Impact of increasing debt profile on economic growth in Nigeria

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Abstract

Over time, Nigeria's national debt profile has been alarmingly rising. With no evidence of its productivity, the budget deficit has been funded annually by both local and foreign loan. Long-term sustainability of Nigeria's national debt is called into doubt by the country's likely incapability to repay its present debts. This study examined the effect of rising debt profile on the Nigerian economy using secondary data from World Bank Development Indicators and Central Bank of Nigeria's statistical bulletin from 2000 to 2022. The research employed the Autoregressive Distributive Lag (ARDL) technique as the method of analysis. From the outcome of the investigation, the estimated model shows that in Nigeria, external debt stock and foreign exchange rate is statistically significant and have an adverse impact on economic growth in Nigeria. It also discovered that there is a positive and significant relationship between other variables such as the domestic debt stock, Gross Capital formation, and labor force participation and economic growth. The study suggests that the Nigerian government uses its borrowing of external debt for worthwhile projects, manages and maintains debt service at a minimum level, encourages the export of domestic goods by depreciating the currency, and impacts economic growth through diversification and job creation to fill the labor force's looming shortage.

Keywords: Domestic debt, external debt, GDP, public debt, Nigeria

Jel Classification Codes: C35, C51, H64, F34

1. Introduction

In both industrialized and developing nations, the budget is how the government informs the public of its goals at the start of each fiscal year. The economic performance of the preceding year is examined, and the government's planned economic initiatives are listed. The government's annual goal is outlined in the budget, which also promotes macroeconomic expansion. According to the World Bank (2020), countries, especially those with limited resources, borrow cash to boost capital development and investments which are frequently hampered by a lack of local savings.

According to the dual-gap concept, debt becomes unavoidable when savings and foreign exchange profits needed to finance domestic projects are typically insufficient, particularly in developing nations. In Sub-Saharan Africa, Nigeria is one of the most nations that has high debt (Ogunjimi, 2019). Gross Domestic Product is growing at a slower rate than its exports, and its poverty rate is rising. Nigeria has been stuck by high-interest loans that they recurrently cannot repay. Again, due to the high rate decline in global export pricing, the situation became worse. This means they must borrow more money in order to survive (Kehinde, Olanike, Oni, and Achukwu, 2015).

Public debt is referred to as the total outstanding debt (bonds and other securities) of a nation's central government, sometimes known as government debt. It is applied when government revenue is not enough to cover anticipated expenses and includes both internal (domestic) and external debts (Panagiotis, 2018). Countries can finance economic initiatives that raise living standards and encourage sustainable growth and development by using public debt to pay down their deficits. Through higher output and total factor productivity, it can boost GDP growth and accelerate economic expansion, particularly in situations where domestic finance is insufficient. Therefore, Public debt is an important phenomenon which cannot be emphasized because it promotes economic growth, higher living standards, and poverty reduction stability (Saungweme and Odhiambo, 2018)). Up to a certain degree, public borrowing can boost investment and growth in a country; beyond that, large levels of foreign debt servicing may impede growth as money is diverted from funding private investment to debt repayment (Kehinde, Olanike, Oni, and Achukwu, 2015).

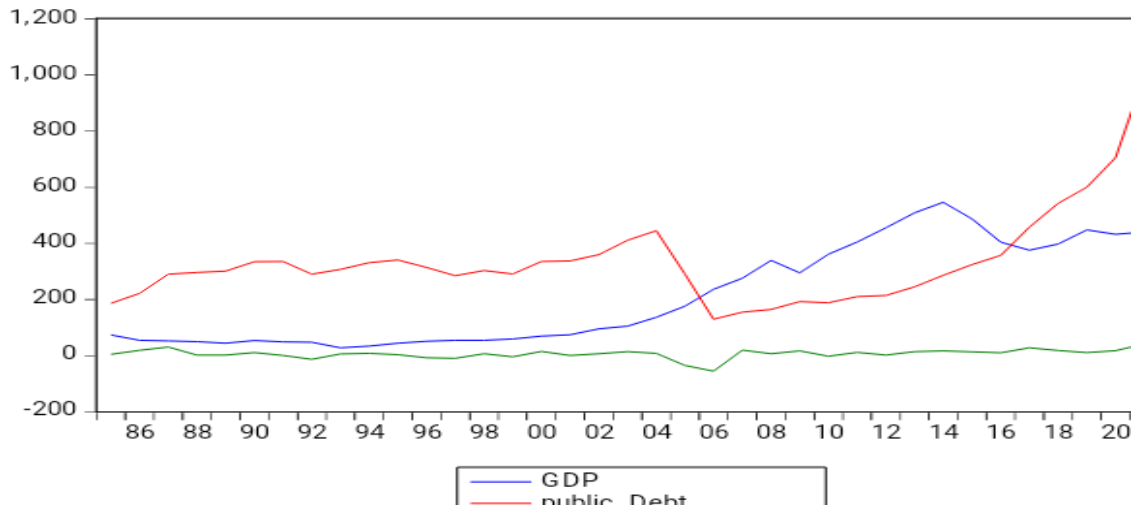
Ever since the 1920s Keynesian revolution, and even before that, the majority of nations have borrowed money to increase the yearly budget deficit. A country must borrow money to cover its shortfall when its expected spending exceeds its planned receipts in a given fiscal year (Irina & Lulian, 2015). The borrowing may originate from external debt or the home economy (domestic debt). The agreement was that the loan needs to be paid back in future, whether the loan comes from international country or domestically. Moreover, when the loan is due, there is an additional expense (interest rate) that must be paid on top of the principal (Adegbie, Otitolaiye, Aguguom,

and Ajayi, 2022). The problem of public loan is shared by all residents, as opposed to private debt, which is endured by the individual borrower. This is because taxpayers will either pay more taxes, which will go toward repaying the debt, or their welfare will suffer when funds meant for improving public utilities are diverted for debt servicing (Adegbie, Otitolaiye, Aguguom, and Ajayi, 2022).

Over time, Nigeria's national debt profile has been alarmingly rising. With no proof of its output, the financial plan deficit has been supported annually by both internal and external debt. For example, as of March 2021, Nigeria's total outstanding debt increased from approximately N10, 948.51 billion in 2015 (Central Bank of Nigeria, 2019) to over N33.11 trillion (Debt Management Office, 2021). As of the third quarter of 2022, there was an accumulated debt of N46.25 trillion. Empirical research indicates that Nigeria's growth is harmfully affected by governmental liability. For instance in a study by Isibor, Babajide, Akinjare, Oladeji, and Osuma (2018), they found that while external debt significantly affects GDP, internal debt has a favorable effect. Didia and Ayokunle (2020) also discovered in a related study that the growth of the Nigerian economy was severely and negatively affected by both external and local debt. These outcomes are unquestionable because public expenditures are conspicuously poorly invested.

For example, over time, a detailed examination of the budgets in Nigeria reveals that a higher proportion is allotted to recurrent spending as opposed to capital spending, which has a higher potential to boost capital formation. This suggests that it's possible that investment projects were not sponsored by the deficits that resulted in borrowing. Furthermore, data that is currently available indicates that Nigeria's ratio of total indebtedness to Gross Domestic Product has been gradually increasing recently. See Diagram 1.

Diagram 1: Nigeria's ratio of total indebtedness to Gross Domestic Product



Source: Researchers Compilation using Debt Management Office (DMO) data, via Eviews 9

The study by Falegan (2021) found that the major causes of increase in public loan are excessive reliance on loan financing from other countries for building a project, rapid increase in public expenditure, the pursuit of unsound economic policies leading to bad investments, the escalation of public sector earnings and pay bills as a result of higher minimum wages and upward salary benefits, reviews, poor management, minimal productive capacities, consumption-oriented expenditure, an increasing trend in inflation which raises project costs, and a lack of integrity and financial discipline in the public sector. Depreciation of currency can also increase the cost of servicing foreign-denominated loan, putting further pressure on the loan burden of the country, raising the Cost of servicing indebtedness, and Insufficient Debt Management. Most times, the country might find it very difficult to generate income because of economic difficulties such as changes in the global oil price. Nigeria's government mostly depends on oil export earnings to maintain its spending plan, as the country is a major oil exporter, Low oil prices result in income shortfalls, which may force the government to borrow money to close budget deficits. Governments may have to borrow money during emergencies, like the COVID-19 pandemic, to pay for emergency responses and lessen their adverse effects on the economy and public health. Such borrowing may add to the total amount of loan owed by the nation.

As the loan continues to rise, we think of what will be the effect on the future generation if not tackled. It is also found worthy to analyze the effect of the nation’s loan on the economy. Therefore, the rate of the increasing debt profile is being examined in this study to know the e4ffect on the Nigerian economy

2. Overview of Nigerian administration and debt profile

Nigeria's debt financing problem worsened between the post-colonial era of the 1980s and the date of the country's substantial growth in both its domestic and foreign debt portfolio. Experts attributed this to the country's severe decline in global oil prices as well as the sizeable amount of unpaid principal interest. Her entire external debt had increased to an astounding $14.8 billion by the early 1980s, of which the Paris Club of Creditors possessed roughly $6.3 billion.

Economists estimate that in 1985, when Nigeria's total foreign debt to all of its creditors was approximately $19 billion, the country's debt payment issues started. According to Debt Management Office, the debt by the federal government dropped from N3.55 trillion in 1999 to N2.42 trillion in 2007 under President Olusegun Obasanjo's administration. The federal government's local and international debt levels decreased throughout Obasanjo's eight-year mandate, amounting to a 31.8 percent decrease. An examination of the data revealed that at the end of 2007, the amount of external debt had reduced from $28.04 billion in 1999 to $2.11 billion. But in the same time frame, the internal debt component grew from N798 billion to N2.17 trillion.

In August 2000, the International Monetary Fund (IMF) signed an agreement that led to the massive reduction in foreign debt. a $1 billion credit from the IMF, $18 billion in foreign debt relief from the Paris Club, $12 billion in additional buyback with other debtors, and a $30 billion package paid off in November 2005. In the first quarter of 2007, Nigeria also received payment for unpaid debts to the London Clubs of Creditors (Asogwa and Ezenwa, 2003)

Between 2007 and 2011, internal debt increased to N5.62 trillion from N2.17 trillion by the national authorities of the Umar Musa Yar' Adua and Goodluck Jonathan administrations. During the same time frame, the debt's foreign component grew from $2.11 billion to $3.5 billion. The nation's currency rate also changed from N116.8 to N156.7 per $1. In just four years, the total debt profile jumped to 155%, from N2.42 trillion to N6.17 trillion. In 2011, at the start of former President Goodluck Jonathan's administration, the national government owed N6.17 trillion. An examination of the debt amount revealed that, at an exchange rate of N156.7/$1, local debt was N5.62 trillion, while international debt was $3.5 billion (or around N548.65 billion). At the end of 2015,The external debt component reached $7.3 billion, while the total amount of internal debt and public loan amassed reached N8.4 trillion and N9.8 trillion, respectively. The nation's exchange rate was N197 to the dollar.

According to research by the Debt Management Office of Nigeria, the domestic debt rose under the Buhari administration, rising from N8.4 trillion in June 2015 to N26.91 trillion in the third quarter of 2022. In 2015, the nation’s debt rose to $39.7 billion from $7.3 billion through external borrowing. This indicates that the president added $32.4 billion to the nation's debt load through foreign loans. The value of the nation's rate of exchange fluctuated from N197 to $1 in 2015 to N736 at the end of December 2022, N 1100 to $1 in 2023 and N1700 to 1$ I 2024(Debt Management Office, 2021). Consolidated debt analysis revealed that under President Buhari seven years of administration, domestic debt climbed by over 96% while external debt surged by over 298 percent. Using the N736 exchange rate, the total debt amassed by the Buhari-led government as of the third quarter of 2022 was N44.06 trillion. From the time he was elected president in 2015, this amounted to an increase of more than 179% (Ojekunle, 2021). Buhari is currently the nation's largest borrower, having added more than 179% to the national debt. With a 155% increase in borrowing, the Yar' Adua/Jonathan administration comes in second to the Buhari administration. We now have N 87.38 trillion in debt as a result of President Ahmed Bola Tinubu's request for a loan of $8.7 billion and €100 million in 2023(Onyeniru, 2023)

The concerning aspect is that there doesn't seem to be much evidence to support this level of debt since these loans are used for consumption such as amazing salaries and allowances for elected officials, successive governments have been unable to defend their actions. With debt currently

consuming about half of the budget for 2024 that has been planned, Nigeria is on the verge of a catastrophic debt trap that requires immediate attention.

3. Theoretical framework

The Keynesian theory of public debt, first proposed by John Maynard Keynes in 1935, is the theory used for this investigation. According to Keynes, debt increases the value of a nation's economy rather than impeding its growth and development. He went on to say that this value addition is possible as long as the borrowed funds are used for capital projects that will increase financial development and generate profits. According to the argument, emerging nations should only borrow money to support their economic progress. This implies that the money has to go toward major initiatives. If these monies aren't used for capital growth, the nation will most likely be at a disadvantage. According to Keynes' theory of public debt, debt is a crucial component to take into account when calculating the overall rate of economic growth through capital accumulation. In support of this claim, Habib and Zurawicki (2002) contend that capital formation that would spur growth in the economy which can also be created through the use of foreign aid, trading wth other countries, foreign direct investment, external remittances, and domestic revenue. This is not to say that massive borrowing equates to growth in the economy. But how the loans are used is just as important as the political commitment to spend the money wisely.

4. Review of empirical literature

Numerous studies focusing on the effect of public indebtedness on the economy have been conducted due to its sensitivity as a technique of compensating for income shortfalls and the ensuing burden it causes. In Nigeria, majority of the literature have identified a major positive correlation between public loan and Gross Domestic Product. However, some other empirical literature shows a negative impact of public debt on GDP. For instance, Ehikioya, and Omankhanlen (2021), using the Ordinary Least Square technique, examined the effect of public debt on economic growth in Nigeria. In their research, the connection between public debt and economic growth has a long term equilibrium in Nigeria. The analysis shows that public loan harms economic performance, but only when looking at the lag variable. Didia and Ayokunle (2020) in their research, Public debt was disaggregated into external and domestic loan and they examined the effect of public debt on the growth of Nigerian economy. The research found that in the long run, local debt has a major positive link with economic growth while external debt has a adverse correlation with economic growth. The study was able to conclude that in Nigeria, domestic debt is more beneficial to foreign debt as interest paid on internal loans remains in the country and could be used in further economic production.

Emmanuel (2012) evaluated how Nigeria's public loan affected the economic expansion of the country. The outcome demonstrated that, while lent funds and the measurement of financial plan deficit in the short run have a positive effect on the growth of the economy, In the long run, the research also found that loan have a negative impact on the growth of the economy. On examining the impact of public indebtedness on the growth of Nigerian economy, Alagba, Ochuko, and Idowu (2019) using the data from 1981 to 2018 demonstrated that while international liability have a lesser overall impact on Nigeria's economic growth, the federal government's internal liability have a positive and statistically impact growth of the country. The enormous expense of debt servicing hinders economic expansion. Kur, Abugwu, Abbah, and Anyanwu (2021) examined public debt and its possible impact on economic growth by examining how it affects investment using the auto-regressive distributed lag method. The long-term projected outcomes show that whereas internal loan and external debt service have a negative relationship with growth, foreign loan and investment have a high positive correlation with growth in the economy. Using a co-integration approach. Edeminam (2021) used yearly time series data from 1990 to 2019 to investigate the effect of Nigeria's state indebtedness on economic development. The Augmented Dickey-Fuller unit root test was used in the empirical analysis and it was found that public liability has an adverse and significant effect on the growth of the economy in the long run. In the short term, public debt has a adverse but insignificant effect on economic growth. Furthermore, both in the short and long terms, the effect of the debt servicing to GDP ratio was substantial and detrimental.

However, the effect of internal loan on the Nigerian economy was examined. Using data covering 1987–2014, Igbodika, Chukwunalu, and Werigbelega (2016) used the Ordinary Least Square to investigate the empirical relationship between domestic loan and how the Nigerian economy performs. According to the research, interest rates and Nigeria's GDP have a substantial inverse relationship. In Nigeria, there is a strong positive link between GDP and internal debt. Using Time series data and Ordinary Least Square Technique, Okwu, Obianwu, Obiakor and Oluwalaiye (2016) investigated the connection between internal loan and economic growth in Nigeria. They discovered that internal loan harmed economic growth.

Some empirical literature also studied the effect of external liability on the growth of the economy. For Example, Abiodun, Uwaleke and Umar (2022) using quantitative method explored the link between external loan services and economic growth in Nigeria. Using Auto-Regressive Distributed Lags model, the research established that the relationship between external debts, external debt stock is adverse and non-significant. On the other hand, the connection between external loan service to export and growth of the economy is non-significant but positive. Panizza and Presbitero (2014) investigated the link between public debt and Nigeria's economic growth as well as the impact of external debt on the country's economic growth. The study's findings indicate

that domestic loan on the long and short term, has an impact on the growth of Nigerian economy. Foreign debt also have effect on the growth during the short and long term. The impact of debt burden on economic development was assessed by Peter, Olohungbebe, and Okoye (2021) over the years 1980–2019. The ARDL model's outcomes disclosed a positive and major long- and short-term link between foreign debt and economic growth. The analysis conclusion also showed that Nigeria's foreign debt load significantly and negatively affects per capita income. In the study of how domestic indebtedness affects GDP of a country. Isibor, Babajide, Akinjare, Oladeji, and Osuma (2018) revealed that although internal indebtedness positively affected Gross Domestic Product, external indebtedness had an adverse effect on the economy. In a similar study, the effect of both local and foreign indebtedness was positive and substantial on the growth of the Nigerian economy which was found by Didia and Ayokunle (2020).

4.1 Contribution to knowledge

This study contributes to existing knowledge by the use of recent data that relates to the period of enormous increase in public indebtedness in Nigeria.

5. Method

This study employed the Autoregressive Distributed Lag (ARDL) structure for co-integration analysis. The ARDL bounds test was adopted in this study because of the small sample size available for the research and the ARDL bounds test's ability to check for co-integration in a small sample. The source of data was Central Bank Statistical Bulletin and World Development data.

6. Data presentation

6.1 Empirical model specification

The model used in this study is modified form of the model specified in Edeminam, (2021). The model is adapted for this study as it embodies several variables similar to the variables of interest in this study and includes some fundamental theoretical determinants of economic growth. The functional form of Edeminam 's model is stated as follows:

GDP = f (DST, EXR, INF, DS/GDP) Where:

GDP – Gross Domestic Product

DST –Debt stock

EXR– Exchange rate

INFL – Inflation (GDP Deflator, Annual)

DS/GDP –Debt to GDP ratio in current terms

However, this study modifies the model thus:

RGDP = f(DDS,EDS, PDS, EXCH, GCF, LFP)

Where;

RGDP –Real Gross Domestic product

DDS – Domestic Debt stock

EDS – External Debt stock

PDS – Public Debt service

EXCH – Exchange rate

GCF – Gross Capital formation

LFP– Labour Force Participation rate

Given the functional form for this study, the following general econometric/stochastic model is derived:

$$RGDP = \beta_0 + \beta_1 LNDDS + \beta_2 LNGEDS + \beta_3 LNTDS + \beta_4 EXCH + \beta_5 GCF + \beta_6 LFp + \varepsilon \quad (i)$$

Where;

RGDP– Real Gross Domestic Product

LNDDS – Natural log of domestic indebtedness stock

LNEDS – Natural log of external indebtedness stock

LNPDS – Natural log of Public indebtedness service

EXCHR– Exchange rate

GCF—Gross capital formation

LFP—Labour force participation rate

ε - Random disturbance/error term

β_0 – Intercept/coinstant

6.2. Test of research hypothesis

Here, the 5percent level of significance was used to test the hypothesis. The computed t-statistic of the research policy variables will be compared with the critical t-statistic derived from the

critical values of the t-table using the chosen 5 percent level of significance. The Hypotheses tested are:

H_0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$ (No Significance in relationship)

H_1: $\beta_1 \neq \beta_2 \neq \beta_3 = \beta_4 \neq 0$ (Significance in relationship)

Decision Rule: Reject H_0 if t-calculated > t-critical.

Where t-critical is given as:,(n-k). $\alpha = 5\%$ (0.05)

Descriptive Statistics Analysis

Table 1: Summary of Descriptive Statistics

	RGDP	DDS	EDS	PDS	EXCH	GCF	LFP
Mean	4.703426	3.655934	3.406652	2.830106	2.287796	3.846522	58.20391
Median	4.804231	3.749956	3.490995	2.721961	2.187239	4.390000	59.82000
Maximum	5.306135	4.346556	4.271894	3.752554	3.487350	40.74000	60.07000
Minimum	3.848974	2.953399	2.642357	2.117430	1.934397	-22.79000	53.91000
Std. Dev.	0.437090	0.457408	0.502788	0.481501	0.320977	13.66783	2.264506
Skewness	-0.515521	-0.094918	0.014117	0.342000	2.379876	0.312836	-0.759226
Kurtosis	2.127926	1.565315	1.927126	2.007879	9.511298	4.170695	1.905566
Sum	108.1788	84.08647	78.35301	65.09243	52.61932	88.47000	1338.690

Source: Researcher's computation (2024) using Eviews 10

Table 1 shows the mean value for all the variables included in the model. The means values are 108.1788, 84.08647, 78.35301, 65.09243, 52.61932, 88.47000, and 1338.690 for RGDP, DDS, EDS, PDS, EXCHR, GCF, and LFP respectively. Real gross domestic product (RGDP), Domestic debt stock (DDS), Exchange rate (EXCHR), and Labour force participation rate are positively skewed while External debt stock (EDS), Public debt service (PDS), and Gross capital formation (GCF) are negatively skewed. Exchange rate (EXCHR) and Gross capital formation have positive kurtosis and have peaked curves, while Real Gross Domestic Product (RGDP), Domestic debt stock (DDS), External debt stock (EDS), and labor force participation rate have negative kurtosis

and have flat curves. The table also shows the sum for all variables employed in the study and they are 108.1788, 84.08647, 78.35301, 65.09243, 52.61932, and 88.47000 for RGDP, DDS, EDS, PDS, EXCH GCF, and LFp respectively.

6.3 Result of Unit Root Test

To avoid running a spurious regression, a stationarity test was conducted using the Augmented Dickey-Fuller (ADF) test.

Table 2: Summary of Unit Root Test

	Level		1st Difference		
Variable	Critical Value @ 5%	ADF Statistic (Probability)	Critical Value @ 5%	ADF Statistic (Probability)	Order of Integration
RGDP	-3.632896	-1.760923 (0.6887)	-3.690814	-0.866931 (0.0381)	I(1)
DDS	-3.644963	-2.040297 (0.5470)	-3.644963	-3.099164 (0.0118)	I(1)
EDS	-3.632896	-0.940535 (0.9324)	-3.644963	-3.097756 (0.0022)	I(1)
PDS	-3.632896	-1.895484 (0.0417)	-3.644963	-5.429614 (0.0014)	I(0)
EXCH	-3.690814	2.455060 (1.0000)	-3.644963	-1.133733 (0.0083)	I(1)
GCF	-3.632896	-5.335884 (0.0015)	-3.673616	-4.646081 (0.0080)	I(0)
LFp	-3.673616	-2.284330 (0.4216)	-3.644963	-2.114394 (0.0089)	I(1)

Source: Researcher's computation (2024) using Eviews 10

Table 2 shows that, for all variables in the model, except Public Debt Servicing (PDS) and Gross Capital Formation (GCF), the null hypothesis of the Augmented Dickey-Fuller test that the variables have a unit root is rejected at the 5% level of significance. This is because the absolute value of each variable's ADF test statistic is greater than the critical value of the ADF test at the 5% level of significance. Given that the ADF test statistics for PDS and GCF, when considered at level, are greater than the ADF test's absolute critical value at the 5% level of significance, the variables are considered stationary.

6.4. Result of the Co-integration Test

Given the small sample size available for this study and the results of the unit root test (which shows a combination of I(0) and I(1) variables, this study employed the ARDL bounds test for co-integration to examine the relationship that exists among the variables in the long run. The results of the ARDL bounds test for co-integration are shown in Table 3.

Table 3: Summary of the ARDL Bounds Test

K F-statistic	6 33.85884	
	Critical Value Bounds	
Significance Level	I(0)	I(1)
10%	1.99	2.94
5%	2.27	3.28
2.5%	2.55	3.61
1%	2.88	3.99

Source: Researcher's computation (2024) using Eviews 10

If the F-statistic exceeds the upper bound (I(1)) critical value, the null hypothesis of the ARDL bounds test—that there is no co-integration—is rejected. Table 3 illustrates that the F-statistic of 33.85884 is higher than the upper bound critical value of 3.28 at the 5% significance level. In the end, this finding indicates that there is a long run relationship the dependent variable and the independent variables. This makes it possible to estimate simply a short-run dynamic model.

6.5 Short-run Dynamic Model

Table 4: Result of the Short Run Dynamic Model

Dependent Variable: RGDP				
Method: Least Squares				
Date: 12/10/23 Time: 13:12				
Sample: 2000 2022				
Included observations: 23				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.752780	0.547904	3.199065	0.0056
DDS	0.570447	0.111312	5.124743	0.0001
EDS	-0.291555	0.040315	-7.231895	0.0000
PDS	0.548586	0.117540	4.667233	0.0003
EXCH	-0.028158	0.074176	-0.379613	0.7092
GCF	0.000448	0.000809	0.554067	0.5872
LFP	0.006331	0.007305	0.866697	0.3989
R-squared	0.991377	Mean dependent var		4.703426
Adjusted R-squared	0.988143	S.D. dependent var		0.437090
S.E. of regression	0.047595	Akaike info criterion		-3.006402
Sum squared resid	0.036244	Schwarz criterion		-2.660816
Log-likelihood	41.57362	Hannan-Quinn criteria.		-2.919488
F-statistic	306.5733	Durbin-Watson stat		2.062665
Prob(F-statistic) 0.000000				

Source: Researcher's computation (2024) using Eviews 10

In particular, Table 4 illustrates how the explanatory factors behave in the short term concerning the dependent variable. According to the model, there would be an average short-term boost in economic growth of 1.75% for every 1% increase in the stock of domestic debt. According to the projected regression model, a 1% rise in the stock of external debt would, on average, result in a 29% short-term decline in economic growth. According to the model, in the short term, there would be a 55% increase in economic growth for every 1% rise in public loan payments. According to the model, in the short run also, there would be a 3% loss in economic growth on average for every 1% increase in exchange rates in the short term. Economic growth would typically increase by 45% for every 1% rise in gross capital formation. According to the model, in the short term, a 1% rise in the labor force participation rate would boost the economy by 63%. The computed probability value of the F-statistic in the estimated Short Run Model is 0.000000 as shown in Table 4. Given that the probability of the F-statistic is less than 0.05, the null hypothesis that the model is insignificant is rejected. Using Durbin-Watson (DW) statistics which the study obtains from the regression result, it is observed that the DW statistic is 2.062665 or approximately 2. This implies that there is no autocorrelation since d* is approximately equal to two. Therefore, we conclude that the variables are not auto correlated, and it can be relied upon for predictions.

Table 5: Summary of the t-Test

Variable	t-statistic	Critical value	Decision	Conclusion
DDS	5.124743	2.120	Reject H_0	Statistically significant
EDS	-7.231895	2.120	Reject H_0	Statistically significant
PDS	4.667233	2.120	Reject H_0	Statistically significant
EXCHR	-0.379613	2.120	Do not reject H_0	Statistically insignificant
GCF	0.554067	2.120	Do not reject H_0	Statistically insignificant
LFP	0.866697	2.120	Do not reject H_0	Statistically insignificant

Source: Researcher's Compilation (2023)

From the table above, the explanatory variables- domestic debt stock, external debt stock, and public debt service significantly affect economic growth in the short run, while exchange rate, Gross capital formation, and labor force participation rate do not.

6.6 Test for Autocorrelation

Table 6: Summary of Heteroscedasticity Test for the Short Run Model

F-statistic	3.782885	Prob. F(4,21)	0.0154
Obs*R-squared	13.49029	Prob. Chi-square(4)	0.0359
Scaled explained SS	3.285154	Prob. Chi-square(4)	0.7723

Source: Researcher's compilation (2024) using Eviews 10

The test's null hypothesis of no heteroscedasticity is rejected when the probability value of the F-statistic is less than the chosen level of significance (0.05). The result of the test shown in Table 6

reveals that the residuals in the model are heteroscedastic (does not have a constant variance) as the probability value of the F statistic (0.0154) is less than the level of significance (0.0500).

In this study, given that the t-calculated for Domestic Debt Stock (DDS) is greater than the t-critical, this study found that significantly, domestic loan stock affects growth of the Nigerian economy in the short term.

7. Discussion of findings

From this study, the relationship between the growths of Nigerian economy and the explanatory variables were established to be positive in the long run. From the estimated short-run model, it was also established that both external debt stock and currency exchange rate had an inverse and statistically substantial impact on economic growth. The inverse and statistically significant connection external loan stock exhibits on economic growth is tied to the fact that high external debt increases the danger of nonpayment and being in the pocket of another nation, ruining credit ratings, leaving slight capitals to invest, and exposing the borrower to exchange rate risk. The inverse and statistically insignificant relationship between exchange rate and economic growth only means that a drop in the value of the naira, relative to foreign currency, makes it possible to purchase more domestic products by foreigners and boost economic performance. Whereas, domestic debt stock, gross capital formation, and Labour force participation rate have positive and statistically significant relationships with economic growth. One strange but interesting finding in this study was the relationship that exists between public debt and growth of the Nigerian economy is positive and statistically significant. However, it is a two-way thing, when revenue rises and falls. When revenue rises above public debt, it increases the growth of the economy and when it falls below public debt, it becomes negative. This is because the revenue of a nation determines the ability of the nation to service their loan and possibly negotiate for more credit to invest.

8. Conclusion and recommendations

Nigeria's debt is fast rising and could approach unsustainable levels given the low revenue and export profiles. Based on these outcomes, the research recommends that

The government and the central bank should maintain domestic debt stock at a moderate threshold of 35% because beyond this point, the marginal effect of domestic debt on economic growth declines. In improvement in the management of external debt borrowings towards sustainable growth, the government, through the debt management office and other concerned institutions of the government, should endeavor to manage Nigeria's debt, for productive purposes, and maintain the debt service at a minimal level. The government through its monetary policy, should maintain a depreciated real exchange rate, to make domestic products cheap for export and boost the

economy. The government should emphasis on planned savings, investment, and accumulation of capital, to boost the economy and make the sign of capital formation significant in Nigeria's economy. Also, the labor market should be appropriately regulated, so that the human resources of the country could impact significantly the growth of the economy, this could be done through diversification of the economy and the creation of employment opportunities to absorb the teeming population of the labor force.

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