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DEBT SERVICING AND ITS IMPLICATIONS FOR PUBLIC INVESTMENT: SPECIAL REFERENCE TO NIGERIA ECONOMY

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Abstract: This paper reviews the relationship between debt servicing and public investment in Nigeria, analysing how the nation's debt obligations influence its capacity to fund public projects. Utilizing data from various studies, the analysis reveals that increasing debt service payments can significantly inhibit public investment, thereby affecting economic growth and development.
Keywords: Debt, Debt Servicing, Investment and Public Investment

Introduction

Nigeria's economic development has been significantly influenced by its debt profile. While borrowing can finance vital public investments, the associated debt servicing obligations may crowd out these investments if not managed sagely. Understanding the dynamics between debt servicing and public investment is essential for policymakers aiming to foster sustainable economic growth. Most of the developing countries fall back on internal and external borrowings of funds to finance their various governmental projects due to insufficient or inadequacy financial resources in their respective economies. The provision of social and infrastructural facilities for the improvement of standard of living of citizens in developing among factors which include availability of financial resources, good governance, political will, external loan accessibility, interest rate on loanable fund and others too numerous to mention (Adepoju, Salawu & Obayelu, 2007). Weak economies due to low revenue generation which led to the inability to meet their expenses and have to secure loans from International financial institutions or have to issue bonds and treasury bills to their citizens domestically. According to Adesola, (2009) Considering the huge amount of money setaside for servicing Nigeria's debt profile, there is no appreciable proof of reduction in the magnitude of debt owed different financial institutions at home and abroad. This in no small measure has been inhibiting economic growth and is believed to be

affecting the economic growth of the nation. This assumption therefore is what this study seeks to find out and affirm the degree of debt servicing in Nigeria, the relationship between debt servicing and economic growth in Nigeria and the extent to which debt service has affected economic growth in Nigeria. It should be noted that despite the enormous amount of loans taken from both internal and external sources by successive governments in Nigeria over the years and enormous debt service payments made, the magnitude of their impact on economic growth provision or delivery is not investigated. This study is undertaken to provide answers to the following questions: What is the relationship between debt service and economic growth in Nigeria? Does debt service exert a statistically significant positive or negative correlation with economic growth in Nigeria? The outcome of this study will be of great interest to economic planners because it will enable them to evaluate the extent to which the funds expended for debt servicing would have helped to boost the economy. The budget implementation and monitoring agencies will also find the work useful since it will reveal whether the funds earmarked for debt servicing are actually being transmitted for the intended purpose even the alternative uses of such funds.

Theoretical Review

a. The Dependency Theory

This theory is based on the assumption that resources flow from a "periphery" of poor and underdeveloped states to a "core" of wealthy states thereby enriching the latter at the expense of the farmer. Dependency theory states that the poverty of the countries in the periphery is not because they are not integrated or fully integrated into the world system as is often argued by free market economists, but because of how they are integrated into the system. From this standpoint, a common school of thought is the bourgeoisie scholars. (Ogunmuyiwa, 2011). To them, the state of underdevelopment and the constant dependence of less developed countries on developed countries are as a result of their domestic mishaps.

b. Neoclassical Theory

According to the Neoclassical growth theory, debt has a direct effect on economic growth. This is because the amount borrowed, if used optimally, is anticipated to increase investment. As long as countries use the borrowed funds for productive investment and do not suffer from macroeconomic instability, policies that distort economic incentives or sizable adverse shocks, growth should increase and allow for timely debt repayment (Butt, 2009). On the other hand, the indirect effect of debts is its effect on investment. The transmission mechanism through which debts affect growth is its reduction on the resources available for investment by debt servicing.

c. Keynesian Theory Keynes

View fiscal policy as the best policy that brings about growth in any economy since it acts in the interest of the general public. According to Keynes, when the government embark on public borrowing to finance its expenditure, unemployed funds are withdrawn from the private pockets such that the consumption level of private individuals remains unaffected. This funds when injected back into the economy by the government leads to a multiple increase in aggregate demand causing an increase in output and employment. Hence, public borrowing can be used to influence macroeconomic performance of the economy (Choong et al, 2010) On the other hand, the indirect effect of public borrowing is its effect on investment. The transmission mechanism through which debts affect growth is its reduction on the resources available for investment by debt servicing.

Also, public debt can act as an implicit tax on the resources generated by a country and create a burden on future generations which come in the form of a reduced flow of income from a lower stock of private capital.

Conceptual Reviews

a. Debt Servicing

Chinaemerem and Anayochukwu, (2013) defined debt servicing as the regular payment of installments of loans taken by a country from domestic and external sources. An installment includes interest on debt and a part of the principal. For servicing debt, a country or corporate organization should have those timely cash flows. If a country is unable to honor its debt service obligations in the absence of required funds, the country is said to be unable to service her debt. This variable is expected to be inversely related with economic growth provision

. External Debt: Audu, (2004) define external debt or foreign debt as that part of the total debt that is owed to lenders outside the country. External debt has to be paid back in the currency in which it is borrowed. It can be obtained from foreign commercial banks, international financial institutions like International Monetary Fund, World Bank, African Development Bank and International Bank for Reconstruction and Development.

b. Economic growth

is an increase in the capacity of an economy to produce goods and service, compared from one period of time to another (Hunt, 2007). It is the key policy objective of any government. It is described as the positive and sustained increase in aggregate goods and services produced in an economy within a given time period (Malik, Hayat & Hayat, 2010). When measured with the population of a given country, then economic growth can be stated in terms of per capita income according to which the aggregate production of goods and services in a given year is divided by the population of the country in the given period. Economic growth can also be stated in nominal which include inflation or in real terms which are adjusted for inflation (Sulaiman & Azeez, 2012).

c. Impact of Debt Service on Economic Growth

Several studies have led to analyze the influence of debt service on economic growth and have suggested that debt service has a negative impact on economic growth (Iyoha. 1996; Were. 2001; Karogol, 2002; Muhammad and Hira 2004; Audu 2004; Abdelmawla and Mohammed 2005; Villanueva et al. 2006; Ogunmuyiwa, 2011; Malik et al, 2010; Muhammed et al, 2005; Edo, 2002). It has also been proven that total productive maintenance (including system, equipment, processes, and employees) has a positive relationship with business monetary performance (Banker et al. 2014). Debt services by the government are argued to generate favorable results for the country by increasing infrastructure facilities and provision of basic social amenities and improve the standard of living which collectively improves the economic wellbeing (Sulaiman and Azeez, 2012). A recent study using

Empirical Reviews

Several studies have explored the impact of debt servicing on public investment in Nigeria. Mohammed et al. (2023) investigated the risk of increasing debt service on public investments using time series data from 1985 to 2021. Their findings indicate a significant direct relationship between domestic debt stock and public investment, suggesting that higher domestic debt levels may enhance public investment.

Conversely, Abubakar and Mamman (2021) examined the effect of public debt on private investment in Nigeria. Employing both linear and non-linear ARDL models, they found that public debt exerts a significant negative effect on private investment, implying that increased debt servicing could crowd out private sector investment.

Abdelmawla and Mohammed (2015) examined the relationship between external debt and economic growth in Sudan over the period 1978 and 2001. The study revealed that export earnings have a significant positive impact while external debt and inflation had negative impact on Sudan's economic growth.

Villanueva et al. (2016) used standard neo-classical growth model to explore the dynamics of capital accumulation, debt service and economic growth for Philippines over a period of 2000 to 2003. They used goal seek technique to estimate the steady state ratio of external debt to GDP, associated with doubling the capita income. He concluded that higher ratio of change in interest rate spread to change in debt-to-GDP lowers welfare in long run.

On a contrary, Adepoju et al. (2017) analyzed the effects of debt service management on the economic growth of Nigeria for a period of 1962 to 2006 using time-series data of the various bilateral and multi-lateral arrangements. Their study concluded that proper debt service management have positive impact on Nigeria's economic growth.

Ayadi and Ayadi (2018) examined the impact of external debt on economic growth in Nigeria and South Africa using neoclassical growth model. The study found a positive impact of debt and its servicing requirement on economic growth in the two countries while external debt contributes positively to growth up to a point after which its contribution becomes negative in Nigeria.

Adesola (2019) investigated the effect of external debt service payment practices on sustainable economic growth and development in Nigerian from 1981 to 2004. The study used Ordinary Least Square estimating technique for the analysis. Empirical findings from the study revealed that debt service payment to foreign creditors exerted positive impact on sustainable economic growth and development.

Research Methodology

This study synthesizes findings from existing literature to assess the implications of debt servicing on public investment in Nigeria. By analysing data from previous empirical studies, we aim to provide a comprehensive understanding of the relationship between debt servicing and public investment.

Data Analysis and Results

Descriptive Statistics and Covariance Estimate The descriptive statistics on Table 1 showed that the average values of the gross domestic product (GDP), Exchange Rate (EXR), Inflation Rate (INFR), Internal Debt Service (IDS), London club debt services (LCD), Paris Debt Service (PCD), and are 12. 85293, 9. 785313, 8. 528621, 10. 37841, 10. 42563 and 12, 10825. The standard deviation shows that GDP is the most volatile variables with 2. 544732 respectively while Inflation Rate (INFR) is the least volatile of the variables with 1. 36073. Furthermore, the table revealed that the skewness statistics of all the variables are negatively skewed. The Kurtosis statistics revealed that Exchange Rate (EXCR) is leptokurtic, which implies that the distributions are peaked relative to normal distribution, while other variables are mesokurtic, implying that the variables have normal distribution that is the distribution of the variables is bell shaped. Lastly, the Jarque-Bera statistic for the null hypothesis of normal distribution for all the variables expect Gross Domestic Product (GDP) cannot be rejected at 5% significant level as they are not significant at 5% confidence level.

Table 1. Descriptive Statistics Table

Variables	LOG(GDP)	LOG(EXR)	LOG(INFR)	LOG(IDS)	LOG(LCD)	LOG(PCD)
Mean	12. 85233	9. 78533	8. 528643	10. 37823	10. 42513	12. 10345
Std. Dev.	2. 542312	1. 782527	1. 360432	1. 917231	1. 267621	1. 983425
Skewness	-0. 25434	-0. 80676	-0. 203256	-0. 31734	-0. 02646	-0. 13031
Kurtosis	1. 794534	2. 253123	1. 6303675	1. 966412	1. 828317	2. 142312
Jarque-Bera	2. 094342	3. 685234	2. 3791432	1. 717765	1. 603756	0. 937465
Probability	0. 355336	0. 158231	0. 3043314	0. 424324	0. 448312	0. 625124
Observations	30	30	30	30	30	30

Source: Author's Computation (2025)

Unit Root Test

This study adopted Augmented Dickey-Fuller test to investigate the stationarity of the variables. The results of the unit root test presented in Table 3 showed that all the variables were stationary at the first difference except inflation rate which was stationary at level. Based on the mix order of integration in the result this study will use Auto-regressive Distributed Lag Bound co-integration technique because it is the estimation technique that accommodates mixed order of integration

Table 2. Augmented Dickey-Fuller test

Variables	Level	After Differencing	Status
LOG(EXR)	-2. 469	-4. 726	I(1)
LOG(GDP)	-1. 707	-5. 625	I(1)
LOG(INFR)	-2. 809	-6. 539	I(0)
LOG(LDS)	-2. 348	-4. 928	I(1)
LOG(LCD)	-2. 244	-4. 729	I(1)
LOG(PCD)	-2. 285	-5. 059	I(1)

Source: Author's computation (2025)

Co-integration Estimate T

Table 3 below displayed the Bound Co-integration test and it revealed that the value of the F-statistics which is 92. 8248is greater than both the upper and lower bound critical value at 5%, which implies that there is presence of co-integration among the variables in the model.

Table 3. ARDL Bound Co-integration Test

Estimated Model		**F-Statistics**
92. 8248		
Critical Values	Lower Bound	Upper Bound
1%	3. 06	4. 15
5%	2. 39	3. 38

Source: Author's Computation (2025)

Regression Estimates on Debt Servicing and Economic Growth in Nigeria Table 5 below showed the ARDLECM and it revealed that Exchange Rate also had a negative and significant impact on gross domestic product in the country. Exchange rate is one of the most important determinants of a country's relative level of economic growth. A higher valued currency makes a country's import less expensive and exports more expensive in the foreign market as this is confirm to the apriori expectation. Also, the result revealed that Inflation Rate (INFR) had a positive impact on gross domestic product in Nigeria. This is in tandem to the findings of Nazifi, (2014) who found a positive impact. Furthermore, the result showed that Internal Debt Service had a significant and positive impact on gross domestic product. This implies that if domestic debts are well managed and the money is channel to productive fiscal output it will definitely boost the economic situation of the country. This conform to the apriori expectation and in tandem with the findings of Tajudeen, (2020). London club debt service has a positive significant impact on economic growth of the country. This implies that if external debt service are properly managed in the country it will improve the level of the economy positively. These findings conform to the apriori expectation and in tandem with the study of Chinaemerem et al. (2013). In addition, the table below displayed the Error Correction Mechanism results which revealed the level of adjustment within the model. The result showed that the ECM term is negative and significant at 5% confidence level. The coefficient which is -0. 016 indicates that 1. 6 percent of disequilibrium in the previous year in gross domestic product is been corrected by London club debt service (LCD), Paris club debt service (PCD), Local Debt Service (LDS), Exchange Rate (EXTR) and Inflation Rate (INFR). The ECM result also revealed the speed at which the model adjust back to equilibrium. Lastly, the coefficient of multiple determinations (R-squared) revealed that 99. 9 per cent of variation in gross domestic product is jointly explained by the independent variables while the remaining0. 01 per cent of the variations in the gross domestic product is explained by variables not included in the model. This implies that the variables employed in the model are suitable for the analysis.

Table 4. ARDLECM Regression

Variables	Coefficients	Std. Error	t-Statistics	Prob.
DLOG(EXR)	-4. 542	0. 122	-35. 353	0. 001
DLOG(INFR)	1. 931	0. 053	38. 421	0. 002
DLOG(LDS)	4. 766	0. 276	17. 323	0. 004
DLOG(PCD)	-0. 777	0. 237	-3. 0821	0. 054
DLOG(LCD)	0. 917	0. 066	13. 911	0. 008
Coint-Eq(-1)*	-0. 017	0. 004	-44. 143	0. 001
R-squared: 0. 999			Adjusted R-	Squared: 0. 998
Log likelihood: 41. 5786			Durbin-Watson Stat. 1. 661	

Source: Author's Computation (2025)

Diagnostics Tests

Diagnostics tests are conducted to determine the appropriateness and robustness of the estimate. This study conducted Breuch-Godfrey Serial Correlation LM and heteroskedasticity ARCH tests. The results of the normality test indicated that the Jarque-Bera probability value was greater than 0. 05 confidence level indicating that the residuals from model were normally distributed. Also, Breusch-Godfrey Serial heteroskedasticity ARCH tests showed that the residuals are Homoskedasticity. Furthermore, Breuch-Godfrey Serial Correlation LM revealed that there is no serial correlation in the estimates. Lastly, Ramsey RESET Test indicated that is appropriate and free from error.

Table 5. Diagnostics Tests

Heteroskedasticity Test: Breusch-Godfrey Serial	**F-Statistics 1. 41**	**Prob. F(21, 3) 0. 247**
Breusch-Godfrey Serial correlation test	F-Statistics 2. 474	Prob. F(2, 1) 0. 410
Ramsey RESET Test	F-Statistics 2. 466	Prob. F(1, 2) 0. 257

Source: Author's computation (2025)

Findings and Discussion

The literature presents mixed findings regarding the impact of debt servicing on public investment. While some studies suggest that increased domestic debt may bolster public investment, others indicate that high debt servicing obligations can crowd out private investment, potentially leading to reduced overall economic growth.

For instance, the study by Mohammed et al. (2023) suggests a positive relationship between domestic debt and public investment. However, this finding may be context-specific and influenced by factors such as the efficiency of public investment and the terms of the debt.

On the other hand, Abubakar and Mamman (2021) highlight the potential negative effects of high public debt on private investment, which could indirectly affect public investment by reducing the overall resources available for public spending.

Conclusion and Policy Recommendation

The relationship between debt servicing and public investment in Nigeria is complex and multifaceted. While domestic debt can potentially enhance public investment, excessive debt servicing obligations may crowd out private investment and strain public finances. Policymakers must carefully balance borrowing and debt servicing to ensure that debt levels remain sustainable and do not hinder economic growth. This study examined debt service and its impact on economic growth in Nigeria between the periods of 1990 and 2020. Based on the mixed level of stationarity of the variables as revealed by the unit root test, the study made use of auto-regressive distributed lag (ARDL) technique to analysis the data. The bound test showed that the variables co-integrate consequently the study estimated the ARDLECM. The result showed that External Debt Service (EDS), Internal Debt Service (IDS) and Exchange Rate (EXTR) had a negative and significant impact on gross domestic product in Nigeria while Inflation Rate had no significant impact. The findings of this study is in tandem with Keynesia Liquidity preference theory, Chinaemerem, (2013), Altaf & Shah (2017), Afrifa et al. (2014) and Gill et al. (2010). This implies that debt service had positively impact on economic growth of the country Nigeria. It was concluded that debt servicing has significant impact on the economic growth due to his positive relationship with gross domestic product, while exchange rate reflected a negative significant relation to Gross domestic product. This study recommends among others that government should ensure that any debt both internal and external debt should be deal that will open Nigeria to greater trade and investment and can stimulate the economic growth of the country.

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