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The Impact of Institutional Quality on External Debt Management in Nigeria

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ABSTRACT: This study investigates the impact of institutional quality on external debt management in Nigeria, focusing on the period from 1980 to 2022. It employed data from the World Development Indicator and the CBN Statistical Bulletin, the research employed descriptive statistics, trend analysis, and advanced econometric techniques, including the Augmented Dickey-Fuller (ADF) unit root test and the Auto Regressive Distributed Lag (ARDL) model, to explore the relationships among key variables. The dependent variable, Debt to Gross Domestic Product (GDP) ratio (DGDP), is analyzed against several independent variables: government transparency index (GTI), government effectiveness index (GEI), corruption perception index (CPI), regulatory quality index (RQI), inflation rate (INF), and the logarithm of government expenditure (LINGEXP). The findings reveal that higher government transparency and reduced corruption are associated with lower debt-to-GDP ratios, while government effectiveness and regulatory quality are positively correlated with higher debt levels. Inflation and government expenditure also significantly impact debt dynamics, underscoring the need for effective inflation control and prudent fiscal management. The ARDL bounds test confirms a long-term relationship between institutional quality and external debt management, highlighting the importance of stable and transparent institutions for sustainable debt practices. The study concludes that enhancing institutional quality through improved transparency, accountability, and regulatory frameworks, along with effective inflation control and fiscal management, is crucial for Nigeria's economic stability and sustainable debt management.

KEYWORDS: Debt to Gross Domestic Product Ratio, Inflation rate. Interest rate, Co-integration Test, Auto-regressive Distributed Lag, Government transparency index (GTI), Government effectiveness index (GEI)

INTRODUCTION

The rinsing debt profile of Nigeria and the lack of significant effect of this on the economy due to mismanagement of debt funds as a result of poor institutions has continued to pose serious challenges to the country. In recent times a lot of efforts have been made to improve on the quality of institutions by establishing many antigraft agencies as well as antic corruption polices that can improve the quality of institutions in the country. Despite these efforts, debt in Nigeria has continued to soar with worsen institutional quality.

The persistent challenge of the Nigerian economy to generate domestic resources to address the consistent budget deficits has led to a continual reliance on public debt, particularly foreign debt, marked by unfavorable lending conditions and foreign exchange rate instability. Consequently, this reliance has had adverse effects on the growth of the Nigerian economy, as noted by Akinwunmi and Adekoya (2018). Furthermore, it has been observed that this issue hampers the creation of domestic capital, exacerbating the inadequate provision of essential services for the citizens in the country. The Ministry of Finance in Nigeria asserts that the insufficient and deteriorating state of infrastructure is a primary factor contributing to the country's unsatisfactory development status (Udoka & Anyinyang, 2010). The continual rise in Nigeria's external and domestic debt levels, without a corresponding growth in capacity utilization, has necessitated regular debt scheduling and debt cancellation for Nigeria and many other developing economies globally.

As highlighted by Nwankwo (2010), various challenges emanating from domestic debt, including the diversion of limited capital from the productive private sector to the unproductive public sector, additional tax burdens, and economic external factors such as interest rates and exchange rates, contributed to Nigeria's first recession in 2004. Despite the debt relief granted in 2005 following the cancellation of Nigeria's membership in the Paris and London clubs in 2006, the country continued to resort to deficit financing, notably in 2009 and 2010, issuing debt instruments totaling approximately N524 billion and N867 billion, respectively.

This decision raised concerns as it resulted in a significant increase in the interest payments of $42 billion owed to the Paris Club (Nwankwo, 2010).

Over time, numerous studies have explored the determinants and effects of government debt globally, with a focus on developing countries. Some studies, such as those by Saifuddin (2016), Idenyi et al. (2016), and Muhammad et al. (2017), concentrated on developing countries but lacked substantial empirical evidence on Nigeria and other developing economies. Other studies, such as those by Fatukasi et al. (2020), Beyene and Kotosz (2019), and Abdullahi et al. (2015), examined the effects of external debt on economic growth without considering the role of institutional quality. Identifying this gap, this study empirically investigates the effect of institutional quality on external debt (foreign) in Nigeria.

LITERATURE REVIEW

Ashogbon et al., (2023) assessed the nexus between public debt, institutional quality oon economic growth in Nigeria. The paper employed the use of secondary data spanning 1981 to 2021 sourced from World Development Indicators, World Governance Indicators, Debt Management Office and Central Bank of Nigeria statistical bulletin. While, using the autoregressive distributed lag with real gross domestic product as the dependent variable while public debt, gross capital formation, labour force, exchange rate and institutional quality were the independent variables. The results showed evidence of long run equilibrium relationship among the variables. Also, findings revealed that in the long run domestic public debt established a positive significant influence on economic growth whereas external public debt had a negative significant impact on economic growth. Furthermore, institutional quality had significant negative effect on economic growth in the long run with no such evidence shown in the short run. Therefore, the study recommended that government should consider alternative sources of funding to external debt while institutional quality should be strengthened.

Ekpe and Ogbuabor (2023) examined the impact of foreign debt and institutional quality on economic performance in Nigeria. Data used for the analysis were quarterly data that ranged from 1996 first quarter to 2019 fourth quarter. Foreign debt service was used as a measure of foreign debt while corruption control and government effectiveness were used as measures of institutional quality. Economic performance which is the dependent variable was measured using Gross Domestic Product. The study also examined how institutional quality influences the relationship between foreign debt and economic performance in Nigeria. Autoregressive distributed lag model was used to specify and estimate the relationship between the variables. The result of the analysis indicates that foreign debt has an insignificant negative effect on economic performance in the short run and also negative insignificant effect in the long run too, corruption control has a significant positive effect on economic performance only in the short run, The study recommends that mechanism should be put in place to ensure that foreign debts are properly utilized on the projects they were meant for.

Canh, Schinckus and Chong (2021) examined institutional quality and risk in the banking system in Nigeria. The result of the study revealed that an improvement in institutional quality is an important factor to reduce the banking system risk. Notably, a better institutional quality helps to reduce the banking system risk in the highly concentrated banking system. The study concludes that, notably, a better institutional quality enhances the negative effect of foreign direct investment (FDI) inflow on both banking system risk and credit risk.

Alabed, Karim and Faizah (2021) examined the relationship between institutional quality and economic growth covering the period of 1996-2017. The study uses an autoregressive distributed lag (ARDL) model. The empirical findings revealed that there is a co-integration (long-run co-movement) between economic growth and its determinants. Also revealing that there is a positive and significant relationship between institutional quality and economic growth in the long-run and short run. The study suggested that the Jordanian government should emphasize more on good institutional quality by improving all dimensions of institutional quality in sustaining their economic growth in the future

Ring, et al. (2021) examined the nexus between external debt and economic growth where institutional quality it was used as a moderator. The study used GMM panel data analysis, covering twenty-three samples of countries from 2011 to 2014. The samples for the study were divided into two groups consisting of low and high governance groups of countries. Findings from the study revealed the importance of institutional quality as a moderator in the relationship between external debt and economic growth for both samples of study. The results confirmed that, despite the importance of good governance practices, as indicated by the significant effect of high scores in governance indicators such as voice and accountability and regulatory quality prescribing the right policy is crucial to avoid the negative impact of the wrong policy prescription on economic growth. The study suggested that good debt management and feasible policy prescriptions are the keys to controlling external debt.

Mohd Daud (2020) examined the role of institutional quality in the external debt–economic growth relationship. By taking a dynamic threshold specification to a panel data consisting of 53 countries, the study found that external debt has an adverse effect on a country's growth, while institutional quality improves it. Also revealing that, the effect of external debt on economic growth

depends on the level of institutional quality. In addition, at a high level of external debt, the effect of institutional quality on growth is very small, suggesting that the adverse effect of external debt on a country's economic growth holds true.

Olanrewaju, Tella and Adesoye (2019) investigate the causal interactions among the institutional, financial and inclusive growth variables by employing Toda-Yamamoto, Granger non-causality test within the augmented VAR framework. The study used annual time series, data spanning from 1998 to 2017, were used. The Toda-Yamamoto analysis showed that all the variables, with the exception of financial inclusion index, Granger-caused inclusive growth, but without any evidence of feedback. However, a bidirectional causal relationship was found between inclusive finance and the interaction of institutional quality and financial inclusion. Thus, revealing that while the effects of institutional quality could vary widely in an economy, institutional quality appears to be the dominant driving force behind inclusive growth. It is, therefore, recommended that institutional improvement, beyond the present liberal democratic threshold, is much needed to effectively harness the human capital resource-base.

METHODOLOGY

Research Design

In this study, ex-post facto research design will be employed. Ex-post facto research design is a category of research design in which the investigation starts after the fact has occurred without any form of interference from the researcher(s).

Theoretical framework

The Ricardo Theory of Public Debt

David Ricardo introduced the theory of public debt in 1819, asserting that both planned and unexpected government expenditures primarily involve payments made to maintain economic balance, regardless of the efficiency of most workers in the economy (Ajayi, 2020). In a letter addressed to McCulloch in 1986, Ricardo emphasized that public expenditure was an unproductive economic activity carried out by the state. Focused on the identified fiscal gap, Ricardo's theory centers on the escalating burden arising from society, a result of unproductive public expenditures (Precious, 2015). According to David Ricardo's theory of public debt, financing public expenditure can be productively achieved by obtaining funds from sectors and communities with excess economic resources to reduce inequality.

Ricardo argued that prioritizing a particular sector over others for settling public expenditure does not positively impact economic growth; instead, it impoverishes the state despite the accumulation of public debts and taxes raised (Ricardo, 1819). Additionally, Ricardo (1819) contended that paying interest on debt transfers a significant amount of wealth from the society to a different economy, thereby impoverishing the state's economy. This underscores the importance of nations acquiring productive debts to enhance economic growth and development (Okoye, Modebe, and Evbuomwan, 2013).

Model Specification

The model specification involves identifying the independent (x) and dependent (y) variables and the economic relationship between the variables.

The model specification can be outlined as follows:

Thus, the model is:

Y= f (x). .. . . … . . . . ……………………………….. . . . . . .(1)

DGDP= f(Government transparency index, Government effectiveness index, Corruption perception index and Regulatory quality)

Mathematically, this can be re-presented as

DGDP = f(GTI, GEI, CPI, RQI)…………………………………………………………….. (2)

$DGDP = \beta_0 + \beta_1 GTI + \beta_2 GEI + \beta_3 CPI + \beta_3 RQI + \mu t)$ ………………………….……. (3)

Where: DGDP = Debt to Gross Domestic Product (GDP) ratio,GTI = Government Transparency Index, GEI = Government Effectiveness Index, CPI = Corruption Perception Index, RQI= Regulatory Quality Index, Ut = Error terms, β_0 = intercept of DGDPt model ,t = number of years.

Dependent Variables

Looking critically at the study, an attempt is made to empirically investigate effect of institutional quality on external debt management in Nigeria. Thus, the dependent variable of the study is government external debt (management), measured with the following indices or composite scores that capture aspects such as; Government transparency, Corruption perception Index, Government effectiveness and Regulatory quality

Government Transparency Index: Transparency in government operations, decision-making processes, and access to information is essential for building trust and promoting good governance. the data is available on the world bank database

Government Effectiveness Index: This variable gauge the overall competence of the government in implementing policies and delivering public services. It includes factors such as the quality of public administration, bureaucratic efficiency, and the

government's ability to formulate and implement effective policies. The data for this variable is available on the world bank database

Corruption Perception Index (CPI): The CPI is a widely used indicator that ranks countries based on the perceived level of corruption in the public sector. It is compiled by organizations such as Transparency International and the data is available on the world bank database

Regulatory Quality Index: This variable evaluates the efficacy and openness of regulatory frameworks within domains like business, labor, and financial markets. A regulatory environment that functions optimally is imperative for fostering economic development.

Independent Variables

The independent variable is institutional quality factors which is measured by, Debt-to-GDP ratio.

Debt-to-GDP ratio is a financial metric that gauges the proportion of a country's total debt in relation to its Gross Domestic Product (GDP). This ratio provides insight into the country's economic health by assessing the extent to which its accumulated debt compares to the overall value of its economic output. It serves as a critical indicator for evaluating the fiscal sustainability and potential risks associated with a nation's level of indebtedness. The formula for calculating this ratio involves dividing the total debt by the GDP and expressing the result as a percentage. This analytical tool is widely employed by policymakers, economists, and financial analysts to assess a country's ability to manage and service its debt while considering the size of its economy.

A-priori Expectation

The apriori expectation is a positive sign for these variables as the institutional quality determinants of government external debts is believed to lead to an increase in effective management the government external debt. Meanwhile, the a priori expectation is expected to take the form: ß1> 0; ß2> 0; ß3.

Estimation Techniques

The methodology employed for analyzing data in the specified model utilizes the approach of multiple regression analysis. The data collected determines the type of tool to be adopted for analysis. This study will utilize multiple regression techniques as a tool of analysis. Unit root test will be conducted, ganger causality will be conducted using E-view 12 software. This method allows for the concurrent examination of various independent variables, such as government expenditure and tax, while controlling for other relevant factors. The data collection process will involve compiling data on these variables. Subsequently, the model is precisely defined, and if required, variables undergo transformations to align with the assumptions inherent in regression analysis. Estimation of the regression model is carried out through ordinary least squares (OLS) to derive coefficient estimates related to debt-gross domestic product ratio and the institutional quality indices. Statistical examinations will be conducted to evaluate the significance of these coefficients, determining the influence of independent variables on the dependent variable, namely debt financing. The overall efficacy of the regression model will be assessed using metrics like R-squared. To ensure result stability, robustness checks will be implemented. Interpretation of the results will take into consideration expectations and implications, ultimately leading to draw conclusions based on the analysis.

Sources of Data

This study employs annual time series data for the period of 1990-2020.The data will be sourced from the Statistical Bulletin and Annual Report published by the Central Bank of Nigeria (CBN). Also, from the World Development Indicators (2023) published by the World Bank.

RESULTS AND DISCUSSION

Table 1: Correlation Table

	DGDP	GTI	GEI	CPI	RQI	INF	LINGEXP
DGDP	1						
GTI	-0.422751	1					
GEI	0.308079	-0.608109	1				
CPI	-0.303867	0.579141	-0.721304	1			
RQI	0.455937	0.029722	-0.121275	0.217492	1		
INF	0.645070	-0.274620	0.278340	-0.248622	0.475974	1	
LINGEXP	-0.486569	0.486328	-0.422815	0.488473	-0.059330	-0.315987	1

Source: Authors computation using EViews 10 2024

The correlation analysis conducted in this study examines the relationships between the Debt to Gross Domestic Product (GDP) ratio (DGDP), as the dependent variable, and several independent variables including the government transparency index (GTI),

government effectiveness index (GEI), corruption perception index (CPI), regulatory quality index (RQI), inflation rate (INF), and the logarithm of government expenditure (LINGEXP). The findings highlight distinct associations that provide insights into Nigeria's debt management dynamics.

According to the analysis, there is a negative correlation of approximately 42% between the government transparency index (GTI) and the Debt to GDP ratio (DGDP), suggesting that higher levels of transparency in governmental operations may correspond to lower debt-to-GDP ratios. Similarly, the corruption perception index (CPI) shows a negative correlation of around 30% with DGDP, implying that reduced perceptions of corruption could contribute to lower debt burdens. Furthermore, the logarithm of government expenditure (LINGEXP) exhibits a negative correlation of about 49% with DGDP, indicating that higher levels of government expenditure relative to GDP may influence lower debt ratios.

Conversely, positive correlations are observed between DGDP and certain variables. The government effectiveness index (GEI) demonstrates a positive correlation of approximately 31%, suggesting that higher government effectiveness might lead to increased debt levels as governments efficiently allocate resources for development. Similarly, the regulatory quality index (RQI) shows a positive correlation of about 46% with DGDP, indicating that stronger regulatory frameworks and governance structures may facilitate higher debt accumulation under controlled economic conditions. Additionally, inflation rate (INF) displays a notable positive correlation of around 65% with DGDP, suggesting that higher inflation rates could coincide with increased debt ratios as governments borrow to manage economic fluctuations.

Unit Root Test

As a follow up of the outcome of the descriptive statistics of the variables, the researcher considered it necessary to check for the time series properties of the variables used. To check for these properties, the Augmented Dickey-Fuller (ADF) test was used and the result is presented in the Table below.

Table 2: Unit root test table

Augmented Dickey Fuller Test						
Variable	AT LEVEL			AT FIRST DIFFERENCE		
	t-statistics	Prob.Value	Status	t-statistics	Prob.Value	Status
DGDP				-6.104663	0.0110	I (1)
GTI	-6.553003	0.0005	I (0)			
GEI	-4.655169	0.0033				I (1)
CPI			I (0)	-4.412222	0.0068	
RQI				-4.650714	0.0031	I (1)
INF	-3.844173	0.0240	I (0)			
LINGEXP			I (0)	-5.864112	0.0001	

Source: Authors computation using EViews 10 2024.

The unit root test conducted on various economic variables has provided crucial insights into their stationarity characteristics, which are fundamental for understanding their long-term behavior and relationships. Stationarity indicates whether a variable's statistical properties, such as mean and variance, remain stable over time. From the analysis, it was found that several variables, including the government transparency index (GTI), government effectiveness index (GEI), and inflation rate (INF), exhibited stationarity in their original form, denoted as I (0). This suggests that these variables display consistent trends without requiring differencing to achieve stationarity.

In contrast, variables such as the Debt to Gross Domestic Product (GDP) ratio (DGDP), corruption perception index (CPI), regulatory quality index (RQI), and logarithm of government expenditure (LINGEXP) showed evidence of non-stationarity and required first-

order differencing to achieve stationarity, indicated as I (1). This indicates that these variables exhibit trends or patterns that change over time, necessitating adjustments to stabilize their statistical properties.

The need to explore the long-term relationships among these variables using the ARDL (Autoregressive Distributed Lag) bound test arises precisely because of their varying stationarity properties. The ARDL model is well-suited for analyzing relationships between variables with mixed orders of integration (I (0) and I (1)). It enables the investigation of both short-term dynamics and long-term equilibrium relationships, accommodating variables that exhibit different patterns of behavior over time.

Optimal Lag Length Criteria

From the table 4 below, the optimal lag length of 3 was selected based on the AIC and HQ criterion.

Table 3.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-791.1745	NA	1.41e+09	40.93203	41.23061	41.03916
1	-632.4363	252.3530	5286227.	35.30443	37.69313*	36.16147
2	-547.8535	104.1020	1095172.	33.47967	37.95849	35.08663
3	-463.8834	73.20472*	387462.3*	31.68633*	38.25526	34.04320*

Source: Authors computation using EViews 10 2024.

* Indicates lag order selected by the criterion
LR: sequential modified LR test statistics (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information Criterion
HQ: Hannan-Quinn information criterion

ARDL Bounds Test

The ARDL bound test conducted in this study provides compelling evidence that, under the assumption of strong erogeneity for all variables, there exists a long-run relationship between the dependent variable, Debt to Gross Domestic Product ratio (DGDP), and the independent variables (GTI, GEI, CPI, RQI, INF, LINGEXP). The test results indicate that the hypothesis of a long-term relationship is accepted at a 5% significance level. This conclusion is supported by the F-Statistics value of 14.08635, which surpasses both the upper bound (3.28) and the lower bound (2.27) critical values required for statistical significance.

In practical terms, this means that the independent variables collectively exert a substantial and statistically significant influence on the behavior of the DGDP over time. The ARDL model's ability to accommodate variables with different orders of integration (I (0) and I (1)) allows for a comprehensive analysis of both short-term dynamics and long-term equilibrium relationships among these economic indicators. By establishing a long-run relationship, the analysis underscores the interconnectedness and impact of institutional quality, economic performance metrics, and fiscal policies on Nigeria's debt management dynamics.

Table 4: Bound Test Table

Test Statistics	**Value**	**K**
F-Statistics	14.08635	6
Critical Value Bounds		
Significance	**I (0) Bound**	**I (1) Bound**
5%	2.27	3.28

Source: Authors' Computation using E-views 10, 2024

Short run and long run ARDL Regression Estimate

Table 5: Short-run ARDL Regression Estimate

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GTI	0.528346	0.329943	1.601327	0.1289
GEI	2.591838	1.094264	2.368567	0.0308
CPI	-7.459292	1.021221	-7.304288	0.0000
RQI	1.052146	0.349981	3.006296	0.0084

INF	0.674092	0.151916	4.437275	0.0004
LINGEXP	0.130315	1.121639	0.116183	0.9090
C	66.69533	42.81755	1.557663	0.1389
CointEq(-1)*	-0.426226	0.033488	-12.72765	0.0000
R-squared	0.991520			
Adjusted R-squared	0.979331			
S.E. of regression	4.338337			
Sum squared resid	301.1387			
Log likelihood	-97.13137			
F-statistic	81.34163			
Prob(F-statistic)	0.000000			
Durbin-Watson stat	2.110265			

Source: Authors' Computation using E-views 10, 2024

The table presented offers detailed insights into the short-run relationships between institutional quality, as measured by the Government Transparency Index (GTI), and external debt management, represented by the Debt to Gross Domestic Product ratio (DGDP) in Nigeria. Four key variables Government Effectiveness Index (GEI), Corruption Perception Index (CPI), Regulatory Quality Index (RQI), and Inflation Rate (INF) significantly influence DGDP in this analysis.

Firstly, the Government Effectiveness Index (GEI) demonstrates a positive and statistically significant impact on DGDP. This indicates that improvements in governmental efficiency and service delivery, captured by higher GEI scores, lead to a 2.6% increase in DGDP for every 1% improvement in GEI. This suggests that effective governance enhances economic management and potentially supports higher debt-to-GDP ratios through better resource allocation and policy implementation (Gabriel, 2018).

Conversely, the Corruption Perception Index (CPI) shows a negative and significant influence on DGDP. A 1% improvement in CPI, indicating reduced perceived corruption levels, correlates with a substantial 7.5% decrease in DGDP. This underscores the detrimental effects of corruption on economic performance and debt sustainability, affecting investor confidence, economic efficiency, and fiscal discipline.

Additionally, the Regulatory Quality Index (RQI) exhibits a positive impact on DGDP, with a 1% improvement in RQI associated with a 1.1% increase in DGDP. This highlights the importance of strong regulatory frameworks in fostering a conducive business environment and supporting economic growth, which can facilitate higher debt levels under controlled conditions.

Furthermore, the Inflation Rate (INF) demonstrates a positive influence on DGDP, where a 1% increase in inflation corresponds to a 0.7% increase in DGDP. This relationship reflects how inflationary pressures, if managed effectively through monetary policy, can impact debt dynamics by influencing borrowing costs and economic stability.

The analysis also includes the CointEq(-1) term, indicating a speed of adjustment from short-term deviations to long-run equilibrium. A value of 0.43 suggests that 43% of any short-term imbalance between the explanatory variables (GTI, GEI, CPI, RQI, INF, LINGEXP) and DGDP corrects itself in subsequent periods, indicating a dynamic adjustment process in Nigeria's debt management framework.

Moreover, the high coefficient of determination (R^2) of 99% indicates that the model effectively explains variations in DGDP using the included explanatory variables. This strong explanatory power underscores the robustness of the model in capturing the complex factors influencing debt management outcomes in Nigeria.

Finally, the Durbin-Watson statistic of 2.11 suggests minimal serial correlation in the regression residuals, enhancing the reliability of the findings by indicating that the model estimates are free from systematic errors over time.

Table 6: Long-run ARDL Regression Estimate

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GTI	3.574377	1.041492	3.431976	0.0034
GEI	6.378879	4.204548	1.517138	0.1487
CPI	-2.031954	2.269451	-0.895351	0.3839
RQI	-0.102193	1.659899	-0.061566	0.9517
INF	1.295899	0.486196	2.665381	0.0169
LINGEXP	-12.55093	2.269509	-5.530241	0.0030
C	156.4788	92.88106	1.684723	0.1114

Source: Authors' Computation using E-views 10, 2024

The long-run analysis of Nigeria's debt to gross domestic product ratio (DGDP) reveals enduring impacts from three critical variables: government transparency index (GTI), inflation rate (INF), and logarithm of government expenditure (LINGEXP). These variables play substantial roles in shaping the country's fiscal sustainability and economic management.

Firstly, the Government Transparency Index (GTI) exhibits a positive and statistically significant influence on DGDP. A 1% increase in GTI leads to a 3.6% increase in DGDP, highlighting the importance of transparency in governance for fostering investor confidence, efficient resource allocation, and sustainable economic growth. Higher GTI scores indicate greater accountability and reduced corruption risks, which are conducive to effective debt management and economic stability (Olaniyi, 2023).

Secondly, the Inflation Rate (INF) demonstrates a positive impact on DGDP in the long run. A 1% increase in inflation corresponds to a 1.3% increase in DGDP, illustrating how inflationary pressures can affect debt dynamics by influencing borrowing costs, consumer purchasing power, and overall economic stability. Effective inflation management is crucial for maintaining favorable debt-to-GDP ratios and ensuring macroeconomic stability over time.

Thirdly, the Logarithm of Government Expenditure (LINGEXP) shows a negative and significant influence on DGDP. A 1% increase in LINGEXP results in a substantial 12.6% decrease in DGDP. This relationship suggests that excessive government spending, if not managed prudently, can strain fiscal resources, increase borrowing needs, and potentially hinder long-term economic growth. Efficient expenditure management is therefore vital for maintaining sustainable debt levels and supporting economic development.

The analysis also indicates that other variables not explicitly detailed in the long-run table have no significant impact on DGDP over extended periods. This underscores the unique roles played by GTI, INF, and LINGEXP in shaping Nigeria's debt management strategies and economic outcomes.

POST ESTIMATION ANALYSIS

Breusch-Godfrey Serial Correlation LM Test:

Since the probability value is higher than 5% significant level, this indicates that the null hypothesis of serial correlation is rejected which implies that there is no serial correlation and the model is normally distributed.

Table 7.

F-statistic	1.128568	Prob. F(3,13)	0.3737
Obs*R-squared	8.265020	Prob. Chi-Square(3)	0.0608

Source: Authors Computation using E-views 10, 2024

Heteroskedasticity Test: Breusch-Pagan-Godfrey:

Since the probability value is higher than 5% significant level, this indicates that the null hypothesis of heteroskedasticity is rejected which implies that there is no heteroskedasticity and the model is normally distributed.

Table 8.

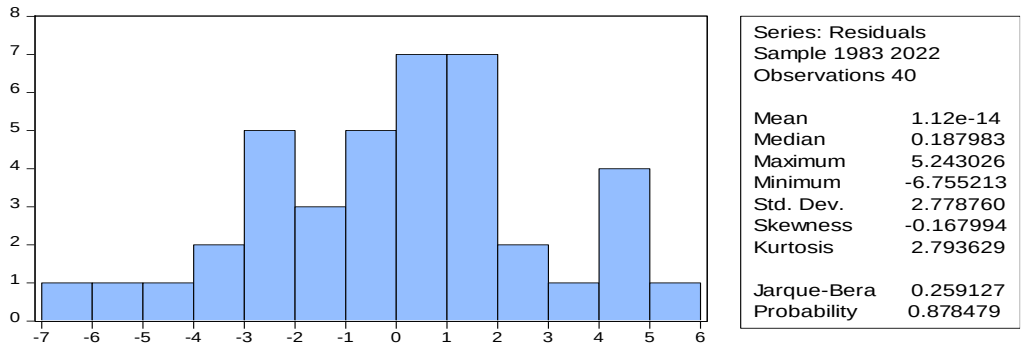
F-statistic	0.526984	Prob. F(23,16)	0.9216
Obs*R-squared	17.24090	Prob. Chi-Square(23)	0.7973
Scaled explained SS	2.473903	Prob. Chi-Square(23)	1.0000

Source: Authors' Computation using E-views 10, 2024

Histogram-Normality Test

From the diagram below it is observed that the probability value of Jarque-Bera is higher than 5% hence the hypothesis of normal distribution for residual cannot be rejected and the model is said to be normally distributed.

Fig 1.



Source: Authors' Computation using E-views 10, 2024

CONCLUSIONS

The findings reveal that improved government transparency (GTI) and reduced corruption (CPI) are associated with lower debt-to-GDP ratios. This implies that enhancing institutional quality can lead to better debt management, fostering economic stability and investor confidence. Policymakers should focus on strengthening transparency and reducing corruption to manage external debt effectively. Also, government effectiveness (GEI) and regulatory quality (RQI) show a significant positive relationship with the debt-to-GDP ratio. This suggests that while efficient governance and strong regulatory frameworks are essential for economic growth, they can also lead to higher debt accumulation. Therefore, it's crucial to balance effective governance with prudent debt management practices.

Furthermore, the findings revealed that inflation rate (INF) has a positive correlation with the debt-to-GDP ratio, indicating that higher inflation may increase debt levels. Conversely, government expenditure (LINGEXP) negatively impacts the debt-to-GDP ratio in the long run. This underscores the need for effective inflation control and prudent fiscal management to maintain sustainable debt levels.

The findings suggest that improving institutional quality can lead to better economic outcomes and debt management. Therefore, policies aimed at enhancing government transparency, reducing corruption, and ensuring effective regulatory frameworks are crucial for Nigeria's economic stability and sustainable debt management.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are;

i. **Enhance Government Transparency and Accountability**
   There is a need for the government to implement policies to improve transparency in government operations, such as open data initiatives and public financial management reforms. Enhancing accountability mechanisms will reduce corruption and improve investor confidence, contributing to better debt management.

ii. **Strengthen Regulatory Frameworks**
   There is the need for stronger regulatory frameworks that support economic growth while ensuring prudent debt accumulation. This includes improving the effectiveness of regulatory institutions and enhancing compliance with international standards.

iii. **Control Inflation through Effective Monetary Policies**
   Government should adopt monetary policies aimed at controlling inflation to maintain stable economic conditions. This includes using interest rate adjustments, open market operations, and other tools to manage inflationary pressures.

iv. **Prudent Fiscal Management**
   Government andn other relevant agencies should ensure prudent fiscal management by controlling government expenditure and prioritizing investments in productive sectors. Implementing fiscal rules and frameworks can help maintain sustainable debt levels and support long-term economic growth.

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