



EFFECTS OF SELECTED FOREIGN DEBT COMPONENTS ON NIGERIAN ECONOMY

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Abstract

External debt is a critical tool used by the government to fund her spending capacity, especially when it is difficult to raise taxes and reduce public expenditure as well as a significant shortfall in domestic savings to finance productive activities and provision of infrastructure. On this basis, this study is aimed at investigating the effect of foreign debt components on the growth of Nigerian economy. The study adopted econometrics analytical method rooted on Autoregressive Distributed Lag (ARDL) technique using time series data from 1986 to 2023. The empirical results from ARDL revealed a long run relationship between the variables used in the study. Bilateral debt and debt service payment have a negative and significant effect on economic growth, while multilateral debt has a positive and insignificant effect. Also, 95 percent of disequilibrium in the short run is corrected each year. The study recommends that government should diversify their economic base in other to improve their internally generated revenue as well as improve the ease of doing business in the country in other to attract more investors and generate more revenue in the country and government should go for long term external debt and concessional loan that have minimal effect to service.

Keywords: Foreign debt, bilateral debt, multilateral debt, debt service, Growth.

INTRODUCTION

In the face of budget deficits, government often resorts to borrowing; the borrowing can be internal or external debt. Debt is a critical tool used by the government to fund her spending capacity, especially when it is difficult to raise taxes and reduce public expenditure. Reasonable borrowings and judicious use of borrowed fund to finance public expenditure and infrastructural developments are antidotes to fast-track economic growth. But excess borrowings without appropriate planning for investment may lead to heavy debt burden and creates unnecessary intergenerational transfer, since it benefits the present but burdens the future generations. Shortfall in domestic savings to finance productive activities compels nations to borrow (Amadi,



et al. 2022). Aguwamba & Adeghe (2017) assert that external debt is one of the sources of financing capital formation in any economy. But servicing the debt mostly when the borrowed fund is not adequately invested reduces the capital stock of the economy.

Nigeria external debt history traced back to 1958 when Nigeria government borrowed US\$28 million from World Bank for railway construction. As one of the developing economy, Nigeria cannot do without external debt to finance its infrastructural and developmental projects like power generation, roads, rails etc. One of the measures taken by different nations to bridge the gap between government's generated revenue and its expenditure (Deficit) is to borrow. Hence, relying on domestic and external debt to finance economic growth and expansion is inevitable (Amadi, et al. 2022). According to Amadi et al. (2023) external debt is not that bad if the country channeled the borrowed fund to productive assets and development of infrastructure capable of repayment.

Over the years, Nigerian government has borrowed fund from both bilateral and multilateral financial institutions to improve her physical infrastructure. Since 2015, the total debt owed to multilateral financial institutions skyrocketed from 374 billion Naira in 2015 to 1.142 trillion Naira in 2022 (NBS, 2022). "Total external debt stood at N33.25 trillion (US\$43.16 billion) in Q2 2023, while total domestic debt was N54. 13 trillion (US\$70.26 billion). The share of external debt (in naira value) to total public debt was 38.05% in Q2 2023, while the share of domestic debt (in naira value) to total public debt was 61.95%" (DMO, 2023). Bakare (2011) asserts that a country's indebtedness does not necessarily slow growth, rather it is the nation's inability to optimally utilize these loans to foster economic growth and development and ensure effective servicing of such debt that hampers the benefits derivable from borrowed capital resources (Eze et al., 2021). Despite this huge loan sourced from external financial institutions and countries, researchers are in total dismay if the loan has impacted in the growth and development of the country. Based on the aforementioned, this study tends to empirically investigate the effect of external loan on Nigerian economy.

LITERATURE REVIEW

The study anchored its theoretical framework from the external debt effect theories and the debt overhang theory. The external debt theory which posits that the essence of external debt is to close or fills the gap between the available domestic funds and the total investment inquired in the countries with low income, if the domestic savings are not sufficient for the investment, the gap has to be filled with foreign funds. The idea behind this is that the investment spending and the total Gross Domestic Product (GDP) are proportionally related and they have a positive relationship (Amadi & Ibzan, 2016). As government borrows externally and spends directly on physical infrastructure its resultant effect is growth. While the debts overhang theory propose that if a nation is dreadfully indebted to the level that the debts exceed its repayment capacity, debt service will choke investments and hinder economic growth (Gordon & Cosimo, 2018;



Isichei et al., 2023). Debt overhang is a situation where the debt burden is so enormous that a nation cannot further secure other debts to fund new project. Coccia (2017) affirmed that debt overhang in relation to public debt and public debt servicing affects economic growth negatively by prioritizing debt repayment over other expenditure. Its consequences are high interest payment obligations which hamper growth by reducing public resources productive capable of stimulate growth.

Study conducted by Ijirshar, Fefa and Godoo (2016) assessed the link between external debt and economic growth in Nigeria from 1981-2014. They used descriptive and econometric tools in evaluating the time series data generated. The finding gave a significant relationship between external debt and economic growth in Nigeria in a long run hence external debt servicing had both long run and short run negative impact on Nigeria economic growth. They thus, recommended that stock of external loan borrowed should be efficiently managed since it increases growth rate.

Similarly, Lucky and Godday (2017) empirically investigated the relationship between the public debts structure and the growth performance of the Nigerian economy for the period 1990-2015 using multiple regression analyses. The variables used in the analysis include gross domestic product, domestic debt, external debt, and total debt. The findings revealed a positive and significant impact of total public debt on gross domestic product in Nigeria. The study also revealed negative and significant impact of external debt to economic growth; the domestic debt has a positive and significant effect on the economic growth in Nigeria.

In addition, Grace et al. (2019) observed negative evidence in Nigeria between external debt service and growth. The period covered by the study was from 1981 to 2017 using the ARDL model. Similarly, Muhammad & Abdullah (2020) evaluated the relationship among external debt servicing and economic growth from 1985 to 2018 in Nigeria using ARDL model. Debt service was found to have negative effect on economic growth, although statistically insignificant in the short and long-run.

Ohiomu (2020) modeled the nexus for external debt and economic growth for policy analysis on public finance and public debt management in Nigeria using the ARDL technique and found a negative effect of external debt on growth the study confirmed the existence of a debt overhang. Didia & Ayokunle (2020) provided support that both in short-run and the long-run, external debts have positive relationship with the Nigerian economy but not statistically significant. Faizulayev et al. (2020) employed data from 1981 to 2017 in their study. The findings showed that debt services and external debt have a negative and significant effect on real growth both in the short and long run. , 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 negative effect on economic growth, but statistically insignificant in the short and long-run.



Additionally, Adekunle et al. (2021) employed the non-linear approach to examine effect of external debt on growth. The study used foreign debt indicators debt service as percentage of GDP as the dependent variable. The study found and concluded that the threshold of external debt stock is 6.81% of gross national income GNI, implying that any level above 6.81% will exert negative penalty.

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

Also, Akanbi, et al (2022) investigated the relationship between external debt service and economic growth in Nigeria from 1981 to 2020 using 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. Moreover, Amadi et al. (2022) 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, Isubalew (2023) examined the effect of external debt on economic growth in sub-Saharan Africa: The study investigated the short-run and long-run effect of external debt on the economic growth of 39 SSA countries during the last decade for the periods of 2011–2021. The result of the study revealed that external debt has a significant negative impact in both the short and long run. The study concludes that the negative impact of the long run is greater than that of the short run. The policy implication is that SSA countries should allocate the external debt on the projects that bring other investment opportunities to amortize external debt. Further, the strategies that improve domestic revenue mobilization sources that compliment external debt such as improving informal sectors to broaden tax bases and minimizing domestic revenue leakages need to be established in SSA countries.

Furthermore, Amadi et al. (2023) examined the effect of external debt service payment on infrastructure development in Nigeria from 1981 to 2022 using ARDL method. The findings show evidence of negative significant effect of external debt service payment on infrastructure development in Nigeria.



METHODOLOGY

The study employed the Autoregressive Distribution Lag (ARDL) model developed by Pesaran, Shin and Smith in 2001. Also, Augmented Dickey-Fuller (ADF) unit root test was engaged to test for stationarity of the data. The bounds test was utilized to investigate the presence of long-run relationship.

Mode Specification

For straightforwardness the study adapted the model used by Ajuh *et al* (2021). The functional forms of the model are stated thus:

$$GDP = f(EXD) \dots\dots\dots (1)$$

Where, GDP is the proxy for economic growth and EXD is external debt. In equation (1) external debt (EXD) were disaggregated into multilateral and bilateral debt. Therefore the equation was re-estimated as follows

$$GDP = f(MLD, BLD DSP, EXR) \dots\dots\dots (2)$$

Econometrically, the model in equation (2) can be re-organized as follows:

$$GDP = \beta_0 + \beta_1MLD + \beta_2BLD + \beta_3DSP + \beta_4EXR + \varepsilon_t \dots\dots\dots (3)$$

In reference to equation (3) the long run ARDL model is specified as:

$$\ln GDP_t = \beta_0 + \beta_1 \ln GDP_{t-1} + \beta_2 \ln MLD_{t-1} + \beta_3 \ln BLD_{t-1} + \beta_4 \ln DSP_{t-1} + \beta_5 \Delta EXR + \varepsilon_t \dots\dots (4)$$

The short run dynamic model is presented as thus:

$$\Delta \ln GDP_t = \beta_0 + \beta_1 \Delta \ln GDP_{t-1} + \beta_2 \Delta \ln MLD_{t-1} + \beta_3 \Delta \ln BLD_{t-1} + \beta_4 \Delta \ln DSP_{t-1} + \beta_5 \Delta EXR + ECT_{t-1} \varepsilon_t \dots\dots\dots (5)$$

Where:

GDP = Gross Domestic Product (a proxy for economic growth)

MLD = Multilateral Debt

BLD = Bilateral Debt

DSP = Debt Service Payment

EXR = Exchange Rate and

$\beta_0, \beta_1, - \beta_4$ = parameter estimates

μ = stochastic error term

Estimation Procedure

The study employed the Auto-regressive distribution lag (ARDL) method to test the existence of co-integration among variables. This approach is recommended over co-integration approaches



build by Engle and Granger in 1987 and Johenson in 1988 which require a large sample series and all variables to be stationary at first difference that is I(1). The methodology has the advantage of relieving the task of determining the order of integration among variables because variables are presumed to be stationary at level and first difference. Therefore testing for unit roots to determine I(0) and I(1) are not necessary for ARDL technique (Ewetan & Urhie, 2014). But according to Rahman and Islam (2020) it is essential to carry out unit root test to guarantee that no I(2) variable(s) is /are included in the model because it is assume that I(2) variable(s) may cause the system to collapse as cited in Amadi et al (2024).

RESULTS AND DISCUSSION

Stationarity Test

The study engaged Augmented Dickey- Fuller (ADF) unit root test to test for the stationarity of the data. The results are presented below.

Table 1: Augmented Dickey-Fuller Unit Root Test

Variable	Level	1 st Difference	5% Critical Value	Order of Integration
Log(GDP)	Non-Stationary	-4.857292	-2.948404	I(1)
Log(MLD)	Non-Stationary	-4.668878	-2.948404	I(1)
Log(BLD)	Non-Stationary	-6.477217	-2.948404	I(1)
Log(DSP)	-4.036799	-----	-2.945842	I(0)
Log(EXR)	-4.045107	-----	-2.948404	I(0)

Source: Author's Computation using E-views (2024)

The Augmented Dickey-Fuller (ADF) unit root test in table 1 above discovered that only the variables DSP and EXR were stationary at its level. While GDP, MLD and BLD were stationary at first difference, that is, integrated of order one I(1). Given the unit root properties of the variables, the study proceeded to ascertain if there is a co-integration among the variables in the model by using the Autoregressive distributed lags (ARDL) Bounds Test for co-integration.

ARDL Bounds Testing for Cointegration

Having confirmed that not all variables are not integrated in the same order, but a mixture of I(0) and I(1), as shown in table 1 above. The study adopted the ARDL bounds test method to co-integration to determine if there is co-integration or a long-run relationship between the variables under consideration in the model.



Table 2: ARDL Bounds Test for Cointegration

Test Statistic	Value	K
F-Statistic	4.135468	4
Critical Value Bounds		
<i>Significance</i>	<i>I(0) Lower Bounds</i>	<i>I(1) Upper Bounds</i>
1%	3.01	3.88
5%	2.22	3.19
10%	2.21	3.25

Source: Author's Computation using E-views (2024)

As shown in Table 2 above, the value of F-statistic 4.135468, which is greater than the upper and lower bounds of the 5 percent critical value interval (2.22 and 3.19) allowed for the rejection of the null hypothesis that there is no long-run relationship between the variables and accept the alternative and conclude that there is a long-run relationship between the dependent variable (GDP) and the independent variables (MLD, BLD, DSP and EXCR) within the period under review.

Table 3: ARDL Estimates for External Debt and the Nigerian Economy

Dependent Variable: GDP				
Variable	Coefficient	Std Error	t-statistic	P-value
A: Longrun Estimates				
Log(MLD)	0.007276	0.023401	0.310937	0.7588
Log(BLD)	-0.058869	0.039619	-1.484874	0.0015
Log(DPS)	-0.037249	0.026615	-1.399547	0.0366
EXCR	-0.043786	0.019796	-2.211823	0.0377
Constant	2.303235	2.063772	1.116031	0.0001
B: Shortrun Estimates				
D(MLD)	0.007075	0.022599	0.313061	0.7572
D(BLD)	-0.057240	0.037470	-1.527620	0.0109
D(DSP)	-0.151132	0.047970	-3.173068	0.0044
D(EXCR)	-0.045135	0.035922	-1.256502	0.0021
ECM(-1)	-0.955327	0.165746	-5.866384	0.0000

Source: Author's Computation using E-views (2024)

It was revealed that both the long run and short run result of the multilateral debt has a positive and insignificant effect on economic growth in Nigeria. The implication of this result is that debt

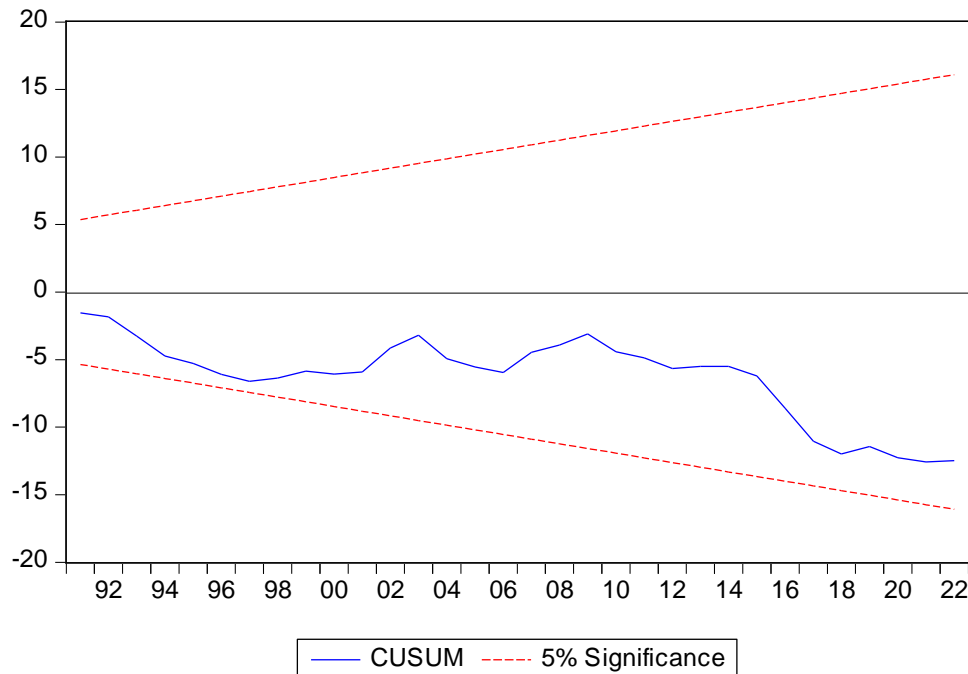


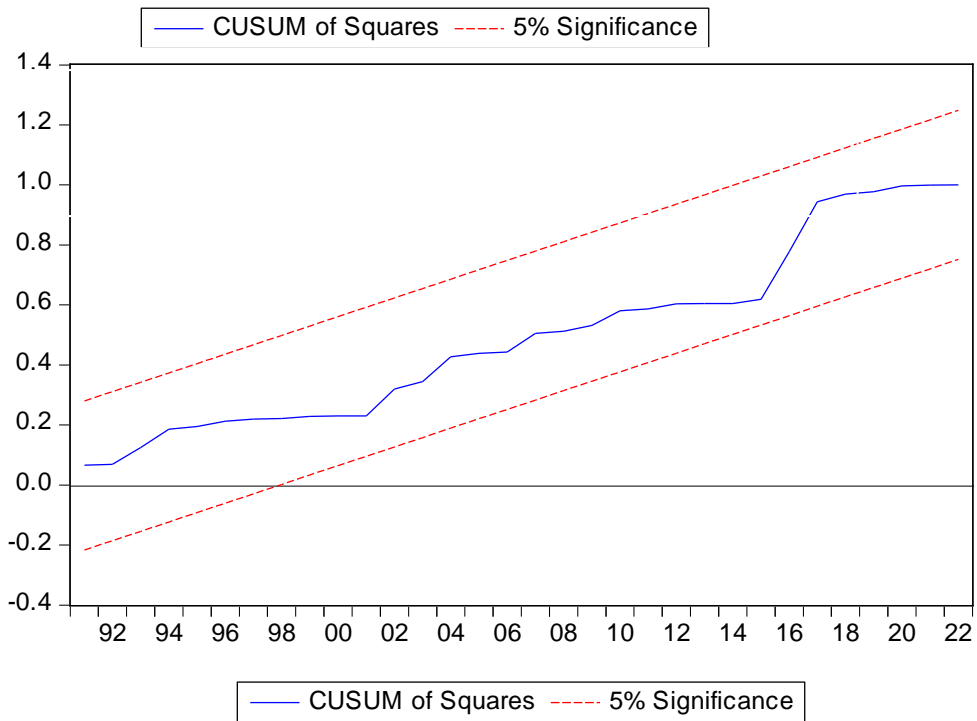
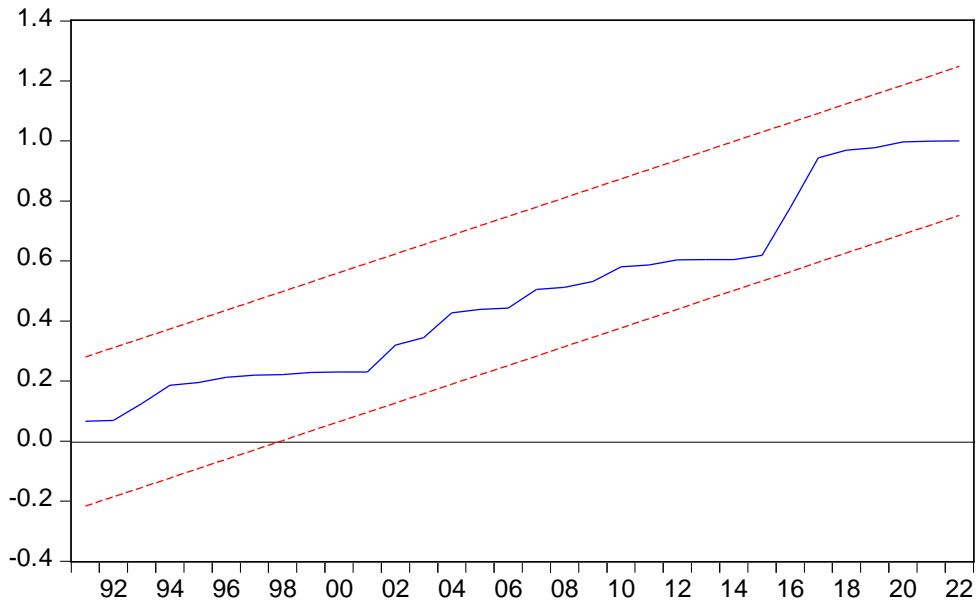
sourced through multilateral has been misappropriated and wrongly channeled to projects that could not service or repay the loan borrowed. This study is in agreement with the work of Ajuh et al (2021), Ibrahim (2016), Elom-Obed, et al (2017) and Akhanolu, et al (2018). While the coefficient of bilateral debt and debt service payment were negative and statistically significant in the long-run and short-run periods. The negative effect of bilateral and debt service payment on economic growth aligns with the study conducted by Amadi et al (2023) and Amassoma & Adeniran (2017) who found a negative effect of debt service payment on growth. As the debt keeps accumulating, debt service payment is increasing thereby eroding the revenue that would have been used to provide infrastructure for sustainable growth in the country.

Additionally, the ECM result in Table 3 is rightly signed with a coefficient value -0.955327 and is statistically significant at 5% level of significance. Thus, it will rightly act to correct any deviations from long-run equilibrium.

Stability Test

To know whether the short and long-term relationships established earlier are stable and consistent. The study employed the stability test using the cumulative sum of recursive residuals test (CUSUM) and cumulative sum of squares (CUSUMSQ). Pesaran et al (2001) as cited in Amadi, et. al (2013) accentuated the importance of reviewing the error correction model stability. The graphs below represent the results of the CUSUM and CUSUM of squares tests. The graphs revealed that our coefficients are stable. Since both the cumulative sum of residuals and the cumulative sum of squared residuals fall within the critical limits of the 5 per cent level of significance.







CONCLUSION AND RECOMMENDATIONS

All things been equal, External debt plays a crucial role to close or fills the gap between the available domestic funds and the total investment inquired in the countries, if the domestic savings are not sufficient for the investment. When nations have access to external debt, it can enable them to fill the gap of insufficient domestic saving that will contribute to domestic investment and growth.

The study employed the autoregressive distributed lag method, and examined the effect of external debt on economic growth in Nigeria using annual time series data. The result revealed a long run relationship between the variables: bilateral debt and debt service payment had negative and significant effect on economic growth, while multilateral debt has a positive and insignificant effect. Also, 95 percent of disequilibrium in the short run is corrected each year. The study recommends that government should diversify their economic base in other to improve their internally generated revenue as well as improve the ease of doing business in the country in other to attract more investors and generate more revenue in the country and government should go for long term external debt and concessional loan that have minimal effect to service.



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