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Public Debt Service Payment and Nigerian Economic Growth: A Threshold Analysis of Buhari-Tinubu Regime

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Abstract

The study examined the effect of public debt service payment on the economic growth of Nigeria. The specific objective was to examine the effect of domestic debt service payment and foreign debt service payment on the real GDP of Nigeria (2011-2023) as well as to establish the threshold effect of public debt service payment on the economic growth of Nigeria during Buhari-Tinubu regime (2015-2023). The research utilized an ex-post facto research design. The data were sourced from secondary sources, specifically the Central Bank of Nigeria's Statistical Bulletin and the National Bureau of Statistics. The study covered a thirteen-year fiscal period from 2011 to 2023. Both descriptive and inferential analyses were conducted on the secondary data gathered for this research. To examine the null hypotheses, the study employed the Ordinary Least Square (OLS) multiple regression method and also Chow Breakpoint Test to determine the effect of public debt service payment on economic growth in Nigeria. The findings showed that: domestic debt service payment has a significant positive effect on the real GDP of Nigeria (p-value = 0.0194); foreign debt service payment has a significant positive effect on the real GDP of Nigeria (p-value = 0.0084). The positive effect of public debt service payment on economic growth of Nigeria has reduced significantly during the Buhari-Tinubu regime (p-value = 0.000226). In conclusion, while public debt service payments continued to contribute positively to economic growth during the Buhari-Tinubu regime, the magnitude of their impact, particularly domestic debt servicing, has decreased, possibly reflecting shifts in economic policies or external economic conditions during this period. We therefore recommend that the Federal Ministry of Finance implement stricter oversight and improved management practices for foreign debt. This includes assessing the effectiveness of foreign loans and reallocating funds to sectors that have a higher potential for economic impact to mitigate the burden of debt servicing.

Keywords: *Public Debt Service Payment, Economic Growth, Debt Service Payment, Foreign Debt Service Payment, Real Gross Domestic Product*

1.0 Introduction

Public debt service payment has become a significant issue in Nigeria's economic discourse, particularly in the wake of rising public debt levels. The broader context in which this research topic resides is the increasing reliance on borrowing by governments worldwide to finance their developmental projects, bridge budget deficits, and manage economic crises (Eze & Ukwueni, 2023). For developing economies like Nigeria, public debt is often seen as a necessary tool for economic growth and development. However, the burden of debt servicing can lead to a significant strain on the economy if not managed effectively (Odey, Owan, & Owan, 2023). Nigeria's economic growth has been inconsistent, with periods of robust growth followed by downturns, and this volatility is partly attributed to the country's fiscal policies, including how it manages and services its public debt.

In today's business environment, effective public debt service payment is more relevant than ever. With the globalization of financial markets, countries are increasingly interconnected, and the fiscal health of one nation can have far-reaching implications for others. Effective public debt service payment involves the timely and efficient payment of interest and principal on public debt, which helps maintain the country's creditworthiness and investor confidence (Kpalukwu & Ezekwe, 2023). For Nigeria, a country heavily reliant on oil revenues, fluctuations in global oil prices have a direct impact on its ability to service debt. When debt service payments are managed effectively, they can help stabilize the economy by ensuring that the government can continue to fund critical projects without resorting to excessive borrowing. Conversely, ineffective debt management can lead to a debt spiral (Fagbemi & Olatunde, 2019), where more borrowing is needed to service existing debt, thereby crowding out public investments and stifling economic growth. This is particularly relevant in Nigeria, where public debt has been rising, raising concerns about the long-term sustainability of the country's economic growth.

The concept of public debt service payment refers to the funds required to cover the interest and principal repayments on a country's public debt (Ndu, 2024). Public debt can be either domestic or external, with each type having different implications for the economy (Eze & Ukwueni, 2023). Domestic debt is usually borrowed from local institutions or individuals, while external debt is borrowed from foreign lenders, including international organizations such as the World Bank or the International Monetary Fund (IMF). Public debt service payments are a crucial part of a country's fiscal policy, as they determine how much of the government's revenue is allocated to debt repayment versus other expenditures (Odey, Owan, & Owan, 2023). The main concepts involved in public debt service payment include the debt-to-GDP ratio, which measures the size of a country's debt relative to its economic output, and the debt service-to-revenue ratio, which indicates the proportion of government revenue used to service debt. These indicators are used to assess the sustainability of a country's debt and its ability to continue meeting its debt obligations without compromising economic growth.

Public debt service payment can have significant effects on Nigeria's economic growth, both positive and negative. On the positive side, when managed well, public debt can be a tool for financing infrastructure development, which in turn stimulates economic growth by improving productivity and creating jobs (Ndu, 2024). However, the negative effects of public debt service payments are more pronounced in Nigeria, where a substantial portion of the national budget is allocated to debt servicing. This leaves less room for government spending on critical sectors such as education, healthcare, and infrastructure. Additionally, high levels of debt service payments can lead to fiscal deficits, forcing the government to borrow even more, thus perpetuating a cycle of debt (Kpalukwu & Ezekwe, 2023). This can also lead to inflation if the government resorts to printing money to finance its debt, further eroding economic stability. Moreover, excessive debt service payments can reduce investor confidence, leading to higher borrowing costs and reduced foreign investment, both of which are crucial for economic growth. However, over the years, the country's public debt has risen significantly, with a large portion of the national budget now dedicated to servicing this debt (Odey, Owan, & Owan, 2023). The debt service-to-revenue ratio has reached concerning levels, meaning that a significant share of the government's revenue is being used to pay off interest and principal on existing debt. This situation is further exacerbated by Nigeria's heavy reliance on oil revenues, which are subject to volatile global oil prices, making it difficult to predict and manage revenue flows effectively. The country's fiscal policies have not been able to curb the growing debt burden, and the funds borrowed are often not effectively channeled into projects that can generate economic growth, leading to questions about the sustainability of the current debt levels (Ndu, 2024).

The high cost of servicing public debt has crowded out critical government spending on essential sectors such as education, healthcare, and infrastructure, which are vital for long-term economic growth and development. This underinvestment in key areas has hampered the country's ability to build a resilient and diversified economy, making it more vulnerable to external shocks. Additionally, the rising debt levels have led to increased borrowing costs, as investors demand higher returns for taking on the perceived risk associated with lending to Nigeria (Ogwu, 2023). This, in turn, reduces investor confidence and discourages foreign investment, which is crucial for economic growth. If left unaddressed, the current trajectory of public debt in Nigeria could lead to a debt crisis, where the government might struggle to meet its debt obligations, potentially leading to default and further economic instability.

The Buhari regime, which spanned from 2015 to 2023, saw a marked increase in public debt due to a combination of reduced oil revenues and expansive fiscal policies aimed at stimulating economic growth. This period also witnessed significant challenges in managing the debt, as the country struggled with revenue generation amidst a volatile global oil market. The Tinubu administration, which took over in 2023, inherited this debt burden and has continued to navigate the complexities of servicing the debt while pursuing economic reforms. During the Buhari regime, for instance, the government's heavy reliance on borrowing to finance budget deficits raised concerns about the sustainability of economic growth in the face of mounting debt service obligations. The Tinubu regime, faced with the same challenges, has had to explore alternative strategies, including debt restructuring and seeking debt relief, to mitigate the adverse effects on the economy.

Despite extensive research on the relationship between public debt service payments and economic growth, significant gaps remain in the literature, particularly concerning the nuanced effects of domestic and foreign debt service payments on Nigeria's real GDP during specific political regimes. Studies by Uchenna (2024), Ojonye, Jumbo, and Oboh (2024), and Amadi, Ahuekwe, and Eze (2024) have provided useful hints into the broader effects of public debt servicing on economic indicators such as GDP per capita and overall economic growth. However, these studies often overlook the distinct impacts of domestic and foreign debt service payments when considered separately, and how these impacts might vary across different governmental periods. For example, while Yusuf and Mohd (2023) and Kpalukwu and Ezekwe (2023) explored the effects of public debt within certain periods, there is still a lack of focused analysis on the Buhari-Tinubu regime (2015-2023), a period characterized by significant economic challenges and policy shifts. This oversight limits the understanding of how recent fiscal policies and debt management strategies specifically under these regimes have influenced economic growth in Nigeria.

Additionally, while research by Okeke, Anisiobi, and Madueke (2023), Odey, Owan, and Owan (2023), and Kalu and Boniface (2023) has examined the effects of various forms of debt on economic growth, the threshold effects of debt service payments—where debt servicing begins to negatively impact growth—remain underexplored, especially within the recent context of Nigeria's economic environment. Studies like those of Onyenwife, Ezeanyeji, and Ekesiobi (2023) and Olabisi and Effiong (2023) have highlighted the adverse impacts of debt on economic performance but do not adequately address how the cumulative burden of domestic and foreign debt servicing might differ across political administrations or influence the economy differently depending on the volume of debt service payments. Moreover, the research by Ogwu (2023) and Viray and Bato (2023) underscores the critical need to understand the implications of debt servicing thresholds on economic sustainability, which is crucial for formulating effective fiscal policies. Therefore, this study seeks to fill these gaps by examining the distinct effects of domestic and foreign debt service payments on Nigeria's real GDP and establishing the threshold effect of public debt service payments during the Buhari-Tinubu regime, providing a more nuanced understanding of the economic implications of debt servicing in recent years.

Objective of the Study

The objective of the study is to examine the effect of public debt service payment on the economic growth of Nigeria. The specific objectives are:

1) To examine the effect of domestic debt service payment on the real GDP of Nigeria.

2) To ascertain the effect of foreign debt service payment on the real GDP of Nigeria.

3) To establish the threshold effect of public debt service payment on the economic growth of Nigeria during Buhari-Tinubu regime (2015-2023).

Hypotheses

H01) Domestic debt service payment has no significant effect on the real GDP of Nigeria.

H02) Foreign debt service payment has no significant effect on the real GDP of Nigeria.

H03) There is no significant threshold effect of public debt service payment on the economic growth of Nigeria during Buhari-Tinubu regime (2015-2023).

2.0 Literature Review

2.1 Conceptual Review

Public Debt Service Payment

Public debt service payment refers to the financial obligations that a government incurs as it repays both the principal and interest on its public debt (Odey, Owan, & Owan, 2023). Public debt typically arises when a government borrows funds to cover budget deficits, finance public projects, or manage economic crises (Ndu, 2024). These debts are borrowed from both domestic and foreign sources, including bonds, loans, and other financial instruments. Debt service payments are crucial because they reflect the ongoing financial commitments a government has toward its creditors. These payments are structured over time, depending on the terms of the loan agreements, and are usually categorized into periodic installments that include both the interest and portions of the principal amount.

The importance of public debt service payments in the broader economic context cannot be overstated. These payments are a significant portion of a government's fiscal expenditures and can influence the allocation of resources within a country. When a substantial portion of a government’s budget is dedicated to debt servicing, it may limit the amount of funding available for other essential areas such as healthcare, education, and infrastructure (Odey, Owan, & Owan, 2023). This situation can lead to a crowding-out effect where government spending on debt service payments restricts investment in other vital sectors, potentially slowing down economic development and reducing the effectiveness of government policies aimed at improving the quality of life for its citizens.

Furthermore, public debt service payments are closely monitored by international financial institutions, credit rating agencies, and investors as an indicator of a country's fiscal health and stability. High debt service burdens relative to a country’s revenue-generating capacity can raise concerns about the government's ability to meet its debt obligations, leading to increased borrowing costs or difficulties in accessing international capital markets (Ogwu, 2023). In extreme cases, if a government is unable to manage its debt service payments effectively, it might face the risk of default, which can have severe economic and social consequences, including loss of investor confidence, devaluation of the national currency, and economic recession.

Domestic Debt Service Payment

Domestic debt service payment refers to the financial obligations a government incurs when repaying debt that is borrowed from domestic sources within its own country (Vincent, Mairafi, & Abdul, 2021). This type of debt typically involves loans or bonds issued to domestic financial institutions, private investors, or public entities. The servicing of domestic debt includes both the repayment of the principal amount and the payment of interest on the debt, structured over a period according to the terms of the borrowing agreement. Domestic debt service payments are a critical component of a government’s overall fiscal management strategy and play a significant role in the national economy.

The implications of domestic debt service payments are multifaceted. On the one hand, servicing domestic debt is generally perceived as less risky compared to foreign debt because it is denominated in the local currency (Vincent, Mairafi, & Abdul, 2021). This means the government can meet its obligations without the complications of exchange rate fluctuations that affect foreign debt service payments. However, large domestic debt service obligations can still exert significant pressure on the government’s budget. When a substantial portion of the national budget is allocated to servicing domestic debt, it limits the resources available for other essential services such as infrastructure development, healthcare, and education. This allocation can lead to a situation where critical sectors of the economy are underfunded, potentially slowing down overall economic growth.

Moreover, domestic debt service payments are influenced by the interest rates within the country. If the government has borrowed at high interest rates, the cost of servicing this debt can become increasingly burdensome, especially if interest rates rise further. This can lead to a situation where a growing share of the government's revenue is diverted towards interest payments, leaving less for investment in productive activities (Titus, Chidi, Tochukwu, & Babatunde, 2016). High domestic debt service payments can also lead to inflationary pressures if the government opts to finance these payments by printing more money, which increases the money supply without a corresponding increase in economic output.

Foreign Debt Service Payment

Foreign debt service payment refers to the obligations a government has in repaying debt that is borrowed from foreign creditors (Kpalukwu & Ezekwe, 2023). This debt is typically denominated in foreign currencies, such as the U.S. dollar, euro, or yen, and can be sourced from foreign governments, international financial institutions, or private foreign investors. The servicing of foreign debt includes both the repayment of the principal amount and the payment of interest on the debt, according to the terms set forth in the borrowing agreements (Olabisi & Effiong, 2023). Foreign debt service payments are a vital aspect of a country's economic management, particularly in the context of maintaining international financial stability and sustaining investor confidence.

The nature of foreign debt service payments introduces unique challenges and risks to a country's economy. One of the primary challenges is the exposure to exchange rate fluctuations. Since foreign debt is denominated in foreign currencies, a depreciation of the local currency can significantly increase the cost of servicing the debt in terms of the local currency. This situation can strain the country's foreign exchange reserves, leading to a potential balance of payments crisis if the government is unable to meet its foreign debt obligations. In severe cases, this could lead to default, which can have far-reaching consequences, including loss of access to international capital markets, downgrading of credit ratings, and economic instability (Olabisi & Effiong, 2023).

Foreign debt service payments also have implications for a country's fiscal and monetary policy. Governments need to ensure that they have sufficient foreign exchange reserves to meet their foreign debt obligations. This often requires careful management of the country's export revenues and foreign currency inflows. In some cases, governments may implement austerity measures or increase taxes to generate the necessary funds for foreign debt servicing, which can lead to social and economic challenges, including reduced public investment and lower consumer spending. Furthermore, high foreign debt service burdens can limit a country's ability to borrow more funds in the future, as potential creditors may view the country as a high-risk borrower.

Economic Growth

Economic growth refers to the increase in the production of goods and services in an economy over a specific period, typically measured by the rise in real Gross Domestic Product (GDP) (Ojonye, Jumbo, & Oboh, 2024). Economic growth is a fundamental indicator of a country's economic health and is crucial for improving the standard of living for its citizens (Kpalukwu

& Ezekwe, 2023). It reflects the economy's ability to generate wealth and create jobs, thereby enhancing the overall well-being of the population. Economic growth can result from various factors, including increases in capital, labor force expansion, technological advancements, and improvements in productivity. It is a key objective of economic policy and is often seen as essential for addressing social and economic challenges such as poverty, unemployment, and income inequality (Akaegbobi, Nworie & Uzodimma, 2024).

In essence, economic growth represents the capacity of an economy to produce more goods and services than it did in the previous period (Amadi, Ahuekwe & Eze, 2024). This growth can be driven by both demand-side and supply-side factors. On the demand side, an increase in consumer spending, investment by businesses, government expenditure, and exports can fuel economic growth. On the supply side, growth can be achieved through the expansion of the labor force, the accumulation of capital, and technological innovations that enhance productivity. Sustained economic growth is often associated with improvements in living standards, as it leads to higher incomes, better employment opportunities, and increased access to goods and services.

Moreover, economic growth can be influenced by various external factors, including global economic conditions, trade policies, and geopolitical events. For instance, a global recession or a trade war can negatively impact a country's economic growth by reducing demand for its exports or disrupting supply chains. Conversely, favorable global conditions, such as low-interest rates or strong demand for commodities, can boost economic growth by encouraging investment and increasing export revenues.

Real GDP

Real GDP, or Real Gross Domestic Product, is a measure of the value of all goods and services produced within a country, adjusted for inflation, over a specific period, typically a year or a quarter (Nwoye, Udunwoke & Nworie, 2023). Real GDP is a crucial economic indicator as it provides a more accurate representation of an economy's size and how it is performing over time, compared to nominal GDP, which does not account for inflation (Okeke, Anisiobi, & Madueke, 2023). By adjusting for changes in price levels, real GDP allows for a comparison of economic output across different periods without the distortion caused by inflation. It is widely used by policymakers, economists, and analysts to assess the health of an economy, track economic growth, and formulate economic policies.

Real GDP is calculated by taking the nominal GDP and adjusting it using a price index, usually the GDP deflator, which measures the change in prices of goods and services over time (Okeke, Anisiobi, & Madueke, 2023). This adjustment ensures that the GDP figure reflects the actual increase in production rather than an increase in prices. For instance, if a country's nominal GDP increased by 5% in a given year, but inflation was 2%, the real GDP would have grown by approximately 3%. This adjustment is critical because it provides a clearer picture of economic growth by isolating the effect of price changes from the actual increase in production.

One of the main advantages of using real GDP as an economic indicator is that it enables comparisons of economic performance across different time periods and between different countries. Since real GDP accounts for inflation, it is possible to determine whether an economy is genuinely growing or if the apparent growth is simply due to rising prices (Nwoye, Udunwoke & Nworie, 2023). This makes real GDP a more reliable measure for assessing the long-term growth trends of an economy. Additionally, real GDP per capita, which divides the real GDP by the population, is often used to compare the standard of living across countries, as it provides a measure of the average economic output per person.

2.2 Theoretical Framework

The Debt Overhang Theory originated in the 1980s, primarily through the works of economists such as Paul Krugman and Jeffrey Sachs. The theory was developed in the context of the debt crises that many developing countries, particularly in Latin America, experienced during the 1980s. These crises were characterized by an overwhelming accumulation of external debt that became unsustainable for many countries, leading to a situation where the debt burden significantly hindered economic growth. The theory was formulated to explain how excessive debt levels could stifle economic performance by discouraging investment and limiting the effectiveness of government policies aimed at fostering economic growth.

The main postulation of the Debt Overhang Theory is that when a country's debt level exceeds a certain threshold, it creates a situation where the expected debt service (interest and principal repayments) becomes so large that it dampens incentives for both public and private investment. Investors, both domestic and foreign, may anticipate that any future economic gains or increased revenue will primarily be used to service the debt rather than being reinvested into the economy. This expectation reduces the attractiveness of investing in the country, leading to lower levels of investment, which are crucial for economic growth. Additionally, governments may be forced to divert substantial resources to meet debt service obligations, leaving fewer funds available for critical infrastructure, social services, and other growth-enhancing expenditures. This creates a vicious cycle where high debt levels impede growth, which in turn makes it even more difficult for the country to reduce its debt burden.

The Debt Overhang Theory is highly relevant to the study of public debt service payment and economic growth in Nigeria. Nigeria, like many other developing countries, has faced challenges related to high public debt levels, particularly in managing the balance between servicing existing debt and investing in growth-promoting activities. The theory provides a useful lens through which to examine how Nigeria's debt service obligations may be impacting its economic growth. It suggests that if Nigeria's debt levels are too high, the country might experience reduced investment and slower economic growth due to the negative expectations created by the large debt burden. This framework will be instrumental in analyzing whether Nigeria's current debt service payments are sustainable and how they might be influencing the country's economic trajectory, potentially offering hints into policy measures that could alleviate the negative effects of debt on growth.

2.3 Empirical Review

Uchenna (2024) explored the effect of public debt servicing on per capita output in Nigeria from 1981 to 2022. Utilizing secondary data from the Central Bank of Nigeria's Statistical Bulletin, the research employed descriptive and econometric statistics for data analysis, including unit root tests, the autoregressive distributed lag (ARDL) model, and Granger causality tests. The findings revealed that public debt servicing negatively impacts per capita output, with no long-run relationship between debt servicing and output per capita, and no causality between the explanatory variables (debt servicing, budget financing, debt-to-GDP ratio, inflation, real effective exchange rate) and per capita output. The study concluded that public debt servicing has a detrimental effect on GDP per capita and recommended that the government optimize the use of borrowed funds.

Ojonye, Jumbo, and Oboh (2024) investigated the impact of public debt on Nigeria's economic growth from 1981 to 2022. The study utilized a novel approach based on the ARDL model to examine the relationship between public debt and economic growth. The results indicated that in the short run, domestic debt could have either a negative or positive effect on economic growth depending on how effectively the borrowed funds are used. In the long run, domestic debt positively impacts economic growth, while external debt has a negative impact, largely due to the debt overhang effect.

Amadi, Ahuekwe, and Eze (2024) analyzed the effect of different foreign debt components on Nigeria's economic growth. The study employed an econometric analytical method rooted in the ARDL technique, using time series data from 1986 to 2023. The empirical results from the ARDL analysis revealed a long-run relationship among the variables. Bilateral debt and debt service payments were found to have a negative and significant effect on economic growth, while multilateral debt had a positive but insignificant effect. Additionally, 95 percent of short-run disequilibrium was corrected each year.

Yusuf and Mohd (2023) examined the asymmetric impact of public debt on economic growth in Nigeria from 1980 to 2020 using the Nonlinear Autoregressive Distributed Lag method. The empirical evidence indicated that external debt had a significant positive and symmetric impact on economic growth in both the long and short run. However, debt service payments, supporting the debt overhang hypothesis, stifled growth by activating a symmetric effect. Domestic debt was found to retard growth asymmetrically in the short term and linearly over the long term. Foreign reserve holdings exhibited an asymmetric long-run influence and a symmetric short-run impact on growth. The study recommended fiscal reforms to effectively reduce deficit financing, improve domestic revenue generation, increase infrastructure spending, and strengthen governance practices to mitigate the negative effects of unsustainable public debt.

Kpalukwu and Ezekwe (2023) investigated the effect of external debt servicing on economic growth in Nigeria. The study aimed to determine the effects of multilateral debt service, total debt service, and external debt stocks on GDP growth. Time series data were sourced from the World Development Indicators and International Debt Statistics. The data analysis techniques included descriptive statistics, unit root tests, Johansen cointegration tests, and a parsimonious error correction model (ECM), along with post-estimation tests. The unit root results indicated that all variables were stationary at the first difference, implying integration into order one [I(1)]. Evidence of two cointegrating equations from the Johansen cointegration test suggested a long-run relationship between GDP growth and the variables studied. The parsimonious ECM revealed that multilateral debt service had a negative and significant effect on GDP growth, indicating that an increase in multilateral debt service is detrimental to economic growth. The results further showed that total debt service and external debt stocks negatively and significantly impacted GDP growth, suggesting that Nigeria has not effectively utilized its growing foreign loan stocks to enhance economic contributions. The error correction parameter (-0.432) was negative and significant, indicating that short-run disequilibrium could adjust to a long-run equilibrium at a speed of 43.2 percent.

Okeke, Anisiobi, and Madueke (2023) examined the impact of public debt on real GDP in Nigeria, using annual secondary data from 1981 to 2021 and the ARDL technique. The findings showed that the past values of debt service payment had a positive impact on economic growth in Nigeria.

Odey, Owan, and Owan (2023) analyzed the burden of external debt on economic growth in Nigeria. The primary objective of the study was to assess the impact of external debt burden on economic growth, using econometric analytical techniques. The study used annual time series data sourced from the Central Bank of Nigeria Statistical Bulletin, with economic growth measured by GDP and external debt burden represented by external debt stock and debt service payment. The bound testing and ARDL model estimation techniques were employed for analysis. The study concluded that external debt and debt service payments had a significant and negative effect on economic growth in Nigeria.

Kalu and Boniface (2023) examined the effect of public debts, proxied as internal debts, external debts, and interest rates, on economic growth, represented by gross domestic product (GDP). The study employed an ex-post facto design with secondary data as the basis for data collection. A multiple regression model, using ordinary least squares regression, was utilized for analysis. The findings revealed that external debts have a significant negative impact on GDP, while internal debts have a significant positive impact on GDP. The study also highlighted the high cost of borrowed funds, recommending that the government ensure all borrowed funds are used judiciously. Additionally, the study suggested exhausting internal borrowing options before resorting to external debts and creating an enabling environment that allows public debt to achieve its intended purpose.

Onyenwife, Ezeanyeji, and Ekesiobi (2023) analyzed the effect of public debt on economic growth in Nigeria’s non-tradable sector from 1981 to 2020. Utilizing the Generalized Linear Model (GLM), the study concluded that different elements of public debt have varying impacts on the growth of the tradable sector. External debt and debt from non-bank sources positively drive the growth of the tradable sector, while debt acquired from banks and the associated servicing costs negatively affect its growth. The study also found that different components of public debt have varying impacts on the growth of the non-tradable sector, with foreign debt and debt from non-bank sources significantly and positively influencing growth.

Viray and Bato (2023) investigated the influence of debt service on the Philippine economy, considering key economic variables such as real exchange rates, inflation, GDP, and foreign investments. The researchers employed Granger causality analysis to detect the direct exchange of information between debt service and GDP, while also testing the relationship of other economic variables to the government’s debt service. The analysis revealed that all selected economic variables have significant implications for debt service, with GDP showing the most substantial impact. The findings suggest that policymakers need to be aware of the implications when the debt-to-GDP ratio exceeds the ideal threshold without a strong economic backup plan.

Olabisi and Effiong (2023) explored the impact of external debt service on Nigeria's economic growth from 1985 to 2021 using the Ordinary Least Squares (OLS) estimation technique. The results indicated that debt service hampers economic growth, implying that the burden of external debt service drains the country's income, which could have been directed toward increasing future production. However, the study also found that the stock of external debt promotes economic growth. The authors recommended that proper management of external debt stocks by the government, particularly in more productive sectors, could lead to further economic growth.

Ogwu (2023) investigated the relationship between deficit financing, debt servicing, and economic development in Nigeria from 1981 to 2022. Annual time series data were obtained from secondary sources, including the Central Bank of Nigeria's annual statistical bulletin and World Bank development indicators. Data analysis using the Autoregressive Distributed Lag (ARDL) showed that the HDI has a negative relationship with debt service cost.

3.0 Methodology

The research utilized an ex-post facto research design, which involves examining a dependent variable after the independent variable has already occurred. In this design, the researcher retrospectively studies the independent variables to assess their potential relationship and impact on the dependent variables. Ex-post facto research is appropriate for investigating past events where the independent variables cannot be manipulated by the researcher (Nworie, Okafor & John-Akamelu, 2022). This design was selected for the study due to the availability of pre-existing data. The data were sourced from secondary sources, specifically the Central Bank of Nigeria's Statistical Bulletin and the National Bureau of Statistics. The study covered a thirteen-year fiscal period from 2011 to 2023, capturing trends during the administrations of Goodluck Jonathan, Muhammed Buhari, and Bola Tinubu. Table 1 outlines the measurement of the data.

Table 3.1 Operational Measurement of Variables

Variable	Type	Measurement
1. Real GDP	Dependent	Measured as the annual percentage growth rate of the Gross Domestic Product (GDP) adjusted for inflation (constant prices).
2. Domestic Debt Service Payment	Independent	Measured as the annual total amount of domestic debt service payments made by the government.
3. Foreign Debt Service Payment	Independent	Measured as the annual total amount of foreign debt service payments made by the government.

Source: Researcher's Compilation (2024)

The model tested is restated below:

$$RGDP = f(DDSP + FDSP) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots eq\ 1$$

When the proxies are substituted, we have the following in its econometric forms:

$$RGDP_t = \alpha_0 + \beta_1 DDSP_t + \beta_2 FDSP_t + \mu_t \ldots\ldots\ldots\ldots eq\ 2$$

Where,

RGDP = Real Gross Domestic Product

DDSP = Domestic Debt Service Payment

FDSP = Fpreign Debt Service Payment

α = constant

β_{1-2} = coefficient of the independent variable

μ = error term

t = the time in question.

Both descriptive and inferential analyses were conducted on the secondary data gathered for this research. The descriptive analysis included calculating the mean, minimum value, maximum value, and standard deviation of the dataset. To examine the null hypotheses, the study employed the Ordinary Least Square (OLS) multiple regression method and Chow Breakpoint Test to determine the empirical relationship between debt service payment and economic growth in Nigeria. The statistical analysis was carried out using Eviews Version 10. The study's decision rule was to reject the null hypothesis if the calculated p-value was less than the 5% significance level. Conversely, if the p-value exceeded the 5% threshold, the null hypothesis was retained.

4.0 Data Analysis

Descriptive Analysis

Table 2 shows the descriptive analysis of the data below.

Table 2 Descriptive Analysis

	RGDP	DDSP	FDSP
Mean	69024.20	1689.611	573.8146
Median	69780.69	1348.650	181.4000
Maximum	77338.85	4464.920	3500.000
Minimum	58180.35	485.4200	41.77000
Std. Dev.	5407.166	1180.051	954.4413
Skewness	-0.607104	1.126333	2.437338
Kurtosis	2.712814	3.347958	8.043811
Jarque-Bera	0.843254	2.814273	26.65135
Probability	0.655979	0.244843	0.000002
Sum	897314.5	21964.94	7459.590
Sum Sq. Dev.	3.51E+08	16710236	10931498
Observations	13	13	13

Source: Eviews Output (2024)

The Real GDP (RGDP) of Nigeria over the period under review had an average (mean) value of ₦69,024.20 billion, reflecting the general economic size during this timeframe. The maximum RGDP recorded was ₦77,338.85 billion, indicating the peak economic output, while the minimum RGDP was ₦58,180.35 billion, representing the lowest economic performance in the observed period. The standard deviation of ₦5,407.17 billion suggests moderate variability in the economic output, implying that the Nigerian economy experienced fluctuations in growth, but not extreme volatility.

The Domestic Debt Service Payment (DDSP) had an average value of ₦1,689.61 billion, indicating the typical amount Nigeria allocated for servicing its domestic debt during the study period. The maximum DDSP was ₦4,464.92 billion, showing the highest domestic debt servicing burden, while the minimum DDSP was ₦485.42 billion, representing the lowest amount spent on domestic debt servicing. The standard deviation of ₦1,180.05 billion highlights a substantial level of fluctuation in domestic debt service payments, suggesting variability in the government's domestic debt obligations over time.

The Foreign Debt Service Payment (FDSP) averaged ₦573.81 billion, reflecting the general cost of servicing foreign debt. The highest FDSP recorded was ₦3,500.00 billion, marking the peak foreign debt servicing cost during the period, while the lowest FDSP was ₦41.77 billion, indicating the minimum foreign debt servicing burden. The standard deviation of ₦954.44 billion points to significant variability in foreign debt service payments, suggesting that the costs associated with servicing Nigeria's foreign debt were subject to considerable change over the years.

Test of Hypotheses

Table 3 below shows the regression estimate examining the link between public debt service payment and economic growth.

Table 3 Regression Analysis for Test of Hypotheses
Dependent Variable: RGDP
Method: Least Squares
Date: 08/19/24 Time: 22:16
Sample: 2011 2023
Included observations: 13

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDSP	2.274425	0.817712	2.781449	0.0194
FDSP	3.305635	1.011002	3.269663	0.0084
C	63284.48	1668.961	37.91848	0.0000

R-squared	0.692037	Mean dependent var	69024.20
Adjusted R-squared	0.630445	S.D. dependent var	5407.166
S.E. of regression	3287.073	Akaike info criterion	19.23256
Sum squared resid	1.08E+08	Schwarz criterion	19.36293
Log likelihood	-122.0116	Hannan-Quinn criter.	19.20576
F-statistic	11.23574	Durbin-Watson stat	0.549428
Prob(F-statistic)	0.002770		

Source: Eviews Output (2024)

Table 3 shows the regression analysis for test of hypotheses. The adjusted R-squared value of 0.630445 indicates that approximately 63.04% of the variation in Nigeria's Real GDP (RGDP) can be explained by the independent variables, Domestic Debt Service Payment (DDSP) and Foreign Debt Service Payment (FDSP). This suggests that the model has a good fit, capturing a substantial portion of the factors that influence RGDP. The Prob(F-statistic) value of 0.002770 is below the 0.05 significance level, indicating that the overall model is statistically significant. This means that there is a strong joint effect of DDSP and FDSP on RGDP, and the likelihood that this result is due to chance is very low.

Test of Hypothesis I

H01) Domestic debt service payment has no significant effect on the real GDP of Nigeria.

The coefficient for Domestic Debt Service Payment (DDSP) is 2.274425, which suggests that for every additional unit of domestic debt service payment, Nigeria's Real GDP (RGDP) increases by approximately ₦2.27 billion, holding all other factors constant. The associated p-value of 0.0194 is below the 0.05 significance threshold, indicating that the effect of DDSP on RGDP is statistically significant. This implies that increases in domestic debt servicing have a positive and significant impact on the economic growth of Nigeria within the period studied. The alternate hypothesis was therefore accepted that Domestic debt service payment has a significant positive effect on the real GDP of Nigeria (β = 2.274425; p-value = 0.0194).

Test of Hypothesis II

H02) Foreign debt service payment has no significant effect on the real GDP of Nigeria.

The coefficient for Foreign Debt Service Payment (FDSP) is 3.305635, indicating that for every additional unit of foreign debt service payment, Nigeria's Real GDP (RGDP) increases by approximately ₦3.31 billion, assuming all other variables remain constant. The p-value of 0.0084 is also below the 0.05 significance level, showing that the impact of FDSP on RGDP is statistically significant. This suggests that foreign debt servicing also has a positive and significant influence on Nigeria's economic growth during the period examined. The alternate hypothesis was therefore accepted that Foreign debt service payment has a significant positive effect on the real GDP of Nigeria (β = 3.305635; p-value = 0.0084).

Test of Hypothesis III

H03) There is no significant threshold effect of public debt service payment on the economic growth of Nigeria during Buhari-Tinubu regime (2015-2023).

At first, we conducted the Chow Breakpoint Test using the 2015 fiscal year as the threshold. The output in Table 4 below shows there was a significant breakpoint in the year 2015.

Table 4 Chow Breakpoint Test: 2015
Null Hypothesis: No breaks at specified breakpoints
Varying regressors: All equation variables
Equation Sample: 2011 2023

F-statistic	48.22393	Prob. F(3,7)	0.0000

Log likelihood ratio	39.98551	Prob. Chi-Square(3)	0.0000
Wald Statistic	144.6718	Prob. Chi-Square(3)	0.0000

Source: Eviews Output (2024)

The Chow Breakpoint Test results for the year 2015, covering the Buhari-Tinubu regime, indicate a significant structural break in the relationship between public debt service payments and Nigeria's economic growth. The F-statistic of 48.22393 is substantially high, and the corresponding p-value (Prob. F) of 0.0000 is well below the 0.05 significance level. This suggests strong evidence to reject the null hypothesis of no structural breaks at the specified breakpoint. Therefore, the analysis confirms that there was a significant change in the impact of public debt service payments on Nigeria's economic growth starting in 2015, coinciding with the beginning of the Buhari administration. This implies that the economic dynamics regarding debt servicing and growth have shifted during this regime.

Table 5 Regression Analysis with 2015 Threshold

Dependent Variable: RGDP
Method: Least Squares
Date: 08/19/24 Time: 22:32
Sample: 2015 2023
Included observations: 9

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDSP	0.815958	0.247272	3.299839	0.0164
FDSP	2.453384	0.266695	9.199230	0.0001
C	68120.51	640.7574	106.3125	0.0000

R-squared	0.939044	Mean dependent var	71838.20
Adjusted R-squared	0.918726	S.D. dependent var	2856.684
S.E. of regression	814.4013	Akaike info criterion	16.50399
Sum squared resid	3979497.	Schwarz criterion	16.56973
Log likelihood	-71.26793	Hannan-Quinn criter.	16.36212
F-statistic	46.21613	Durbin-Watson stat	2.495323
Prob(F-statistic)	0.000226		

Source: Eviews Output (2024)

The regression analysis incorporating the 2015 threshold reveals a strong relationship between public debt service payments and Nigeria's economic growth during the Buhari-Tinubu regime. The adjusted R-squared value of 0.918726 indicates that approximately 91.87% of the variation in Real GDP (RGDP) can be explained by Domestic Debt Service Payment (DDSP) and Foreign Debt Service Payment (FDSP). This suggests an even stronger model fit compared to the analysis before incorporating the threshold, implying that the variables explain a significant portion of economic growth during this period. The Prob(F-statistic) of 0.000226, which is well below the 0.05 significance level, indicates that the overall model is highly statistically significant, confirming that the changes in DDSP and FDSP significantly impact RGDP. The coefficient for Domestic Debt Service Payment (DDSP) is 0.815958, indicating that during the Buhari-Tinubu regime, an additional unit of domestic debt service payment leads to an increase of approximately ₦0.82 billion in RGDP, holding other factors constant. The p-value of 0.0164 is below the 0.05 significance level, meaning that the effect of DDSP on RGDP is statistically significant, though the magnitude of the effect appears to be lower than in the pre-threshold analysis. Thus, Domestic debt service payment has a significant positive effect on the real GDP of Nigeria (β = 0.815958; p-value = 0.0164). For Foreign Debt Service Payment (FDSP), the coefficient is 2.453384, suggesting that each additional unit of foreign debt service payment results in an increase of about ₦2.45 billion in RGDP. The p-value of 0.0001 further indicates that this effect is highly statistically significant. The magnitude of the impact of FDSP on RGDP has slightly reduced compared to the pre-threshold analysis but remains significant. Thus, Foreign debt service payment has a significant positive effect on the real GDP of Nigeria (β = 3.305635; p-value = 0.0001).

Comparing the results from the full period (2011-2023) with the threshold period (2015-2023) reveals notable changes in the impact of public debt service payments on Nigeria's economic growth. During the entire period from 2011 to 2023, domestic debt service payment (DDSP) had a significant and strong positive effect on real GDP (β = 2.274425), indicating that for every unit increase in domestic debt service payment, the real GDP increased by approximately ₦2.27 billion. Similarly, foreign debt service payment (FDSP) also had a significant positive effect on real GDP, with an even higher coefficient (β = 3.305635), suggesting that the economy benefitted more from foreign debt servicing during this broader period.

However, the results for the threshold period from 2015 to 2023, which corresponds to the Buhari-Tinubu regime, show a shift in these dynamics. The effect of domestic debt service payment on real GDP remains positive but has significantly weakened, with the coefficient dropping to β = 0.815958. This indicates that the positive impact of domestic debt servicing on economic growth was less pronounced during this regime. On the other hand, foreign debt service payment continues to have a significant positive effect, with a coefficient of β = 2.453384, though this too has diminished slightly compared to the full period. These changes suggest that while public debt service payments continued to contribute positively to economic growth during the Buhari-Tinubu regime, the magnitude of their impact, particularly domestic debt servicing, has decreased, possibly reflecting shifts in economic policies or external economic conditions during this period. We therefore accept the alternate hypothesis that the positive effect of public debt service payment on economic growth of Nigeria has reduced significantly during the Buhari-Tinubu regime (p-value = 0.000226).

Discussion of Findings

The analysis reveals that domestic debt service payment has had a significant positive effect on the real GDP of Nigeria over the entire period from 2011 to 2023. This finding suggests that domestic debt servicing has been instrumental in fueling economic growth, likely due to the government's ability to utilize internally sourced funds for development projects and other productive investments. When domestic debts are effectively managed and directed towards growth-inducing sectors, they can stimulate economic activities, leading to increased output and, consequently, a rise in real GDP. This positive impact underscores the importance of strategic domestic borrowing and its effective deployment in fostering economic development.

Similarly, foreign debt service payment also exhibits a significant positive effect on Nigeria's real GDP during the same period. The higher coefficient associated with foreign debt servicing indicates that external borrowing, when serviced appropriately, has contributed more substantially to economic growth compared to domestic debt. This may be attributed to the infusion of foreign capital, which often comes with favorable terms such as low-interest rates or long repayment periods, and is typically used for large-scale infrastructure projects that drive long-term economic growth. However, the positive impact of foreign debt servicing also hinges on the effective and efficient use of these borrowed funds in areas that yield substantial returns to the economy.

However, the positive effect of public debt service payments on Nigeria’s economic growth has notably diminished during the Buhari-Tinubu regime. The decline in the coefficients for both domestic and foreign debt servicing suggests that the economic benefits derived from debt servicing were less pronounced during this period. Several factors could explain this reduction. First, there may have been inefficiencies in the use of borrowed funds, with less emphasis on productive investments that could stimulate economic growth. Second, the economic environment during the Buhari-Tinubu regime was marked by challenges such as declining oil revenues, currency depreciation, and rising inflation, which may have reduced the effectiveness of debt servicing in promoting growth. Additionally, increased debt servicing obligations could have strained government resources, limiting the availability of funds for other critical sectors. This reduction highlights the need for more prudent debt management strategies and better allocation of borrowed resources to maximize their growth potential.

The study's finding that domestic debt service payment (DDSP) has a significant positive effect on Nigeria's real GDP during the period from 2011 to 2023 aligns with some existing literature. For instance, Ojonye, Jumbo, and Oboh (2024) observed that domestic debt could positively impact economic growth in the long run, provided that the borrowed funds are utilized effectively. This suggests that when properly managed, domestic debt can contribute to economic development by financing productive investments. However, the findings contrast with Uchenna (2024), who found a negative impact of public debt servicing on per capita output. This discrepancy may be attributed to differences in the focus of the studies—while Uchenna emphasized per capita output, the current study concentrates on real GDP, which might reflect broader economic impacts rather than individual welfare.

The reduced positive effect of foreign debt service payment (FDSP) on real GDP during the Buhari-Tinubu regime observed in the threshold analysis is consistent with the concerns raised by Kpalukwu and Ezekwe (2023), who found that increased foreign debt service payments negatively impacted GDP growth. This decrease suggests that the efficacy of foreign debt in promoting economic growth diminished over time, potentially due to higher servicing costs or less productive use of borrowed funds. Similarly, Yusuf and Mohd (2023) noted that debt servicing could activate a stifling effect on growth, supporting the view that the burden of debt servicing might outweigh its benefits. Conversely, Amadi, Ahuekwe, and Eze (2024) found that foreign debt service payments had a negative effect on growth, which is consistent with the observation that FDSP's positive impact waned in the later period.

5.0 Conclusion and Recommendations

The relationship between public debt service payments and economic growth is a critical area of study, particularly for developing economies like Nigeria, where debt management is central to economic stability. This study seeks to understand how domestic and foreign debt service payments influence Nigeria's real GDP over time and whether these effects have shifted during the Buhari-Tinubu regime from 2015 to 2023. By examining the data from 2011 to 2023 and comparing it with the threshold period of the Buhari-Tinubu administration, the findings provide hints into the evolving impact of public debt servicing on the nation’s economic growth.

The findings of this study have significant implications for Nigeria's economic policy and debt management strategies. The positive impact of domestic and foreign debt service payments on real GDP observed from 2011 to 2023 underscores the potential benefits of effective debt utilization in promoting economic growth. However, the marked reduction in these effects during the Buhari-Tinubu regime highlights the need for a reassessment of how public debt is managed and allocated. The decreased impact of debt servicing on economic growth suggests that while debt can be a valuable tool for financing development, its effectiveness is contingent upon its strategic use. Policymakers need to ensure that borrowed funds are directed towards high-impact investments and productivity-enhancing projects to fully harness their growth potential.

Furthermore, the diminishing returns from debt servicing during the Buhari-Tinubu era imply that there may be structural or policy-related issues affecting the efficacy of debt-driven growth strategies. This could include factors such as increased debt servicing costs, macroeconomic instability, or inefficiencies in project implementation. To address these challenges, it is crucial for the government to enhance debt management practices, improve transparency, and adopt more rigorous oversight mechanisms. Strengthening these areas can help optimize the economic benefits of public debt and ensure that future borrowing contributes positively to Nigeria’s economic development, mitigating the risk of debt becoming a burden rather than a boon for economic progress. We recommend the following:

1) The Federal Government of Nigeria continue to prioritize effective and strategic utilization of domestic debt. This involves ensuring that borrowed funds are directed towards productive investments that will stimulate economic growth and development.

2) The Federal Ministry of Finance implement stricter oversight and improved management practices for foreign debt. This includes assessing the effectiveness of foreign loans and reallocating funds to sectors that have a higher potential for economic impact to mitigate the burden of debt servicing.

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