DOMESTIC DEBT HOLDINGS AND PRIVATE INVESTMENTS: EMPIRICAL EVIDENCES FROM NIGERIA

[1]Jonah O. Arumona (PhD), [2]Lambe Isaac (PhD), *[3]Forongn A. Dore

[1,2 &3] Department of Accounting, Bingham University, Karu Nasarawa State, Nigeria

Abstract: **Every nation undergoes investments in order to boast her economy by adding up more sources of income, employment opportunities, improved production of goods and services. These investments are usually enhanced by debt, invested to provide economic benefit in the near future. However, because of the limitation of resources available, nations have to resolve to borrowing in order to make investment possible. Despite the increasing rate of borrowing, the growth of private investment in Nigeria has not been encouraging. Consequently, the main objective of this study is to investigate the impact of domestic debt holdings on private investment in Nigeria from 1984 to 2022. The data used were sources from the Central Bank of Nigeria (CBN) Annual Statistical Bulletin. The paper used the Auto-Regressive Distributed Lag model to analyze the data. The findings revealed a long run relationship between the domestic debt components and private investment. The paper specifically found that domestic debt holding with the Central Bank of Nigeria has a positive and insignificant impact on private investment in the long run; while domestic debt holding with the non-bank public has a negative and insignificant impact on private investment in the long run. However, both the domestic debt with the CBN and the nonbank public were found to have significant impacts on private investments in the short run. Base on the findings, the paper recommended that the federal government should sustain its current domestic debt policy because of the significant impact it has on private investment.**

Keywords: **Debt Holding, Deficit Financing, Domestic debt, Central Bank of Nigeria, Non-bank public and Private investment.**

I. INTRODUCTION

The Private sector of a country plays an important role in the economic development of a nation. Apart from contributing significantly to the provision of employment to the people of the country, it also provides goods and services to meet their needs. Private investment depends largely on private borrowing or credit to the private sector which is an important part of the financial development that measures the financial depth. Investment in the private sector is also a crucial prerequisite for economic growth as it allows entrepreneurs to set economic activities in motion by harnessing resources to produce goods and services (Oshadami, 2016). However, for private investments to achieve its importance and role in the developing and developed countries, there is the need for effective and efficient fiscal policy framework that guarantees a smooth business environment. According to Olosode and Babatunde (2016), fiscal policy instruments like expenditure, revenue and debt can affect the performance of the economic actors especially the private investors. In specific argument, Nnamdi, (2017) agreed that domestic debt among other fiscal policy instruments has great effect on the activities of economic actors in developing countries where credit mobilization and accessibility is a great challenge for investors especially private investors. Sanni (2007) observed that Nigeria's fiscal operations over the years have resulted in varying degrees of deficit in which the financing has had tremendous implications for the economy. The large fiscal deficits experienced in Nigeria

over time have had adverse effects on the economy because it reduced national savings, which in turn increased domestic interest rates, thereby hindering capital formation and crowds out private sector investment (Paiko, 2012). The reduction in investments in turn affected employment as firms or businesses reduced their demand for labour and other factor inputs. All these reduced national outputs, which in turn led to trade deficits and balance of payments problem, and a reduction in the overall well-being of the people.

Domestic debts are classified based on instruments and on holdings. Based on holdings constitute holdings by the CBN, deposit money bank and based on non-bank public. According to Alison et al. (2003), government often engaged in domestic debt instruments due to three reasons: budget deficit financing, implementation of monetary policy, and development of the financial sector. Odozi (1996) explained that high budget deficit, low output growth, large government expenditure and narrow tax base are factors that affect Nigeria domestic debt profile. Existing literatures on debt-investment relationship focused on the aggregate of domestic debt (Akomolafe *et al*., 2015; Anoke *et al*., 2021 and Omodero, 2019; Chukwu *et al*., 2021 and Ogunjimi, 2019). This paper however assesses domestic debt based on holdings and concentrates on domestic debt holdings with the CBN and domestic debt holdings with the non-bank public as the two explanatory variables with private investment as the dependent variable, proxied by gross fixed capital formation. Generally, the paper contributes to the general literatures by analyzing the implications of domestic debt holdings by the CBN and non-bank public in order to have an indebt analysis on how the individual components of domestic debt holdings affects private investment in Nigeria. It is against this backdrop that the study seeks to assess the relationship between domestic debt and private investment in Nigeria. The following formulated hypotheses guided the paper:

H$_{01}$: Domestic debt holdings with the Central Bank of Nigeria has no significant impact on private investment index in Nigeria.

H$_{02}$: Domestic debt holdings with the non-bank public has no significant impact on private investment index in Nigeria.

2. LITERATURE REVIEW

2.1. Conceptual Framework

This paper reviewed the following concepts which are: private investment, domestic debt holding with the Central Bank of Nigeria, domestic debt holding with non-bank public and private investment index.

2.1.1 Domestic Debt Holding with the Central Bank of Nigeria

Domestic debts holding with the Central Bank of Nigeria (CBN) are debt instruments held by the CBN (Asogwa, 2005). The CBN plays important role in both the primary and secondary markets for government securities in the course of discharging its functions. In the primary market, the CBN readily guarantees the issue of these securities and absorbs any amount not subscribed by the deposit money banks and the non-bank public. Hence, when debt instruments are issued by the CBN on behalf of the federal government, the deposit money banks (commercial banks) and the non-bank (private & public institutions, and private investors) subscribe to the debt instruments. Any debt instruments left unsubscribed are absorbed by the CBN, which constitute the domestic debt holdings by the CBN.

2.1.2 Domestic Debt Holding with the Non-Bank Public

The non-bank public which includes both private & public institutions as well as private investors often subscribed to debt instruments floated by the CBN on behalf of the federal government (Asogwa, 2005). The non-bank includes insurance companies, development banks, pension funds, leasing companies, mortgage banks, savings and loans associations, state and local government amongst others. On the other hand, the public holdings of debt instruments include private investors that subscribed to domestic debt instrument. Hence, domestic debt holdings with the non-bank public are debt instruments held with the private & public institutions as well as private investors.

2.1.3 Private Investment

Private investments are investments in real assets which consist of physical assets such as factories, land, capital goods, infrastructures and inventories (Agu, 2015). Private investments are monies invested by companies, financial organizations or other investors other than the government. These investments can expand the productive capacity of a country and plays crucial roles in the economic growth and development of a nation. In another definition, Ambachew (2010) explained that

private investment as an act of current spending for future returns. It is the purchase of capital assets that are expected to produce income and appreciate in value.

2.1.4 Private Investment Index

Gross fixed capital formation (GFCF) which is used as proxy for private investment in this seminar, is a component of the expenditure on gross domestic product that indicates how much of the new value added in an economy is invested rather than consumed. It measures the value of acquisitions of new or existing fixed assets by the private sectors and household (Akpan *et al.,* 2023).

2.2 Empirical Review

Akpan *et al*. (2023) investigated the impact of public debt on private domestic investment in Nigeria using time series data from 1981 to 2022. The variables used include public external debt, public domestic debt and public debt service. The data were estimated using the autoregressive distributed lag model and the error correction model techniques of analysis. The cointegration test showed the existence of long run equilibrium relationship among the variables. Findings from the study revealed that public external debt and public domestic debt have negative relationship with private domestic investment, while public debt service has positive relationship with private domestic investment. The study concluded that public debt has significant impact on private domestic investment due to the outcome of the Wald test. Consequently, the paper recommended that Nigeria's debt management office should advice the federal government to minimize or discourage borrowing to finance her budget; as well as channeled borrowed fund into investment projects that will improve private investment in Nigeria.

Penzi and Salisu (2022) examined the effect of public debt on private investment in selected emerging economies. Using a panel threshold regression model, the paper utilizes yearly data on 12 emerging market and five developed economies covering a total time span from 1990 to 2020. The countries included in the sample of emerging market are: Brazil, China, Colombia, Egypt, India, Indonesia, Mexico, Peru, Philippines, Russia, South Africa, and Thailand, while those considered for the developed countries are: Australia, Japan, Singapore, United Kingdom, and the United States. The panel threshold regression model was used for the study; and the variables used include ratio of private investment to GDP and public debt to GDP. The results revealed that public debt stimulates private investment but private investment in emerging and developed economies respond heterogeneously to an increase in public debt. Based on these findings, we recommend that the public policy makers, especially the fiscal managers, maintain reasonable levels of public debt ratio that complement private sector's productivity rather than undermine it.

In the study of Sathananthan and Kanesh (2022), they investigated the effect of state government debts on the various forms of investment in Sir Lanka from 1980 to 2020, applying the ARDL model. The variables used are domestic investment, foreign direct investment, domestic debt as ratio of GDP, external debt as ratio of GDP, lending rate and exchange rate. The results revealed that domestic debt resulted to FDI inflows in the short term, but crowds out FDI in the long term. Also, external debt has a negative relationship with FDI in the short run but does not influence FDI in the long run. The results concluded that the higher public debt in Sir Lanka adversely affects domestic investment and FDI inflows. Also, the result further concluded that the effect of domestic debt on various forms of investments in Sir Lanka is greater than that of external debt. The study then recommended that policy makers develop suitable policies that will ensure states debt are efficiently used, as well as make resolute attempt to manage debt levels to enhance domestic investment in the country.

Accordingly, Anoke *et al*. (2021) investigated the relationship between public debt and domestic private investment in Nigeria from 1980 to 2018. The paper employed the vector error correction model and the Granger causality for the analysis. The variables used by the author are domestic private investment, external debt, domestic debt, debt servicing, interest rate and foreign direct investment. The result shows that both external debt and domestic have negative but significant impact on the domestic private investment. Debt servicing has a negative and insignificant impact on domestic private investment. Therefore, the researcher concluded that public debt crowds out domestic private investment in the long run within the period under review. The study recommended that the debt management office of Nigeria should review its credit policies to be in favour of the private sector. Also, that all foreign direct investment should be channeled to critical sectors of the economy. The study used the right technique which is vector error correction model (VECM) to analyze the data because

they are all integrated at first difference. However, the study failed to specify the VECM model that was used for the study as well as the objectives of the study.

Magumisi (2021) examined the impact of public debt on private investment in Zimbabwe, using quarterly time series data from 2009 to 2017. The variables used for the study are external debt, interest rates, political risk, trade openness and household consumption. The Vector Error Correction Model (VECM) was used as the estimation techniques. The study found that external debt has a negative impact on private investment in the long run. This means that Zimbabwe's external debt is crowding out private investment. The study recommends the Zimbabwe's government to invest its external debt into investment ventures like education, health and infrastructure which could potentially stimulate future investment. The study didn't include a clear objective of the study. Also, political risk was used as one of the independent variables. Using a proxy for political risk could differs from country to country due to political differences.

Eric *et al.* (2021) analyzed the effect of domestic public debt on domestic private investment in Burundi between 1980 and 2020 using univariate, bivariate and multivariate analyses. The variables used were Credits to the Private Sector which was the dependent variable, Internal State Credits, Gross Domestic Product, Money Supply level; Interest Rate and the Real Exchange Rate were the independent variables. The findings revealed that in the long run increase in domestic public borrowing did not lead to a reduction in private sector investment That is, there is no crowding out effect. The result thereby invalidated the hypothesis that domestic public debt has a negative effect on private investment. The study recommends government to place particular emphasis on implementing legislative measures to increase and mobilize economic actors in the informal sector to migrate to the formal sector. The introduction of the study is not comprehensively outlined. It failed to review relevant theories as well as the theoretical framework. No clear indication of the technique of analysis and objectives used in the study. Also, the model for the study was not specified, and the study failed to make recommendations.

Thilanka and Ranjith (2020) evaluated the impact of public debt on private investment in Sri Lanka using the annual data for the period 1978-2015. The study used the Johansen co-integration test and the Vector Error Correction Model (VECM) to find out the long-run impact. The variables used are private investment, domestic debt, external debt and Real Gross Domestic Product. The study found evidence for the presence of crowding-in effect of public debt on private investment in the long-run. The study further revealed that real GDP also has positive effect on private investment. Hence, it was recommended that policies with regard to fiscal operations should be aimed at the well-managed borrowing for the purpose of boosting private investment further. The study did not include the objectives of the study. Theoretical review and framework were not captured in the study. The study failed to include the probability value of the error correction term in the result. The probability value determines the significant of the error correction term.

Mabula and Mutasa (2019) evaluated the effect of public debt on private investment in Tanzania, using secondary data for the period 1970 to 2016. The study used private investment as the dependent variable while domestic debt percentage of GDP, external debt percentage of GDP, debt service percentage of total export and private consumption expenditure percentage of GDP were used as the explanatory variables. The Autoregressive Distributed Lag (ARDL) bound test was used to test for cointegration among the variables. The study found that significant evidence of nonlinear long run and short run relationship between external debt and private investment but the relationship is rather a co-movement than causal based on the Granger causality test. The study recommends the government of Tanzania to adopt strict policies on project implementations to ensure positive returns of borrowed funds and closely monitoring of public debt, particularly external debt on which private investment is more responsive than domestic debt and debt service, despite its sustainability at present. The study adopted the work of Apere 2014 but did not specify it in his study as well as failed to include the objectives of the study.

Ogunjimi (2019) examined the impact of public debts on investment in Nigeria from 1981 to 2016 using the Autoregressive Distributed Lag (ARDL) technique of analysis. The study used the variables private investment; public investment, foreign direct investment and public debt in the study. The result revealed that domestic debt improved both private and public investment in the short-run and long-run. In order words, domestic debt crowded-in both private and public investment, but does not attract foreign direct investment (FDI). The study further revealed that external debt crowded in private investment both in the short-run and the long run, crowded-out public investment, but does not influence FDI. The study recommends that policy makers should formulate and implement appropriate policies to ensure public debts are put to optimal use to stimulate investment. The study also recommends that external debt should be more favored over domestic debt because of

Page | 96

ISSN 2394-7322

International Journal of Novel Research in Marketing Management and Economics
Vol. 11, Issue 2, pp: (93-104), Month: May - August 2024, Available at: www.noveltyjournals.com

its impact on investments. Ogunjimi used the right technique of data analysis. However, it failed to review relevant theories as well as theoretical framework for the study.

Chinanuife et al. (2018) evaluated public debt spiral and domestic investment in Nigeria using Auto-Regressive Distributed Lag model to estimate quarterly time series data from 1981 to 2016. The study used public investment as the dependent variable while public debt, real interest rates, financial development, debt service and inflation were used as the independent variables. The result of the study shows that public debt has negative relationship with public investment but has statistically significant impact on public investment in Nigeria during the period under review. The study therefore recommends that greater percentage of public debt should be invested in order to reduce future borrowing in Nigeria. Furthermore, that government should borrow domestically rather than borrowing externally in other to overcome exchange rate fluctuations problem. The introduction of the study is not broad enough to capture the relevant variables of the study. Relevant theories related to debt and domestic investment was not reviewed. Also, the theoretical framework which the theory is based on was not captured in the study. The scope of the study ends at 2016 which needs to be updated.

Ogbaga and Udede (2018) examined the relationship between deficit financing and private sector investment in Nigeria from 1986 to 2016 using autoregressive distributed lag model. The variables used are gross private domestic investment, domestic deficit financing, interest rate, domestic credit to the private sector and gross domestic product. The study found that domestic debt financing, interest rate, domestic credit to the private sector and gross domestic product has a positive and statistically significant impact on the gross private investment in Nigeria during the period under study. The implication of the outcome is that domestic deficit financing ruled out a crowding out tendency of domestic private investment but rather crowds in private investment in Nigeria. The study recommends that government should continue in deficit financing and also formulate monetary policies that will enhance private sector access to credit in order to boost investment. The theory employed econometric approach without stating the type of techniques used for the study. Although, the ARDL technique was used for the study, the model was not specified. Also, the study reviewed related theories but could not choose any for the theoretical framework. Furthermore, the study made use of four objectives but only made two recommendations. The scope of the study ends at 2016 hence not up to date.

2.3 Theoretical Framework

2.3.1 Debt Overhang Theory

The theory of debt overhang was postulated by Myers (1977) with his theory of company valuation in corporate finance and the effects on debt financing. The theory states that companies do not like financing their activities with maximum debt because high amount of debt will distort the possibilities for company to make optimal future investment due to the fact that future earnings accrue to the company will go to the creditors in the form of interest payment. Base on Krugman analysis, corporations can fully commit their revenue streams to their debt servicing, while countries on the other hand can only use a fraction of their national income for debt service because they have obligatory commitments to keep the country stable as a priority. That if company default, they could go into bankruptcy procedures where creditors are paid back as much as possible of the debt owed to them. But a sovereign country will not be forced to service debt. However, there could be negative effects associated with defaulting. If a country's debt level is expected to exceed the country's repayment ability with some probability in the future, the expected debt service is likely to be an increasing function of the country's output level. Thus, some of the returns from investing in the domestic economy are effectively "taxed away" by existing foreign creditors and investment by domestic and foreign investors and thus economic growth is discouraged (Benedict et al., 2003).

2.3.2 Crowding-Out Theory

The theory that underpins this study is the crowding-out theory. The crowding out theory was chosen due to its peculiarity to investment. The theory which was first propounded by Adam Smith (1776) states that a rapid growth of government spending/borrowing would cause a transfer of scarce productive resources from the private sector to the public sector thereby crowding out private investment in an economy. The idea of crowding out theory came as a result of Smith's argument of funding wars through increase in public debt in the Great Britain (Sibel, 2015). The mercantile believed that in the payment of interest on public debt, the money does not go out of the country, but revolves within the economy. Therefore, heavy debt is not a problem for a society because "we owe it to ourselves" or "it is the right hand which pays the left hand" (Smith, 1776). Smith debunked the mercantile ideas with three arguments. First, Smith argued that the believe

ISSN 2394-7322

International Journal of Novel Research in Marketing Management and Economics
Vol. 11, Issue 2, pp: (93-104), Month: May - August 2024, Available at: www.noveltyjournals.com

that "we owe it to ourselves" was not true because at that time, foreign nationals such as the Dutch were living in the country and partaking in share of the public fund, which means there is international transfer payments. Second, Smith explained that even if the debt were owed to the inhabitants of the country (domestic borrowing), there are many problems which must be faced when a country goes into debt. He argued that it causes "perversion of the economy" by diverting resources from productive activities and shifting the burden of payment to the future generation. Third, Government borrowing is not only within but could borrow outside the shore of a country, and interest must be paid. When capital is diverted from private to public uses, it results to increase in taxes which reduce capital accumulation and consequently crowds out the private sector (Smith, 1776). Accordingly, debt undermines the "natural progress of a nation towards wealth and prosperity" since resources that could be used productively from the private sector of the economy are diverted by the state in order to finance its unproductive activities. Consequently, Smith's suggested that only under emergency situations (such as wars, natural calamities, and the likes) the government perhaps was justified to run budget deficits and accumulate debt. However, when such emergency circumstances arise, the preferred method of financing government expenditures should be through taxation and not borrowing (Smith, 1776). That, if public expenses are funded through taxation, it will hinder further accumulation of capital but not existing capital. But if public expenses are funded with borrowing, it will undermine the existing productive capacity by displacing savings from the "maintenance of productive labour" to unproductive and wasteful usages. Hence, Smith supported the denial of states to incur debt being that indebtedness delays the natural progress of a nation towards wealth and prosperity.

3. METHODOLOGY

The paper employed expost-facto research design. The design was considered appropriate for this study because it describes the statistical association between two or more variables using time series data. Secondary data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin 2022, and the Debt Management Office Annual Report, 2022 were used for the analysis for the period of 38 years spanning from 1984-2022. The data sourced from these sources were on private investment (in billion naira), domestic debt holding with the CBN and domestic debt holding with the non-bank public (in billion naira). Unit root tests were conducted using the Augmented Dicker Fuller test to determine the stationarity levels of the variables before conducting the cointegration test. According to Dicker and Fuller (1979), time series data needs to be stationary before carrying out any estimation in order to avoid spurious regression. After conducting the pre-diagnosis test (unit root), there was the need to ascertain the existence of long run relationship among the variables. Hence, the bounds cointegration test was used to test for long run relationship. Consequently, the Auto-regressive Distributed Lag method of cointegration was used to test for the long run relationship among the variables. Afterwards, the Error Correction Model (ECM) model was employed to analyze the data. The Wald test was used to test the hypotheses of the study.

3.1 Model Specification

The econometric model used for this paper is specified thus;

$PRINV = \beta_0 + \beta_1 DCBN + \beta_2 DNBP + \mu$ ………………………………………………… (1)

Where:

PRINV = Private Investment Index (This will be used to measure private investment)

DCBN = Domestic debt holding with the CBN.

DNBP = Domestic debt holding with the non-bank public.

β_0 = the intercept.

$\beta_1 - \beta_3$ = are the parameters to be estimated, and

μ = is the error term.

The ARDL - ECM model is specified thus:

$$\Delta PRINV_t = \beta_0 + \sum_{i=1}^{p} \beta_1 \Delta PRINV_{t-i} + \sum_{i=1}^{q} \beta_2 \Delta DCBN_{t-1} + \sum_{i-1}^{q} \beta_3 \Delta DNBP_{t-1} + \delta\gamma_{t-1} + \varepsilon_t - (2)$$

4.   RESULTS AND DISCUSSION

4.1 Descriptive Statistics

In order to have glimpse or more precise idea of the data used in the seminar, a first test of the data in the form of descriptive statistics is carried out.

Table 1: Descriptive Analysis

	PRINV	DCBN	DNBP
Mean	8354.389	657.4055	1674.602
Median	8167.450	398.2683	215.4645
Maximum	11445.86	3506.280	7651.570
Minimum	5668.870	9.531700	6.520300
Std. Dev.	1500.278	824.1390	2460.999
Skewness	0.173382	1.881824	1.254892
Kurtosis	2.129052	5.776624	3.010292
Jarque-Bera	1.428044	35.54637	10.23607
Probability	0.489671	0.000000	0.005988
Sum	325821.2	25638.81	65309.47
Sum Sq. Dev.	85531703	25809793	2.30E+08
Observations	39	39	39

Source: Output from E-view 10, 2024

As observed from Table 1, the mean, median, maximum, minimum, standard deviation, skewness, kurtosis, Jarque-Bera (and its probability) of the variables are given. The output revealed PRINV has the highest average of 8354.389, while DCBN has the lowest mean value of 657.4055. The median which is the middle number when arranged from the smallest to the highest revealed that PRINV has the highest median of 8167.450. Out of the three variables, PRINV has the maximum value of 11445.86 while DNBP has the minimum value of 6.520300. The standard deviation which measures the dispersion around the mean indicated that DNBP with a standard deviation of 2460.999 is more volatile that the other two variables. The skewness which measures the asymmetry of the distribution which could be either positive or negative revealed that all the variables have positive skewness, hence are more skewed to the right-hand side of the distribution because of their positive values. The kurtosis which measures the peakness or flatness of the distribution of the series revealed that DCBN and DNBP are leptokurtic, meaning they are peaked relative to the normal distribution, while the kurtosis of private investment is platykurtic, which means the variable is flat relative to the normal distribution. Also, the values of the Jarque-Bera for the 3 variables showed that private investment is normally distributed due to the probability value being greater than 0.05. However, the probability values of DCBN and DNBP showed that the variables are not normally distributed because their probability values are lower than 0.05. The total number of observations is 39.

4.2 Correlation Analysis

Correlation analysis is used to describe the strength and direction of the linear relationship between two or more variables. Table 2 showed the correlation output.

Table 2: Correlation Output

Correlation Probability	PRINV	DCBN	DNBP
PRINV	1.000000		

DCBN	0.681290	1.000000	
	0.0000	-----	
DNBP	0.786533	0.899692	1.000000
	0.0000	0.0000	-----

Source: Output from E-view 10, 2024

The result in Table 5 indicates that positive and significant relationship exists between PRINV and DCBN. The relationship was found to be moderate as indicated by the correlation coefficient value of 0.681290, and with a probability value of 0.0000. The positive correlation between PRINV and DCBN implies that an increase in DCBN would lead to a corresponding increase in PRINV. Furthermore, positive and strong relationship was found to exist between PRINV and DNBP. This was captured by the correlation coefficient value of 0.786533, which was found to be statistically significant going by the probability value of 0.0000.

Table 3: Summary of Unit Root Test Results

Variables	ADF Results	Critical Value @ 5%	Prob. Value	Integration
PRINV	-9.910444	-2.945842	0.0000	I(1)
DCBN	-6.504153	-3.536601	0.0000	I(1)
DNBP	-3.163788	- 2.971853	0.0332	I(1)

Source: Output from E-view 10, 2024

4.3 Cointegration Analysis

Cointegration analysis is use to ascertain if a long-run equilibrium relationship exists between a set of variables. When a long-run equilibrium relationship exists, the set variables are set to be cointegrated. The null hypothesis is that there is no cointegration, while the alternate hypothesis says there is cointegration. The decision rules are, if the calculated F-statistics is greater than the critical value for the upper bound I(1), then it can be concluded that there is cointegration (long run relationship). However, if the calculated F-statistics falls below the critical value of the lower bound, that is I(0), it can be concluded that there is no cointegration. Furthermore, if the calculated F-statistics falls in between the lower bound I(0) and the upper bound I(1), the test is considered inconclusive. Consequently, the ARDL bounds approach was used for the seminar to test for cointegration. The output of the ARDL Bounds Cointegration result is presented at Table 6.

Table 4: ARDL Bounds Test Results

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	5.226593	10%	3.17	4.14
k	2	5%	3.79	4.85
		1%	5.15	6.36

Source: Output from E-view 10, 2024

The cointegration test result in Table 6 showed that the F-statistic's value of 5.226593 is greater than the lower (I (0)) and upper bound (I (1)) critical values of 3.79 and 4.85 respectively at 5% significance level. Thus, the null hypothesis of no long-run equilibrium relationship is rejected and the alternative hypothesis of the existence of long-run equilibrium relationship is accepted. It can therefore be concluded that the variables are co-integrated; hence there is a long run equilibrium relationship between PRINV, DCBN and DNBP.

Table 5: ARDL-ECM Regression Results

Variable	Coefficient	Std. Error	T – Statistics	Prob.
C	6887.300	1577.505	4.365945	0.0004
D(PRINV(-1))	-0.032749	0.222513	-0.147179	0.8846
D(PRINV(-2))	-0.185746	0.233633	-0.795030	0.4370
D(PRINV(-3))	0.477469	0.215725	2.213326	0.0400
D(PRINV(-4))	0.346685	0.157541	2.200609	0.0411
D(DCBN)	-1.727747	0.633960	-2.725323	0.0139
D(DCBN(-1))	-2.618237	0.630089	-4.155344	0.0006
D(DCBN(-2))	-3.931614	0.887114	-4.431916	0.0003

ISSN 2394-7322

International Journal of Novel Research in Marketing Management and Economics
Vol. 11, Issue 2, pp: (93-104), Month: May - August 2024, Available at: www.noveltyjournals.com

D(DCBN(-3))	1.046641	0.619980	1.688184	0.1086
D(DNBP)	-1.415155	0.650861	-2.174281	0.0433
D(DNBP(-1))	2.061356	0.457792	4.502818	0.0003
D(DNBP(-2))	1.565396	0.382762	4.089739	0.0007
D(DNBP(-3))	2.934438	0.859626	3.413623	0.0031
CointEq (-1) *	-0.927116	0.222119	-4.173964	0.0006
Long Run				
DCBN	1.370926	0.931671	1.471470	0.1584
DNBP	-0.080147	0.393494	-0.203680	0.8409
R-squared	0.843022		Durbin-Watson	1.845917
F-statistic	8.262010			
Prob(F-statistic)	0.000019			

Source: Source: Output from E-view 10, 2024

Table 5 revealed that the lagged value of the Error Correction Term (ECT) meets the necessary conditions of being negative, less than unity and statistically significance. The ECT coefficient value of -0.927116 indicates that once there is disequilibrium in the system, it will take an average speed of 92.7% to adjust from short run to long run. The coefficient of determination (R-square) with value of 0.843022 indicates that DCBN and DNBP collectively accounted for about 84.3% variation or changes in PRINV in Nigeria during the period under review, while the remaining 15.7% was captured by the error term. Furthermore, the value of the F-statistics (8.262010) with its corresponding probability value of 0.000019 indicates that the parameters of the estimated model are jointly or simultaneously statistically significant at 5% level. Furthermore, the Durbin-Watson (DW) statistics value of 1.845917 shows that there is no evidence of autocorrelation because it falls within the acceptable DW range of 1.50 and 2.40.

4.4 Test of Hypotheses

The Wald test was used to test the causality of the independent variables on the dependent variable. The Wald test for individual hypothesis is presented in table 5. The decision rule is that if the probability value of the F-statistic is less than 0.05, it implies that the variable is statistically significant; hence the null hypothesis is rejected that there is no significant impact and accept the alternative.

Table 6: Summary of Wald Test Results

Variables	F-Statistics	D.f	Probability
DCBN	2.045578	(4, 18)	0.1308
DNBP	4.692266	(4, 18)	0.0090

Source: Output from E-View 10, 2024

Based on the hypotheses used in the study, hypothesis 1 (H_{01}) states that domestic debt holding with the CBN (DCBN) has no significant impact on private investment (PRINV). From Table 6, the probability value of DCBN which is 0.1308 is greater than 0.05 (5%); hence the null hypothesis that (DCBN) has no significant impact on private investment (PRINV) cannot be rejected. Likewise, hypothesis 2 (H_{02}) states that domestic debt holdings with the non-bank public (DNBP) have no significant impact on private investment (PRINV). Base on the decision rule, since the probability value which is 0.0090 is less than 0.05, it implies that the null hypothesis that domestic debt holdings with the non-bank public (DNBP) has no significant impact on private investment (PRINV) is rejected. This means, domestic debt holding with the non-bank public (DNBP) has significant impact on private investment (PRINV) in Nigeria during the period under review.

5. DISCUSSION OF FINDINGS

Table 7 displayed the long and short run results of the ARDL estimated parameters. Starting with the long run form, the value of coefficient of domestic debt holdings with the CBN (DCBN) which is 1.370926 showed that there is a positive relationship between DCBN and private investment (PRINV). Specifically, the results indicates that when domestic debt holding with the CBN increases by 1 billion naira, PRINV will on average also increase by 137.09 billion naira while

ISSN 2394-7322

International Journal of Novel Research in Marketing Management and Economics
Vol. 11, Issue 2, pp: (93-104), Month: May - August 2024, Available at: www.noveltyjournals.com

keeping DNBP constant. Also, the corresponding probability value (0.1584) means that DCBN has a positive and insignificant impact on PRINV. This finding aligned with the observation of Ogunjimi (2019) who observed that domestic debt improved private investment in Nigeria by crowding-in private investment. On the other hand, the value of the coefficient of domestic debt holdings with the non-bank public (DNBP) which is -0.080147 revealed a negative relationship between the DNBP and PRINV. That is, when DNBP increases by 1 billion naira, PRINV will on average decrease by 8 billion naira, while holding DCBN constant. Its corresponding probability value shows that DNBP has negative insignificant impact on PRINV. This finding is in line with that of Anoke *et al*. (2021) who found domestic debt to have negative relationship with private investment. In the short run the lagged values of DCBN and DNBP were all found to have significant impact on PRINV. The implications of the results are that holding of domestic debt instruments by the CBN and the non-bank public are for a short-term period because the debt instruments are floated in the money market. Hence, they have significant impact on PRINV in the short run, while in the long run, the impact is insignificant.

Table 8: Diagnostic Checks for domestic Debt and Private Investment

Tests		Outcomes	
		Coefficient	Probability
Breusch-Godfrey Serial Correlation LM Test	F-Stat.	1.326861	0.3027
Heteroskedasticity Test: Breusch-Pagan-Godfrey	F-Stat.	0.896979	0.5797
Normality Test	Jarque-Bera	2.397546	0.301564

Source: Output from E-View 10, 2024

The serial correlation test is based on the Lagrange Multiplier testing, hence often refers to as LM test for serial correlation. The null hypothesis states that there is no serial correlation in the model. The decision rule is that if the probability value is greater than 0.05, the null hypothesis cannot be rejected but rather accepted. Base on result from Table 8, the probability value of 0.3027, which is greater than 0.05 indicates that the null hypothesis of no serial correlation in the estimated model is accepted. Likewise, the null hypothesis for Heteroscedasticity states that there is no Heteroscedasticity among the residuals. The probability value of the F-statistics must be greater than 5% for the null hypothesis to be accepted. From Table 8, the probability value of the Heteroscedasticity F-statistic is 0.5797, which is greater than 0.05, indicating that there is no Heteroscedasticity among the residuals of the estimated model. Also, the normality test null hypothesis states that the error terms are normally distributed. To accept the null hypothesis, the probability value of the Jarque-Bera (JB) must be greater than 0.05, otherwise the null hypothesis will be rejected. In Table 8, the probability value of the JB (0.301568) which is greater than 0.05 indicates that the error terms are normally distributed.

Figure 1: CUSUM Stability Test
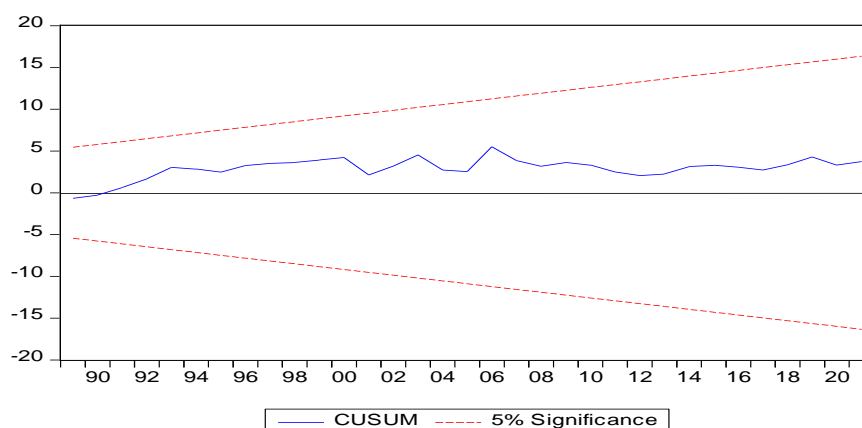
Source: Output from E-view 10, 2023

Figure 2, shows that the cumulative sum (CUSUM) series lies between the upper and the lower critical boundaries at 5%. This is an indication that the estimated model is stable. Hence, the estimated results are reliable, and can therefore be used for further analysis and prediction as well as for policy.

6. CONCLUSION AND RECOMMENDATIONS

The paper assessed the relationship between domestic debt holdings and private investment in Nigeria using the auto-regressive distributed lag model and the error correction model technique of data analysis. The findings indicated that domestic debt holding with the CBN has a positive relationship with private investment while domestic debt holding with non-bank public has negative relationship with private investment in Nigeria. Consequently, the following recommendations were made:

i. The Central Bank of Nigeria who is responsible for floating of debt instruments on behalf of the federal government should sustain its current domestic debt operations because the findings shows that they have positive and significant impact on private investment in the short runs.

ii. Due to the positive and significant impact that debt with the nonbank public has on private investment in the short run, the Nigeria Debt Management Office should encourage the participation of the public (private sector) and the nonbanks institution to participate more in the subscription of domestic debt instrument to further increase private investment in the country.

REFERENCES

[1] Agu, O. C. (2015). Determinants of private investments in Nigeria: An econometric analysis. *International Journal of Economics,* Commerce *and Management United Kingdom*, *3*(4).

[2] Akomolafe, K. J., Bosede, O., Emmanuel, O., & Mark, A. (2015). Public debt and private investment in Nigeria: *American Journal of Economics*, *5*(5), 501-507. https://doi:10.5923/j.economics.20150505.10

[3] Alison, J. (2003). Key issues for analyzing domestic debt sustainability. *Debt Relief International Publication.*

[4] Ambachew, M. (2010). Determinants of private investments in Ethiopia. *Ethiopian Journal of Economics*, *19*(1).

[5] Anoke, C. I., Odo, S. I., & Nnabu, B. E. (2021). Public debt and domestic private investment: A crowding effect in Nigeria. *International Journal of Research and Innovation in Social Science 5*(3),*1-8.* https://doi:10.47772/IJRISS. 2021.5301

[6] Asogwa, R. C., & Ezema, C. C. (2005). Domestic government debt structure, risk characteristics and monetary policy conduct: Evidence from Nigeria, Final research report submitted for the "*International Research Project on Macroeconomic Policy Challenges for Low Income Countries".*

[7] Balago, G.S. (2014). An empirical analysis of the relationship between government external borrowings and economic growth in Nigeria: *International Journal of Finance and Accounting3*(4), 235–243. doi: 10.5923/j.ijfa.20140304.03.

[8] Benedict, C., Rina, B., & Toan, Q. N. (2003). External debt, public investment and growth in low-income countries. *International Monetary Fund Working Paper 3/249.*

[9] Chinanuife, E., Eze, P., & Nwodo, O.S. (2018). Public debt spiral and domestic investment in Nigeria: *Academic Journal of Economic Studies.* 4(1), 153–161.https://doi:hdl.handle.net/11159/1876

[10] Chukwu, k. O., Ogbonnaya-Udo, N. & Chimarume, B. U. (2021). Effect of public debt on public investment in Nigeria: *Asian Journal of Economics, Business and Accounting,* 21(2), 98-114.https://doi:10.9734/AJEBA/2021/ v21i23035

[11] Eric, N., Ndayizeye, L., & Barthelemy, B. (2021). Impact of domestic public debt on private investment in Burundi: *Applied Mathematical Sciences*, 15(15), 705-716. doi:10.12988/ams.2021.9165552021.

[12] Iya, I., Gabdo, A., & Aminu, U. (2013). An empirical investigation into the impact of external debt on economic growth in Nigeria. *International Journal of Current Research.*

[13] Jhingan, M. L. (2009). *The Economics of Development and Planning*, (39thed), Delhi, Vrinda Publications (P) Ltd.

[14] Ogbaga, K., & Udede, C.C. (2018). Deficit financing and private sector investment in Nigeria: *IDOSR Journal of Banking, Economics and Social Sciences,* 3(1) 105-122. https://www.researchgate.net/publication/354451869

[15] Magumisi, N. (2021). The impact of public external debt on private investment. Evidence from Zimbabwe under the multi-currency system: *Journal of Economic Info, 8(2),* https://doi.org/10.31580/jei.v8i1.1688

[16] Krugman, P.R. (1988). Financing versus forgiving a debt overhang: *Journal of Development Economics,*29, 253-268. https://doi:10.3386/w2486

[17] Myers, S. C. (1977). Determinants of corporate borrowing: *Journal of Financing Economics, 5*(2), 147–175.https://doi:.org/10.1016/0304-405X(77)90015-0

[18] Mabula, S., & Mutasa, F. (2019). The effect of public debt on private investment in Tanzania: *African Journal of Economic Review,* 7(1), 109-135.https://doi:10.13140/RG.2.2.32360.52483.

[19] Nwaeze C. N. (2017). Public borrowing and private investment in Nigeria: Any crowding out effect? *JORIND,* 15(2), 24-34.https://www.ajol.info/journals/jorind

[20] Odozi, V.A (2016). Nigeria's domestic public debt stock: An assessment CBN debt trend. *20*(2).

[21] Ogunjimi, J. A. (2019). The impact of public debt on investment. Evidence from development bank of Nigeria: *Journal of Economics & Sustainable Growth*, 1-29. https://ssm.com/abstarct=3466870

[22] Olabode, OS & Babatunde, T. S., (2016) External Debts and Economic Growth in Nigeria: An Empirical Study Using Autoregressive Distributed Lag Model. [*Business and Economics Journal*, *7*(3), 1-9.

[23] Omodero, C. O. (2019). The effect of external borrowing on government capital investment in Nigeria. *Economics and Business. 33*(2019), 111-126.

[24] Oshadami, O. L. (2016). The impact of domestic debt on Nigeria's economic growth. Unpublished Journal.

[25] Paiko, I. I. (2012). Deficit financing and its implication on private sector investment: The Nigerian experience. *Arabian Journal of Business and Management Review* (OMAN Chapter), *1*(10), 1-12.

[26] Presbitero, A. F. & Panizza, U., (2014). Public Debt and Economic Growth: Is There a Causal Effect? *Journal of Macroeconomics 41, 21-41.* https://doi.org/1 0.1016/j.jmacro.2014.03.009.

[27] Sanni, H.T. (2007). Fiscal Dominance: Its Impact on Economic Management in Nigeria. A Paper presented at the course on issues in Economic Management Organized by the Central Bank of Nigeria (CBN) Learning Centre, Lagos

[28] Thilanka, H.R., & Ranjith, J.G. (2018). The impact of public debt on private investment: Sri Lankan experience. *International Journal of Business and Social Research, 8*(8),01-10. https://dx.doi.org/10.18533/ijbsr.v8i8.1122.