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DEBT LEVEL AND ECONOMIC PERFORMANCE OF NIGERIA: EFFECTS

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Correspondence:
chineloudunwoke8@gmail.com

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Ugochukwu J. Nwoye[1]
Chinelo M. Udunwoke[2] Gilbert O. Nworie[3]
1Lectuer, Research Student & 3 Postgraduate Research Student, Department of Accountancy, Nnamdi Azikiwe University, Awka, Nigeria
1 Email: uj.nwoye@unizik.edu.ng
2 Email: cm.udunwoke@stu.unizik.edu.ng
3 Email: gn.nworie@stu.unizik.edu.ng

ABSTRACT:

Domestic and external debts of Nigeria have continued to rise geometrically over the years amidst undermining the nation's economic capacity to repay. This has heightened the debt crisis regardless of several economic and fiscal policies put in place by relevant regulatory government agencies in Nigeria to control the debt menace and level. Specifically, the study ascertains the effect of domestic debt level, external debt level and debt servicing level on the gross domestic product of Nigeria for the period under review. The ex post-facto research design was adopted and the time series data deployed to analyse public debt trends in Nigeria when compared to the GDP growth rate over a period of twenty three (23) years (1999 – 2021). The Ordinary least square regression, unit root test, and Johansen cointegration tests were conducted and the study found out that domestic debt level significantly and positively affects the gross domestic product performance in Nigeria ($ß_1$ = 2.784464, p-value = 0.000); external debt level significantly but negatively predicts the movement of the gross domestic product in Nigeria ($ß_2$ = -1.340768, p-value = 0.000), while the debt servicing level had no significant implications on the gross domestic product of Nigeria ($ß_3$ = -0.062668, p-value = 0.1101). The study concluded that accumulated debt service payment creates a evitable problems for Nigeria especially where the nation's revenue continues to deplete due to gross mismanagement of scarce public funds, endemic corruption and leadership failure which apparently positions the country in a state of been unable to meet its debt servicing obligations. It was therefore recommended that: the government should resort to domestic debts up to sustainable debt levels that do not crowd out development and social programmes. It was also recommended that there is imminent need of the government to prevent issues of debt overhang by ensuring that borrowings from international markets are utilized effectively even as concessionary loans, rather than commercial loans, should be sought afte. Lastly, the money recovered from past loots should be used to service Nigeria's public debts rather than relying on oil revenue that barely meets the country's recurrent expenditure needs.

1. INTRODUCTION

Over the years, studies on the effect of debt level on economic performance of nations have been characterized as a debatable issue between scholars. Public debt level when managed prudently helps economic performance, growth and stability through mobilizing resources with low borrowing cost and limiting financial risk exposure (Eke & Akujuobi, 2021). Developing nations such as Nigeria borrow domestically and externally to augment their limited capital base and to bridge the domestic savings-investment gap with the aim of facilitating economic performance and growth (Onyele & Nwadike, 2021; Nwamuo & Agu, 2021). Developmental strides are fast-tracked and the people's standard of living is increased when the borrowed funds are productively ploughed back and correctly exploited for profitable investment (Opara, Nzotta & Kanu, 2021). Be that as it may, the economy of the nation is troubled by a difficult scenario orchestrated by the COVID-19 pandemic and falling crude oil prices. Thus, borrowing is imperative due to prevailing circumstances, especially with the advent of COVID-19 (Hoti, Shkurti & Rehman, 2022; Yang, Zhang, Wang, Deng & Guo, 2022). It is of course necessary that such borrowings is judiciously utilised to improve infrastructure and implement development plans that can grow the economy.

In attempt to add to available domestic resources, successive governments have acquired huge sums of public debt to finance national development plans. A high debt level in Nigeria poses a great challenge for the economy because a large portion of revenues is devoted to servicing the debt instead of being put into domestic investment. Okoye and Nwoye (2021) lamented that the federal government expenditure of 98% of its revenue on debt servicing between January and May 2021 was somewhat worrisome. They noted that the above statistics was up from the 83% recorded in year 2020; yet, the government still plan to spend N17.8 trillion on debt servicing between 2021 and 2024. This has tremendously reduced the prospects of economic growth in the country for years. The conventional view is that a high level of public debt tends to lead to crowding out and also constrain the scope of counter cyclical fiscal policies, which may result in higher volatility and adversely affect economic performance (Egede, Aminu & Oluwole, 2021; Kobey, 2016).

Nigeria's public debt has risen the most under the Buhari administration when compared to previous governments since 1999, and foreign debt has grown three times more than the combined figure recorded by the past three administrations (Yusuf, 2021). While the Obasanjo government met US$28 billion as foreign debt in 1999, it left US$2.11 billion in 2007 after successfully securing a write-off by the London and Paris clubs of foreign creditors. The Yar'adua/Jonathan government added US$1.39 billion to what they met, and the Jonathan government incurred additional US$3.8 billion, taking the country's total foreign debt to US$7.3 billion when that administration came to an

end in 2015. Nigeria's external loan reached US$28.57 billion by December 2020, meaning an extra US$21.27 billion had been accumulated under the Buhari administration — three times the combined amount by past governments since 1999 (Yusuf, 2021). For domestic debt, considered relatively less harmful to the value of Naira than foreign debt, the figure rose from N795 billion in 1999 when the Obasanjo government came to power, to N8.8 trillion in 2015 when the Buhari administration assumed office. By December 2020, Nigeria's domestic debt stood at N16.02 trillion — twice as much the combined amount taken by the past three governments (Onyeiwu, 2021). The domestic and foreign debt figures are higher now as the government has borrowed more in 2021 (Yusuf, 2021). The Debt Management Office (DMO) said as of March 31, Nigeria's total public debt stood at N33.1 trillion (US$87.24 billion) — accumulated between 1999 and 2021.

The external debt level of Nigeria is apparently one of the biggest in sub-Saharan Africa despite the number of times they have been rescheduled (Eke & Akujuobi, 2021; Abdulkarim & Saidatulakmal, 2021; World Bank, 2020). This debt kept accumulating over time. The situation began to get out of control around 1977 when an outstanding growth rate in the country's debt became manifest. The outstanding debt reached US$7.5 billion in 1979 and $8.9 billion by 1980 (Omotosho, Sani & Doguwa, 2018). This was due to excess borrowing from international agencies and countries at non-concessional interest rate as a result of the decline in oil earnings (Aiyedogbon, Zhuravka, Maxim, Olena & Olena, 2022), and the emergence of high trade arrears due to inability of the country to either produce or foot the bills of importation of needed goods and services (Onyele & Nwadike, 2021). By 2005, the nation's debt had ballooned to about $30 billion, mostly borrowed from the Paris Club of creditors. Nigeria and the creditors' club then went into series of negotiations on a mutually acceptable relief on the $30 billion debt with the Paris Club. In October 2005, Nigeria and the Paris Club announced a final agreement for debt relief worth $18 billion. The relief turned out to be temporary as, by June 2015, the country's debt had again jumped to $63.8 billion, representing the country's highest debt profile since 2007 (Abdulrahman, 2021). By September 2020, the Debt Management Office (DMO) revealed that the country's total public debt stock stood at $84.574 billion. A breakdown of the public debt stock showed that 37.82 per cent was external, while the balance of 62.18 per cent was domestic (Abdulrahman, 2021).

Nigeria, as a developing country, supplement its revenue through domestic and external debts. Policy analysts, citizens and many stakeholders are increasingly disturbed over the country's external debt compared with its national income. This is because of the fact that unsustainable debt levels is not only harmful but also crowds out development and social programmes since huge portions of government revenue are taken away from essential services and used instead to service

debt (Mutunga, 2020). That aside, concerns have been raised on whether or not surge of public debt level negatively affects the future generations. In Nigeria however, the major proportion of external debt, if not all, are not used to finance infrastructural projects that can promote economic growth and development in the country. This explains the reason the country has been continually exposed to debt-servicing problems amidst its worful failure to achieve growth and development targets. In their studies, Okoye and Nwoye (2021), Babalola (2021) and Nairametrics had, in 2021 revealed that the Federal Government spent an enormous sum of N1.8 trillion on debt servicing in the first five months of the year. This amount represents about 98 per cent of the total revenue generated in the same period. A total of N4.86 trillion was spent by the Federal Government between January and May 2021. Of this, the sum of N206.89 billion was spent as statutory transfers (Babalola, 2021). The implication is that the government is expending nearly all its revenue in the servicing recurrent of expenditures and debts, consequently causing the federal government to seek recourse to foreign loans thereby further threatening the nation's ailing external debt profile.

Apparently, Nigeria's debt crisis will continue to persist regardless of various policy measures put in place to control the debt level. The aftereffect of this is visibly affecting the rich and poor alike in Nigeria. Terrains such as deteriorating insecurity level, increasing unemployment level, heightened inflation, capacity underutilization, over dependence on the oil sector et cetera (Opara, Nzotta & Kanu, 2021) remain nightmares in Nigeria.. And despite the nation's continuous borrowing, the Nigerian economy remains bedeviled by low per capita income (one of the lowest in the world), highly inadequate response to infrastructural development, high unemployment rates, inadequate basic amenities, falling growth rates of GDP. Recall that poor financial management of borrowed funds played unhealthy key role in dipping the nation's economy into avoidable economic recession experience between late 2015 and 2017. Since then, achieving a sustainable economic recovery has has been an Agenda or goal, especially as the country's poverty level has not ceased to witness rapid rise annually amidst its fluctuating economic growth status. Little wonder why Nigeria was in late 2021 rated the poverty capital of the world.

Empirical studies have been carried out to examine the effect of public debt level on the economic growth of nations. To the best knowledge of the researcher, extant studies such as Aiyedogbon, Zhuravka, Maxim, Olena and Olena (2022); Hoti, et al (2022); Yang, et al (2022); Opara, Nzotta and Kanu (2021); Onyele and Nwadike (2021); Nwamuo and Agu (2021); Egede, Aminu and Oluwole (2021); Edeminam (2021); Sani and Nwite (2021); Abdulkarim and Saidatulakmal (2021); Nzeh (2020); Mutunga (2020); Alagba and Eferakeya (2019); Omotosho, Sani and Doguwa (2018);

Mwangi (2017); Ndubuisi (2017); Nwannebuike, Ugwu and Onwuka (2016); Achwoga (2016); Kobey (2016); Hassa, Abubakar and Abu (2015); Utomi (2014); Iya, Gabdo and Aminu (2013); Matiti, C. (2013); Sulaiman and Azeez (2012); et cetera failed to examine the fused effect of debt servicing, domestic and external debt level on the GDP of Nigeria between 1999 to 2021. It is in light of this that the present study seeks to address the afore observed gap in knowledge.

1.1 Objectives of the Study

The general objective of the study is to determine the effect of debt level on the economic performance of Nigeria from 1999 to 2021. The above objective is decomposed into the following specific objectives below.

i. To investigate whether domestic debt level significantly affects gross domestic product performance in Nigeria.
ii. To ascertain the extent to which external debt level influences gross domestic product of Nigeria.
iii. To determine the implications of debt service level on gross domestic product of Nigeria.

1.2 Hypotheses

The hypotheses (in null form) tested in the study are:

a) Domestic debt level does not significantly affect the gross domestic product performance in Nigeria.
b) External debt level does not significantly influence the gross domestic product of Nigeria.
c) Debt service level has no significant implication on the gross domestic product of Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual review

2.1.1 Concept of Debt Level

Debt level which is also termed sovereign debt is the aggregate amount of money that government owes either to their citizens and/or local financial organisations (domestic debt) or foreign financial organisations (external debt) (Onyele & Nwadike, 2021). Public debt level is internal/domestic when it arises from borrowing from individuals and firms within a country while it is external when it is owed to individuals and organizations (firms) outside the country (Nwamuo & Agu, 2021). Debt level refers to how much a country owes to lenders both those inside and those outside its shore (Dairu, 2017). It is also called national debt because it includes the totality of debt owed by government of a nation internally and externally. The aggregation of both domestic and foreign

debts cumulates in what is referred to as public debt level (Aiyedogbon, Zhuravka, Maxim, Olena & Olena, 2022). External debt level has become an issue with ever accumulation of budget deficits, over reliance on oil revenue, low productivity, low saving and high propensity to consume foreign goods and services (Khalil & Junaidu, 2019). The compounding issue of public debt accumulation in the country is so severe that quite apart from over reliance on oil revenue to the neglect of other revenue sources that could have been explored, the revenues from this only major source (oil) and indeed other revenue are susceptible to all manner of leakages that further weaken the economy and government had to borrow for developmental projects and programmes (Sani & Nwite, 2021).

Debt level refers to the total of the nation's debts which covers debts of local and state and national governments indicating how much public spending is financed by borrowing. Government debt is one method of financing government operations, though not the only method as governments can also create money to monetize their debts, thereby removing the need to pay interest. But this practice simply reduces government interest costs rather than truly canceling government debt and can result in hyperinflation if used unsparingly (Matiti, 2013).

2.1.2 Domestic Debt Level

Domestic debt level refers to total debt instrument issued by the federal government and denominated in local currency as money owed to its citizens and/or local financial organisations. Domestic debt level refers to debt instrument issued by the federal government and denominated in local currency (Opara, Nzotta & Kanu, 2021). It is the gross obligation of government property which should include federal, state, and local government transfer obligation to the citizen and corporate firms within the country (Mwangi, 2017). Internal debts are those debt obligation of government owed to residents of the country. Meanwhile, domestic debt financing puts pressure on future generations and their ability to maintain economic and financial stability. They not only will have to pay the amount borrowed, but also cover the costs related to domestic debt financing, which includes interest and costs of debt management. Such a debt is sustainable if it is used to generate economic growth and benefits higher than initial costs, otherwise serious public finance issues are bound to appear (Kobey, 2016).

Conventional strategies for reducing the national domestic debt focus on some combination of reduced spending and policies promoting faster economic growth, which can in turn increase government revenue. More radical (and usually costly) solutions, most often undertaken by governments struggling with unsustainable debt, include a formal debt restructuring, debt

monetization, or outright default. Central banks purchasing their own government's debt monetize it by paying for the obligations with the currency that they issue. Governments and central banks may also monetize long-term fixed debt by increasing the rate of inflation. Low interest rates can serve the same end.

2.1.3 External Debt Level

External debt level refers to the amount of debt instrument issued by the federal government and denominated in foreign currency as money owed to foreign financial organisations. External debt is the portion of a country's debt that is acquired from foreign sources such as foreign corporations, government or financial institutions (Hassa, Abubakar & Abu, 2015). It arises as a result of the gap between domestic savings and investment. As the gap widens, debt accumulates and this makes the country to continually borrow increasing amounts in order to stay afloat. Nigeria's external debt entails the debt owed by the public and private sectors of the Nigerian economy to non-residents and citizens that is payable in foreign currency, goods and services. External debts are those obligations of government to international actors (Udoka & Lari 2011). They are obtained outside the shores of the country. The debts are usually owed to multilateral agencies such as International Monetary Fund, World Bank and African Development Bank. Others are private creditors such as the London club or Paris club (Alagba & Eferakeya, 2019). External debt is a major source of public receipts and financing capital accumulation in any economy. It is one of the media used by countries to bridge their deficits and carry out economic projects that are able to increase the standard of living of the citizenry and promote sustainable growth and development. External borrowing is expected to accelerate economic growth especially when domestic financing is inadequate.

Increases in Nigeria's foreign debt level was traced to the economic consequences posed by the oil glut of early 1980's by Nwoye, Obiorah and Chukwunonso (2015). According to them, Nigeria's dependence on oil and the inability of the country to sustain fixed exchange regime forced the external debts of the country to increase. Nigerian government then went for foreign debt in order to enable the country fund investment in different sectors, thus improving economic growth. External debt tends to improve total factor productivity through an increase in output which in turn could enhance Gross Domestic product (GDP) growth of a nation (Utomi, 2014). Huge external debt does not necessarily imply a slow economic growth; it is a nation's inability to meet its debt service payments fueled by inadequate knowledge on the nature, structure and magnitude of the debt in question (Were, 2011).

2.1.4 Debt Service Level

Debt service level refers to the amount spent in repaying back the amount borrowed. Debt servicing in Nigeria is a problem due to the mono cultural nature of the economy depending majorly on one revenue source (Ossar & Tanko 2015). Vincent (2018) submitted that over reliance of the nation on oil for revenue to the neglect of other viable sectors that could have been exploited for foreign earnings is a major factor that has compounded debt service problem in Nigeria. Debt overhang phenomenon often occurs when substantial resources are used for debt servicing such that it stifles economic growth (Aiyedogbon, Zhuravka, Maxim, Olena & Olena, 2022). Consequently, it becomes a tax on domestic production such that the amount spent hampers meaningful economic growth activities as it reduces resources available to government to implement growth oriented economic policies (Nwannebuike, Ugwu & Onwuka, 2016). Okoye and Nwoye (2021) observed that the federal government expenditure of 98% of its revenue on debt servicing between January and May 2021 is quite worrisome. The adverse implication of this anomaly is revealed by the ever increasing unemployment rate, hunger, systemic failure and increased agitation in the country.

Debt service refers to the money that is required to cover the payment of interest and principal on a loan or other debt for a particular time period (Akanbi, Uwaleke & Ibrahim, 2022). The term can apply both to individual debts, such as a home mortgage or student loan, and corporate or government debt, such as business loans and debt-based securities, such as bonds. The ability to service debt is a key factor when a country applies for a loan or an economy needs to raise additional capital to augment its revenue base. To "service a debt" simply means to make the necessary payments on the debt.

2.1.5 Economic Performance

A country's economic performance is a long-term rise in capacity to supply increasingly diverse economic goods to its population; this growing capacity is based on advancing technology and the institutional and ideological adjustments that it demands (Hassa, Abubakar & Abu, 2015). The foregoing definition implies that economic performance is synonymous with sustained rise in national output, provision of wide range of economic goods, presence of advancing technology, and institutional, attitudinal, and ideological adjustments. Economic performance, when simply defined, refers to the increase, over time, of a country's or an economic capacity to produce those goods and services needed to improve the well-being of the citizens in increasing numbers and diversity.

Economic performance measurement is possible by evaluating how well the economic is growing (Nwoye, Obiorah & Chukwunonso, 2015). Performance of an economy is revealed by the change in the productive potential of an economy (Nwoye, Chukwunonso & Ezenwafor 2015). It is an increase in the potential level of real output an economy can produce in a specified period (typically one year) compared to another period. Therefore, it is strictly related to Gross Domestic Product and Gross National Income. An economy can either be classified as a well-performing economy or an under-performing economy. The performance of an economy cannot be better than its production capacity. Thus, Okoye and Nwoye (2021) argued that a situation whereby demand outweighs supply of essential goods and services, indicates that the country is experiencing under-production of essential goods and services. This jeopardizes the strength of the economy to a great extent especially by reducing the ability of the country to pay back borrowed funds. A sound economic performance is indicated by an increase in a country's physical output over a long period of time (Sani & Nwite, 2021). When an economy is performing well, the essentially benefits of such are: improved standard of living of citizens, higher real incomes and ability of government to devote more resources in provision of infrastructure like health education et cetera. Thus, capital accumulation and exogenous rate of change in population and technological progress are the major sources of growing economic performance.

Economic Performance entails the extent of increase in the amount of goods and services produced per head of the population over a period of time. It is an increase in the capacity of an economy to produce goods and services, compared from one period of time to another. Economic performance is the increase in the amount of goods and services produced in an economy over time. It can be conventionally measured as the percent rate of increase in Gross Domestic Product (GDP).

2.1.5.1 Gross Domestic Product

Gross domestic product is the total market value of goods and services produced by a country's economy during a specified period of time. It includes all final goods and services, that is, those that are produced by the economic agents located in that country regardless of their ownership and that are not resold in any form. According to Mwangi (2013), GDP is a most commonly used macroeconomic indicator to measure total economic activity within an economy which makes its growth rate reflect the state of the economic cycle; it is veritably used throughout the world as the main measure of output and economic activity. Economic growth relates to an increase in the productive potential of an economy. It is both an increase in the potential level of output that the economy can produce and an increase in the income of citizens of a country (Nwoye, Chukwunonso & Ezenwafor 2015). The economic growth should be stable as rapid growth may result in issues

such as inequality, inflation, current account deficit, and environmental pollution. It is often cited that the GDP of a country is a reliable tool which can be deployed to assess the general health of the economy since GDP indicates the stabilization status of the economy of any nation (Nwoye, Obiorah & Chukwunonso, 2015).

Gross Domestic Product (GDP) is a macroeconomic measure of the value of economic output which of course can be adjusted for price changes (i.e., inflation or deflation) (Chilozie, 2018). This adjustment transforms the money-value measure, nominal GDP, into an index for quantity of total output. An upward movement in GDP could raise export prices due to the potential for higher profits arising from a healthy business climate (Mwangi, 2013). However, when the GDP is on the downward trend, there is likelihood of export prices dropping. It is a gauge of economic recession and recovery and an economy's general monetary ability to address externalities. In terms of GDP, economists are more concerned about real GDP which is a macroeconomic statistic that measures the value of the goods and services produced by an economy in a specific period, adjusted for inflation (Nwoye, Obiorah & Chukwunonso, 2015).

2.1.6 Effect of Debt Level on Economic Performance

Government debt and its importance to economic performance have generated a lot of debate over the years in Nigeria particularly with respect to economic growth. Government borrowing becomes indispensable when the conventional revenue sources (tax and non-tax) are inadequate in financing government expenditures. Such borrowing can come from internal or external sources. This is necessary in order to boost domestic investment and hence accelerate economic growth and development. Government opts for debt financing in order to close the resource gap between savings and investment (Nwamuo & Agu, 2021). Public debt level is productive when it creates assets which yields income sufficient to pay the principal and interest on the loan (Opara, Nzotta & Kanu, 2021).
The import of external debt is that it contributes to economic performance and increases financial liquidity in an economy by making external funds available for international trade and investment. Increases in public debt aims at stimulating economic growth because government borrow to finance investment and infrastructural projects that help provide the fundamental basis for further economic production and growth (Nwamuo & Agu, 2021). Thus, in order to encourage growth in the economy, developing countries resort to borrowing to augment what they have because of dominance of small stocks of capital. This becomes effective only when borrowed funds are properly utilized for productive investment. However, Onyele and Nwadike (2021) argued that national debt becomes a burden when debt overhang is rising, a foreign reserve is inadequate to

cover short-term external debt and government revenue is inadequate for debt servicing. Worthy of note is that while internal borrowing can easily be repaid through increase in taxes or printing of more local currency though, with attendant problems such as tax evasion and inflation, external borrowings create more problems and difficult to repay due to harsh conditions of lenders and debtor country would have to struggle to export goods and services to earn foreign exchange to repay (Sani & Nwite, 2021).

Developing countries like Nigeria have often contracted large amount of public debt that has led to the mounting of trade debt arrears at highly concessional interest rates. Accumulated debt service payment creates a lot of problems for countries especially developing nations (Eke & Akujuobi, 2021). The reason being that a debt is actually serviced for more than the amount it was acquired and this slows down the growth process in such nations. The inability of the Nigerian economy to meet its debt service obligations has resulted in debt overhang or debt service burden that has militated against her growth and development. Apparently, the Nigerian debt crisis has persisted regardless the policy measures that have been put forward to control the debt level. The after-math of these are the ever-increasing level of unemployment, heightened inflation, capacity underutilization, and over dependence on the oil sector among others (Opara, Nzotta & Kanu, 2021).

2.2 Theoretical Review

2.2.1 Debt Overhang Theory

This research work was anchored on Debt Overhang Theory.

Krugman (1988) coins the term of "debt overhang" as a situation in which a country's expected repayment ability on external debt falls below the contractual value of debt. The term was further put in theory by Cohen (1993) in a model that posits a non-linear impact of foreign borrowing on investment. The theory is founded on the background that up to a certain threshold, foreign debt accumulation can promote investment, while beyond such a point the debt overhang will start adding negative pressure on investors' willingness to provide capital (Kobey, 2016).

The debt overhang theory is based on the premise that if the total amount of debt exceeds the country's repayment ability in the future, then the expected debt service of that country will be an increasing function of its output level (Achwoga, 2016), thereby jeopardizing the chances for a sustained economic growth. This is because the part of the returns gained from investing in the domestic market is taken by the foreign creditors thus discouraging domestic investments. In such a situation the indebted country is left with a small proportion of any increases in output and exports since part of the proceeds is used to service external debt (Baum, Anja, Cristina & Philipp, 2013).

The theory is relevant to the present study mainly because of its postulation that reducing debt obligation can lead to a rise in investment and repayment capacity. When this happens, the outstanding debt is more likely to be repaid therefore reducing chances of debt default. Similarly when the effect is strong, the indebted country is said to be on the wrong side of the debt Laffer curve (Hoti, Shkurti & Rehman, 2022). Laffer describes the relationship between the level of debt and the country's repayment ability which implies that there is a maximum at which accumulation of debt promotes growth in the economy (Ndubuisi, 2017). Therefore the debt overhang hypothesis predicts that, if there is likelihood that in future, debt will be larger than the country's repayment ability, then the cost of servicing the debt will depress further domestic and foreign investment, thereby eroding economic performance of the country. Therefore, the study is anchored on Debt Overhang Theory.

2.3 Empirical Review

Hoti, Shkurti and Rehman (2022) examined the average impact of government debt on long-term GDP growth in four Western Balkan countries of Albania, Serbia, Macedonia, and Bosnia & Herzegovina over a 23-year period from 1997-2019. It explored the use of financing through debt on short- and long-term economic growth for these economies using a dynamic common correlated effects model with heterogeneous coefficients. The model's methodology estimation mimicked Chudik and Pesaran and the pooled mean group estimator was used. The conclusion of this study, with respect to the average impact of government debt on long-term GDP growth in the four Western Balkan countries, is consistent with the literature in that the study found that in the long-term, external debt does not contribute to long-term growth and, in fact, tends to have a negative impact.

Aiyedogbon, Zhuravka, Maxim, Olena and Olena (2022) examined the short- and long-run impact of state debt on economic growth in Nigeria. Time series data were sourced from Nigeria's statistical bulletins and annual reports, and it spanned the years from 1990 to 2020. The model was estimated using an autoregressive distributed lag (ARDL) bounds testing method to co-integration for the long-run investigation. The study found evidence of a long-term link between the study variables. In addition, the study discovered that all the explanatory are statistically significant. Specifically, economic growth is significant and negatively responsive to changes in external debt by 0.19% and debt servicing by 0.07%, contrary to its positive response to changes in domestic debt and exchange rate by 0.27% and 0.18%, respectively.

Manasseh, Abada, Okiche, Okanya, Nwakoby and Offu (2022) examined the impact of external debt on economic growth. The study utilized annual time series data, focusing on thirty selected Sub-Saharan African (SSA) countries for the period 1997 to 2020. The Dynamic System Generalised Method of Moments estimation technique was adopted while controlling for conventional sources of economic growth. Empirical findings from the study revealed that external debt and external debt volatility have a negative and significant impact on economic growth in SSA. Furthermore, the interaction of governance indicators, external debt and its volatility, had a positive impact on economic growth in SSA.

Yang, Zhang, Wang, Deng and Guo (2022) study the impact of government debt on economic growth and fluctuations in China. Based on panel data of 30 provinces in China from 2012 to 2019, the study used the Mann–Kendall method and Kernel Density estimation to analyze the temporal and spatial evolution of China's provincial government debt ratio and adopted a panel model and HP filtering method to study the impact of provincial government debt on economic growth and fluctuation. The findings indicate that, during the sample period, China's provincial government debt promoted economic growth and the regression coefficient (0.024) was significant. From different regional perspectives, the promotion effect of the central region (0.027) is higher than that of the eastern (0.020) and western regions (0.023). The study found a nonlinear relationship between China's provincial government debt and economic growth, showing an inverted "U-shaped" curve.

Onyele and Nwadike (2021) examined the impact of national debt burden on economic stability in Nigeria. Data spanning from 1981 to 2019 were collated from the World Development Indicators and Central Bank of Nigeria Statistical Bulletin, 2019 edition. Consequently, the variables used to measure debt burden are total debt-to-GDP ratio (debt overhang), short-term external debt-to-reserves ratio (reserve adequacy) and debt service cost-to-government revenue ratio (revenue adequacy) with exchange rate as a control variable, while economic stability is measured with real GDP growth rate. The Autoregressive Distributed Lag (ARDL) model was used for the analysis since the variables were stationary at both levels and first difference. The ARDL estimation showed that the explanatory variables collectively cause a diminishing impact on economic stability in the long run with revenue adequacy having a negative and significant impact. In the short run, all the components of debt burden, except debt overhang, have a negative and significant impact on economic stability. Under this circumstance, exchange rate has a positive and significant impact on economic stability in the long run.

Opara, Nzotta and Kanu (2021) investigated the effect of Nigeria's domestic public debt on economic development of Nigeria spanning from 1981-2018. The secondary data used in the study were sourced from Central Bank of Nigeria Statistical Bulletin, Debt Management Office of Nigeria, World Bank Development Indicators and United Nations Development Program. The study made use of Ordinary Least Square Regression tools to determine the statistical relationship between Nigeria's domestic public debt profile and Human Development Index as well as private sector investment. The outcome of study in the first model showed that domestic debt servicing and state governments' domestic debts are significantly related to economic development. It was also shown that federal domestic debt and state domestic debt are significantly related to private sector investment.

Edeminam (2021) ascertained the impact of public debt on economic growth in Nigeria using annual time series data from 1990 to 2019 collected from Central of Nigeria statistical bulletin. The variables were Real GDP, public debt, Inflation, debt to GDP ratio, debt servicing to GDP ratio, and exchange rate. Empirical analysis was conducted using Augmented Dickey Fuller unit root test to check for stationarity. Johansen Cointegration test was used to determine long run relationship and Vector Error Correction Model to check for short run and long run impact of public debt on economic growth. Empirical results showed that the impact of public debt on economic growth was negative and significant in the long run. The impact of public debt on economic growth was negative but insignificant in the short run. In addition, the impact of ratio of debt servicing to GDP was significant and negative in the short and long run. There was no causality between public debt and economic growth. The study recommends that public authorities in Nigeria should reduce reliance on public debt and instead move towards increasing revenues through diversification of the export base of the economy and expanding the tax net.

Abdulkarim and Saidatulakmal (2021) examined the effect of government debt on Nigeria's economic growth using annual data from 1980 to 2018 and the Autoregressive Distributed Lag technique. The empirical results showed that external debt constituted an impediment to long-term growth while its short-term effect was growth-enhancing. Domestic debt had a significant positive impact on long-term growth while its short-term effect was negative. In the long term and short term, debt service payments led to growth retardation confirming debt overhang effect. The findings suggested that the government should direct the borrowed funds to the diversification of the productive base of the economy.

Nwamuo and Agu (2021) examined the impact of public debt on the economic growth in Nigeria. Annual time series data were obtained from the Central Bank of Nigeria Statistical for the period 1981to2019 on the variables used for the study. Unit root test was conducted using Augmented Dickey-Fuller test and Phillips-Perrontest techniques and the results showed that the variables were stationary though at different levels. Co-integration test was also conducted using Johansen co-integration test method and the result showed that the variables in the model were co-integrated meaning that the variables have a long run relationship. The error correction mechanism showed that the coefficient of multiple determination (R^2) in the over parameterized model was 0.890783 while it was 0.846548 in the parsimonious model. The short run regression result showed that external debt has a negative and insignificant impact on the economic growth in Nigeria. The short run result also showed that domestic debt has a positive and significant impact on the economic growth in Nigeria while credit to private sector has a negative and insignificant impact on the economic growth in Nigeria. The result from long run dynamic analysis revealed that external debt has a negative and insignificant impact on the economic growth in Nigeria while domestic debt has a positive and significant impact on the economic growth in Nigeria. The long run dynamic analysis also showed that credit to private sector has a positive and significant impact on the economic growth in Nigeria.

Egede, Aminu and Oluwole (2021) empirically examined the impact of public debt on Nigeria's growth from 1981-2018. The study employed ADF, OLS, Johansen cointegration and granger Causality techniques for its analysis using Economic Growth, proxy by GDP, External Debt and Domestic Debt as variables. The study revealed that the variables of the models became stationary at first difference. The results show that domestic debt positively and significantly impacts economic growth, while External Debt negatively impacts Nigeria's economic growth. Johansen cointegration test for both trace and max-Eigen indicates no cointegrating equation at 0.05 level of significance. Pairwise Granger Causality Tests revealed unidirectional causation, which runs from domestic debt to Gross Domestic Product. The study concludes that domestic debts positively and significantly impact, while external debt has a negative and insignificant impact on economic growth.

Eke and Akujuobi (2021) empirically investigated the effect of public debt on economic growth in Nigeria, covering the period 1981-2018. Employing a co-integration approach, the study revealed prominent among others that a significant short-run relationship exists between Nigeria's public debt and economic growth. Also, the study further showed that whereas both the domestic debt and the external debt variables were statistically significant, only the latter failed the a priori expectation test

and thus, exerts a negative contribution to economic growth in Nigeria. On the basis of the findings, the study concluded that most of the external borrowings in Nigeria are always being misappropriated.

Nzeh (2020) examined the threshold effect of public debt and economic growth in Nigeria. Using annual data spanning a period of 1981-2018 and under the framework of Autoregressive Distributed Lag (ARDL) bounds technique, the results of findings revealed that public debt contributes to the growth of the economy both in the short-run and in the long-run. However, after a certain threshold level, public debt was shown to lead to declining growth in both time horizons. The study also found the optimal threshold level of debt to be 40.2% in both the long-run and short-run. Also finding revealed that while trade openness contributes to GDP positively, both inflation and fiscal deficit adversely affect GDP.

Mutunga (2020) examined public debt and it's implication on Kenya's future economic growth. The study adopted Vector autoregressive (VAR) model using data from 1980 to 2019 to investigate the effect of public debt on the future economic growth of Nigeria. To do this, the study utilized the historical data for GDP (dependent) and Public debt (independent variable) to estimate GDP for the years 2020, 2021, and 2022. Results revealed that public debt could slow down Kenya's economic growth for the next three years.

Alagba and Eferakeya (2019) investigated the effect of public debts on economic growth of Nigeria for the period of thirty-eight (38) years, 1981 to 2018. Relevant secondary data were sourced from Central Bank of Nigeria Statistical bulletin and Debt Management Office. Among the objectives of the study was to analyze the effect of domestic debts on the economic growth of Nigeria and evaluate the effect of foreign debts on the economic growth of Nigeria. The data were analyzed using ordinary least square (OLS). The findings showed that domestic debts of the Federal government of Nigeria is positive and statistically significant to economic growth of Nigeria while foreign debts contribute less to the economic growth of the country; cost of debts servicing is significant and has a negative effect on economic growth.

Omotosho, Sani and Doguwa (2018) determined the existence of threshold effects in the relationship between public debt and economic growth in Nigeria using quarterly data. The econometric analysis was conducted using quarterly time series data for the period 2005 – 2015, sourced from the Statistics Portal of the Central Bank of Nigeria. The relevant variables included nominal gross

domestic product (NGDP), growth in real gross domestic product (rgdpg), total domestic debt, total external debt and the total public debt. The study employed Threshold Regression, Augmented Dickey-Fuller (ADF) and Zivot Andrews (ZA) tests were used to analyse the data. The study found empirical support for an inverted U-shape relationship between public debt types and economic growth. For total public debt as percentage of GDP, model results identified a threshold level of 73.70 per cent, while the estimated inflexion points for external and domestic debts were 49.4 and 30.9 per cent, respectively. The implication of this finding is that debt accumulation in excess of the estimated threshold levels could hurt economic growth.

Ndubuisi (2017) analysed the impact of external debt on economic growth of Nigeria. Data for the study were collected from secondary sources. The variables on which data were collected include; Gross Domestic Product, External debt services, external debt stock, external reserve, and exchange rate. The scope of the study covered the period from 1985 to 2015. Data were analysed using the ordinary least square regression, ADF unit root test, Johansen cointegration and error correction test. Findings revealed that debt service payment has a negative and insignificant impact on Nigeria's economic growth while external debt stock has a positive and significant effect on Nigeria's growth index. The control variables: external reserve and exchange rate have positive and significant effect on growth. The ADF unit root test shows that all the variables are not stationary at levels but at first difference. Johansen cointegration test shows long-run relationship between external debt and growth index (GDP). It also showed that the variables have at least one common stochastic trend driving the relationship between them. The causality test indicates unidirectional causality between external debt and GDP.

Mwangi (2017) studied how each type of debt, that is, domestic and external debt impacts individually on the Kenyan economic growth. The study incorporated quarterly data for the period 1995-2015. Cointegration analysis was employed to empirically establish the existence of a long-run relationship between Gross Domestic Product, and the above-named variables. The study revealed that in the case of domestic debt, it has an insignificant but positive impact on economic growth, while physical capital, human capital, inflation and trade significantly explained variations in economic growth. Population and broad money supply were also found insignificant at 5% level of significance. In the case of external debt, it was found to have a significant but negative relationship with growth. Physical capital, human capital, population, inflation and trade together with external debt significantly explained variations in economic growth, while money supply was insignificant. The short-run Error Correction models affirmed the existence of cointegrating relationships for the

growth models. In the case of domestic debt model, when an exogenous shock disturbs the equilibrium condition, 91.8% of its effect is adjusted in one quarter, compared to 91.1% in the case of external debt as depicted by the respective error correction terms.

Achwoga (2016) examined the effects of public debts on economic growth. Data spanning from 1963 to 2015 was used. The study sought to establish the effect of domestic and foreign public debt on economic growth in Kenya. A descriptive research design was applied. Secondary data obtained from World Bank Sources, Central Bank of Kenya, International financial statistics like the International monetary fund and Kenya National Bureau of Statistics was used for analysis. Data was analyzed using EVIEWS version 7.2. The regression analysis indicated that economic growth is negatively and significantly related to external debt. Multiple regression analysis indicated that economic growth is positively and significantly related to domestic debt. The association between debt service and GDP was positive but not significant.

Nwannebuike, Ugwu and Onwuka (2016) ascertained the impact of external debt on economic growth in Nigeria. Ex-post facto research design was adopted for the study. While data on Gross Domestic Product (GDP), External Debt Stock and External Debt Service Payment were obtained from World Bank International Debt Statistics, Exchange Rate data were collected from Central Bank of Nigeria Statistical Bulletin, 2013. The period of study was 1980-2013. Model was formulated and data were analyzed using Ordinary Least Square. Diagnostic tests were conducted using Augmented Dick Fuller Unit Root Test, Co-integration and Error Correction Model. The independent variable was GDP, while the explanatory variables were External Debt Stock, External Debt Service Payment and Exchange Rate. The findings showed that External Debt has a positive relationship with Gross Domestic Product at short run, but a negative relationship at long run. Also, while External Debt Service Payment has a negative relationship with Gross Domestic Product, Exchange Rate had a positive relationship with it.

Kobey (2016) determined the effect of public debt on economic growth in Kenya. Specifically, the study answered the question whether external debt and debt servicing have any significant effect on Economic Growth. The study used a linear regression model to analyse Kenyan data from the economic years 1993 to 2015, with GDP growth rate as a function of public debt. Unemployment rate and Inflation rate were taken as control variables. The results indicated that public debt, unemployment rate and inflation rate were negatively related to economic growth, but not significant as indicators of economic growth.

Hassa, Abubakar and Abu (2015) examined the effect of government debt on economic growth in Nigeria between 1986 and 2013. The theoretical underpinning of this work anchors on the Dual Gap Theory which takes into cognizance savings-investment gap. This paper seeks to empirically examine the effect of government debt (internal and external) on economic growth in Nigeria. The Ordinary Least Square (OLS) is used to analyze data gotten from National Bureau of Statistics, World Bank Estimates, CBN statistical bulletin and Debt Management Office covering a time span of 1986 – 2013. This is due to its optimal properties that enhance efficiency of parameter estimates and validity of results. It is also applicable to long term analysis. The Unit root test and Cointegration test are also employed as augmenting analysis. The study revealed that the impact of government debt on economic growth over the period under review is insignificant – with external debt which has been enormous over the years contributing minimally to real gross domestic product. The findings of the study reveal that, if the course of consistent borrowing is not curbed, the economy will slump further: resulting to surplus budgeting, and igniting; increases in unemployment, decreases in total investment, falling reserves, increased exchange rate, higher inflation and consequently increased poverty.

Utomi (2014) determined the impact of external debt on economic growth in Nigeria for the period 1980-2012. Time series data on external debt stock and external debt service were used to capture external debt burden. The study set out to test for both a long run and causal relationship between external debt and economic growth in Nigeria. An empirical investigation was conducted using time series data on Real Gross Domestic Product, External Debt Stock, External Debt Payments and Exchange Rate from 1980-2012. The techniques of Estimation employed in the study include Augmented Dickey Fuller (ADF) test, Johansen Co-integration, Vector Error Correction Mechanism and Granger Causality Test. The results show an insignificant long run relationship and a bi-directional relationship between external debt and economic growth in Nigeria.

Iya, Gabdo and Aminu (2013) analysed the impact of external debt on economic growth in Nigeria. The time series data were derived from various secondary sources such as: the Central bank of Nigeria statistical bulletins, Economic and Financial Review and Annual reports and statement of accounts and Debt Management Office (DMO) publications and website. The macroeconomic data cover gross domestic product (GDP) and external debts from 1992-2012. The estimated techniques includes the Ordinary Least Square (OLS) method, Augmented Dickey- Fuller (ADF) unit root test, Johansen Co-integration test and Error Correction Method (ECM). The results revealed that external

debt impacted positively on the economic performance of Nigeria. The paper also revealed that external debt does not significantly affect economic growth in the country.

Matiti (2013) established the relationship between public debt and economic growth in Kenya. The study used secondary data collected from various sources collected from the Kenya National Bureau of Statistics and the Central Bank of Kenya. The data was collected using data collection sheet which was edited, coded and cleaned. Data was obtained covering the period 1992-2012 financial periods. To establish the relationship between public debt and economic development, the study conducted a regression analysis. The findings showed that external debt has a negative and insignificant effect on GDP.

Sulaiman and Azeez (2012) examined the effect of external debt on the economic growth of Nigeria. The model built for the study proxy gross domestic product as the endogenous variable measuring economic growth as a function of external debt, ratio of external debt to export, inflation, and exchange rate proxy as the exogenous variables. Annual time series data was gathered from the Central Bank of Nigeria Statistical bulletin and Debt Management Office from 1970 to 2010. The econometric techniques of Ordinary Least Square (OLS), Augmented Dickey-Fuller (ADF) Unit Root test, Johansen Co-integration test and Error Correction Method (ECM) were employed in the empirical analysis. The co-integration test showed that long-run equilibrium relationship exist among the variables. The findings from the error correction method showed that external debt has contributed positively to the Nigerian economy.

3. MATERIAL AND METHOD

The present study adopted an ex-post-facto research design in order to determine the effect of debt level on the economic performance of Nigeria. This research design is often deployed in a study that determines the association between variables and seeks to find out the factors that are associated with certain occurrence, conditions, events or behaviour by analyzing past events or already existing data for possible casual factors. The secondary data used for the study were collected from the Central Bank of Nigerian Statistical Bulletin for various years. The variables on which data are collected include: external debt, domestic debt, debt servicing and gross domestic product (GDP). The study uses time series data to analyse public debt level trends in Nigeria compared to GDP growth rate over twenty three (23) years, spanning from the year 1999 to 2021. This period covered the times Nigerian borrowing level witnessed tremendous increment and robust activities in the budget deficit financing. Descriptive statistics was conducted to establish the measures of central

tendency (Mean, median), measures of variation (Standard deviation) normality of the variables using Jarque Bera test.

A number of diagnostic tests were carried out to meet the assumption of OLS estimation technique such as: autocorrelation, Heteroskedasticity and normality tests. Assumptions of OLS stipulate that the residuals should be constant across time (Homoskedastic), uncorrelated with one another over time (autocorrelation) and normally distributed (normality). Heteroskedasticity occurs when the variances of the error terms are not constant. Breusch-Godfrey Serial Correlation LM Test examines the autocorrelation, Breusch-Pagan-Godfrey examines Heteroskedasticity and Jarque-Bera tests for the normality, all at 5% level of significance. The Ordinary Least Square (OLS) is used to analyze the time series data and estimate the parameters for the purpose of hypotheses testing. This is due to its optimal properties that enhance efficiency of parameter estimates and validity of results. It is also applicable to long term analysis. The Unit root test and Cointegration test are also employed as augmenting analysis. In time series analysis, before running the cointegration test the variables must be tested for stationarity. For this purpose, we use the conventional ADF tests. Therefore, before applying this test, we determine the order of integration of all variables using unit root tests by testing for null hypothesis H_0: = 0 (i.e has a unit root), and the alternative hypothesis is H_1: < 0. This is to ensure that all the variables are integrated at 1(1) to avoid spurious result. Thus, the estimation of regression results undergoes ordinary least square regression, ADF unit root test, and Johansen cointegration test.

The study predicts Gross Domestic Products using debt servicing, external debt and domestic debt. The model for this analysis was adapted from the work of Muhammad and Abdullahi (2020) and modified thus:

$GDP_t = ß_0 + ß_1EDL_t + ß_2DDL_t + ß_3DSL_t + \varepsilon_t$ ----------eq (i)

Where:

GDP = Gross Domestic Product

EDL = External Debt Level

DDL = Domestic Debt Level

DSL = Debt Service Level

t = year

$ß_{1-3}$ = parameter estimates of the predictors are zero

$ß_0$ = the constant value of GDP when parameter estimates of the predictors are zero

The measurement of the research variables are shown in Table 1 below:

Table 1 Description of Operational Variables

Variables	Type of Variable	Measurement	Source
Gross Domestic Product	Dependent	Natural Logarithm of total market value of goods and services at constant market price	Mwangi (2013)
External Debt Level	Independent	Stock of external debt to GDP ratio	Achwoga (2016)
Domestic Debt Level	Independent	Stock of domestic debt to GDP ratio	Achwoga (2016)
Debt Service Level	Independent	Debt service cost divided by gross federal revenue	Onyele and Nwadike (2021)

Source: Researcher's Concept, 2023

4. RESULT AND DISCUSSIONS

4.1 Data Analysis

4.1.1 Descriptive Statistical Analysis

The general objective of the study is to determine the effect of debt level on the economic performance of Nigeria from 1999 to 2021. Economic performance is represented by Gross Domestic Product at constant market price while debt level is represented by outstanding domestic debt, external debt and debt service cost. However, descriptive statistical tools of mean, standard deviation, range values, skewness, kurtosis and Jarque-Bera probability were used to analyse the observed data. Table 2 shows the descriptive properties of the data.

Table 2 Descriptive Statistical Analysis

	GDP (₦'B)	Domestic Debt (₦'B)	External Debt (₦'B)	Debt Service Cost (₦'B)
Mean	52140.20	6265.504	3878.456	979.1891
Median	55469.35	4551.820	2695.070	415.6600
Maximum	73382.77	19242.56	15855.23	4221.650
Minimum	24215.78	794.8100	438.8900	30.84000
Std. Dev.	17180.81	5606.516	4042.267	1106.011
Skewness	-0.269972	0.815949	1.643098	1.602045
Kurtosis	1.580926	2.471041	5.061514	4.727621
Jarque-Bera	2.209254	2.820270	14.42189	12.69874
Probability	0.331334	0.244110	0.000738	0.001748
Sum	1199224.	144106.6	89204.49	22521.35
Sum Sq. Dev.	6.49E+09	6.92E+08	3.59E+08	26911704
Observations	23	23	23	23

Source: Authors' Computation, Eviews 10.

All the variables used in the study were measured in ₦'B in line with the Central Bank of Nigeria (CBN) statistical bulletin (2021). Thus, the descriptive analysis are based on ₦'B. Nigeria realised an average GDP of 52140.20 from 1999 to 2021, with a standard deviation of 17180.81. The lowest during the period in view was 24215.78 while the highest was 73382.77. Most of the values of GDP

are below the mean since the skewness is negative. The distribution is platykurtic since the kurtosis is less than 3, implying that the outliers are few. The Jarque-Bera probability of 0.331334 is greater than 0.05, which means that the distribution of GDP is not different from a normal distribution.

Nigeria owed average domestic debts of 6265.504 from 1999 to 2021, with a standard deviation of 5606.516. The lowest domestic debt during the period was 794.8100 while the highest was 19242.56. More of the values of domestic debt are above the mean since the skewness is positive. The distribution is platykurtic since the kurtosis is less than 3, implying that the outliers are few. The Jarque-Bera probability of 0.244110 is greater than 0.05, which means that the distribution of domestic debt come from a normal distribution.

Furthermore, the mean external debt of Nigeria during the period in focus was 3878.456 with a standard deviation of 4042.267. The values ranged from 438.8900 to as high as 15855.23. More of the values of external debt are above the mean since the skewness is positive. The distribution is leptokurtic since the kurtosis is greater than 3, implying that the outliers are larger. The Jarque-Bera probability of 0.000738 is less than 0.05, which means that the distribution of external debt significantly deviated from a normal distribution.

Finally, the mean debt service cost of Nigeria during the period in focus was 979.1891 with a standard deviation of 1106.011. The debt service costs fluctuated between 30.84000 and 4221.650 from 1999 to 2021. More of the values of external debt are above the mean since the skewness is positive. The distribution is leptokurtic since the kurtosis is greater than 3, implying that the outliers are larger. The Jarque-Bera probability of 0.001748 is less than 0.05, which means that the distribution of debt service cost does not have the properties of a normal distribution.

4.1.2 Model Diagnostics

Seven (7) diagnostic tests were computed to assess how well the linear model performed in estimating the parameters used in hypothesis testing. In the model diagnostics, Augmented Dickey-Fuller (ADF) test statistic, Johansen cointegration test, Breusch-Pagan-Godfrey, Breusch-Godfrey Serial Correlation LM Test, Jarque-Bera test, Ramsey RESET Test, and Variance Inflation Factors were used to test for unit root (stationarity), cointegration, heteroskedasticity, autocorrelation, normality, linearity and multicollinearity, respectively.

4.1.2.1 Unit Root Test

In order to obtain plausible numerical estimates of the parameters given, the data were subjected to unit root test using ADF test as shown in Table 3.

Table 3 Stationarity Test

Variable	ADF Test Statistic	5% Critical Value	Order of Integration
LogGDP	-4.122640	-3.004861	I(0)
Domestic Debt Level	-4.255482	-3.052169	I(2)
External Debt Level	-4.573555	-3.029970	I(2)
Debt Service Level	-4.629000	-3.020686	I(1)

Source: Authors' Computation, Eviews 10.

The decision rule for stationarity is that the absolute value of the ADF Test Statistic must be greater than its 5% Critical Value. Therefore, the result of the ADF unit root test shows that except LogGDP which was stationary at I(0), other three variables (DDL, EDL and DSL) were non-stationary at levels. However, DDL and EDL attained stationarity at 2nd difference while DSL attained stationarity at 2nd difference.

4.1.2.2 Johansen cointegration test

Since the variables of the series did not attain stationarity at level, a test for cointegration is conducted to determine if the linear combinations of the stochastic trends in the series are cointegrated. The essence of this test for cointegration is to avoid spurious regression situations. Thus, if the linear combinations of the stochastic trends are I(0), the linear combinations cancels out the stochastic trends in the series. The cointegration result is given below in Table 4.

Table 4 Johansen cointegration test

Null Hypothesis	Trace Statistic	5% Critical Value	Max-Eigen Statistic	5% Critical Value
None *	104.1803	47.85613	51.43943	27.58434
At most 1 *	52.74086	29.79707	41.40978	21.13162
At most 2	11.33108	15.49471	11.23265	14.26460
At most 3	0.098434	3.841466	0.098434	3.841466

Source: Authors' Computation, Eviews 10.

The Trace test and Max-Eigen value test indicates 2 cointegrating equations each. The trace statistic and the Max-Eigen statistic are greater than their respective critical values for all the cointegrating equations. Thus, the null hypothesis of no cointegrating equation was rejected at 5% significance level. This implies that even though the series of the variables were non-stationary at levels, their linear combinations are cointegrated. In other words, there exists a long run relationship among the variables at 5% significance level. Thus, the application of the OLS technique will yield informative and dependable results.

4.1.2.3 Heteroskedasticity Test

Heteroskedasticity was assed using B-P-G test to ascertain whether the residuals have a constant variance. The opposite of heteroskedasticity is homoscedasticity which refers to a situation where the variance of the residuals is equal over a range of measured values.

Table 5 Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	8.200218	Prob. F(3,19)	0.0011
Obs*R-squared	12.97721	Prob. Chi-Square(3)	0.0047
Scaled explained SS	9.514589	Prob. Chi-Square(3)	0.0232

Source: Authors' Computation, Eviews 10.

The null hypothesis of the test is that the model is homoscedastic. However, the null hypothesis was rejected at 5% significance level, implying that the model suffered from heteroskedasticity.

4.1.2.4 Test for Autocorrelation

Autocorrelation refers to a condition whereby the residuals in a regression model have a strong association among themselves. This condition was examined in **Table 6** below.

Table 6 Breusch-Godfrey Serial Correlation LM Test:

F-statistic	7.740931	Prob. F(2,17)	0.0041
Obs*R-squared	10.96251	Prob. Chi-Square(2)	0.0042

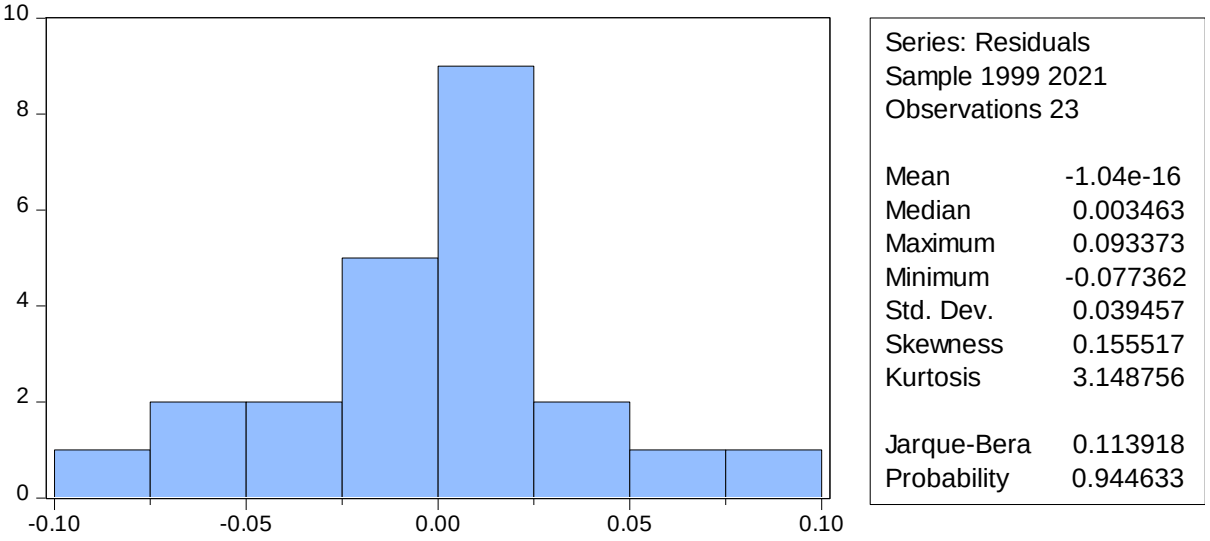
Source: Authors' Computation, Eviews 10.

The null hypothesis is that the residuals are not strongly correlated. However, the alternative hypothesis of auto correlated error terms was accepted since the Prob. F(2,17) = 0.0041 is less than 0.05.

4.1.2.5 Normality Test

The normality assumption in regression analysis requires that the error terms should not have outliers or extreme values. The assessment of this property was done using the probability of Jarque-Bera statistics (J-B stat) in figure 1.

Figure 1: Normality Test



Source: Authors' Computation, Eviews 10.

The null hypothesis is that the residuals do not strongly deviate from a normal deviation. Since the probability value of the J-B stat = 0.944633 is greater than 0.05, the null hypothesis of normality was accepted.

4.1.2.6 Linearity Test

The OLS regression model assumes that there is a linear relationship between the parameters of independent variables and the dependent variable. Ramsey RESET test was used in validating this assumption.

Table 7 Ramsey RESET Test
Equation: UNTITLED
Specification: LOGGDP C DDL EDL DSL
Omitted Variables: Powers of fitted values from 2 to 3

	Value	df	Probability
F-statistic	1.015599	(2, 17)	0.3831
Likelihood ratio	2.595923	2	0.2731

Source: Authors' Computation, Eviews 10.

From the result in Table 7, the null hypothesis that there is a linear relationship between the variables was accepted since the Prob(F-stat) = 0.3831 is grater than 0.05. Thus, OLS model can be accurately deployed in explaining the effect of debt level on the economic performance of Nigeria.

4.1.2.7 Multicollinearity Test

Multicollinearity is a condition in which the independent variables are highly correlated such that the effects of the independents on the outcome variable cannot be separated. It reduces the validity of the regression estimates since the independent variables become extremely the same when there is a strong collinearity in the predictors. Multicollinearity practically inflates unnecessarily the standard errors of the coefficients. By overinflating the standard errors, multicollinearity makes some variables statistically insignificant when they should be significant. To assess the strength of the collinearity subsisting among the predictors, the study deployed Variance Inflation Factors as shown in Table 8.

Table 8 Variance Inflation Factors
Sample: 1999 2021
Included observations: 23

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.000314	4.000552	NA
DDL	0.080445	15.22433	4.807144
EDL	0.025845	3.101247	1.213311
DSL	0.001398	18.03512	5.013042

Source: Authors' Computation, Eviews 10.

The recommended practice in VIF analysis is that a centered VIF greater than or equal to 10 is considered highly collinear (Tamura, Kobayashi, Takano, Miyashiro, Nakata & Matsui, 2019). Thus, the explanatory variables are considered free from multicollinearity issues. In general, the regression model performed well out of the seven diagnostic assessments, although not excellent since it failed to meet two assumptions: heteroskedasticity and autocorrelation. However, the researcher still applied OLS model as Frost (2019) observed that the presence of autocorrelation and heteroskedasticity does not lead to biased regression estimates although it reduces OLS precision.

4.2 Test of Hypotheses

The Ordinary Least Square (OLS) was used to analyze the time series data and estimate the parameters for the purpose of hypotheses testing. The model estimated is stated below:

$GDP_t = ß_0 + ß_1EDL_t + ß_2DDL_t + ß_3DSL_t + \varepsilon_t$

The result of the OLS estimation is presented in Table 9 below.

Table 9 Ordinary Least Square Regression Estimates
Dependent Variable: LOGGDP
Method: Least Squares
Sample: 1999 2021
Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.565246	0.017708	257.8133	0.0000
DDL	2.784464	0.283629	9.817274	0.0000
EDL	-1.340768	0.160763	-8.340029	0.0000
DSL	-0.062668	0.037389	-1.676091	0.1101

R-squared	0.940193	Mean dependent var	4.690768
Adjusted R-squared	0.930750	S.D. dependent var	0.161344
S.E. of regression	0.042458	Akaike info criterion	-3.323817
Sum squared resid	0.034251	Schwarz criterion	-3.126339
Log likelihood	42.22389	Hannan-Quinn criter.	-3.274152
F-statistic	99.56311	Durbin-Watson stat	0.736375
Prob(F-statistic)	0.000000		

Source: Authors' Computation, Eviews 10.

The output of the OLS estimation ascertained the effect of debt level (proxies by DDL, EDL, and DSL) on the economic performance of Nigeria. R-squared = 0.940193 shows that about 94.02% variations in the Gross Domestic Product of Nigeria are accounted for by the systematic changes in Domestic Debt Level, External Debt Level and Debt Service Level. The model's goodness-of-fit is high since the Adjusted R-squared = 0.930750 is greater than 0.50. In addition, the statistical significance of the model was supported by the F-statistic = 99.56311 of which Prob(F-statistic) = 0.000000 is less than 0.05. The conclusion is therefore that the model predicting GDP using Domestic Debt Level, External Debt Level and Debt Service Level is informative and useful. Therefore, the researcher proceeds to use the regression coefficients and *p*-values to test the individual hypotheses.

4.2.1 Hypothesis One

H_{01}: Domestic debt level does not significantly affect the gross domestic product performance in Nigeria.

Domestic Debt Level (DDL) has a positive coefficient of 2.784464 and a corresponding *p*-value of 0.0000. These imply that an increase in DDL by a margin will result in a significant increase in GDP performance of Nigeria by 2.784464.

Decision: The null hypothesis was rejected in favour of the alternate hypothesis since the *p*-value = 0.000 is less than 0.05. In conclusion, domestic debt level significantly and positively affects the gross domestic product performance in Nigeria ($ß_1$ = 2.784464, *p*-value = 0.000). This relationship is based on the fact that money borrowed by the government from internal sources are also re-invested back into the economy when they are finally re-paid or serviced. This finding of a significant positive relationship was also found by Aiyedogbon, Zhuravka, Maxim, Olena and Olena (2022); Egede, Aminu and Oluwole (2021); Eke and Akujuobi (2021); and Alagba and Eferakeya (2019).

4.2.2 Hypothesis Two

H_{02}: External debt level does not significantly influence the gross domestic product of Nigeria.

External Debt Level (EDL) has a negative coefficient of -1.340768 and a corresponding *p*-value of 0.0000. These imply that an increase in EDL by a margin will result in a significant decrease in GDP performance of Nigeria by 1.340768.

Decision: The null hypothesis was rejected in favour of the alternate hypothesis since the *p*-value = 0.000 is less than 0.05. In conclusion, external debt level significantly but negatively influences the gross domestic product of Nigeria ($ß_2$ = -1.340768, *p*-value = 0.000). External debt negatively affects GDP performance through the debt overhang effect which is a situation when an accumulated debt discourage and overhang investment. This finding agrees with those of Hoti, Shkurti and Rehman (2022); Aiyedogbon, Zhuravka, Maxim, Olena and Olena (2022); Manasseh, Abada, Okiche, Okanya, Nwakoby and Offu (2022); Abdulkarim and Saidatulakmal (2021); Egede, Aminu and Oluwole (2021); Eke and Akujuobi (2021); Alagba and Eferakeya (2019). However, the study by Ndubuisi (2017); Iya, Gabdo and Aminu (2013); and Sulaiman and Azeez (2012) found that external debt stock positively enhances Nigeria's growth and development index.

4.2.3 Hypothesis Three

H_{03}: Debt service level has no significant implication on the gross domestic product of Nigeria.

Debt Service Level (DSL) has a negative coefficient of -0.062668 and a corresponding *p*-value of 0.1101. These imply that an increase in DSL by a margin will result in a non-significant decrease in GDP performance of Nigeria by 0.062668.

Decision: The alternate hypothesis was rejected in favour of the null hypothesis since the *p*-value = 0.1101 is greater than 0.05. In conclusion, debt service level has no significant and negative implication on the gross domestic product of Nigeria ($ß_3$ = -0.062668, *p*-value = 0.1101). The negative implication of debt service level on GDP performance is because the quantity of money available for investment purposes decreases when there are large amount of public debts to be serviced. This impedes potential economic growth and development. Aiyedogbon, Zhuravka, Maxim, Olena and Olena (2022); Abdulkarim and Saidatulakmal (2021); and Alagba and Eferakeya (2019) realised similar result in their studies.

CONCLUSION AND RECOMMENDATIONS

Government opts for debt financing in order to close the resource gap between savings and investment. However, public debt level become productive only when they are used to create assets which yield income sufficient to pay the principal and interest on the loan. Increases in public debt aims at stimulating economic growth because government borrow to finance investment and infrastructural projects that help provide the fundamental basis for further economic production and growth. Debts become a burden when debt overhang is rising, and the foreign reserve become inadequate to cover short-term external debt and government revenue is also inadequate for debt servicing. Worthy of note is that while internal borrowing can easily be repaid through increase in taxes or printing of more local currency, external borrowings create more problems and are difficult to repay due to harsh conditions of lenders and debtor country would have to struggle to export goods and services to earn foreign exchange to repay. This is the major reason why the OLS regression output showed that domestic debt level positively affects GDP performance while the effects of external debt level and debt service level on GDP performance are negative.

Accumulated debt service payment creates a lot of problems for countries especially developing nations such as Nigeria whose revenue is apparently unable to meet its debt service obligations, resulting in debt overhang or debt service burden that has militated against national growth and development. Therefore, despite the continuous borrowing, the Nigerian economy is still bedeviled

by dwindling per capita income, poor infrastructural development, high unemployment rates, inadequate basic amenities, and falling growth rates of GDP.

In line with the findings of the study, the researcher recommends the following:

1. The government should resort to domestic debts up to sustainable debt levels that do not crowd out development and social programmes.
2. To prevent issues with debt overhang, government borrowing from international markets should be utilized effectively and concessionary loans rather than commercial loans should be sought after.
3. The moneys recovered from past looters such as Late Gen. Sani Abacha should be used to service Nigerian public debts instead of using oil revenue that can barely meet the country's recurrent needs.

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