Journal of Research Administration
Society of Research Administrators International

IMPACT OF GOVERNMENT BUDGET DEFICIT AND DEBT SERVICING ON ECONOMIC GROWTH IN NIGERIA.

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Abstract
The continuous government borrowing is a pointer that the Nigeria's fiscal foundation is faulty. Thus, this study aims to examine the impact of government budget deficit and debt servicing on economic growth in Nigeria. Time series data was deployed spanning the period from 1981 to 2022 garnered from the Central Bank of Nigeria Statistical Bulletin. The model was specified based on the Keynesian growth model with real GDP as the regressand while government budget deficit and government debt servicing made up the regressors. Utilizing the ARDL estimation technique, the stated hypotheses were tested. The findings revealed among other things that government budget deficit have statistically significant positive impact on the growth of the Nigeria economy in the long-run while government debt servicing has statistically significant negative impact on the growth of the Nigeria economy in the long-run. The study concluded that, in the long run, the growth of the Nigeria economy can be efficiently predicted using government budget deficit and government debt servicing. It recommended that, government should be mindful of borrowing, especially for recurrent expenditure purposes. However, borrowing should be concentrated more on capital expenditures to support development of the agricultural and industrial sectors. These sectors are germane to sustainable economic growth and development.

Keywords: Budget deficit, Debt servicing, economic Growth.

1. Background to the Study

A strong fiscal foundation creates conditions that encourage economic growth; an environment with greater access to capital, increased public and private investments, enhanced business and consumer confidence. In turn, these factors improve the lives of Nigerians by supporting a vibrant economy with rising wages, greater opportunities, productivity, and resource mobility. Unfortunately, Nigeria remains on an unsustainable fiscal path; hence, the continuous government borrowing which is presumably to finance excess expenditure.

Nigeria's budget has always been on the deficit as documented by the CBN Statistical Bulletin. The CBN Statistical Bulletin (2022) recorded that from 1981 till date, the Nigerian government still operates deficit budgeting except in 1995 and 1996 when the economy witnessed surplus. However, from economics literatures, deficits are expected to accelerate economic activities

during period of economic depression through induced aggregate demand as propounded by Keynes and the Keynesian economists.

Unfortunately, Nigeria's economy is yet to experience such accelerated economic activities that will induce growth and development; instead, the Nigerian case has always been the opposite view of the essence of deficit financing with an unfriendly business environment (World Bank, 2019). This is the reason Nigerian debt profile has continuously been on the increase without any meaningful impact to the economy; hence, one keeps wondering if Nigeria's government spending is efficient enough (Yiega, 2022). 2012 2012..

The continuous increasing debt profile of the Nigerian economy has become a thing of great concern which has in no small way affected the Nigeria economy negatively (Essien et al, 2016). A look at the Nigeria debt statistics from the Debt Management Office (DMO), in 1986 total debt that was highly dominated by the domestic debt turned to be dominated by the external debt. The Nigeria external debt led to a continuous rise in total debt till 2005 when the country was granted debt pardon by the Paris Club. The generosity from Paris Club caused Nigeria's total debt and external debt to decrease forcefully by 59.0% and 90.8%, respectively between 2004 and 2006 to ₦2,533.47 billion and ₦451.5 billion.

As external debt dropped, domestic debt continued to rise uncontrollably such that by 2011, total debt now dominated by the domestic debt had exceeded the 2004 level and stood at ₦6,519.65 billion while in 2012, Nigeria's total debt rose to ₦7,564.4 billion. Between 2006 and 2012, the domestic debt had accounted for 82.2% to 87.2% of the total debt. Furthermore, Nigeria's total debt as of 2015 stood at ₦12.12 trillion, but as at 2020 the country's debt portfolio had risen to ₦32.92 trillion. However, most recent statistics from the DMO, covering the first quarter of 2021, showed that the debt portfolio had increased to ₦33.10 trillion. Of the ₦33.10 trillion, the federal government alone borrowed ₦26.91 trillion while as at March 2022 current outstanding public debt stood at ₦41.6 trillion. Despite the huge borrowings, the expected level of economic growth has not been achieved instead, it has led to increasing debt servicing obligation in Nigeria.

With all efforts of government trying to stabilize the economy, economic progress is yet to be achieved as we all know today that greater percentage of the Nigeria citizens still wallow in abject poverty, the unemployment rate is on the rise with low life expectancy due to poor health facilities , poor road networks and other basic amenities.

Statement of the Problem

The Nigerian government has consistently borrowed from internal and external sources so as to add up to revenue generation; and this is expected to impact positively to the growth and development of the economy with the attendant effect on improving the living standard of the citizens. Unfortunately, this is not the case with Nigeria; the Nigerian economy is still underdeveloped, embraced with the likes of poor infrastructures, poor living standard, etc. in fact, Ekeghe and Emejo (2022) recorded that as of March 2022 the Nigeria public debt was ₦41.6 trillion yet over 83 million Nigerians remain in abject poverty with a poverty rate of over 40.1%. This report goes against the notion that public debt is effective in improving the growth of the economy; because all successive government have borrowed, it is expected that the Nigeria nation should by now have productive assets that will generate sufficient revenue more than enough to service the debt and bring the economy to the part of recovery but this seems to be a mirage and therefore, the policies of government and their sincerity have become highly doubtful.

Available statistics from CBN (2022) indicated that Nigeria's budget deficit has been on an increasing trend for about forty years, since 1981. An analysis of reports from the Budget Office

of Nigeria's website revealed that the Buhari,s administration spent at least ₦54.98 trillion on budget implementation since its inception but has only financed spending with ₦24.39 trillion, leaving a deficit of ₦30.58 trillion. The reports include the third and fourth quarters of 2015; the four quarters of 2016, 2017, 2018, 2019, 2020; the first three quarters of 2021; and the first four months of 2022 (Jaiyeola, 2022). Does the country have to operate budget deficit this long before experiencing any positive and meaningful impact from it? Budget deficits are meant to accelerate economic activities that are expected to spur growth. Unfortunately, the reverse is the case; a case of decline in growth of the economy, poor standard of living of the citizens, poverty, increasing public debt, debt servicing and many more. Is it that the condition of the Nigerian economy is not right for the operation of budget deficit? Or is it that the budget deficit is not well applied by the policy makers? These and more are some of the problems which this research is out to address.

Objectives of the Study

The main objective of this research is to analyze the impact of government budget deficit and debt servicing on economic growth in Nigeria, while the specific objectives are stated below:

1. To examine the effect of increasing budget deficit on the growth of the Nigeria economy.
2. To investigate the effect of increasing debt servicing on the growth of the Nigeria economy.

Research Questions

The following questions were formulated to guide the study:

1. To what extent does increasing budget deficit affect economic growth of Nigeria?
2. What effect does increasing debt servicing have on economic growth of Nigeria?

Research Hypotheses

The hypotheses to be tested in this study were stated in their null forms as follows:

H_{01}: Increasing budget deficit has no significant effect on economic growth of Nigeria.

H_{02}: Increasing debt servicing has no significant effect on economic growth of Nigeria.

Significance of the Study

This study will satisfy the curiosity of the academic community and investors in the Nigeria economy because it will empirically analyze the impact of government intervention through its fiscal operation on Nigeria's economic growth. This will provide ample theoretical and empirical literature to future researchers in the field of economics and beyond. While investors will get good knowledge that will help them profile their analysis and future investments in the economy.

2. Literature Review

Conceptually**,** debt is defined as the accumulated total of government borrowing from either the private sector of the country or from abroad (Mayo, 1996). Public debt can be used to regulate the economy through variations in the volume, composition, and yield rates of such debt, (Akujor et al, 2022). However, debt service is the sum of principal repayments and interest actually paid in currency, goods, or services on long-term debt, interest paid on short-term debt and repayments (repurchases and charges) to the IMF, bilateral and multilateral agencies.

Deficit financing is when government has a budget deficit; it is as result of government total revenue less than total expenditure in a year. According to Akpan et al (2023) fiscal deficit is a

situation where current expenditure exceeds current expected income. Consequently, deficit financing rises due to budgetary deficit.

Economic growth is the increase in goods and services produced by an economy or country determined on short-term basis (usually a fiscal year). Gross domestic product (GDP) is the best factor to measure the size of an economy. Thus, the real GDP reflects the monetary value of all commodities produced by an economy in a given year, corrected by inflation. Real GDP can account for changes in price level and provide a more accurate figure of economic growth as compared to nominal GDP. Economic growth has been referred to as the aggregate of the final product that a country can create within a year judged by the market price of the products taking cognizance of price variation and the imputed cost of the economy's produced commodities less net income from abroad (Favor et al., 2017).

Theoretically, Keynesians assumes that budget deficit engenders a positive influence on the economy stressing its multiplier effect and/or "crowding in" effect. The Keynesian economists are of the view that public expenditure especially deficit financing is a necessary condition in enhancing growth and development through the encouragement of aggregate demand especially during economic depression. They propose that in times of recession or depression that deficit financing can be used to halt the recession or depression as it can provide short term stimulus which can help stop the recession or depression.
To the Ricardian School of Thought, Ricardian Equivalence was postulated and popularized by David Ricardo. The theory suggests that budget deficit has neither positive nor negative effect on the economy. They accentuate that an increase in budget deficits will be repaid either now or in future.
Comparatively, debt overhang theory is important for this discourse. According to Bongumusa et al. (2022) debt overhang occurs, when a country's debt payment burden is so high that a considerable share of current GDP goes to loan guarantees, creating a disincentive to investment. Debt overhang refers to when the ability of a country to repay its external debt reduces below the specific contractual value of the debt. Debt overhang discourages investors from providing capital to the government. Similarly, crowding-out effect theory ,holds that an upsurge in government debt is a liability on next generations, especially in the long run (Ekuma ,Inyiama & Okwo,2024).The negative effect of public debt is from the crowding-out effect theory which assumes that when public authorities raise public loans, the demand for loans increase while the supply of loanable funds remain constant. This raises the interest rate of loanable funds in the financial system.

Therefore, with the Nigerian case in mind, many scholars have done empirical study on debt, deficit financing and the Nigerian economy.
Mohammed and Ogba (2021) evaluated the effect of budget deficit on economic growth in Nigeria from 1985 to 2020. Data were collected on Nigeria's gross domestic product, external debts, budget deficit, inflation and government expenditure. The study applied the Autoregressive Distributed Lag (ARDL) model. The results revealed that government budget deficit (GBD) has negative and insignificant impact on economic growth; inflation rate (INFL) has positive and insignificant impact on economic growth while government expenditure (GEX) has positive and significant impact on economic growth in Nigeria during the period under study. The empirical finding however, demonstrated that budget deficit has negative effect on inflation and economic

growth. The study therefore recommends that fiscal discipline should be strongly adhered to at every level of government since inflation has been established as monetary phenomenon in Nigeria.

Efuntade, Olaniyan and Efuntade (2021) examined debt servicing and its impact on economic growth of Nigeria using secondary data which were sourced from the Central Bank of Nigeria's Statistical Bulletin for 2020 and National Debt Management Office covering the period of 30 years spanning from 1990 to 2020. The variable scope was gross domestic product (GDP), internal debt servicing (IDS), external debt servicing (EDS) exchange rate (EXGR) and inflation rate (INFR). Data garnered were analyzed using both descriptive and covariance estimate method of analysis. The findings revealed among other things that; there was presence of co-integration (long-run relationship) among the dependent and all the explanatory variables which is a clear indication that debt servicing has positive and significant impact on economic growth of the country both in short and long run if properly managed. The study concluded that debt servicing has significant impact on the economic growth due to its positive relationship with gross domestic product. Therefore, the study recommended among other things that government should ensure that any debt both internal and external debt should be a deal that will open Nigeria to greater trade and investment and can stimulate the economic growth of the country.

Ogwueleka, Ezenekwe, Metu, Obisike and Uzoma (2022) examined the impact of deficit financing (DF) on Nigeria's economic growth from 1984 to 2019. The dependent variable of direct productive sectors (i.e. agricultural sector, industrial sector, construction sector, transport and communication sector) were regressed against the independent variables of labour (LAB), gross fixed capital formation (GCF), external deficit financing (EXDF), domestic bank deficit financing (DBDF) and domestic non-bank deficit financing (DNBDF). The ARDL methodology was used for the estimation and testing. The theoretical framework guiding the study anchors on Hirschman's theory of unbalanced growth (HTUG). The ARDL estimated tests revealed that DF has positive impact on each of the directly productive sectors (DPS) in Nigeria. The study concluded that, Nigeria needs to apply more disaggregated measures in management of deficit financing.

Onwuka (2022) investigated the impact of deficit financing on economic growth with inflation as an interaction variable. The variables of interest are deficit financing, inflation and GDP, which were sourced from government annual budgets as published by the Budget Office of the Federal Government of Nigeria, the Central Bank of Nigeria (CBN) Statistical Bulletins and the World Bank Development Indicator for the period from 1980 to 2020. The standard Keynes-Wicksell Three Asset Money Growth economic model was adopted following the works of Makin (1983), Serven (1996), Tchokote (2004) and Ergun and Tuck (2006), Jamshaid et al. (2010). The study adopted the standard co-integration technique suggested by Johansen and Juselius (1992) and Engle and Granger (1987) and the Autoregressive Distributed Lag model (ARDL) for the analysis. The study found, amongst others, that overall deficit financing had a positive and significant impact on economic growth when financed through external sources but had a negative effect when financed through domestic sources; also that overall deficit financing is inflationary which also resulted to decrease in real interest rates. This could be attributed to the crowding-out effect of the private sector when deficit financing is funded through the domestic loan market. The study recommends that the federal government (FGN) should prune down on excessive deficit financing.

Akanbi, Uwaleke and Ibrahim (2022) 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 and the variables were (GDPG) real GDP growth the dependent variable, (DEXT)

Debt service on external debt, (EXT) total external debt stock, (EXTDR) represents percentage debt service to export, (EXRS) represents percentage external reserve to external debt, (BGD) budget deficit, (POPG) growth rate of the population as a proxy for human capital, (GFCR) is Gross fixed capital formation the proxy for investment. The method for estimation was the Auto-Regressive Distributed Lags (ARDL) model. The ARDL bound test results showed that, 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 concluded that external debt service has a resource depletion effect.

Otiko and Iheonkhan (2022) studied the effect of debt servicing on economic growth in Nigeria with corruption as a moderator. Debt servicing was proxy by foreign and domestic debt servicing, while economic growth was proxy by gross domestic product. Also, corruption was measured using the corruption perception index of the Transparency International. The study adopted ex post facto research design and relied on documentary evidence from CBN statistical bulletin from 1990 to 2020. The study used multiple regression analysis technique for the purpose of data analysis after both time series tests such as unit root, co-integration and normality were conducted. The result of this study showed that foreign debt servicing has significant effect on GDP, while the domestic debt servicing does not have any significant effect on GDP in Nigeria. The study also, showed that corruption as a moderator has negative and indirect effect on relationship between debt servicing and economic growth in Nigeria. Based on the findings, the study concluded that debt servicing can be used as a predictor of economic growth in Nigeria. Therefore, the study recommended that Government should regularly service her debts as non-service could amount to debt covenant violation charges which could mean more cash outlay for the government.

Ughulu, Edogiawerie and Billyaminu (2023) empirically investigated the impact of deficit financing on economic growth in Nigeria for the period 1981 to 2019. They utilized secondary data for the study sourced from the Central Bank of Nigeria and the World Bank Global Development Index. The variables of interest are real gross domestic product (RGDP), federal government domestic debt (FGDD), federal government external debt (FGXD), federal government budget deficit (FGBD), foreign exchange reserves (FOER) and broad money supply (BRMS). The major findings of the study showed that the federal government domestic debt variable, the federal government budget deficit variable, the foreign exchange reserves variable, and the broad money supply variable exerted positive impacts on economic growth, while the external debt variable exerted a negative and insignificant impact on economic growth in Nigeria. The study therefore concluded that public borrowing in Nigeria can only induce rapid and sustainable economic growth only and if only borrowed funds are massively invested in related infrastructural facilities that would generate revenue which would augment domestic financial resources.

3. Research Method

This study adopts the *ex-post-facto* research design as it deals with secondary data which have been collected by a recognized government agency and made accessible for collection. The study

used annual data on RGDP as a proxy for economic growth, government budget deficit and government debt servicing. The data were sourced from the Central Bank of Nigeria Statistical Bulletin of 2022 edition.

The technique of analysis adopted was the multiple regression analysis with the application of Autoregressive Distributed Lag model (ARDL). The ARDL models are used to analyze dynamic relationships with time series data in a single equation framework. Also applied in this analysis are the unit root test, the ARDL bounds test for co-integration and Granger causality test. Other important technique for evaluation of results includes Co-efficient of Multiple Determination (R^2), the t – test and the F – test.

Model Specification

The model specification was based on the Keynesian growth model; this is in line with Mohammed and Ogba (2021) who used the Keynesian model to examine the effect of budget deficit on economic growth in Nigeria. Furthermore, the relationship is designed on a linear regression model that assumes a linear relationship between the dependent and independent variables. Therefore, the model is given as:

RGDP = f(GBD, GDS)……. 1

In a linear function the model becomes

$RGDP_t = b_0 + b_1GBD_t + b_2GDS_t + U_t$ ……2

Where:

$RGDP_t$ = Real Gross Domestic Product (Economic growth) at time t

GBD_t = Government Budget Deficit at time t

GDS_t = Government Debt Service at time t

U_t = Stochastic error term

b_0 represents constant

b_1 and b_2 are the slope or the coefficients of the independent variables.

However, the logarithms of the data were used. Thus, the equation becomes,

$lnRGDP_t = b_0 + b_1lnGBD_t + b_2lnGDS_t + U_t$……...3

Recall that this study tends to examine the impact of government budget deficit and debt servicing on economic growth in Nigeria and as such, the ARDL model was selected for the analysis. The ARDL uses a combination of endogenous and exogenous variables, unlike a VAR model that is strictly for endogenous variables. However, the ARDL model can only be specified if and only if the condition that the variables are integrated of different order is met. That is a model having a combination of variables with I(0) and I(1) order of integration. The ARDL model is composed of an autoregressive component, which is the dependent variable, regressed on one or more of its past values, and a distributed lag component, which is the independent variable and one or more of its lagged components. Therefore, the general ARDL (p, q) model is specified as:

$RGDP_t = \alpha_1 + \sum_{i=1}^{p} \beta_i RGDP_{t-i} + \sum_{i=1}^{q} \lambda_i GBD_{t-i} + \sum_{i=1}^{q} \phi_i GDS_{t-i} + \varepsilon_t$

Where:

The dependent variable is a function of its lagged values, the current and lagged values of the independent variables in the model.

p – the lag length for the dependent variable

q – the lag length for the independent variables

ε_t – is the stochastic error terms

α – is the constant or intercept

β, λ and ϕ – are the coefficients of the independent variables

Data and variables

This study used annual time series data spanning from 1981 to 2022. All data came from Central Bank of Nigeria Statistical Bulletin. The variables used in this study are Real Gross Domestic Product (RGDP), government budget deficit (GBD) and government debt servicing (GDS).

4. Presentation of Result and Analysis

The technique of analysis adopted by this research as stated above is the Autoregressive Distributed Lag model (ARDL). Therefore, the procedures started by finding stationarity for the variables followed by test for long-run relationship before analyzing the data.

Stationarity Test

Table 4.1: Augmented Dickey Fuller (ADF) Unit Root Test result summary.

Variable	T statistic Level	C values Level 5%	T statistic 1st diff. 5%	C values 1st diff. 5%	Prob. Level	Prob. 1st diff.	Order of Integration
RGDP	-2.357727	-3.526609	-3.884334	-3.529758	0.395	0.022	First diff. [I(1)]
GBD	-5.142919	-3.523623	-10.06756	-3.526609	0.001	0.000	Level [I(0)]
GDS	-2.543187	-3.523623	-8.222034	-3.526609	0.307	0.000	First diff. [I(1)]

Source: E-views 9, econometric result of the study

From the above table, the empirical result shows that real GDP (RGDP) and government debt service (GDS) were stationary at first difference while government budget deficit (GBD) is integrated of order zero or stationary at levels. By this, we conclude that there is mix order of integration because the variables can be seen to be stationary at different orders. Thus, the statistical properties of the variables do not vary or change over time but can be influenced by an external factor. Based on the mixed order of stationarity, we shall test for the existence of a long-run relationship or co-integration among the variables using the ARDL Bounds test approach.

ARDL Bounds Test Approach to Co-integration

H_0: No long-run relationship exists among the variables (i.e., no co-integration).

H_1: There is long-run relationship among the variables.

Table 4.2: Summary of the ARDL Bounds Test

Test Statistic	Value	k
F-statistic	6.927286	2

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	3.17	4.14
5%	3.79	4.85
2.5%	4.41	5.52

1%	5.15	6.36		

Source: E-views 9, econometric result of the study

The table above summarizes the ARDL Bounds test for co-integration. The criteria for decision is that the F-statistic must be greater than the 5% critical values at the I(0) and I(1) bounds. Therefore, since the F-statistic value of 6.927286 is greater than 3.79 and 4.85 I(0) and I(1) bounds respectively, we reject the null hypothesis and accept the alternative and then conclude that there is log-run relationship between the dependent variable (RGDP) and the independent variables of GBD and GDS; indicating that the variables under consideration which are government budget deficit and government debt servicing have long-run effect on the Nigerian economy.
In addition, Granger causality test was carried out based on the Pair wise approach to determine the direction of causal relationship between the two variables. The result is indicated in the table 4.3 below.

Table 4.3: Pairwise Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
LNGBD does not Granger Cause LNRGDP	40	0.53451	0.5907
LNRGDP does not Granger Cause LNGBD		4.65065	0.0162
LNGDS does not Granger Cause LNRGDP	40	0.97156	0.3885
LNRGDP does not Granger Cause LNGDS		1.70311	0.1969
LNGDS does not Granger Cause LNGBD	40	4.37344	0.0202
LNGBD does not Granger Cause LNGDS		3.58968	0.0382

Source: E-views 9, econometric result of the study

From table 4.3 above, a unidirectional causality was found from RGDP to GBD at 5% level of significance, because the prob. value of 0.0162 is less than 0.05 hence, we reject the null hypothesis and accept the alternative that LNRGDP granger causes LNGBD. The result also indicated that there is no causal relationship between government debt service (GDS) and real GDP at 5% level of significance and therefore we conclude that LNGDS does not granger cause LNRGDP; and also, LNRGDP does not granger cause LNGDS.
However, a bi-directional causality was found between GDS and GBD at 5% level of significance, because the prob. values of 0.0202 and 0.0382 are both less than 0.05. As such, we reject the null hypotheses and accept the alternatives and conclude that LNGDS granger causes LNGBD, and also, LNGBD granger causes LNGDS.

ARDL co-integrating and long-run form

The ARDL co-integrating short-run and long-run form results are presented below.

Table 4.4: ARDL short-run form

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNRGDP(-1))	0.234479	0.242993	0.964959	0.3628
D(LNRGDP(-2))	0.553548	0.166598	3.322654	0.0105
D(LNRGDP(-3))	0.371792	0.212465	1.749894	0.1183
D(LNRGDP(-4))	0.715224	0.230551	3.102237	0.0146
D(LNGBD)	0.013837	0.006367	2.173171	0.0615
D(LNGBD(-1))	-0.020798	0.011384	-1.826977	0.1051
D(LNGBD(-2))	-0.028975	0.011582	-2.501830	0.0368
D(LNGBD(-3))	-0.047567	0.014525	-3.274736	0.0113
D(LNGBD(-4))	-0.038559	0.013254	-2.909230	0.0196
D(LNGBD(-5))	-0.018510	0.008986	-2.059860	0.0734
D(LNGBD(-6))	-0.011642	0.007699	-1.512096	0.1690
D(LNGBD(-7))	-0.020999	0.005836	-3.597994	0.0070
D(LNGBD(-8))	-0.012647	0.006414	-1.971872	0.0841
D(LNGDS)	-0.026858	0.029162	-0.920990	0.3840
D(LNGDS(-1))	0.023370	0.026188	0.892397	0.3982
D(LNGDS(-2))	0.082313	0.023317	3.530157	0.0077
D(LNGDS(-3))	0.021571	0.015347	1.405545	0.1975
D(LNGDS(-4))	0.020452	0.018850	1.084969	0.3095
D(LNGDS(-5))	-0.010843	0.014664	-0.739434	0.4808
D(LNGDS(-6))	-0.027247	0.014893	-1.829535	0.1047
D(LNGDS(-7))	-0.037606	0.014756	-2.548546	0.0343
CointEq(-1)	-0.267812	0.059453	-4.504599	0.0020

Cointeq = LNRGDP - (0.8192*LNGBD -0.6859*LNGDS + 4.5155)

Source: E-views 9, econometric result of the study

From the result in table 4.4 above, the RGDP(-1) is positively related with 0.234479 in the current value of RGDP in the short-run period ceteris paribus; implying that a unit increase in one period lag of RGDP will accounts for 0.234479 units increase in the current RGDP. However, this positive increase is not significant at 5% (0.05) level of significance because the prob. value of 0.3628 is greater than 0.05 level of significance.

The GBD is positively related with 0.013837 in the current value of RGDP in the short-run period ceteris paribus; implying that a unit increase in current government budget deficit (GBD) will account for 0.013837 units increase in the current RGDP. However, this positive increase is not significant at 5% (0.05) level of significance because the prob. value of 0.0615 is greater than 0.05 level of significance.

The GDS is negatively related with -0.026858 in the current value of RGDP in the short-run period ceteris paribus; implying that a unit increase in current government debt service (GDS) will account for 0.026858 units decrease in the current RGDP. However, this negative relationship is not significant at 5% (0.05) level of significance because the prob. value of 0.3840 is greater than 0.05 level of significance.

The CointEq(-1) which is the error correction that captures the speed at which the variables return to their long-run equilibrium after a shock is rightly signed at -0.267812 and is significant because the prob. value of 0.0020 is less than the 0.05 level of significance. This indicate that error correction will take place at a speed of 26.8% (i.e., approximately 27%) annually. This means that long-run equilibrium will be achieved a little less than five years (5 years).

Table 4.5: ARDL long-run coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGBD	0.819206	0.185089	4.426013	0.0022
LNGDS	-0.685931	0.219119	-3.130402	0.0140
C	4.515452	0.132546	34.067113	0.0000

R-squared	0.935068	Mean dependent var	0.017887
Adjusted R-squared	0.740273	S.D. dependent var	0.016465
S.E. of regression	0.008391	Akaike info criterion	-6.625241
Sum squared resid	0.000563	Schwarz criterion	-5.491523
Log likelihood	134.3165	Hannan-Quinn criter.	-6.243779
F-statistic	4.800271	Durbin-Watson stat	2.472666
Prob(F-statistic)	0.013590		

Source: E-views Econometric result of the study

From the above table 4.5, we observe that the GBD is positively related to RGDP with a coefficient of 0.819206 in the long-run period ceteris paribus; and the positive relationship is also significant at 5% (0.05) level of significance because the prob. value of 0.0022 is less than 0.05 level of significance.

On the other hand, the GDS is negatively related to RGDP with a coefficient of -0.685931 in the long-run period ceteris paribus; however, the negative relationship is significant at 5% (0.05) level of significance because the prob. value of 0.0140 is less than 0.05 level of significance.

From the table above, the estimated value for b_1 was extracted and presented in the table below.

Table 4.5.1: Extracted values from ARDL long-run coefficient result

Variable	Estimated value	t-statistics	Expected sign	Remark
b_1	0.819206	4.426013	+	Conform
b_2	-0.685931	-3.130402	-	Conform

$R^2 = 0.935063$

F- statistic = 4.800271

Prob.(F-statistic) = 0.013590

Thus, the regression equation becomes:

lnRGDP = 4.515452 +0.819206LnGBD –0.685931LnGDS

Interpretation of the long-run result

From the result in table 4.5 above, the coefficient of government budget deficit (GBD) indicates a positive relationship with the real GDP in the long-run period. This conformed to our expected assumption. The implication is that a unit increase in government budget deficit in the economy will cause real GDP to increase by 0.819206 units ceteris paribus. However, from the granger causality test conducted a one directional causal relationship was found from real GDP to government budget deficit at the 0.05 level of significance; meaning that real GDP can be used to determine government budget deficit. The study further shows that government budget deficit is statistically significant in explaining changes in real GDP since its prob. value of 0.0022 is less than the 0.05 level of significance.

The coefficient of government debt service (GDS) indicates a negative relationship with the real GDP in the long-run period. This also conformed to our expected assumption. The implication is that a unit increase in government debt servicing in the economy will cause real GDP to decrease by 0.685931 units ceteris paribus. However, from the granger causality test conducted no causal relationship was found between government debt servicing and real GDP at the 0.05 level of significance. The study further shows that government debt servicing is statistically significant in explaining changes in real GDP since its prob. value of 0.0140 is less than the 0.05 level of significance. The intercept of the model indicates that real GDP will increase by 4.515452 units when the independent variables under consideration are held constant at zero; and this is also significant with a prob. value of 0.0000.

Meanwhile, the coefficient of determination (R^2) stood at 0.935063, implying that approximately 94% of the variations in real GDP (dependent variable) is explained or caused by variations in the explanatory or independent variables in the model under consideration while about 6% could be explained by other variables or factors not included in the model. However, the adjusted R^2 which stood at 0.740273 re-affirms the goodness of fit to be approximately 74%; meaning that the explanatory variables jointly affect real GDP only by 74%. Thus, 26% variation in real GDP could be attributed to other variables not considered here. Furthermore, the prob. value of the F-statistic stood at 0.013590 and is less than the 0.05 level of significance, indicating that the joint influence of the explanatory variables on the dependent variable is statistically significant in explaining the variations in real GDP.

Test of Hypotheses

The hypotheses are tested using the prob. value of the t-statistic of the parameter estimates. The hypotheses to be tested are re-stated here.

Table 4.6: Summary of the t-statistics

Variable	t-statistic	Prob. value	Decision
GBD	4.426013	0.0022	Statistically significant
GDS	-3.130402	0.0140	Statistically significant

Source: E-views Econometric result of the study

Hypothesis 1

H_0: Increasing budget deficit has no significant effect on economic growth of Nigeria.

H_1: Increasing budget deficit has significant effect on economic growth of Nigeria.

From the table 4.6, we conclude that increasing budget deficit has significant effect on economic growth of Nigeria.

Hypothesis 2
H_0: Increasing debt servicing has no significant effect on economic growth of Nigeria.
H_1: Increasing debt servicing has significant effect on economic growth of Nigeria.
From the table 4.6, we conclude that increasing debt servicing has significant effect on economic growth of Nigeria.

Test for Autocorrelation
Using the Durbin Watson statistic (DW), if the value is closer to 0; then there is positive autocorrelation, if it is closer to 2; then there is no autocorrelation; if it is closer to 4; then there is negative autocorrelation. However, from our result, the DW value for the model is 2.472666; this is closer to 2 than 4, thus we conclude that there is no autocorrelation. The Breush-Godfrey serial correlation LM test also validates the result that there is no autocorrelation because from the result in table 4.8 below, the prob. chi-square of 0.0647 is greater than 5% (0.05) level of significance.

Table 4.7: Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.807513	Prob. F(1,7)	0.3987
Obs*R-squared	3.413115	Prob. Chi-Square(1)	0.0647

Source: E-views Econometric result of the study

Discussion of Results
Stationarity of the variables implies that the variables are very much representing and the results obtained are genuine and authentic based on the available data; hence, making the estimates unbiased, consistent and reliable for policy formulation. The co-integration test result shows that there exists a stable long run relationship between the dependent variable real GDP and the explanatory variables in the model. This implies that in the long run, economic growth can be efficiently predicted using government budget deficit and government debt servicing. Also, from the result obtained, 74% changes in economic growth is accounted for by government budget deficit and government debt servicing while the F-statistic further confirm the strong influence which government budget deficit and government debt servicing have on economic growth in Nigeria.
Furthermore, the results have shown that past realizations of real GDP have not impacted significantly on the current real GDP even though a positive relationship was obtained in the short-run period; and this cannot be unconnected to the fact that the oil boom era encouraged import-oriented consumption habit that has done more harm than good to the nation as this succeeded in weaken the naira due to the fact that the nation has little or nothing to export. It is also unfortunate that our local producers are not been encouraged; imagine if the 360 special utility vehicles and SUVs estimated at ₦57.6 billion for Senators and House of Rep. members were bought here in Nigeria, this would have impacted significantly on the economy.
The research findings also indicated that government budget deficit has a positive but not significant effect on the growth of the Nigeria economy in the short-run period, meaning that benefits from this policy is not expected within a short period. But again, we found that in the long-run period, that government budget deficit has a significant positive effect on the growth of the Nigeria economy; this aligns with the findings of Ughulu, et al (2023) and Onwuka (2022) but

differ from the findings of Mohammed and Ogba (2021) of a negative but insignificant relationship. Hence, the finding from this research is an indication that budget deficit or deficit financing will spur infrastructural development, increase job creation and boost the overall growth of the economy. However, short-run past realizations of budget deficit indicated negative relationships; and this can be linked to the pattern of expenditure of government, a pattern that suggests that the government is more interested in recurrent expenditure than capital expenditure. For instance, the Buhari's administration spent a minimum of ₦23.66 trillion on personnel costs, pensions, overhead costs, etc., a minimum of ₦14.13 trillion on debt servicing while a minimum of ₦10.47 trillion was on capital expenditures from a budget of ₦54.98 trillion of which ₦30.58 trillion was financed through borrowings. For a country like Nigeria, capital expenditure, especially expenditures on capital projects or infrastructure like revamping the refineries, provision of sound health care system, qualitative education and the likes, ought to constitute a major proportion of government's total expenditure in order to make way for economic growth and sustainable development; unfortunately, the reverse is the case. Just recently President Bola Tinubu submitted a supplementary budget totalling ₦2.17 trillion to the National Assembly for approval; where he plans to spend ₦6.9 billion for the procurement of vehicles for the State House, and ₦1.5 billion for new cars for the Office of the First Lady among other irrelevant items. This is a clear indication that government prefers spending on frivolities even at this time of economic hardship, worst still is the fact that the budget will also be financed from borrowed funds. By this action of government, it is a clear indication that the economy will experience a retarded growth.

The research findings also indicated that government debt servicing has a negative but not significant effect on the growth of the Nigeria economy in the short-run period; but in the long-run, the result showed a significantly negative effect on the growth of the Nigeria economy. This finding contradicts the findings of Efuntade, et al (2021) that government debt servicing has a positive and significant effect on the growth of the Nigeria economy but confirms the assertion of Akanbi et al (2022) of resource depletion effect of external debt services on economic growth. This negative impact cannot be unconnected to the fact that funds generated through government borrowings are not effectively utilized in building infrastructures that add value to the economy; because when borrowed funds are not used for productive ventures, like funding capital projects that will translate to growth and development, it becomes very difficult for government to service the debt. It is on record that the government spent so much on recurrent expenditures and other non-productive ventures to the detriment of capital expenditures; in some other cases, due to corrupt practices of government officials, these borrowed funds are misappropriated or embezzled for their selfish interest.

5.Concluding Remarks

This research examined the impact of government budget deficit and debt servicing on economic growth in Nigeria, using time series data spanning the period from 1981 to 2022. The model was specified based on the Keynesian growth model with real GDP as the dependent variable while government budget deficit and government debt servicing made up the independent variables.

The findings revealed that government budget deficit has statistically significant positive impact on the growth of the Nigeria economy while government debt servicing has statistically significant negative impact on the growth of the Nigeria economy. This means that a positive increase in government budget deficit will lead to a positive increase in the growth of the Nigeria economy but a positive increase in government debt servicing will cause a significant decline in the growth

of the Nigeria economy. In conclusion therefore, the growth of the Nigeria economy can be efficiently predicted using government budget deficit and government debt servicing in Nigeria. There is therefore need for government to spend funds more reasonably and efficiently with the sole aim of growing the economy.

Recommendations

The following recommendations made here are in line with the findings of this research.

It is time for the nation to move from her current state of consumption driven economy to a production driven economy; therefore, government should stop borrowing for recurrent expenditure purposes rather government borrowing must be strictly for productive purposes like funding capital project that will be able to service their debt with ease. This will encourage infrastructural development, increase job creation and boost the overall growth of economy.

Government should be disciplined in her spending habit and spend more efficiently and not wastefully. Government should spend a higher proportion of her budget on capital project that will make way for economic growth and sustainable development.

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