

Impact of Domestic Debt on Private Sector Investment and Economic Growth in Nigeria (2000-2019)

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Article DOI: 10.48028/iiprds/ijrjssmt.v8.i1.07

Abstract

This study examined the impact of domestic debt on private sector investment and economic growth in Nigeria, covering the period 2000-2019. The causal research design was employed. Unit root and cointegrated tests were carried out and the unit root test results showed that the variables were non-stationary at level but became stationary after first differencing. Cointegration test results revealed that the variables are cointegrated meaning that they have long-run equilibrium relationship. Using the ordinary least squares (OLS) method to estimate the specified multiple regression models, findings showed that domestic debt and interest on domestic debt negatively and significantly impacted on private sector investment and economic growth in Nigeria during the period under consideration. The negative impact of domestic debt on private sector investment indicates that government domestic borrowing crowd-out private sector investment. In lieu of the fact that government borrowing (especially domestic borrowing) stifles (crowd-out) private sector investment and retards economic growth in Nigeria, it is recommended that since government borrowing especially through the money market is exerting adverse effects on private sector investment and economic growth, government should endeavor to borrow domestically through the capital market by further developing the Nigerian equity and bond markets in order to enable these markets have the capacity to provide the needed funds. Also, to avoid stunt economic growth and crowding-out effect of government borrowing, government should endeavor to put in place fiscal prudent measures that would favor the private investor by discouraging high government spending in areas that don't have direct positive impact on private sector investment growth and economic growth.

Keywords: *Domestic Debt, Private Sector Investment, Economic Growth*

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Background to the Study

In every economy, the goals of government are to achieve the macroeconomic stability such as low and stable domestic prices, high and sustainable economic growth, low and acceptable level of unemployment, balance of payments equilibrium or surplus amongst others. To achieve these goals government often rely on the use of a mix or either of monetary and fiscal policy. Whereas the former mainly involves government effort through the central bank to directly control the movement and direction of monetary aggregates such as credit facilities, the latter mainly involves the collection of taxes and government spending (Apere, 2014). When government spending exceeds its revenue the government is said to be running deficit budgeting. To finance this deficit government, use at least one of four ways which include: money printing, running down foreign exchange reserves, borrowing abroad and borrowing domestically. The method chosen to finance government deficit affects resource allocation and by implication macroeconomic activities. The focus of this study is on financing public deficit through domestic borrowing and how it affects private sector investment and economic growth in Nigeria.

Literature Review

Conceptually, public debt is the debt owed by a government (Contessi, 2012). Government debt can be categorized as domestic debt (owed to lenders within the country) and external debt (owed to foreign lenders). According to Ozurumba and Kanu (2014), domestic debt refers to the portion of a country's debt (loans) borrowed from within the confines of the country. These loans are usually obtained from the central bank, deposit money banks, discount houses and other non-bank financial houses. Domestic debts are thus contracted through debt instruments such as treasury bills, treasury certificates and treasury bonds. Others are development stocks, federal government bonds and promissory notes. In Nigeria, domestic debts are contracted by the Federal Government as well as states and local governments. In principle, states and local governments can issue debt instruments and are limited in their capacity to do so. Domestic debt instruments in issue in Nigeria usually consist of treasury bills (TBs), treasury certificates (TCs) Federal Government development stocks (DS), bonds and means advances. The TBs, TCs and DS are marketable and negotiable while bonds and ways and means advances are not, but are rather held solely by the Central Bank of Nigeria (Adofu and Abula, 2010). Governments use the debt instruments to borrow in order to close the resource gap between savings and investments.

Investment is one of the components of aggregate demand. It is a smaller component of aggregate demand than consumption but more volatile as a source of short run. It is a more important determinant of aggregate demand such that variation in it can produce magnified changes in aggregate demand and level of employment. In many modern economies, investment accounts on the average for about 15 to 20% of the gross domestic product (GDP) value (Akanbi, 2010). Garba (2012), defined investment as being the most important part of an open and effective economic system serving as a major factor that facilitates economic growth of most economies. Investment is generally classified into four major components: private sector investment, public sector investment, foreign direct investment and portfolio investment. Private sector investment refers to gross fixed capital formation plus net changes in

the level of inventories whereas public sector investment includes investments by government and public enterprises on social and economic infrastructures, real estate and tangible assets. The combination of private and public sector investments is normally referred to as gross fixed capital formation (or aggregate domestic investment) in order to distinguish them from their counterpart foreign investment. The foreign investment when it is on tangible asset is referred to as foreign direct investment. It is called portfolio investment when it is on shares, bonds, securities etc. (Akanbi, 2010). Economic growth refers to increase in a country's GDP, although this differs depending on how GDP has been measured. Economic growth must be sustained for a developing economy to break the circle of poverty. Economic growth is thus the increase in the volume of goods and services produced by an economy.

Theoretical Review

The theoretical discourse on the government borrowing-private sector investment nexus has bordered on two key theories namely the Ricardian equivalence hypothesis and the Keynesian proposition and the study has adopted both theories for the purpose of this research. The Ricardian equivalence hypothesis developed by David Ricardo in 1863 states that for a given path of government consumption, the timing of taxes, or equivalently, the accumulation and de-accumulation of public debt, does not affect private consumption. In a closed economy, it therefore also leaves the interest rate, investments and output unchanged. If this proposition holds, the scope of fiscal policy as a stabilization tool of the economy will be very limited. This is in a sharp contrast to the basic Keynesian perspective as propounded by John Maynard Keynes in 1936. From the Keynesian viewpoint, a tax reduction/public debt accumulation in one period increases private consumption and therefore affects other macroeconomic variables such as output and unemployment. Following the famous work of Barro (1974), the equivalence proposition received a renewed consideration. Barro argued that the private sector's holding of government bonds does not represent net wealth to the households, and therefore has no effect on private consumption. This stand has received support by other papers displaying the equivalence result, but there are also contributions to the literature which favor the Keynesian prediction.

Empirical Literature

Several attempts have been made by previous studies to examine the impact of government domestic debt on private sector investment and economic growth in both developed and developing economies. Some of these studies are reviewed in this subsection. Hassan (2016) analyzed impact of public debt burden on economic growth in Nigeria by specifically looking at domestic and external debt effects on the economy. He applied Johansen co-integration test, error correction model and vector error correction model to establish the association between each set of variables. The study revealed that a significant positive relationship exists between total public debt & investment and between total public debt Government's reserves. The empirical outcomes of their study also revealed that domestic debt has a negative relationship with domestic investment in both short-run and long-run. On the other hand, findings showed that a negative relationship exists between total public debt and manufacturing sector and government subsidy. However, no strong statistical evidence has been found regarding the negative impact of domestic debt and external debt on the GDP growth rate. Kingw'ara (2015) examined the effects of public debt on private investments using GDP growth rate, interest

rate, public debt and public interest as independent variables for 1967–2007 period. He found out that there exists a negative relationship between domestic public debt and private investment.

Algan (2012), studied 17 OECD countries during the period 1960–2001. The empirical results revealed that the creation of one public job destroys approximately 1.5 private jobs, increases the number of the unemployed by 0.3, and slightly decreases participation in the labour market. On the one hand, the crowding-out effect is larger in countries where the public sector's production is highly substitutable to that of the private sector and where, on the other hand, the secure incomes in the public sector are high. Cavallo and Daude (2011) used the panel data of 116 developing countries over the period 1980–2006 to analyze the effect of public debt on the private capital. They find that, on average, the crowding-out effect dominates. In addition, they note that this crowding-out effect is mitigated (or even reversed) in countries equipped with better institutions (where the marginal productivity of public investment is higher in theory) and which are open to international trade, and where financial flows such as financing constraints are less.

Methodology

This study employs causal research design to examine the impact of domestic debt on private sector investment and economic growth. The study covered the period 2000 to 2019, which is a total of 20 years. The data for this study were collected from the Central Bank of Nigeria (CBN) statistical bulletin and the Debt Management Office (DMO) statistical publication. Since the data are time series in nature, they were tested for stationarity using the Augmented Dickey-Fuller (ADF) test method to check whether the time series variables have unit root or not. A time series with a unit root is said to be non-stationary. The reason for the stationarity test is to avoid the problem of spurious regression that occurs when non-stationary time series variables are used for regression analysis (Dickey & Fuller, 1981). The ordinary least squares (OLS) technique was also used to estimate the specified regression model for the study. To examine the impact of government borrowing on private sector investment and economic growth in Nigeria, the study employed a multiple linear regression models which are specified as follows:

$$PSI_t = \alpha_0 + \alpha_1 DMD_t + \alpha_2 INT + \varepsilon_t \quad (1)$$

$$\text{And } GDP_t = \beta_0 + \beta_1 DMD_t + \beta_2 INT + \varepsilon_t \quad (2)$$

Where:

PSI = private sector investment (measured by gross fixed capital formation),

DMD = government domestic debt stock

GDP = gross domestic product (representing economic growth),

INT = interest on domestic debt

α_0 and β_0 = constant terms, α_1 , α_2 , β_1 and β_2 = slope parameters

ε = the error term, t = time

Results and Discussion

Table 1: Augmented Dickey–Fuller (ADF) Unit Root Test Results

Variables	ADF Statistics		Remark
	Level	First Difference	
PSI	0.075498	-4.263441*	I(1)
DMD	3.029036	-6.807296*	I(1)
GDP	0.882189	-4.267866*	I(1)
INT	-0.006488	-8.245387*	I(1)

Note: *Reject the hypothesis of existence of unit root at 5% significance level. Lags are selected based on Schwarz Information Criteria (SIC).

Source: Computed using EViews 9 software

The ADF unit root test results as shown in table 1 indicate that all the variables are not stationary at level, i.e., PSI, DMD, GDP and INT were integrated of order 1. However, each of the variables became stationary after first differencing.

Table 2: Cointegration Maximum Eigen value Statistics for all the Variables

Hypothesized No. of Cointegrated Equation(s)	Eigenvalue	Maximum Eigen Statistics	5% Critical Value	Probability Value**
None *	0.714371	31.32653	27.58434	0.0157
At most 1	0.416773	13.47947	21.13162	0.4091
At most 2	0.303496	9.042054	14.26460	0.2827
At most 3	0.081486	2.124942	3.841466	0.1449

Notes: Superscript * denotes rejection of the null hypothesis of no cointegration at the 5% level of significance, while ** indicates MacKinnon-Haug-Michelis (1999) p-values. Max Eigen value test indicates 1 cointegrating equation(s) at 5% level of significance.

Source: Computed using E-Views 9 Software.

From tables 1 and 2, it is observed that both the trace test and maximum Eigen value statistics indicate 1 cointegrating equation(s) at the 5% level of significance. Based on the these evidence, we can safely reject the null hypothesis of no cointegrating vectors and conveniently accept the alternative hypothesis of the presence of cointegrating vectors among all the variables.

Table 3: Impact of Domestic Debt on Private Sector Investment in Nigeria
Dependent Variable: *PSI*

Regressors	Coefficient	Standard Error	t-Statistic	Probability
Intercept	28.82084	2.106120	13.68433	0.0000
<i>DMD</i>	0.035129	0.017462	2.011723	0.0035
<i>INT</i>	0.630872	0.118297	5.332950	0.0000
$R^2 = 0.93$				D.W=2.01
$\bar{R}^2 = 0.90$				F-stat=161.7799 Prob. =0.000000

Source: Computed using E-Views 9 Software.

From table 3, it can be observed that the coefficient of explanatory variable (*DMD*) is negative; implying that a unit change in government domestic debt stock (*DMD*), on average, reduced the value of private sector investment (*PSI*) by 0.035129 units. The negative impact of *DMD* on *PSI* implies that government domestic borrowing crowd-out private sector investment in Nigeria. On the other hand, the negative coefficient of *INT* suggests that a unit change in interest on domestic debt (*INT*), on average, reduced the value of private sector investment by 0.630872 unit. Given the high t-statistic values of the parameter estimates (i.e., t-statistics greater than 2.00) and the associated low probability values (i.e., probability values less than 0.05), we can infer that both domestic debt stock and interest on domestic debt impacted significantly on private sector investment during the period under consideration. The coefficient of determination (R^2) shows that about 93% of the variation in private sector investment was explained by the changes in the explanatory variables of the estimated model. This implies that the estimated model has a good fit. The adjusted coefficient of determination (\bar{R}^2) also shows that the estimated model has a good fit (adjusted $\bar{R}^2 = 90\%$). The high value of the F-statistic of 161.7799 with probability value of 0.000000 indicates that the parameters of the estimated model are jointly or simultaneously statistically significant. This implies that domestic debt stock and interest on domestic debt jointly impacted significantly on private sector investment during the period investigated. It also implies that the estimated model is still good for policy purposes, prediction and forecasting.

Table 4: Impact of Domestic Debt on Economic Growth in Nigeria
Dependent Variable: GDP

Regressors	Coefficient	Standard Error	t-Statistic	Probability
Intercept	10.68488	0.181642	58.82370	0.0000
<i>DMD</i>	-0.431240	0.142251	-3.031535	0.0002
<i>INT</i>	-0.028205	0.008038	-3.508803	0.0000
$R^2 = 0.89$				D.W.=2.06
$\bar{R}^2 = 0.86$				F-stat=124.17562 Prob. =0.000000

Source: Computed using E-Views 9 Software.

From table 4, it can be observed that the coefficient of explanatory variable (DMD) is negative; implying that a unit change in government domestic debt stock (DMD), on average, reduced the value of gross domestic product (GDP) by 0.431240 unit. On the other hand, the negative coefficient of INT suggests that a unit change in interest on domestic debt (INT), on average, reduced the value of GDP by 0.028205 unit. Given the high t-statistic values of the parameter estimates (i.e., t-statistics greater than 2.00) and the associated low probability values (i.e., probability values less than 0.05), we can infer that both domestic debt stock and interest on domestic debt impacted significantly on the GDP during the period under consideration.

The coefficient of determination (R^2) shows that about 89% of the variation in the GDP was explained by the changes in the explanatory variables of the estimated model. This implies that the estimated model has a good fit. The adjusted coefficient of determination (\bar{R}^2) also shows that the estimated model has a good fit (adjusted $\bar{R}^2 = 86\%$). The high value of the F-statistic of 124.17562 with probability value of 0.000000 indicates that the parameters of the estimated model are jointly or simultaneously statistically significant. This implies that domestic debt stock and interest on domestic debt jointly impacted significantly on private sector investment during the period investigated. It also implies that the estimated model is still good for policy purposes, prediction and forecasting.

Conclusion and Recommendations

The study has attempted to examine the impact of domestic debt on private sector investment and economic growth in Nigeria, covering the period 2000-2019. The causal was employed. Using the OLS method to estimated the specified multiple regression models, findings showed that domestic debt and interest on domestic debt negatively and significantly impacted on private sector investment and economic growth in Nigeria during the period under consideration. The negative impact of domestic debt on private sector investment indicates that government domestic borrowing crowd-out private sector investment. In view of the fact that government borrowing (especially domestic borrowing through the issuance of short-

term debt instruments in the money market) stifles (crowd-out) private sector investment and retards economic growth in Nigeria, it is recommended that government should leverage more on the domestic capital market by further developing the Nigerian equity and bond markets in order to enable these markets have the capacity to provide the needed funds. Also, to avoid stunted economic growth and crowding-out effect of government borrowing, government should put in place fiscally prudent measures that would favor private investment by discouraging high government spending in areas that don't have direct positive impact on private sector investment growth that trigger economic growth.

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