



Analysis of the Impact of Domestic Debt on Private Investment in Nigeria

Hawwa Adamu Ambi¹, Salisu Ibrahim Waziri^{1*}, Yahaya Yakubu¹, Muhammad Mustapha Abdullahi²

¹Bauchi State University Gadau, Yuli campus Bauchi State

²Umaru Musa Yar'aduwa University Katsina State

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Corresponding author

Salisu Ibrahim Waziri

adamuhawwaambi@gmail.com

Tel: +2348039628604.



Abstract

The study is on the impact of domestic debt on private investment in Nigeria for the period 1975-2020. The study adopted ARDL model of estimation, the result showed that domestic debt has negative impact on private investment in Nigeria; further result revealed that domestic debt can induce some level of macroeconomic instability and the result is not surprising because government domestic borrowing is more than the private sector borrowing crowds out the private sector which may lead some economic malaise such as unemployment, slowdown in private sector investment and development among others. The study concludes that domestic debt (DGDP) has a negative significant impact on private investment in Nigeria which implies that as government increases its borrowing from its organizations and financial institutions such as CBN, mortgage bank and their like which will subsequently cause a reduction in private investment.

1. Introduction

Apprehensions regarding the magnitude of private investment within an economy stem from the fundamental recognition of the pivotal role played by the private sector in facilitating economic growth and development (Mabula & Mutasa, 2019). In the Nigerian context, various factors impact private investment, such as access to bank financing, inflation, interest rates, and the state of infrastructure quality, as documented Abubakar and Mamman (2020).

Domestic borrowing constitutes a fundamental component of the fiscal aspect of the macroeconomy, particularly as it can be utilized as a tool for expansionary fiscal policies during economic downturns. It serves as a significant method for financing government deficits and

promoting investments. Nevertheless, despite its potential benefits, the adverse consequences of unchecked domestic borrowing can be substantial, potentially leading to a sovereign debt crisis, as evidenced in cases such as Venezuela (2017) and Greece (2009 - 2018), among others (Ozdemir & Gomez, 2020).

Domestic debts are always seen as cheaper alternative to foreign debts, however, each of the sources of the domestic debt has its consequences. For example, when the government borrows directly from the central bank, it carries the risk of inflation due to increased money supply, similar to printing money. Borrowing from commercial banks poses no inflation risk because it decreases cash and deposits at the central bank, reducing public purchasing power. However, borrowing from non-

bank financial institutions can be inflationary as they may turn to the central bank in case of liquidity shortages, leading to inflation (Ajayi & Edewusi, 2020).

Accumulated debt over time be it domestic or foreign can undermine the fiscal budget's performance, as a considerable portion of the budget may be allocated to servicing debt. For instance, as reported by the Debt Management Office, Nigeria allocated more than \$1.79 billion between 2016 and 2021 for servicing debts owed to the World Bank and Exim Bank of China. Likewise, approximately a quarter of the 2019 budget was earmarked for debt servicing, as highlighted by (BudgIT, 2019). Therefore, borrowing should be considered only when it becomes a necessity, such as acting as an economic stimulus during crises or to fund vital public capital projects. The continuous increase in public debt is also believed to deter investment, a phenomenon described in the literature as the 'crowding-out effect'.

The global financial landscape has witnessed significant shifts in recent years. Various countries have grappled with the issue of managing their debt levels, and Nigeria is no exception. The issue of domestic debt has garnered substantial attention worldwide, as governments aim to strike a balance between fiscal stability and promoting economic growth through private investment. The relationship between domestic debt and private investment is a matter of concern not only for Nigeria but for many countries, particularly those in the developing world. In an era of globalization, it is essential to understand how domestic debt affects private investment within the specific context of each nation (Penzin & Oladipo, 2021).

According to Abubakar and Mamman (2020), Nigerian's domestic debt had skyrocketed over the decades with the effect that her domestic debt consumes a larger chunk of her domestic debt Product (GDP) thereby tending to decline in total output of goods and services. This can be seen in Figure 1.

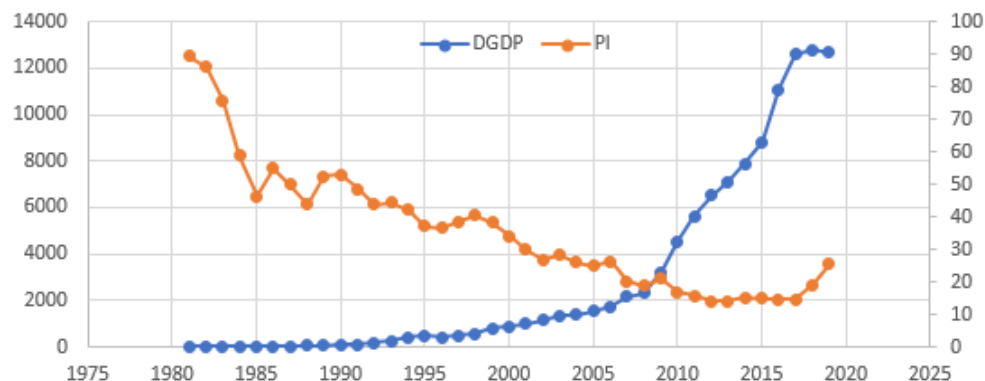


Figure 1. Trend of private investment and the Nigeria's domestic debt.

From 1981 to 1995, domestic debt grew at a reasonable rate, showing good debt management. During this period, even though there was decline in private investment, the performance was not bad. However, from 2000 till date, there was a sharp and steep rise in the domestic borrowing. This shows increasing debt. In the same vein, private investment fell steeply until 2020 when it started showing promise again. This proves that increased domestic debt has been one of the factors affecting

the growth of private investment in Nigeria. As the country's domestic debt continues to take an upward trend and private investment at downward trend.

In the scholarly discourse, a prevalent argument asserts that public debt tends to crowd out private investment, primarily in line with neoclassical theory, which paints public debt as detrimental to the economy. Nonetheless, Mona (2013) argues that private investment is influenced by various factors,

including interest rates (Wuhan & Adnan, 2015; Iheonu & Nwakeze, 2016), economic growth, and public capital expenditure (Nyoni & Bonga, 2017; Combey, 2016). Moreover, some scholars suggest that the negative impact of public debt on investment arises when investors fear that their returns will be taxed to service the debt (Deshpande, 1997), thereby illustrating a potential adverse influence of public debt on investment via the debt service channel.

Contrastingly, an alternate strand of literature presents the viewpoint that public debt could positively affect private investment (Abubakar & Mamman, 2020), aligning with Keynesian perspectives. Another perspective suggests that public debt might have a contemporaneously stimulating impact but a negative long-term influence on investment (Mustapha, Noor-Aznin & Salahuddin, 2017). These contrasting views underscore the absence of a consensus regarding the impact of public debt on private investment.

While there is a growing body of research on the impact of domestic debt on private investment, there is a limited focus on Nigeria. Nigeria's unique economic, political, and social context warrants specific attention. Also, the availability of comprehensive and up-to-date data is crucial for conducting a rigorous analysis. The study will strive to use the latest and most reliable data sources to provide an accurate assessment of the relationship between domestic debt and private investment in Nigeria. The research intends to employ advanced econometric and statistical techniques to provide a robust analysis of the impact of domestic debt on private investment. By adopting a rigorous methodological approach, the study aims to contribute to research in the field by using up to date data and rigorous methodology.

2. Literature Review

2.1 Concept of Domestic Debt

According to Abubakar and Mamman (2020) domestic debt refers to the portion of a country's total debt that is borrowed from individuals, financial institutions, and other entities within its own borders. This debt is typically denominated in the national currency and is owed by the government to its own citizens and institutions.

Internal debt, often termed domestic debt, refers to the financial obligations a government incurs within its own borders. It primarily involves

borrowing funds from domestic sources, such as individuals, financial institutions, or the central bank. This form of debt is typically denominated in the national currency and can be acquired through the issuance of government securities or bonds. Internal debt plays a vital role in a country's fiscal management, allowing the government to finance its operations, infrastructure projects, and other expenditures while impacting domestic interest rates and affecting the broader economy. According to Apare (2014), "Internal debt serves as a crucial instrument for macroeconomic stability and economic growth."

This debt is typically denominated in the national currency and is raised through the issuance of government securities or bonds. Internal debt plays a significant role in investment because it can crowd out private sector investment when the government borrows extensively from the domestic market, leading to higher interest rates and reduced access to funds for businesses.

Concept of Private Investment

According to Mustapha, Noor-Aznin and Salahuddeen (2016) private investment represents capital expenditures made by individuals, businesses, or entities in non-governmental sectors to enhance or expand their productive capacities. It encompasses investments in machinery, technology, infrastructure, and other assets aimed at generating future income and economic growth. Private investment plays a pivotal role in stimulating economic development and job creation. As highlighted by Nobel laureate Robert Solow, private investment, coupled with technological progress, is a key driver of economic advancement (Solow, 1956). This concept underscores the significance of private sector contributions to a nation's overall investment climate and long-term prosperity.

2.2 Theoretical Framework

The Ricardian Equivalence

This study is rooted in the Ricardian Equivalence Theory. This theory posits that in an economy, if the government increases domestic debt through borrowing, households anticipate future tax hikes to repay the debt, leading them to save more and reduce private consumption. As a result, private investment may decline due to diminished consumer demand. In the context of Nigeria,

understanding the implications of domestic debt on private investment is crucial. This study will assess whether the Ricardian Equivalence Theory holds, and whether increased domestic debt crowds out private investment by examining the relationship between domestic debt levels and private investment patterns in Nigeria.

2.3 Empirical review

The existing body of research on the impact of public debt is quite diverse, featuring studies with varying conclusions. The prevailing consensus suggests that an increase in public debt and the associated debt servicing typically have a detrimental effect on private investment. However, there are instances where episodes of excessive debt have shown positive effects on private investment. For example, Mabula and Mutasa (2019) using ARDL, Picarelli et al. (2019) using OLS and Origin et al. (2021) using ECM pointed out that high levels of government debt can hinder investment levels and economic growth. This argument is based on the neoclassical perspective, which posits that public debt leads to an increase in interest rates, subsequently resulting in a decrease in private investment due to the higher cost of capital (interest rates). Another contributing factor is the redirection of funds that would otherwise have been utilized by the private sector, as noted by Vincent and Clem (2013).

Nafowora, O., & Owoye (2019) study on external debt and private investment in Nigeria reveals several key findings. They employed Granger Causality, Johansen, and SVAR Mechanism to examine the relationship between these variables. The study's primary results indicate an inverse relationship between private investment and debt overhang, a pattern observed in both the short-term and long-term analyses. Additionally, the research highlights that a slight increase in debt service obligations leads to a more than proportionate decrease in debt overhang, while other variables display a positive correlation with debt overhang.

Abubakar and Mamman (2020) examines the effect of public debt on private investment in Nigeria. The linear and non-linear ARDL models are employed to analyse the series spanning the period 1981 to 2018. The estimation results show that an increase in total debt, external debt, and debt service payment adversely affects private

investment, with the effects being symmetric. On the other hand, the effect of domestic debt on private investment is found to be asymmetric. Although a negative shock in domestic debt greatly improves private investment, a positive shock leads to a meagre positive effect on private investment. This finding indicates that although domestic debt reduction is more beneficial to private investment, domestic public debt accumulation does not negatively affect private investment in Nigeria. The study recommends curtailing excessive public borrowing and reducing the stock of public debt to improve private investment in Nigeria.

Penzin and Oladipo (2021) examines the connection between domestic debt and private investment in Nigeria spanning from the first quarter of 2000 to the second quarter of 2019. The Autoregressive Distributed Lag (ARDL) methodology is used to explore the short and long-term relationships between public debt and private investment. From the long-term equation, it was observed that domestic debt, real GDP, and the prime lending rate held statistical significance and aligned with the expected outcomes. The study affirms that domestic debt has a notably negative impact on private investment in Nigeria, supporting the crowding-out hypothesis. Based on these empirical findings, the study recommends a reduction in public borrowing, particularly from domestic sources in Nigeria. Furthermore, it suggests that funds acquired through borrowing should be efficiently employed to enhance the investment climate within the country.

Some of the empirical research studies with findings favoring a positive impact of public debt on private investment include the work of Thilanka and Ranjith (2018), specifically in the context of Sri Lanka. Furthermore, Lidema (2019) found that the government can finance deficits through domestic borrowing without adversely affecting private investment. These studies highlight what is known as the "crowding-in" effect of public debt on private investment.

In contrast, research conducted by Manda (2019) and Shah and Shahida (2012) indicates that public debt has no significant influence on investment or does not hinder economic growth, suggesting an absence of a "crowding-out" effect. Additionally, there are other studies that failed to uncover any harmful impact of public debt on investment, such as the research by Checherita-

Westphal and Rother (2012) concerning the Euro Area and Hajian, Mohamed, and Habibullah (2017) in the case of Malaysia.

Furthermore, within the existing body of empirical research, there are studies that yield divergent results. To illustrate, Akomolafe et al. (2015) observe that domestic debt leads to a reduction in investment, whereas external public debt results in an increase in investment. Similarly, the research findings of Osuma et al. (2018) suggest that while external debt has a negative impact on investment in both the short and long term, domestic debt has a positive effect. Additionally, Benayed et al. (2015) point out that up to a certain threshold level of 47.31 % of debt to GDP, public debt promotes investment, but beyond this threshold, it hinders investment.

The research gap in the context of this paper particularly when viewed through the lens of the Ricardian Equivalence Theory, revolves around the scarcity of comprehensive studies addressing the potential counterbalancing effect of individuals' expectations regarding future taxes and government debt. The theory posits that, in a rational economic environment, private investment may not be significantly influenced by domestic debt if individuals anticipate future tax hikes to service that debt. Existing literature often overlooks this crucial aspect, assuming a direct negative impact of domestic debt on private investment, with few reporting a positive effect and many other literatures reporting inconclusive results. A more nuanced examination of how public debt expectations and fiscal policies influence private investment decisions within the Nigerian context is necessary, filling this notable gap in the research.

3. Methodology

Model Specification

Generally, the specification of an economic model is based on economic theory and the available data (Sulaiman & Abdul-Rahim 2018). To capture the objective of the research, taking into consideration the reviewed literature and the foregoing theoretical

framework, capital formation model was developed in line with Ricardian Equivalence Theory.

The models are mathematically specified as follows:

$$PI_t = f(DGD_t, PBGD_t, RIR_t, CPI_t) \quad 1$$

The model can be presented in an econometric form as follows:

$$PI_t = \beta_0 + \beta_1 DGD_t + \beta_2 PBGD_t + \beta_3 RIR_t + \beta_4 CPI_t + \varepsilon_t \quad 2$$

where PI = Private Investment; DGD = Domestic debt to GDP; PBGD = Primary Balance to GDP; RIR = Real Interest Rate; CPI = Consumer Price Index. Transforming the equation into log form we have

$$\ln PI_t = \beta_0 + \beta_1 \ln DGD_t + \beta_2 \ln PBGD_t + \beta_3 \ln RIR_t + \beta_4 \ln CPI_t + \varepsilon_t \quad 3$$

Method of Analysis

To assess the influence of domestic debt on private investment in Nigeria, this research conducted a time series analysis spanning the years 1970 to 2020. Data for this study was extracted from the World Development Indicators Database (WDI) provided by the World Bank.

The analysis utilized the ARDL (AutoRegressive Distributed Lag) method due to its suitability for uncovering both short-term and long-term connections and elasticities among variables. Importantly, the ARDL model accommodates variables with varying levels of integration, rendering it versatile for this study. Moreover, it is known for producing reliable estimates of long-run coefficients, especially in cases of small sample sizes (Pesaran & Shin, 1999).

To establish the stationarity of variables, a unit root test was applied to each variable within the model. The research also employed an ARDL bound co-integration test to determine the long-term relationships between these variables. Equation 3.4 outlines the specification of the unrestricted Error Correction Model (ECM) within the ARDL framework.

$$\ln PI_t = \beta_{1t} + \sum_{i=1}^n \alpha_{1i} \ln PI_{t-i} + \sum_{i=1}^n \beta_{2i} \ln DGD_{t-i} + \sum_{i=1}^n \chi_{3i} \ln PBGD_{t-i} + \sum_{i=1}^n \partial_{4i} \ln RIR_{t-i} +$$

$$\sum_{i=1}^n \pi_{1i} \ln \text{CPI}_{t-i} = \theta_1 \ln \text{PI} + \theta_1 \ln \text{DGDP} + \theta_1 \ln \text{PB GDP} + \theta_1 \ln \text{RIR} + \theta_1 \ln \text{CPI} + \mu_t \quad 4$$

where Δ is first difference operator and n is optimal lag length. To test the long run cointegration relationship among the variables, the following hypotheses are stated:

H0: $\theta_1 = \theta_2 = \theta_3 = \theta_4 = \theta_5 = 0$ (No cointegration)

Ha: $\theta_1 \neq \theta_2 \neq \theta_3 \neq \theta_4 \neq \theta_5 \neq 0$ (Cointegration exists).

Given the established long-term connection between the variables, both the long-run model (Equation 5) and the short-run model (Equation 6) will be concurrently estimated. Additionally, the error correction term (ECT) in Equation is defined as presented in Equation 6.

$$\ln \text{PI} = \beta_{2t} + \sum_{i=1}^n \beta_{2i} \ln \text{DGDP}_{t-i} + \sum_{i=1}^n \chi_{2i} \ln \text{PB GDP}_{t-i} + \sum_{i=1}^n \partial_{2i} \ln \text{RIR}_{t-i} + \sum_{i=1}^n \pi_{2i} \ln \Delta \text{CPI}_{t-i} + \mu_t \quad [3.4]$$

$$\ln \text{PI} = \beta_{3t} + \sum_{i=1}^n \alpha_{3i} \ln \Delta \text{PI}_{t-i} + \sum_{i=1}^n \beta_{3i} \ln \Delta \text{DGDP}_{t-i} + \sum_{i=1}^n \chi_{3i} \ln \Delta \text{PB GDP}_{t-i} + \sum_{i=1}^n \partial_{3i} \ln \Delta \text{RIR}_{t-i} + \sum_{i=1}^n \pi_{3i} \ln \Delta \text{CPI}_{t-i} + \lambda \text{ECT}_{t-1} \quad 5$$

$$\text{ECT}_t = \sum_{i=1}^n \alpha_{4i} \ln \Delta \text{PI}_{t-i} - \sum_{i=1}^n \beta_{4i} \ln \Delta \text{DGDP}_{t-i} - \sum_{i=1}^n \chi_{4i} \ln \Delta \text{PB GDP}_{t-i} - \sum_{i=1}^n \partial_{4i} \ln \Delta \text{RIR}_{t-i} - \sum_{i=1}^n \pi_{4i} \ln \Delta \text{CPI}_{t-i} \quad 6$$

4. Results and Discussions

Unit root test was conducted based on the ADF approach. If the calculated Augmented Dickey-Fuller (ADF)/Philips Perron Test statistic is greater than the MacKinnon critical values, reject the null

hypothesis of non-stationarity and accept the alternative of stationarity, otherwise accept the null hypothesis of non-stationarity. Table 1

Table 1: Unit root test

Variables	Order of Integration	ADF Statistics Constant	ADF Statistics Trend	Prob
$\Delta \ln \text{PI}$	I(1)	-2.110	-4.895	0.000
$\ln \text{DGDP}_t$	I(0)	-4.340	-4.639	0.000
$\ln \text{PB GDP}$	I(0)	-0.652	-5.037	0.000
$\ln \text{RIR}_t$	I(0)	7.253	7.498	0.000
	I(1)			0.000
$\Delta \ln \text{CPI}_t$		-3.321	-3.911	

PB GDP and RIR achieved stationarity at level I(0). PI, DGDP and CPI achieved stationarity at first difference I(1). The order of integration of the variables is mixed. The mixed order of the integration warranted the use of ARDL as ARDL model can be applied irrespective of order of the integration.

4.1 Optimal Lag Selection

The optimum lag of the model selected for the analysis is presented here. The lags selected for the model is shown in Table 2. From Table 2 LR, FPE, AIC and HQ, all suggested the use of lag 4. Thus, lag 4 was selected for further estimations of the model base on AIC. A big advantage of AIC for model selection is that it produces weights that can be used directly for model-averaging predictions or

parameters that have a consistent interpretation across models.

Table 2 Optimal Lag Selection for Model One

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-132.105	NA	0.001	7.411	7.628	7.487
1	-75.319	237.115	0.000	5.573	6.672*	5.957
2	-41.923	48.239*	0.000*	5.106*	7.306	5.874*
3	-21.946	23.306	0.000	5.385	8.684	6.537

Source: Author's computation using EViews 10

Note. * indicate lag order selected by the criterion. LR = sequential modified LR test statistic; FPE = Final prediction error, AIC = Akaike information criteria, SC = Schwarz information criteria, HQ = Hannan-Quinn information criteria, LogL = log likelihood, LR = likelihood ratio

4.2 Cointegration Result

Having identified the optimal lag length, the next step was to estimate the long-run relationship among the variables. The ARDL bound test was used. The Critical values are obtained from Narayan (2005) table case III. The boldness indicates the level of significance at which the F-

statistic exceeds the upper bound. The cointegration results of the model from Table 3 shows that the calculated F-statistics of 4.503, is higher than the Narayan (2005) upper critical values at 5 per cent significance level. Therefore, there is a long run relationship between the dependent and independent variables in the model.

Table 3 Bounds Test Result

Model	F-stats	Lag	Level of significance	Bounds critical values [Unrestricted intercept & no trend]	
				Lower Bound	Upper Bound
($IP_t, IDGDP_t, IPBGDP_t, IRIR_t, ICPI_t$)	4.503	4			
			10%	2.45	3.52
			5%	2.86	4.01
			2.5%	3.25	4.49
			1%	3.74	5.06

Source: Author's computation using EViews10.

4.3 Estimations of the Long Run Relationships

Here long run estimation results of model one is presented in table 4.4 and discussed. Results from Table 4 shows that 1 % increase in domestic debt ratio to GDP will decrease private sector investment by 0.248%. This clearly shows that debt to GDP has a negative impact on private sector investment in Nigeria, the relationship is significant at 5 % level of significance. This finding conforms with the findings of other researchers such as Uzoh (2014) and Olayide (2019). In the same vein the result contrast the findings of Salyungu & Felician (2019)

and Joshua (2019). This finding shows that domestic debt crowds out investment in Nigeria. This also conforms with the Neoclassical theory postulation that large debts if not properly allocated will crowd out investment. This finding shows that domestic debt in the case of Nigeria has diverted funds away from productive investments, increasing the cost of borrowing, crowded out private investment; the effect of this will be reduction in investor's confidence which will further dampen private investment unless an action is taken.

The result depicts a positive and significant relationship between Primary Balance to GDP and private sector investment in Nigeria at 1%. Thus, 1% increase in Primary Balance to GDP will increase private sector investment by 0.578%. This result is consistent with theory. Primary Balance can positively affect investment by signaling fiscal discipline, enhancing investor confidence, stabilizing the economy, reducing borrowing costs, and creating a favorable investment environment. However, this is only possible when primary balance is positive and data sourced have shown that Primary Balance have been positive and consistent throughout the study years.

Real interest rate shows a negatives and significant relationship with private sector investment in Nigeria at 1 %. 1% increase in interest rate will decrease private sector investment in by -0.014%. Investment depends upon the rate of interest involved in getting funds from the market by investors. If interest rate is high, investment is at low level and when interest rate falls, investment will rise. Relationship between interest and investment is inverse. Thus, real interest rates within study period are high. And high interest rates

negatively affect private investment by increasing borrowing costs for businesses and individuals which reduces their ability to finance investments. This leads to decreased investment activity, lower capital expenditure, limited access to credit, and ultimately slowdown in economic growth. "Regrettably, the findings reveal that this situation holds true within the context of Nigeria. This implies that the observed condition or phenomenon is indeed applicable in the Nigerian context, as indicated by the research results."

The long run result shows that consumer price index has a negative but insignificant relationship with private sector investment in Nigeria. This might be because of weak demand because lower CPI allows consumers to keep spending, and business to continue investing and vice versa. Usually Consumer Price Index (CPI) affects private investment by influencing inflation expectations, which can impact borrowing costs, pricing decisions, and overall economic stability, affecting investment decisions. Based on the results of the model CPI appears not to be affecting investment decisions in Nigeria.

Table 4. The Error- Correction Model (ECM)

Dependent variable, lnPI		
Regressors	Coefficient	T-ratio (p values)
D(LDGDP)	-0.207	-2.374 ***
D(LDGDP(-1))	-0.362	-1.973 **
D(LPB GDP)	0.046	2.109 **
D(LRIR)	-0.001	3.330 ***
D(LCPI)	0.014	2.055**
D(LCPI(-1))	0.310	1.620
ECT	-0.280	-3.503 ***

Source: Author's computation using EViews10.

Note***, ** and * Denotes 1%,5% and 10% significance level respectively.

Table 4 depicts the short run results of the model. The result from Table 4.5 shows that domestic debt to GDP has a negative and significant impact on private sector investment in Nigeria at 1 %. This result is consistent with the result from the long run results. This shows that domestic debt to GDP is a key determinant of private sector investment in Nigeria even in the short run. 1% increase in domestic debt to GDP will decrease private sector investment by 0.207% and 0.362% at lag 0 and lag 1 respectively. This further shows that the effects of

domestic debt in dampening private investment in Nigeria are instantaneous as it does not take time to reflect. This shows how urgent the issue needs to be addressed.

The short run result shows that primary balance to GDP has a positive and significant relationship private sector investment in Nigeria at 5 %. 1 % increase in Primary Balance to GDP will increase private sector investment in Nigeria b 0.046%. This result is also consisted with the finding from our long run model. This shows that Primary Balance is

good determinant of private sector investment in Nigeria even in the long run as well as the short run. In the Short run real interest rate shows a negatives and significant relationship with private sector investment in Nigeria at 1 %. 1% increase in interest rate will decrease private sector investment in by -0.001%. Consumer price index has a negative but insignificant relationship with private sector investment in Nigeria in the short run. This shows that Consumer price index is not a good determinant of private sector investment in Nigeria.

The error correction estimates in Table 4.5 shows that the coefficients of the ECT is less than one, negative and statistically significant at 5 %. The adjustment mechanism in the model is slow with (-0.280) 28 % speed of adjustment to equilibrium. Speed of adjustment is slow.

4.4 Diagnostics Test

Diagnostic tests of serial correlation, functional form, normality, and heteroscedasticity were conducted to ensure the estimates of the model are reliable. Results are presented in Table 5.

Table 5. Diagnostic Test

Test Statistics	F Version
A. Serial Correlation	F(2,25) = 1.511 (0.240)
B. Functional form	F(1,264) = 0.871 (0.391)
C. Normality	1.555 (0.459)
D. Heteroskedasticity	F(9,27) = 1.236 (0.314)

Source: Author's computation using EViews10

Note: * **, **and* Denotes 1%,5% and 10% significance level respectively.

The result of the diagnostic tests in Table 5 reveals that the model is free from serial correlation, heteroscedasticity, functional form, and normality problems. This means the model has no serial

correlation, error terms are homoscedastic, model is correctly specified, and data is well modeled.

Cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) tests for stability was conducted. Results are shown in Figure 2a and 2b.

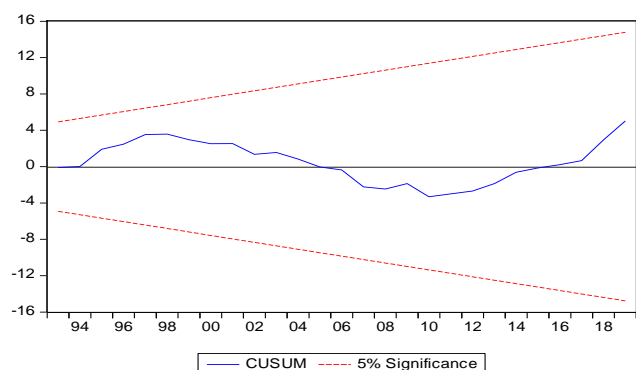


Figure 2a. Plot of CUSUM.

The straight lines represent critical bounds at 5% significance level.

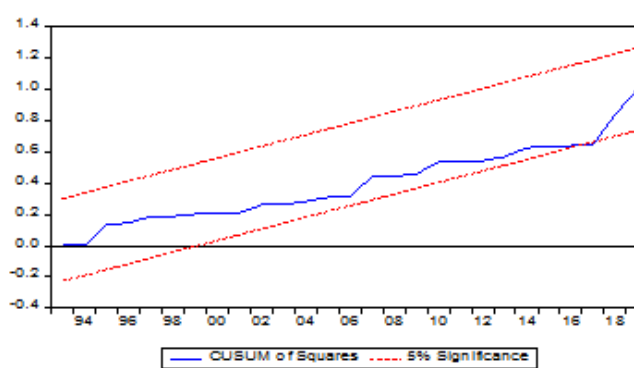


Figure 2b Plot of CUSUM of squares.

The straight lines represent critical bounds at 5% significance level. It is suggested that for a model to be stable along the sampled period, the residuals line must be within the straight lines of the critical bounds at a 5% significance level. Figures 4.1 and 4.2 depict the results. The results show that the model is sable within the study period.

5. Conclusion and recommendations

The analysis of the relationship between domestic debt and private investment in Nigeria indicates a negative impact of domestic debt on private investment. This is unsurprising, as increasing domestic debt can lead to a credit crunch for private investors and may result in the government crowding out private investment through continuous domestic borrowing. Furthermore, the study reveals that domestic debt can contribute to

macroeconomic instability, particularly when government borrowing surpasses private sector borrowing, leading to issues like unemployment and a slowdown in private sector investment. In summary, the research concludes that domestic debt has a significant adverse effect on economic growth and can potentially induce macroeconomic instability, negatively impacting private investment in Nigeria.

The study also concluded that domestic debt (DGDP) has a negative significant impact on private investment in Nigeria which implies that as government increases its borrowing from its organizations and financial institutions such as CBN, mortgage bank and the like, it will subsequently cause a reduction in private investment.

Having concluded that domestic debt (DGDP) has a negative significant impact on economic growth in Nigeria. Hence, the study recommends the following.

Firstly, government should adopt economic policies that enhance investment and economic growth. High level of productive investment and economic growth typically generates additional tax revenue without necessitating an increase in tax rates.

Secondly, government authorities need to engage in debt relief arrangements and consider the option of debt relief and development swaps. Debt relief takes financial obligations off the government's shoulder which increases the fiscal space for the government.

Thirdly, the study recommends that the government should acquire domestic debt largely for economic reasons such as: enhancing investments, curtailing inflation, etc, rather than social or political reasons. This would increase the productivity of the nation. Excessive deficit financing should be avoided and government borrowing from the banking sector should be drastically reduced.

Fourthly, the debt management office along with the various government financial agencies developed to advice the government should identify other sources at which government should borrow

from even if it is from domestic economy so far as it wouldn't cause any economic malaise. Also, government should set a domestic borrowing limit so that it wouldn't crowd-out the private sector.

Lastly, the government should ensure economic and political stability in order to enjoy the benefits of domestic debt and make the debt burden minimal. Internal security, political stability and good governance are strongly recommended as there is a strong tie between internal security, political stability and economic stability. The political instability and continuous internal insecurity experienced for many years in Nigeria resulted in series of crises which created unconducive and unstable investment climate in the country. It resulted in increased wave of insecurity to lives, property and investment. The frequent changes of government through coups and counter coups in Nigeria did not encourage private investment as they were followed by suspension of existing economic policies and formulation of new policies which crippled plans and projection of investors.

Considering the instability in crude oil prices in international markets, in order to raise the required foreign exchange to meet the need of the economy, drastic steps should be taken to diversify the Nigerian economy to make it more export oriented. This will take care of balance of payment deficit, ensure availability of foreign exchange, and put downward pressure on foreign exchange rate.

Reference

- Abubakar, A. B., & Mamman, S. O. (2020). Permanent and transitory effect of public debt on economic growth. *Journal of Economic Studies*, 48 (5), 1064-1083. <https://doi.org/10.1108/JES-04-2020-0154>.
- Ajayi, I. E., & Edewusi, D. G. (2020). Effect of Public Debt on Economic Growth of Nigeria: An Empirical Investigation. *International Journal of Business and Management Review*, 8(1), 18-38.
- Akomolafe, K. J., Bosede, O., Emmanuel, O. and Mark, A. (2015). Public Debt and Private

- Investment in Nigeria. *American Journal of Economics*, 5(5), 501-507.
- Apere, T. O. (2014). The Impact of Public Debt on Private Investment in Nigeria: Evidence from a Nonlinear Model. *International Journal of Research in Social Sciences*, 4(2), pp. 130 – 138.
- Benayed, W., Gabsi, F. B., & Belguith, S. O. (2015). Threshold effect of public debt on domestic investment: Evidence from selected African countries. *Theoretical and Applied Economics*, XXII (4), 189–198.
- BudgIT. (2019). Reviewing Nigeria's debt status. <https://yourbudgit.com/wpcontent/uploads/2019/06/Nigerias-Debt-Status.pdf>
- Checherita-Westphal, C., & Rother, P. (2012). The impact of high government debt on economic growth and its channels: An empirical investigation for the euro area. *European Economic Review*, 56, 1392–1405.
- Chindo S., & Abdul-Rahim, A. S. (2018). Growth and CO2 Emission in Nigeria; A Recursive ARDL Approach. 8(2). <https://doi.org/10.1177%2F2158244018765916>
- Combey, A. (2016). The main determinants of private investment in the WAEMU zone: The dynamic approach. *MPRA Paper* 75382.
- Deshpande, A. (1997). The debt overhang and the disincentive to invest. *Journal of Development Economics*, 52(1), 169-187.
- Hajian, H., Mohamed, A., & Habibullah, M. (2017). The impact of government debt on output, private investment and human capital stock in Malaysia. In: *Global Conference on Business and Economics Research (GCBER) 2017*, 14- 15 Aug. 2017. Universiti Putra Malaysia, Jerdand, Selangor. (PP. 258-264).
- Iheonu, C. O., & Nwakeze, H. M. (2016). Investment, output and real interest rate in Nigeria: an ardl analysis. *Journal of Economics and Allied Research*, 1(1), 72- 90.
- Lidiema, C. (2018). Effects of government borrowing on private investment in Kenya. *Journal of Finance and Economics*, 6(2), 49-59. <https://doi.org/10.12691/jfe6-2-3>.
- Mabula, S., & Mutasa, F. (2019). The effect of public debt on private investment in Tanzania. *African Journal of Economic Review*, 7(1), 109-135.
- Manda, S. (2019). Does Government Borrowing Crowd Out Private Sector Investment in Zimbabwe? *Asian Journal of Economics, Business and Accounting*, 12(1), 1-9. <https://doi.org/10.9734/ajeba/2019/v12i13014>
- 2.gsu Province, China. *Journal of International Studies*, 8(1), 81-90.
- Mona, E, F. (2013). Crowding out effect of public borrowing: The case of Egypt. *International Research Journal of Finance and Economics*, 107, 28-28.
- Muhammad M. A., Nor Aznin B. A., Sallahuddin B. H. (2016), Debt Overhang versus Crowding Out Effects: Understanding the Impact of External Debts on Capital Formation in Theory. *International Journal of Economics and Financial Issues*, 2016, 6(1), 271-278. www.econjournals.com
- Nafowora, O., & Owoye, O. (2019). Impact of external debt shocks on economic growth in Nigeria: A SVAR analysis. *Economic Change and Restructuring*, 52(2), 157-179. https://EconPapers.repec.org/RePEc:kap:ecopl n:v:52:y:2019:i:2:d:10.1007_s10644-017-9222-5.
- Nyoni, T., & Bonga, W.G. (2017). An empirical analysis of the determinants of private investment in Zimbabwe. *Dynamic Research Journals*, 2(4), 38-54.
- Olayinka, O. O. (2019). External Debt and Private Investment in Nigeria. *International Journal of Economics, Finance, and Management Sciences*, 1(6), 2013.
- Origin, C. K., Nneka, O.-U., & Ubah, C. B. (2021). Effect of public debt on public investment in Nigeria: 1985-2018. *Asian Journal of Economics, Business and Accounting*, 21(2), 98-144. <https://doi.org/10.9734/ajeba/2021/v21i230353>.
- Osuma, G., Isibor, A., Adesina, T., Abiola, B., & Victoria, A. (2018). The effect of public debt on economic growth in Nigeria: An empirical

- investigation. *International Business Management*, 12, 436-441.
- Ozdemir, G. B., & Gomez, E. (2020). The Impact of Domestic Debt on Private Investment in the Gambia: an ARDL Approach. *Journal of Research in Economics, Politics & Finance*, 5(1), 111-127.
- Penzin, D.J. & Oladipo, O.S. (2021). Domestic Debt and Private Investment: The Case of A Small Open Economy. *The Journal of Developing Areas Volume 55 No.* <https://www.researchgate.net/publication/352176858>
- Pesaran, H., Shin, Y., & Smith, R. (2001). Bounds Testing Approaches to the Analysis of level relationships. *Journal of Applied Econometrics*, 16, 289-326.
- Philip, A., Victoria, S., Azharul, I., Omankhanlen, A. E., Oluwaseun, A. & Temioluwa, O. (2017). The Impact of Domestic Debt on Private Credits in Nigeria: A Structural VAR Approach, (1981-2015). *Research and Reviews: Journal of Social Sciences*. 3(1), 64 – 72.
- Picarelli, M. O., Vanlaer, W., & Marneffe, W. (2019). Does public debt produce a crowding out effect for public investment in the EU? *European Stability Mechanism Working Paper Series*, No. 36/ 20. <https://doi.org/10.2139/ssrn.3376471>.
- Shah, M. H., & Shahida, P. (2012). External public debt and economic growth: Empirical evidence from Bangladesh, 1974 - 2010. *Munich Personal RePEc Archive*, 3(2).
- Solow, R. M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics*. 70(1), 65-94.
- Thilanka, H. R. A. C., & Ranjith, J. G. S. (2018). The impact of public debt on private investment: Sri Lankan experience. *International Journal of Business and Social Research*, 08(08), 1–10.
- Vincent, N. E., & Clem, I.N. (2013). Fiscal deficits and private investment: econometric evidence from Nigeria. *International Journal of Innovative Research in Management*, 3(2), 1-18.
- Wuhan, L. S., & Adnan, K. (2015). The effect of interest rate on investment: Empirical evidence from Jian.