



Public Debt and Economic Development in Nigeria: An Empirical Analysis

Godgift Chigala Ebelogu

Department of Accounting, Faculty of Management Sciences
Ignatius Ajuru University of Education, Nigeria

chigalaebelogu@gmail.com

<https://orcid.org/0009-0008-3548-0469>

Otekenari David Elisha

Department of Economics
Faculty of Social Sciences
Ignatius Ajuru University of Education, Nigeria.

delisha53@yahoo.com

<https://orcid.org/0000-0003-0767-1926>

Abstract

This study was carried out to assess the relationship between public debt and economic development in Nigeria looking at the periods of 2000-2022. The specific objectives were to evaluate the impact of external debt on real gross domestic product (RGDP) and unemployment rate (UNR) and also evaluate the impact of Domestic debt on real GDP and Unemployment rate in Nigeria. In line with the objectives, four (4) hypotheses were formulated and tested. The study employed the ex-post facto research design, while target population was the entire three arms of government (federal, states and local governments) that have been empowered to borrow to finance developmental activities in Nigeria. The population comes from 62 years' period (1960-2022) of which data for Nigerian development indicators as well as public debt (Nigeria as a nation) began and became available for study. Using purposive non-probability sampling technique, the sample for the study was selected. A sample of 23 years' period starting from 2000 to 2022 was chosen for the study. Secondary sources of data were used for the study. The data collected were from CBN annual Statistical Bulletin 2022, debt management office 2022 and National Bureau of Statistics. Correlation as well as regression analysis and models were used for data analysis and testing of hypotheses with the aid of Statistical Package for Social Sciences (SPSS) version 21. The result of the study indicated that real GDP has a positive and significant relationship with both external debt and domestic, but insignificant with unemployment rate. On the other hand, unemployment rate has positive and significant relationship with domestic debt but insignificant with external debt. The study concluded that Public debt (both domestic and external) affects economic development in Nigeria in terms of real GDP and unemployment rate. Public debt leads to reduction in real GDP contributions and increase in employment rate. The study recommended among others that Reduction in external borrowing is advocated, instead diversification of economy should be embarked on and sustained; where borrowing must take place, it should focus on domestic borrowing. This significantly affects economic development.

Keywords: Domestic Debt, Economic Development, External Debt, Nigeria, Public Debt, Real GDP, Unemployment Rate.

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INTRODUCTION

In recent times, economic development indicators with regard to Nigeria as a nation have not been favourable. There are spikes in inflation, a dramatic increase in unemployment, sluggish economic growth rate as well as a substantive decrease in foreign reserves and a dramatic fall in the Nigerian's currency value, with Naira tumbling downwards against the dollars in the forex market, and all of these signify economic downturn for the nation. Consequently, macroeconomic objectives have not been realistic and thus Nigeria is saddled with the responsibility of evaluating and realigning fiscal policies towards attending to these negative economic indicators that could lead her to the part of economic development. While there have been arguments in several fora that the economy is on the right part towards recovery as such there should be optimism that developmental activities will continue to be witnessed.

However, the rate of recovery cannot be said to be at the expected and accepted rate (Kalagbor & Ordu, 2019; Obara et al., 2022), therefore calls for a policy check as well as retraction on the policy thrust that has been underlined that will result in economic recovery becomes necessary (Obara et al., 2022). One of such policy thrust is the issue of Public debt and its management towards economic development. Public debt represents total foreign and domestic debts of a nation. When there is budget deficit the gap between revenue and expected expenditure is normally filled through borrowing and is referred to as deficit financing. Public debt play a role in economic development when it is not excess of the allowed thresh hold (Sawyer et al., 2023). In view of the impact public debt will have on economic development, it is often argued that its effective and efficient management is the key towards better economic management in a nation.

Looking at the issue of public debt and its management for economic development of a nation, it is argued that risky debt structures are often the consequence of inappropriate economic policies--fiscal, monetary and exchange rate (IMF, 2003). According to Yusuf and Mohd (2023), literature in recent times suggest that resource-rich countries such as Nigeria are more likely to be overwhelmed by over borrowing and the associated debt unsustainability resulting in repayment difficulties as well as a drag on growth and other development goals. Despite getting debt relief in 2005, Nigeria's government debt has been continuously rising. The Federal government's borrowings (local and foreign debt) increased by around 658% from N3.55 trillion to N26.91 trillion between 1999 and March 2021, indicating that successive governments have continued to borrow enormously (Debt Management Office, 2022). Nigeria's domestic debt expanded significantly between 1981 and 1990, rising from N11.19 billion to N84.09 billion, then to N898.25 billion in 2000, N4551.82 billion in 2010, N7904.02 billion in 2014, and N11,058.20 billion in 2016. The external debt profile exhibited a nearly same pattern, rising dramatically from N2.33 billion in 1981 to N298.61 billion in 1990, then again to N3097.38 billion in 2000, before reaching a record high of N4890.27 billion in 2004 (Yusuf & Mohd, 2023).

Furthermore, as of June 30th, 2022, Nigeria's entire public debt stock—which includes the federal government, the 36 state governments, and the federal capital territory (FCT)—rose to N42.84 trillion (\$103.31 billion USD). This is made up of N16.61 trillion (\$40.05 billion USD) in external debt. Concessional and semi-concessional loans from bilateral and multilateral lenders, including the World Bank, the IMF, Afrexim, and African Development Bank, made up 58% of the country's external debt.

Further, domestic debt increased to N25.23 trillion (\$63.24 billion USD) as a result of fresh borrowings by the federal government, state governments and the FCT to cover mounting

budget deficits (DMO, 2022). In 2023, the debt profile rather than reducing is also increasing. According to a report by KPMG Nigeria, it increased to N46.25 trillion and likely to hit above N77 trillion by the end of 2023. The report stated that Nigeria's total public debt stock increased by 14.46% between 2022 and 2023, to N46.25 trillion, excluding another estimated N27.55 trillion 'Ways and Means' loans from the Central Bank and additional debt envisaged in the 2023 annual budgets of States and the Federal Government. Further, National Debt likely to hit above N77 trillion by end of 2023 and is arguably unsustainable at current Tax/Revenue to GDP and Debt service payments ratios and expenditure patterns (Kale, 2023).

Furthermore, as observed by IMF (2003), a government's debt portfolio is usually the largest financial portfolio in the country. It often contains complex and risky financial structures, and can generate substantial risk to the government's balance sheet and to the country's financial stability. As noted by the Financial Stability Forum's Working Group on Capital Flows, experiences have highlighted the need for governments to limit the build-up of liquidity exposures and other risks that make their economies especially vulnerable to external shocks. Therefore, sound risk management by the public sector is also essential for risk management by other sectors of the economy because individual entities within the private sector typically are faced with enormous problems when inadequate sovereign risk management generates vulnerability to a liquidity crisis (IMF, 2003).

Sound debt structures help governments reduce their exposure to interest rate, currency and other risks. Many governments seek to support these structures by establishing, where feasible, portfolio benchmarks related to the desired currency composition, duration, and maturity structure of the debt to guide the future composition of the portfolio, thus, the need for sound debt management for economic development. Experience supports the argument, for example, that developed domestic debt markets can substitute for bank financing (and vice versa) when this source dries up, helping economies to weather financial shocks. Even in situations where there are sound macroeconomic policy settings, risky debt management practices increase the vulnerability of the economy to economic and financial shocks. Sometimes these risks can be readily addressed by relatively straightforward measures, such as by lengthening the maturities of borrowings and paying the associated higher debt servicing costs (assuming an upward sloping yield curve), by adjusting the amount, maturity, and composition of foreign exchange reserves, and by reviewing criteria and governance arrangements in respect of contingent liabilities (IMF, 2003).

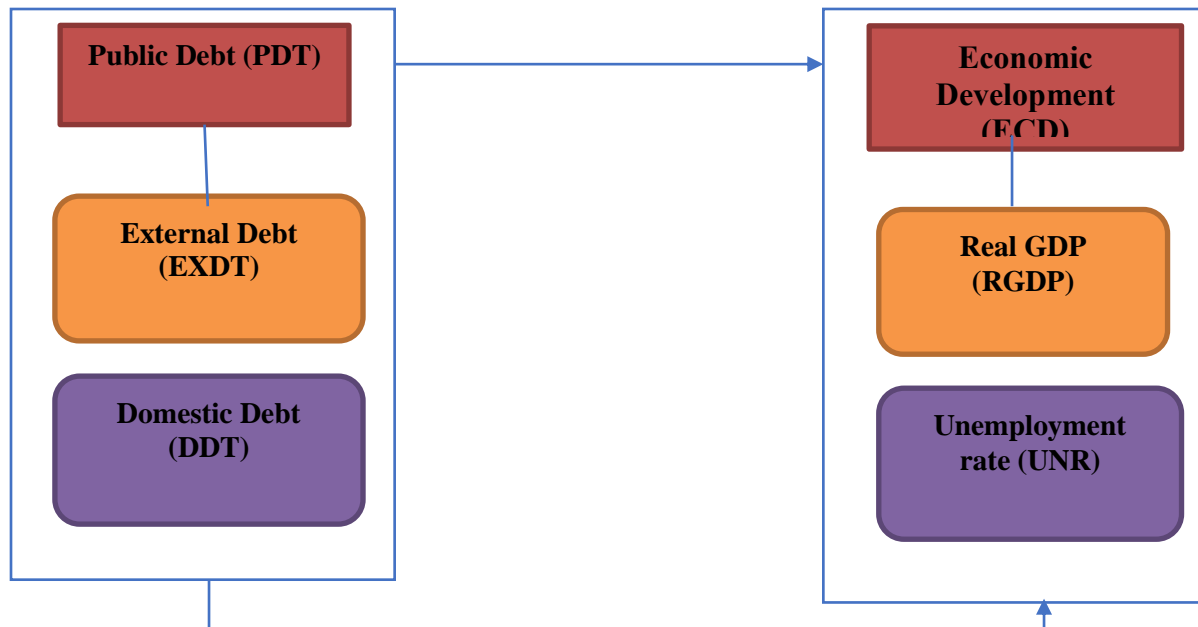
Consequently, it is argued that a well performing economy it is argued has a high level of production, reasonable employment opportunities, economics and price stability, high standard of living, improved investment opportunities and overall social wellbeing of individual and the country at large. This brings about development in the economy. Hence developing economy has the reverse features to that of developed ones. It becomes more imperative when there is a pandemic where all economic indicators are altered and there is need for survival of human life which takes the centre stage while employment, production as well as services become secondary. To buttress the necessities, attach to a well performing economy, hence public expenditure needs to be engaged and at times increased (Ahiakwo et al., 2021).

As regards to Nigeria, there is no doubt with regards to the pattern of transformation that public spending has witnessed over the years in Nigeria that has resulted in mounting debt profile. However, the question of whether these increments in public spending have translated into desired economic growth, development and prosperity of the people is still yet to be answered. Cases of corruption and mismanagement of public funds have stalled the chances of

making adequate budget appropriation and execution of capital projects and this has left the country in a state of huge infrastructural gaps thereby, creating a cog in the wheels of the nation's economic development. Furthermore, there have been changes in the dynamics of the demand for public services with respect to the demographic explosion that has generated more pressure on the available insufficient social amenities. Yet government expenditure as depicted through the yearly budget continues to increase (Ahiakwo et al., 2021).

As if that is not enough, the economy is still faced with poor performance of national institutions such as road, transportation, politics, struggling health care system and facilities and financial systems (Obara et al., 2022). At the same time, there is a high unemployment rate in the nation (Ordu, 2021; Obara et al., 2022). With this situation it becomes imperative to look at how public debt profile affects the economic development of Nigeria within the periods of 2000-2022. Past studies reviewed focused on public debt and economic growth leaving out economic development which is critical and different from economic growth (Owui et al., 2020; Yusuf & Mohd, 2023; Sawyer et al., 2023), thereby creating a research gap, hence the need to embark on empirical investigation to ascertain the relationship between public debt and economic development in Nigeria using the proxies as shown in the conceptual framework for the study.

Conceptual framework



Sources: (Owui et al., 2020; Ahiakwo et al., 2021; Ordu, 2021 and researcher 2023).

Aim and Objectives of the Study

The main aim of the study is to investigate the relationship between public debt and economic development in Nigeria. The specific objectives of the study are to:

- Evaluate the relationship between external debt (EXDT) and Real Gross Domestic Product (RGDP) in Nigeria.

- Evaluate the relationship between external debt (EXDT) and Unemployment rate (UNR) in Nigeria.
- Evaluate the relationship between domestic debt and real gross domestic product (RGDP) in Nigeria.
- Evaluate the relationship between domestic debt and unemployment rate (UNR) in Nigeria.

Research Questions

The under listed research questions guided the study:

- What is the relationship between external debt and real GDP in Nigeria?
- What is the relationship between external debt and unemployment rate in Nigeria?
- What is the relationship between domestic debt and real GDP in Nigeria?
- What is the relationship between domestic debt and unemployment rate in Nigeria.

Hypotheses

The under listed hypotheses further guided that study:

- **HO₁:** There is no significant relationship between external debt and real GDP in Nigeria.
- **HO₂:** There is no significant relationship between external debt and unemployment rate in Nigeria.
- **HO₃:** There is no significant relationship between domestic debt and real GDP in Nigeria.
- **HO₄:** There is no significant relationship between domestic debt and unemployment rate in Nigeria.

LITERATURE REVIEW

Conceptual Review (Public Debt Concept)

The issue of public debt proliferation, which many developing countries worldwide have experienced, has attracted global attention. In Nigeria, this experience, caused by falling oil prices, exchange rate volatility, rising interest rates, and other factors, has negatively impacted the country's economy. Some Studies have found that having a high level of public debt has a detrimental influence on the growth of the most developing economy (Olaoye & Orimogunje, 2022).

Budget deficits show that government spending is high compared to receipts, and this gap has been rising in many developing nations. It is crucial to remember that public debt is bad when it becomes chronic and burdensome for governments to repay; however, countries cannot escape it once in a while because it can achieve critical macroeconomic goals of improving citizens' standard of living (Offurum & Fubara, 2022). As a result, governmental debt has been described as a necessary evil. This means that borrowing is beneficial until it causes the economy to suffer.

Furthermore, it is argued that countries with lower debt burdens have higher development rates than those with more enormous debt burdens (Ajayi & Edewusi, 2020). The failure of Nigeria to generate domestic savings to fill the country's usual budget deficit over the years has resulted in the country's continued reliance on public debt, particularly foreign debt. Foreign debts are often characterised by unfavourable lending conditions, fluctuating foreign exchange rates, and the risk of repudiation, resulting in debt overhang, thus negatively affecting the economy (Akinwunmi & Adekoya 2018; Offurum & Fubara, 2022). This problem has also been identified as impeding domestic capital creation, resulting in a reduction in the supply of essential services to citizens in the country.

Although public debt is frequently used as a last alternative by governments worldwide, it is regarded as advantageous compared to other strategies such as money creation and the sale of national assets. Furthermore, debt overhang impacts economic development and the efficacy of monetary policies, export growth and decreases the harshness of trade restrictions, therefore improving market friendliness and, as a result, boosting trade openness. Regardless, debt, if not properly utilised, decreases the amount of economic progress. Public debt is an excellent tool for boosting economic growth, especially when it is utilised to create national assets that may generate job possibilities. Although public debt, if mishandled or used inefficiently, causes a slew of economic problems, the notion is that debt should only be used when it is indispensable and when sufficient measures for its usefulness and control are in place. This study used external debt, domestic debt, external debt servicing, and domestic debt servicing as public debt indicators.

External debt

External debt refers to liabilities owing to other countries or international organisations. There is ample evidence in the current body of research to suggest that foreign borrowing promotes a country's growth and development. Governments borrow for various reasons; the first is for macroeconomic reason, to increase investment and human capital development, while the second is to alleviate budget constraints by funding fiscal and balance-of-payment imbalances.

Domestic Debt

Domestic debt refers to the responsibility or obligation committed by a country within its borders. Domestic debt markets can assist improve money and financial markets, increase private savings, and promote investment. A contractually fixed fee on domestic real income and savings is known as debt serving. Debt service charges climb in tandem with the debt's quantity or interest rate. Only export earnings, restricted imports, or further external borrowings are used to pay debt service. As a result, if export earnings decline, debt servicing problems will likely develop

Economic Development in Nigeria

Economic development is referred to as an increase in living standards, improvement in self-esteem needs and freedom from oppression as well as a greater choice for the people (Todaro, 1985). Although GDP is used in measuring economic development, however it is argued that the most accurate method of measuring development is the Human Development Index. HDI

incorporates literacy rates, life expectancy rates as this affect productivity and as well lead to economic growth (Toderó & Smith, 2011). It also leads to the creation of more opportunities in the sectors of education, healthcare, employment and the conservation of the environment. Thus economic development can be summarized as to have taken place where there is an increase in the standard of living of the citizens, improvement in self-esteem needs and freedom from oppression as well as the citizens having a greater choice available to them (Amadoe, 2018).

Economic development indicators with regard to Nigeria as a nation have not been favourable. There are spikes in inflation, a dramatic increase in unemployment, sluggish economic growth rate as well as a substantive decrease in foreign reserves and a dramatic fall in the Nigerian's currency value, with Naira tumbling downwards against the dollars in the forex market. All of these signify economic downturn for the nation. Consequently, macroeconomic objectives have not been realistic and thus Nigeria is saddled with the responsibility of evaluating and realigning fiscal policies towards attending to these negative economic indicators that could lead her to the part of economic development. While there have been arguments in several fora that the economy is on the right part towards recovery as such there should be optimism that developmental activities will continue to be witnessed, however the rate of recovery cannot be said to be at the expected and accepted rate (see selected indicators analysis), therefore calls for a policy check as well as retraction on the policy thrust that has been underlined that will result in economic recovery becomes necessary. However for this to take place, government spending must take place, and the sources of government revenue to enable spending must come from a pool of government funds that is backed by a policy thrust.

Real Gross Domestic Product (RGDP)

Malizia and Feser (2000) referred to growth and development as complementary because one engenders the other, growth represents an increase in output while development is a structural change. Again, while growth evidences expansion in the economy, development results in the equitable distribution of income and wealth. So it is very important for economic growth to manage and endure that for the benefit of the entire populace, wealth should be distributed (UNDP, 2014). When the size of an economy increases between two time periods and that increase is measured by gross domestic product (GDP), the said increase is referred to as economic growth. Gross Domestic Product (GDP) is therefore, the final value of the finished, goods which a country produces within her borders over a given period of time. "It is the monetary value of final output of the goods and services produced within the geographical confines of a country's territory in a given year (Adoghor et al., 2008), and (Okidim & Tuaneh, 2012). The formula below represents the GDP equation which is the sum of private consumption, the expenditures of government, private capital investments, and net exports at market prices in an open economy.

$Y = C + I + G + N_x$; where Y ~ Total Output, C ~ Consumption, I = Capital Investments, G <= Government Expenditures, and N_x = Net Exports. However, in the event of changes in general price level in a country over time, the comparison of a particular year's output or GDP with that of another is usually very difficult except by the use of an average price of a base-year. This is to say that for such cross-bother comparison to be possible, Nominal GDP must be adjusted for inflation or deflation. The reason is because the value of Nominal GDP is subject to price changes as it is measured on the basis of monetary value of goods and services produced. The implication here is that the value of GDP will tend to increase during a period-of

rising prices and will certainly drop at the time of fall in prices. Given this economic situation portrayed by changes in the value of Nominal GDP due to changes in prices, one cannot affirm as to whether there is a quantity increase or quality improvement in goods and services produced in the economy.

The remedy here is Real Gross Domestic Product (RGDP) which presents a better basis for ascertaining long-term economic performance because it is derived after adjustment is made for price changes. So, GDP adjusted for inflation or deflation is referred to as RGDP. In other words, the result of dividing Gross Domestic Product (GDP) by GDP Deflator is Real Gross Domestic Product (RGDP). The GDP deflator measures the impact which inflation makes on GDP over a period of one year. Therefore, RGDP measures the total value of goods and services produced in an economy over a given period of time using a constant base-year price.

Unemployment Rate

In Nigeria, the unemployment rate measures the number of people actively looking for a job as a percentage of the labour force. According to tradingeconomics.com, (2021), unemployment rate in Nigeria averaged 13.55 percent from 2006 until 2020, reaching an all-time high of 33.30 percent in the fourth quarter of 2020 and a record low of 5.10 percent in the fourth quarter of 2010. It thus implies that efforts towards raising the funds needed to create environments that would tackle unemployment have not been effective enough, thus there is need for rethink of such efforts.

THEORETICAL REVIEW AND FRAMEWORK

Public Finance Management Theory

This theory assumes that the government will prudently manage her expenditures to the benefit of citizenry. The theory also stresses that government's revenue should be well mobilized to disallow the looting of such into private pockets (Udo & Esara, 2016). These consist of resources prioritization, the budgetary process, efficient management of resources (Ajugwe, 2020).

Wagner and Keynesian Public Expenditure Schools Of Thought

Adolph Wagner, a legendary Germany economist in 1883, developed a model and it was officially articulated as the prime determinant of government overheads in developing and developed economies. The Wagner's law holds the view that government overheads are an endogenous constituent that is fundamentally influenced by means of an increase in national income and not dynamics accompanying growth in national income. The Wagner's law, however, states that proliferation in administrative overheads translates to progression in national income. The proposition is that national income energizes overheads. The law auxiliary clarified that government overheads might be considered as an endogenous variable, not as an exogenous variable.

The Keynesian in 1936 holds the view that government overheads are spirited governmental tool for the correction of progression imbalances in any economy by means of financial intermediation borrowing from the surplus unit (private sector) to the scarce unit and repayment

by means of fund injection through disbursements programs. Therefore, progression economically is a byproduct of administrative outflow in developed and developing economies (Udoh et al., 2018).

Review of Empirical Literature

Saywer et al. (2023) in a recent study investigated indirect tax, public debt and Nigeria economic performance. The aim of the study was to determine the effect of indirect taxes on economic performance using secondary data derived from Central bank of Nigeria annual bulletin. Ex-post facto and longitudinal research design was adopted for study covering the period 1993 to 2021. Indirect tax was proxied as value added tax revenue whilst real GDP, inflation, unemployment and human development index were the dependent variables representing economic performance. Multiple regression analysis was adopted because of multiple variables in the study to determine the relationships between variables of study. Granger's causality test was used to determine the effect of reverse causality.

Autoregressive distributive lag were deployed and various diagnostic test were carried out on the data set. Bound testing for cointegration based on ARDL was done. Lag selection for optimality of the model under ARDL was determined using Akaike information criteria and Schwatz Bayesian criterion. Normality test for stability of regression model was conducted using J-B procedures while serial correlation was tested using LM statistics. Unit root test for stationarity was performed using two different methods namely, the Augmented Dickey Fuller and the Kwiatkowski-Phillips-Schmidt-Shin procedure. Nyblom-Hansen statistic tests for parameter constancy against the alternative hypothesis that the parameters follow a random walk process. Variance inflation factor for multicollinearity was carried out and Visual test for stability was done using CUSUM of squares in order to eliminate doubts about possible outliers. Granger causality test causality was used for the variables in order to determine any form of reverse causality. V

AT has a current coefficient which is insignificant at the 5 percent level (p-value is greater than 0.05), while the lagged coefficient is significant and positive also indicating that VAT tends to promote short run economic performance. However, in the long run vat does not exert significant influence on economic growth in Nigeria. VAT exert significant negative impacts on inflation, implying indirect tax can reduce inflation in Nigeria. Indirect tax exert significant negative impacts on human capital development in the short run and positive in the long run. Increase in VAT increases human development index. However, the study also found indirect taxes cannot be used to improve macroeconomic stability in Nigeria in the long run. Yusuf and Mohd (2023) study focused on Nonlinear effect of public debt on economic growth in Nigeria. The study's main objective was to examine the asymmetric impact of public debt on economic growth in Nigeria from 1980 to 2020 using the Nonlinear Autoregressive Distributed Lag method. Empirical evidence indicated that external debt have a significant positive and symmetric impact on economic growth in the long and short run, while debt service payment supporting the debt overhang hypothesis activated a symmetric effect that stifle growth. Domestic debt retarded growth asymmetrically in the short term and linearly over the long term. Foreign reserve holding, on the other hand, had an asymmetric long-run influence and a symmetric short-run impact on growth motivation. To mitigate the negative effects of unsustainable public debt, the study advocated for fiscal reforms that effectively reduce deficit financing to keep the level of government debt low and be able to respond robustly to an

economic shock, improve domestic revenue generation and infrastructure spending, and strengthen governance practices and institutions.

Ofurum and Fubara (2022) in their study on Public Debt and Economic Development within Nigeria, investigated the impact of public debt on economic development in Nigeria between 1980 and 2019. Data were collected from the Central Bank of Nigeria (CBN) Statistical bulletin, and the Augmented Dickey-Fuller (ADF), Autoregressive Distributed Lag (ARDL), and Granger Causality were used to test the hypotheses and analyse the data. The results indicated that foreign debt servicing does not have a significant impact on Nigerian real GDP. Foreign debt servicing has a negative but insignificant impact on real GDP. In addition, the result indicates that external debt does not significantly impact unemployment. External debt servicing has no significant effect on unemployment. The study recommended that the private sector support the government in developing technology to facilitate natural resource exploitation to generate additional revenue to finance the government budget and reduce borrowings.

Ighodalo et al. (2020) examined the dynamic relationships between foreign debt and economic development in 43 African nations from 2001 to 2018. They utilised the Johansen Cointegration test and the system Generalised Method of Moments (sysGMM). The research explains how the impact of foreign debt might be overstated owing to its misapplication. The findings support a long-run equilibrium link between foreign debt and African economic growth. The result shows that, above a certain capacity, the short run converges to equilibrium in the long run, and foreign debt begins to influence African economic growth negatively.

Omitogun and Longe (2017) investigated the impact of unemployment on economic growth in Nigeria the 21st century using the VAR model. Their research revealed that the impact of unemployment, inflation rate, exchange rate and government expenditure varies over the periods. Unemployment and inflation, among other variables were found to have contributed mostly to the variations in the growth of the economy over the period. This is because the price and sustainability mean of the economy is a factor which needs full attention to avoid a downturn growth.

METHODOLOGY

This study employed the ex-post facto research design. Ex post facto research design is basically concerned with how to perform impact analysis on already existing data. It is relevant for this study since it was used to find out if one or more already existing conditions could have possibly caused subsequent differences in groups of subjects. The study's target population was the entire three arms of government (federal state and local governments) that have been empowered to borrow to finance developmental activities in Nigeria. The population comes from 62 years period (1960-2022) of which data for Nigerian development indicators as well as public debt (as Nigeria as a nation) begins and becomes available for study. Using purposive non-probability sampling technique, the sample for the study was selected. A sample of 23 years' period starting from 2000 to 2022 was chosen for the study. Secondary sources of data were used for the study. The data collected from the secondary source were extracted from CBN annual Statistical Bulletin 2022, debt management office 2022 and National Bureau of Statistics. The variables were that of External debt, domestic debt, real GDP and unemployment rate. Correlation as well as regression analysis were used for data analysis and testing of hypotheses.

Model Specification

In line with the hypotheses earlier stated in at introduction, regression models were formulated as shown in the following implicit equations:

$$\begin{aligned}ED &= PDT \\RGDP &= f(EXDT, DDT) \text{ ----- (1)} \\UNR &= F(EXDT, DDT) \text{ ----- (2)} \\RGDP &= a_0+a_1EXDT +a_2DDT + u\dots(3) \\UNR &= b_0+b_1EXDT+b_2 DDT + u\dots(4)\end{aligned}$$

Where:

For RGDP

a_0 is the intercept

a_1 is the slope of External debt

a_2 is the slope of Domestic debt

u is the stochastic term

for UNR:

b_0 is the intercept

b_1 is the slope of External debt

b_2 is the slope of Domestic debt

u is the stochastic term

$\beta_0, \beta_1, \geq 0$

Using Statistical Package for Social Sciences (SPSS) software, the variables were subjected to complementary statistical test and the results used for analysis and for hypothesis verification.

RESULTS AND ANALYSIS

Multicollinearity Test: This test is done to check for the multicollinearity between the independent variables. This was ascertained here using variance inflation factor (VIF) and Tolerance values. For VIF values when they are lower than 10, they are deemed to be acceptable within the range for colinearity and hence data are deemed to be reliable for analysis. Similarly, where the Tolerance values are below 1, the data is also deemed to be acceptable for the analysis.

Table 1: Normality Test Results of Skewness and Kurtosis values for Logged data

	N	Minimum	Maximum	Sum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
LRGDP	23	10.0727	11.2034	248.6498	10.810859	.3579574	-.740	.481	-.671	.935
LUNR	23	2.4765	4.4965	68.3728	2.972731	.4640951	1.628	.481	4.038	.935
LEXTDT	23	6.0842	9.6713	180.0278	7.827298	1.1299458	-.065	.481	-1.128	.935
LDDT	23	7.0613	9.8649	191.3296	8.318680	.9918888	.074	.481	-1.636	.935
Valid N (listwise)	23									

Table 2: Result of Variance Inflation Factor (VIF) and Tolerance values of variables (Logged data)

Model		Collinearity Statistics		
		Tolerance		VIF
1	LEXTDT		.977	1.023
	LDDT		.977	1.023

a. Dependent Variable: LRGDP

Test for Goodness of Fit: The coefficient of determination (r) measures the goodness of fit which shows the proportion or percentage of the total variations in the dependent variable(s) that are systematically explained by the underlying regressors in the model. The values of the R is expected to lie between 0 and 1 and the reference value is 50 percent as it measures the explanatory power of the model. The result of serial correlation is presented below

Table 3: Correlation matrix

		RGDP	UNR	EXTDT	DDT
RGDP	Pearson Correlation	1	.764**	.452*	.783**
	Sig. (2-tailed)		.000	.030	.000
	N	23	23	23	23
UNR	Pearson Correlation	.764**	1	.649**	.581**
	Sig. (2-tailed)	.000		.001	.004
	N	23	23	23	23
EXTDT	Pearson Correlation	.452*	.649**	1	.554**
	Sig. (2-tailed)	.030	.001		.006
	N	23	23	23	23
DDT	Pearson Correlation	.783**	.581**	.554**	1
	Sig. (2-tailed)	.000	.004	.006	
	N	23	23	23	23

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).

The values of the correlation are between the values of 0 and 1 and hence meets the test for goodness criteria indicating variation amongst the variables.

Descriptive Analysis

Table 4: Descriptive Statistics of all the variables

	N	Sum	Mean	Std. Deviation
RGDP	23	1210406.31	52626.3613	16760.66181
UNR	23	456.30	19.8391	7.05509
EXTDT	23	105329.34	4579.5365	5073.21691
DDT	23	171440.35	7453.9283	6993.75129
Valid N (listwise)	23			
Descriptive Statistics Logged				
	N	Sum	Mean	Std. Deviation
LRGDP	23	248.6498	10.810859	.3579574
LUNR	23	68.3728	2.972731	.4640951
LEXTDT	23	180.0278	7.827298	1.1299458
LDDT	23	191.3296	8.318680	.9918888
Valid N (listwise)	23			

From the descriptive result analysis as shown on the table above for all the variables, it shows that within the period of study unemployment rate averaged 19.839 percentage a year while the variation within months is equal to 7.1% as depicted by the mean and standard deviation values respectively. Similarly, the RGDP averaged 10.8% within the period of study while its variations within months in the same year is 0.4%. This depicting that the Nigerian economy has experienced relatively moderate increase in real GDP over the period studied, however the unemployment rate has continued to increase implying that there is need for job creation that will lead to reduction in unemployment rate. Looking at the Debt profile, External debt has averaged over N7.8 Trillion Naira within the period of study why on a monthly bases the external debt equals to over N1 trillion (as shown in the mean and standard deviation values respectably).

Similarly, Domestic debt has averaged over N8.3 Trillion Naira within the period of study why on a monthly bases the domestic debt equals to over N999 billion (as shown in the mean and standard deviation values respectably).

Testing of Hypotheses

Hypothesis One: There is no significant relationship between external debt and real GDP in Nigeria.

Table 5 Regression result for hypothesis one

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.177 ^a	.031	-.015	.3605664	.031	.683	1	21	.418
a. Predictors: (Constant), LEXTDT									
Model	Coefficients ^a					Collinearity Statistics			
		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Tolerance	VIF	
1	(Constant)	10.371	.538		19.284	.000			
	LEXTDT	.056	.068	.177	.826	.418	1.000	1.000	
a. Dependent Variable: LRGDP									

From table 5 above, the result of the data regressed on RGDP shows a positive and insignificant relationship with External Debt in Nigeria (p-value= 0.418). It means that a 1% increase in external debt will bring about a 0.177% decrease in real GDP all other variables are held constant. Since the p-value of the independent variable is greater than 0.05, we therefore accept the null hypothesis and therefore concluded that there is no significant relationship between external debt and real GDP in Nigeria.

Hypothesis Two: There is no significant relationship between external debt and unemployment rate in Nigeria

Table 6: Regression result for hypothesis two

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.417 ^a	.174	.135	.4316539	.174	4.431	1	21	.048
a. Predictors: (Constant), LEXTDT									
Model	Coefficients ^a				t	Sig.	Collinearity Statistics		
	Unstandardized Coefficients		Standardized Coefficients				Tolerance	VIF	
	B	Std. Error	Beta						
1	(Constant)	1.631	.644		2.533	.019			
	LEXTDT	.171	.081	.417	2.105	.048	1.000	1.000	
a. Dependent Variable: LUNR									

From table 6 above, the result of the data regressed on unemployment rate and external debt shows a positive and significant relationship with external debt in Nigeria (p-value= 0.048). It means that a 1% increase in external debt will bring about a .417% increase in unemployment rate all other variables are held constant. Since the p-value of the independent variable is less than 0.05, we therefore reject the null hypothesis and therefore concluded that “There is a significant relationship between external debt and unemployment rate in Nigeria.

Hypothesis Three: There is no significant relationship between domestic debt and real GDP in Nigeria

Table 7: Regression result for hypothesis three

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.695 ^a	.483	.458	.2634685	.483	19.610	1	21	.000
a. Predictors: (Constant), LDDT									
Model	Coefficients ^a				t	Sig.	Collinearity Statistics		
	Unstandardized Coefficients		Standardized Coefficients				Tolerance	VIF	
	B	Std. Error	Beta						
1	(Constant)	8.725	.474		18.395	.000			
	LDDT	.251	.057	.695	4.428	.000	1.000	1.000	
a. Dependent Variable: LRGDP									

From table 7 above, the result of the data regressed on domestic debt and real GDP shows a positive and significant relationship Domestic debt on real GDP in Nigeria (p-value= 0.000). It means that a 1% increase in Domestic debt will as well bring about a .695% increase in real GDP all other variables are held constant. Since the p-value of the independent variable is less than 0.05, we therefore reject the null hypothesis and therefore conclude that there is significant relationship between Domestic Debt and real GDP in Nigeria.

Hypothesis Four: There is no significant relationship between domestic debt and unemployment rate in Nigeria.

Table 8: Regression result for hypothesis four

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.135 ^a	.018	-.029	.4706794	.018	.389	1	21	.540
a. Predictors: (Constant), LDDT									
Model	Coefficients ^a				t	Sig.	Collinearity Statistics		
	Unstandardized Coefficients		Standardized Coefficients	Beta			Tolerance	VIF	
1	(Constant)	2.448	.847		2.889	.009			
	LDDT	.063	.101	.135	.624	.540	1.000	1.000	
a. Dependent Variable: LUNR									

From table 8 above, the result of the data regressed on domestic debt and unemployment rate shows a positive but insignificant relationship domestic debt on unemployment rate in Nigeria (p-value= 0.540). It means that a 1% increase in domestic debt will as well bring about a .135% decrease in unemployment rate all other variables are held constant. Since the p-value of the independent variable is greater than 0.05, we therefore accept the null hypothesis and therefore conclude that there is no significant relationship between domestic debt and unemployment rate in Nigeria.

Model 1 Testing and Analysis

Table 9: Combined influence of the variables of Public Debt and Real GDP (Proxy for Economic development)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.751 ^a	.565	.521	.2477427	.565	12.964	2	20	.000
a. Predictors: (Constant), LDDT, LEXTDT									
Model	ANOVA ^a			df	Mean Square	F	Sig.		
	Regression	Residual	Total					Sum of Squares	
1				1.591	.796	12.964	.000 ^b		
				1.228	.061				
				2.819					
a. Dependent Variable: LRGDP									
b. Predictors: (Constant), LDDT, LEXTDT									
Model	Coefficients ^a				t	Sig.	Collinearity Statistics		
	Unstandardized Coefficients		Standardized Coefficients	Beta			Tolerance	VIF	
1	(Constant)	7.877	.625		12.603	.000			
	LEXTDT	.092	.047	.289	1.937	.067	.977	1.023	
	LDDT	.267	.054	.739	4.948	.000	.977	1.023	
a. Dependent Variable: LRGDP									

From the table above, on the combined influence of the variables of Public debt and economic development in terms of RGDP, a positive, strong and significant relationship is shown to exist amongst the variables of public debt (Ext debt, and Domestic debt) and RGDP. This is evidenced by the r value of 0.751 (75.1%) and r squared value of 56.5% and adjusted r value of 52.1% respectively. This signifies that 52 % of the total variation of economic development in terms of

RGDP is accounted for by the combined effect of public debt (external and domestic debts) in Nigeria while the remaining 43.5 percentages is accounted for by other factors. The result on table 9 shows that the value of F-statistics is 12.964 with the p value of $0.000 < 0.05$ level of significance. The result indicates that the predictor variables (EXDT, DDT) jointly and significantly influence the dependent variable (Real GDP). This is an indication that the model is statistically significant and appropriate for the study.

In addition, from table of coefficients above, the regression result is as follows:

$RGDP = 7.877 + .092 EXTDT + .267DDT$. From the regression equation on table 9, when EXDT and DDT are zero, the Real GDP will be 7.877. Therefore, a unit increase in EXDT while holding DDT constant will on the average increase the RGDP by 10% in Nigeria. In the same manner, a change in DDT while keeping EXDT constant will lead to an increase in RGDP by 26.7%. in Nigeria.

Model 2

Table 10: Combined influence of the variables of Public debt and unemployment rate (UNR) (Proxy for economic development)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.463 ^a	.214	.136	.4314442	.214	2.728	2	20	.090
a. Predictors: (Constant), LDDT, LEXTDT									
ANOVA^a									
Model	Sum of Squares		df	Mean Square	F	Sig.			
1	Regression	1.016	2	.508	2.728	.090 ^b			
	Residual	3.723	20	.186					
	Total	4.738	22						
a. Dependent Variable: LUNR									
b. Predictors: (Constant), LDDT, LEXTDT									
Coefficients^a									
Model	Unstandardized Coefficients			Standardized Coefficients	t	Sig.	Collinearity Statistics		
	B	Std. Error	Beta				Tolerance	VIF	
1	(Constant)	.744	1.088		.684	.502			
	LEXTDT	.184	.082	.448	2.235	.037	.977	1.023	
	LDDT	.095	.094	.203	1.010	.324	.977	1.023	
a. Dependent Variable: LUNR									

Similarly, from the table above, on the combined influence of the variables of Public debt and economic development in terms of UNR, a positive, weak and significant relationship is shown to exist amongst the variables of Public debt (EXDT, and DDT) and UNR. This is evidenced by the r value of 0.463 (46.3%) and r squared value of 21.4% and adjusted r value of 13.6% respectively. This signifies that 21.4 % of the total variation of economic development in terms of UNR is accounted for by the combined effect of public debt (Ext and DDT) in Nigeria while the remaining 78.6 percentages is accounted for by other factors. The result on table 10 shows that the value of F-statistics is 2.728 with the p value of $0.090 < 0.05$ level of significance. The result indicates that the predictor variables (EXDT, DDT) jointly and significantly influence the

dependent variable (UNR). This is an indication that the model is statistically significant and appropriate for the study.

In addition, from table of coefficients above, the regression result is as follows:

$UNR = 744 + .184EXTDT + .095DDT$. From the regression equation on table 10, when EXTDT and DDT are zero, the UNR will be .744. Therefore, a unit increase in EXTDT while holding DDT constant will on the average increase the UNR by 18% in Nigeria. In the same manner, a change in DDT while keeping EXTDT constant will lead to an increase in UNR by 10% in Nigeria.

DISCUSSION OF FINDINGS

Public Debt and Economic development

From the results obtained, it can be seen that public debt affects economic development in Nigeria both in terms of real GDP and unemployment rate. This is evidence from the result tables (table 9 and 10), on the combined influence of the variables of Public debt and economic development in terms of RGDP. A positive, strong and significant relationship is shown to exist amongst the variables of public debt (Ext debt, and Domestic debt) and RGDP. Between 21.5% and 52% of the total variation of economic development in terms of RGDP and unemployment rate is accounted for by the combined effect of public debt (external and domestic debts) in Nigeria while the remaining 43.5 percentages is accounted for by other factors. It implies that increase in public debt will affect both real GDP and unemployment rate. This in line with the assertions of (Yusuf & Mohd, 2023; Offurum & Fubara 2022; Sani & Nwite, 2021) whose studies indicated that public debt has significant relationship with economic development and growth in Nigeria.

External Debt and Real GDP Relationship

From the results of models and coefficients (table 5) there is an r squared value of 0.031(3%) of EXDT and RGDP shows that 3% of the total variation of economic development in Nigeria in terms of real GDP was due to the effect of external debt in Nigeria within the period of study. On adjusted bases, -.015(-.02%) RGDP was -02% relative to the external debt in Nigeria within the period. Considering the coefficient, result suggests that a 1% increase in external debt will bring about a 0.177% decrease in real GDP all other variables are held constant. The probability value (0.418) is greater than the test significance level of 0.005. The implication of this is that increase in external debt would retard the factors that could increase Nigerian real GDP contribution to the nation. The findings here are in consonance with earlier studies such as (Offurm and Fubara, 2022) whose works indicated an insignificant relationship between external debt and economic development in terms of real GDP in Nigeria.

External Debt and Unemployment Rate Relationship

Looking at the results of models and coefficients (tables 6) it has r squared value of 0.174(17%) of EXDT and UNR shows that 17% of the total variation of economic development in Nigeria in

terms of unemployment rate was due to the effect of External debt in Nigeria within the period of study. On adjusted bases, 0.135 (13.5%) Unemployment rate was 13.5% relative to the external debt of Nigeria within the period. Considering the coefficient, result suggests that a 1% increase in external debt will bring about. 417% increase in unemployment rate all other variables are held constant. The probability value (0.048) is less than the test significance level of 0.005. The implication of this is that external debt unless adequately channeled towards employment creation activities, and economic growth activities economic development could be retarded since there would be increase in unemployment in Nigeria and vice versa. The findings here are in consonance with earlier studies such as (Yusuf & Mohd 2023; Offurum & Fubara 2022; Sani & Nwite, 2021) whose works indicated that public impacts on unemployment in Nigeria.

Domestic Debt and Real GDP Relationship

Looking at the results of models and coefficients (tables 7) it has r squared value of 0.483(48.3%) of DDT and RGDP shows that 48.3% of the total variation of economic development in Nigeria in terms of real GDP was due to the effect of Domestic debt aspect of public debt in Nigeria within the period of study. On adjusted bases, 0.458(45.8%) RGDP was 45.8% relative to the Domestic debt in Nigeria within the period. Considering the coefficient, result suggests that 1% increase in Domestic debt will as well bring about .695% increase in real GDP all other variables are held constant. The probability value (0.000) is less than the test significance level of 0.005. The implication of this is that Domestic debt channel towards infrastructures and economic growth activities is veritable means of tackling economic development issues in Nigeria, more contribution of real GDP to the economy and vice versa. The findings here are in consonance with earlier studies such as (Agrees with Yusuf & Mohd, 2023).

Domestic Debt and Unemployment Rate Relationship

Looking at the results of models and coefficients (tables 8) it has r squared value of 0.018(02%) of DDT and UNR shows that 02% of the total variation of economic development in Nigeria in terms of Unemployment rate was due to the effect of Domestic debt in Nigeria within the period of study. On adjusted bases, -.029 (-03%) UNR was -03% relative to the Domestic debt in Nigeria within the period. Considering the coefficient, result suggests that a 1% increase in domestic debt will as well bring about a .135% decrease in unemployment rate all other variables are held constant. The probability value (0.540) is greater than the test significance level of 0.005. The implication of this is that domestic debt used towards infrastructures creation and economic growth activities; it will lead to reduction in unemployment rate in Nigeria and vice versa. The findings here are in consonance with earlier studies such as (agrees with Offurum & Fubara, 2022)

CONCLUSIONS AND RECOMMENDATIONS

The result obtained shows that Public debt (both domestic and external) affects economic development in Nigeria in terms of real GDP and unemployment rate. Public debt leads to reduction in real GDP contributions and increase in employment rate in Nigeria within the period of study thus affirm the position of our apriority expectation in line with several assertions of

various scholars that high debt profile for a nation is capable of retarding the economic growth and developmental objectives of the nation. Thus it concluded that both real GDP has a positive and Significant relationship with both external debt and domestic, but insignificant with unemployment rate. On the other hand, unemployment has positive and significant relationship with domestic debt but insignificant with external debt. Consequently, the study recommends as follows:

- Reduction in external borrowing is advocated, instead diversification of economy should be embarked on and sustained.
- Where borrowing must take place, it should focus on domestic borrowing. This significantly affects economic development
- Borrowing should be adequately channeled towards creation of employment generation activities in the nation. In other words, borrowing should mainly be channeled towards capital projects, not for recurrent expenditures or activities.
- Efforts should be made toward repayment of public debts especially external debt so that its burden could be lessen towards the nation.

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