
- Getinet, B., & Ersumo, F. (2020). The Impact of Public External Debt on Economic Growth in Ethiopia: The ARDL Approach to Co-integration. *Journal of Economics and Sustainable Development*, 11, 25-39.
- Gordon, L. B., & Cosimo, M. (2018). Government Debt in EMU Countries. *The Journal of Economic Asymmetries*, 18, e00096. <https://doi.org/10.1016/j.jeca.2018.e00096>
- Grace, O. O., Oluwayemisi, A. M., & Femi, O. O. (2019). Effect of External Debt on Economic Growth in Nigeria. *African Journal of Economics and Sustainable Development*, 2, 39-50.
- Greiner, A. (2007). An Endogenous Growth Model with Public Capital and Sustainable Government Debt. *The Japanese Economic Review*, 58, 345-361. <https://doi.org/10.1111/j.1468-5876.2007.00394.x>
- IMF (2017). *Debt Sustainability Analysis*. <https://www.imf.org/external/pubs/ft/dsa/>
- Karazijienė, Ž. (2015). Critical Analysis of Public Debt and Tendencies of Its Management. *Public Policy and Administration*, 14, 194-208. <https://doi.org/10.13165/VPA-15-14-2-03>
- Lwanga, M. M., & Mawejje, J. (2014). *Macroeconomic Effects of Budget Deficits in Uganda: A VAR-VECM Approach*. *Advances in Management and Applied Economics*, 4, 81-98.
- Muhammad, M. A., & Abdullahi, K. (2020). Impact of External Debt Servicing on Economic Growth in Nigeria: An ARDL Approach. *International Journal of Business and Technopreneurship*, 10, 257-268.
- Musibau, H. O., Mahmood, S., Ismail, S., Shamsuddin, Z., & Rashid, N. (2018). Does External Debt Cause Economic Growth? An Experience from ECOWAS Member Countries. *International Journal of Academic Research in Business and Social Sciences*, 8, 1256-1264. <https://doi.org/10.6007/IJARBS/v8-i11/5167>
- Ndubuisi, P. (2017). Analysis of the Impact of External Debt on Economic Growth in an Emerging Economy: Evidence from Nigeria. *African Research Review*, 11, 156-173. <https://doi.org/10.4314/afrrrev.v11i4.13>
- Ogbonna, O., Ihemeje, I., Obioma, O., Hanson, H., & Amadi, A. (2021). Impact of External Debt Management on Economic Growth of Nigeria. *Journal La Bisecoman*, 2, 25-41. <https://doi.org/10.37899/journallabisecoman.v2i2.359>
- Ohiomu, S. (2020). External Debt and Economic Growth Nexus: Empirical Evidence from Nigeria. *The American Economist*, 65, 330-343. <https://doi.org/10.1177/0569434520914862>
- Owusu-Nantwi, V., & Erickson, C. (2016). Public Debt and Economic Growth in Ghana. *African Development Review*, 28, 116-126. <https://doi.org/10.1111/1467-8268.12174>
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds Testing Approaches to the Analysis of Level Relationships. *Journal of Applied Econometrics*, 16, 289-326. <https://doi.org/10.1002/jae.616>
- Sanni, G. K., Musa, A. U., & Sani, Z. (2019). Current Account Balance and Economic Growth in Nigeria: An Empirical Investigation. *Economic and Financial Review*, 57, 83-106.
- Shrestha, M. B., & Bhatta, G. R. (2018). Selecting Appropriate Methodological Framework for Time Series Data Analysis. *The Journal of Finance and Data Science*, 4, 71-89.

<https://doi.org/10.1016/j.jfds.2017.11.001>

Ugochukwu, U. S., & Chinyere, U. P. (2013). The Impact of Capital Formation on the Growth of Nigerian Economy. *Research Journal of Finance and Accounting*, 4, 36-42.

Yusuf, A., & Mohammed, S. (2021). The Impact of Government Debt on Economic Growth in Nigeria. *Cogent Economics & Finance*, 9, Article ID: 1946249.

<https://doi.org/10.1080/23322039.2021.1946249>