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Public Debt and Financial Development in Nigeria

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ABSTRACT

This study examines the effect of public debt on financial development between 1981 and 2016 using Dynamic Ordinary Least Square (DOLS). The focused variables are financial development and public debt. The ratio of private credits to GDP, the ratio of broad money, M2 to GDP and the ratio of commercial bank asset to the sum of commercial bank asset and Central Bank asset are used to measure financial development which is the dependent variable. The control variables include GDP deflator, lending rate, gross fixed capital formation, and government expenditure. ADF and PP tests of the unit root are used followed by the test of cointegration using Johansen and Juselius's test. The DOLS results indicate that public debt has a positive effect on financial development in Nigeria. This, therefore, supports the safe asset view. Thus, public borrowing which serves as a safe asset for financial intermediaries will encourage lending to the private sectors which will increase financial development and ultimately economic growth. Furthermore, if government borrowing and private credit are channeled to the productive sector of the economy, the economy will grow which will ultimately promote economic development in Nigeria.

JEL Classification Codes: E44, B26

Keywords: Financial development, DOLS, Public Debt, GDP deflator, ADF, Nigeria

1.0 Introduction

The government requires resources for financing public expenditure. While taxes generally provide the bulk of the revenue, public borrowings bridge the gap between receipt and the expenditure. Public borrowing could be made in the domestic or foreign market. Where local markets are not developed, external sources provide the bulk of funding for the resource gap (Matiti 2013, p. 1). In recent years, several countries have looked increasingly to domestic sources when expanding their net borrowing or adopted aggressive policies aimed at reducing public external debt and substituting it with domestically issued debt. Some countries are even building up domestically fiscal liabilities with the objective of sterilizing enlarged aid inflows (Panizza 2007 p.1).

Domestic debt can have severe implications on the financial system of a country if the increase in the debt discourages financial intermediaries from lending to the private sectors as the ratio of private credit to GDP is a good indicator of financial development (Levine, et al, 2000, p.20). Financial development is important because of its impact on economic growth and development. However, one of the factors affecting financial development is public debt (Hauner, 2008). Its effect on financial development could be negative or positive depending on the effect of public borrowing on private credit. Thus, an attempt to quantify the effect of public borrowing on financial development in Nigeria motivates this paper.

The issue of Nigeria's public debt became important prior to the period of debt forgiveness because of its magnitude and the amount which was required to service such debt as well as its attendant possible effects on different operating sectors of the economy especially the banking sector and the growth of the economy at large (Emmanuel, 2012).

In 2004, Nigeria's public debt stood at N6260.6 billion but fell by 64.78 per cent in 2006. This fall was due to debt forgiveness granted Nigeria and ever since the debt has been on the increase as it stood at N8506.3 billion in 2013. Nigeria's external debt declines sharply from its high value of N4890.27 billion in 2004 to N451.46 billion in 2006. The implementation of phase I and II of the Paris Club debt deal accounted for this. However, it started rising again in 2008 and its value stood at N3478.92 billion in 2016.

Although external debt has fallen, the domestic debt is on increasing trends as it increases from N1753.3 in 2006 to 3228.0 in 2009 and stood at N11058.20 billion in 2016. The rise in public debt most especially the domestic debt over the years is a major concern due to the crowding out effect it has in the private sector which has a negative impact on the financial development (DMO, 2014). More worrisome is the share of government credit in total bank credit which is a good indicator of financial development (Hauner, 2008). The research question is what is the impact of public debt on financial development? This becomes the problem in which the study tries to examine in order to draw a reasonable

conclusion for the study. In an attempt to answer this question, we employed the Dynamic Ordinary Least Square proposed by Stock and Watson (1993) to show the impacts of public debt on financial development. The primary objective of this paper is to examine the effects of public debt on financial development.

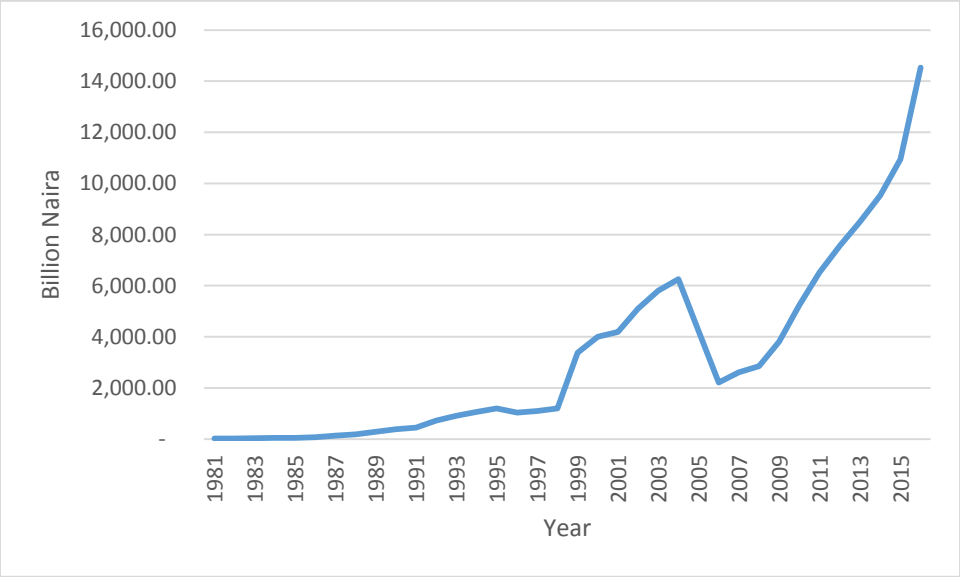
The rest of the paper is organized as follows: the next section examines the profile of public debt in Nigeria. This is followed by a review of theory and the empirical evidence. The next section discusses the data and methodology just before the conclusion.

2.0 Profile of Public Debt in Nigeria

Applying the principles of scarcity, countries borrow internally and externally in order to grow their economies, achieve sustainable development and ultimately improve the living standard of their citizenry. Nigeria is no exception to this modality (Ngerebo, 2014). Particularly, Nigeria's domestic borrowing is aimed at escaping the dangers associated with external borrowing occasioned by rising government expenditures vis-à-vis falling government revenues, supplement the internal savings for productive activities through infrastructural development as well as management of other macroeconomic conditions of the country (Ngerebo, 2014).

Three principal reasons are often advanced for government domestic debt in Nigeria (Charles, 2012). The first is for budget deficit financing, second is for implementing monetary policy and the third is to develop financial instruments so as to deepen the financial market. Whatever the purpose, the ultimate goal is for the government to find a way of managing the domestic debt so that the level of debt is not counter-productive. Debt instruments currently in issue consist of Nigeria treasury bills, Federal Government development stocks and treasury bonds and in 2003, Federal Government of Nigeria Bond was introduced (CBN, 2013). Out of these, treasury bills and development stocks are marketable and negotiable while treasury bonds are not but held solely by CBN (Charles, 2012).

Figure 1 Profile of Nigerian Public Debt (1981-2016)



Source: Plot by the Author from CBN Statistical Bulletin 2013 Edition

The trend of public debt in Nigeria can be explained as depicted in figure 1. Nigeria's public debt stock was at a modest level of N13.52 billion in 1981 before

rising to N382.71 billion in 1990. In 2004, it skyrocketed to N6260.59 billion before a sharp fall of about 64.78 per cent to N2204.72 billion in 2006. The sharp fall was due to debt forgiveness granted to Nigeria by the Paris Club and the London Club in 2006. Ever since, there has been a steady rise in public debt with a value of N14537.12 billion in 2016. Several factors have been advanced to explain the rising profile of public debt. The major factors include high budget deficits, low output growth, large expenditure growth, high inflation rate and narrow revenue base (Ngerebo, 2014).

3.0 Review of Theoretical and Empirical Literature

3.1 Review of Theoretical Literature

The roles of financial development and public debt in an economy have been extensively discussed in the academic literature (Ogwumike and Salisu). This is underscored by the fact that an effective financial system that enhances the mobilization of savings promotes economic growth and development through its impact on investment (Levine, 1997). Likewise, economic theory suggests that a reasonable level of public debt accelerates the growth rate of the economy through the development of infrastructure (Lee and Yan-Ling, 2015). However, the relationship between public debt and financial development has received little attention in the literature. But, it is important to examine such a relationship because the fiscal variable has been opined as one of the key determinants of financial development (Hauner, 2008). There are two strands of hypotheses that

describe the relationship between the two. The first is the safe asset view by Kumhof and Taner (2005) while the second is the lazy bank hypothesis by Hauner (2008).

The safe asset view by Kumhof and Taner (2005) asserts that safe government debt provides liquid collateral which facilitates financial intermediation. This is because the government treasury bill has inherent features that enable it to generate positive externalities for other financial instruments in a way that cannot be easily replicated by other instruments (Nyawata, 2012). Apart from being issued to finance government expenditure, it also performs the function of mopping off excess reserve in the economy. Furthermore, when the treasury market is well developed, the return on government debt will serve as a benchmark for the sale of private bonds if there is still excess liquidity in the economy. This will lead to the development of the private bond market which is crucial for overall financial development. Therefore, the increase in government borrowing may not necessarily have a crowding out effect on private sector credit. This was explained by Fayed (2012) that public debt actually crowds in credit to the private sector if there were excess liquidity in an economy. Fayed argued that even if the financial system is highly regulated, government borrowing will crowd in private sector credit if there is excess liquidity in the financial system.

Lastly, in support of the safe asset view, Alani (2006) opined that government bonds are issued in both domestic and foreign market and that interest rates are insensitive to government borrowing but more on the interest rates prevailing at the international financial market than the domestic financial market. This is because there is increasing globalization and integration among financial markets. Thus, higher government borrowing, rather than crowding out private sector credit may crowd in lending to the private sector.

Contrary to the safe asset view, lazy bank view was propounded by Hauner (2009) to explain the impact of public debt on financial development. Hauner asserted that government debt could have negative effects on the development of the financial system through the structural characteristics of the banking system. Increase in public debt is attributable to a lack of fiscal discipline and this has caused a financial crisis in the emerging market economy. The increased borrowing of the government from the banks which compete with private investors which would have used the funds more efficiently has made the financial depth of the developing countries to be shallow (Caballero and Krishnamurthy, 2004). Private investors are considered to be more efficient than government because it is believed that the credit extended to the private sector has a higher marginal social return than credit to the public sector (Adam et. al., 1999).

Moreover, part of the reasons why government debt hinders the financial development in the developing economy is that it requires far more expertise than in advanced one to invest in the economy. For example, it requires knowledge of political risk, exchange rate risk and the degree and form of corporate, judicial and government corruption (Caballero and Krishnamurthy, 2004). This actually reduces the number of investors in the emerging market and further degenerates the crowding out effect government borrowing have in the economy because of limited funds. These limited funds make the availability of credit to the private sector to be hindered.

In essence, banks that lend mainly to the government will be more profitable but less efficient. This is because it requires an interest rate premium to provide the loan to the private sectors because they are considered to be riskier. This premium is only possible in a liberalized financial system. But where there is an interest rate ceiling, banks will prefer to lend majorly to the government and this will retard the financial development. This was supported by an empirical result. The result shows that safe asset view dominates up to a threshold for both bank level and country level while increasing level of debt becomes harmful (lazy bank view) dominates beyond the threshold.

Hauner, however, concluded the analysis with four policy implication that the additional costs of large fiscal deficits on developing countries bring about. First, financial depth and private sector credit has great impacts on economic

growth; second, the decrease in the credit to the private sector has adverse effects on the small firm and income distribution; third, underdeveloped financial sector raises the sensitivity of the financial system to capital account crises; and fourth, poor financial development supports financial crowding out.

3.2 Review of Empirical Evidence

Empirical work that directly relates public debt and financial development is very scarce. Most studies indirectly empirically relate government borrowing with financial development through the impacts of interest rates on private sector credit. Since credit to the private sector is a key measure of the level of financial development, empirical works that explain how public debt crowds out or crowds in lending to the private sectors are reviewed in the study.

To start with, Fayed (2012) investigates crowding out effect of public borrowing using quarterly data from 1998 to 2010 of the Egyptian economy. The dependent variable is private credit while the independent variables include government borrowing, level of financial intermediation, the institutional quality, lending rate and industrial production where government borrowing is the key variable. In his findings using the Johansen cointegration approach, it is shown that government borrowing from the domestic banks leads to crowding out of private credit. The study also shows that government borrowing from banks is not the sole reason behind crowding out of private credit. The increase in banks'

holding of securities and treasury bills also reflects banks preference to invest excess liquidity in a low-risk high return investment. Thus, it is a case where the banking sector is populated by lazy banks.

Moreover, Maana, et al., (2008) examine domestic debt and its impact on private sector credit in Kenya using monthly data between 1996 and 2007. The estimation technique used is OLS and the dependent variable is private sector credit while the explanatory variable is domestic debt and both variables expressed as a percentage of broad money supply M3. The results show that the significant rise in domestic debt during the period results in higher domestic interest rate payment which presents a significant burden to the budget. However, due to a considerable level of financial development in Kenya, the study finds no evidence that the growth in domestic debt crowds out private sector lending in Kenya.

Emran and Farazi (2009) provide robust estimates of the causal effect of government borrowing on private credit using cross-country panel data set consisting of 60 developing countries and 32 years (annual data for 1984 – 2004). The focused variables are private credit and government borrowing from the banking sector and other financial institutions both measured as a percentage of GDP. While the control variables include GDP, inflation and growth rate of capital. The estimation techniques are the system-GMM and Pooled Mean

Group (PMG) and the results show that there is a significant crowding out effect of government borrowing from the domestic banking sector in private credit

Furthermore, the role of public debt in financial development is investigated empirically by Hauner (2008) from the sample of 11000 bank year observation over 1994 to 2003 and country level from 1960 to 2004 using Ordinary Least Square (OLS). For the country level, the independent variable is the ratio of liquid liability of the banking system to GDP while the explanatory variables are the share of public sector credit in total credit extended by the commercial banking system, inflation measured as a growth rate of CPI, and GDP. While for the bank level, the dependent variable is bank profitability while the explanatory variables are bank size, net interest margin, bank's capitalization, and bank liquidity. All observations are annual. The findings show that both country level and bank level regression are more supportive of the lazy bank view but the safe asset view seems to play a role at moderate levels of public debt held by banks. There is also evidence of a harmful interaction between public debt and financial repression.

Also, Altayligil and Akkay (2013) investigate the relationship between domestic public debt and financial development for the Turkish economy between 2002Q1-2012Q2. The dependent variable is the finance aggregate while the independent variables are the ratio of domestic debt to GDP, inflation, turnover ratio, and interest rate margin. The results of the time series analysis using Engle-

Granger cointegration test support the lazy bank view which advocates the negative relationship between domestic indebtedness and financial development.

Hauner (2007) however examines the impact of credit to the government on banking sector performance from 142 countries between 1960 and 2005. The dependent variable is the ratio of liquid liability to GDP while the main explanatory variable is the credit to the government using annual observations. Fixed effect panel specification with OLS is used as the estimation technique and the results show that there is a sizable negative effect of credit to the government in bank deepening in developing countries but no impact in advanced economies.

4.0 Data and Methodology

4.1 Model Specification

As discussed in the theoretical literature, there are two strands of hypotheses on the effects of public debt on financial development. The safe assets view considers public debt to have a positive effect on financial development while the lazy bank hypothesis shows that public debt impacts financial development negatively. This study adopts the lazy bank hypothesis and follows the work of Ismihan and Ozkan (2012) to specify the model. The focus variables are financial

development and public debt. Financial development is measured in three ways:

First, the ratio of private credit to GDP (PRIVATE), second, the ratio of broad money, M2 to GDP (DEPTH) and lastly the ratio of commercial bank asset to the sum of commercial bank and Central Bank assets (BANK). These indicators of financial development are justified by the work of Levine (1997) and each is constructed in such a way that increase reflects greater financial depth.

Following Hauner (2009), the set of control variables include inflation which is measured with GDP deflator (GDFLA), the government expenditure (GOVEXP), gross fixed capital formation (GFC) and the lending rate (RATE). GDP deflator is used as a measure of inflation because it covers a wider range of goods and service (Koga, 2003). Moreover, inflation is included because it may devalue the stock of outstanding debt and while the lending rate is made use of in the model because it indicates the cost of debt to both private sector and the government. In addition, total government expenditure is controlled for because it is a key factor that motivates the government to issue bonds and gross fixed capital formation (GFC) is seen as a measure of investment. Investment is important because most of the borrowing is largely invested.

Based on the foregoing, the relationship between public debt and financial development can be specified as:

FINDEV= f(PDEBT, GDFLA, GFC, RATE and GOVEXP) (1)

Where:

FINDEV = Financial Development;

PDEBT=Public Debt;

GDFLA= GDP deflator;

GFC= Gross capital formation;

Rate=Lending Rate

GOVEXP = Government Expenditure.

This analysis is based on time series annual data from 1981 to 2016. The data source includes Central Bank of Nigeria Statistical Bulletin and World Development Indicator (WDI). To estimate equation (1), natural log of both sides is taken and this results in the following equation (2)

$$FINDEV = \beta_0 + \beta_2 lnPDEBT + \beta_2 GDFLA + \beta_3 lnGFC + \beta_4 lnRATE + \beta 5 lnGOVEXP + \mu_0 \quad (2)$$

$lnPDEBT < 0$, $lnGDFLA < 0$, $lnGFC < 0$, $lnRATE < 0$, $lnGOVEXP > 0$

β_0, β_1, β_2, β_3, β_4 and β_5 are the parameters.

4.2 Estimation Technique

This study follows the current time series econometric practice that asserts that classical linear regression holds only when the variables are stationary (i.e. they

are integrated of order (0)). Most economic variables are of higher order and do not satisfy this condition. However, when a linear combination of these higher order variables result in an error term that is integrated of order (0), then such a model is amenable to cointegration. The variables are therefore said to be cointegrated and OLS estimate of such cointegrated variables may be super consistent in the sense of collapsing to their true values more quickly than if the variables had been stationary (Gutierrez, 2010).

The first step is to determine the degree of integration of individual series under investigations. This is done using Augmented Dickey-Fuller (ADF) and Phillip Perron (PP) test on a series of regression of original values. Thereafter, Johansen and Joselius's cointegration test is performed to see if the variables have a long-run relationship before the Stock and Watson Dynamic OLS is used for estimation. The stock and Watson Dynamic OLS improves on OLS by coping with a small sample and dynamic sources of bias (Al-Azzam and Hawdon, 1999). This method is a robust single equation approach which corrects for regressor endogeneity by the inclusion of lead and lag of first differences of the regressors and for socially corrected error by a GLS procedure. In addition, it has the same asymptotic optimality properties as the Johansen distribution. In this design, the dynamic OLS estimator performed well relative to other asymptotically efficient estimators.

Stock-Watson DOLS model can be specified as follows:

$$lnPRIVATE_t = \beta_0 + \beta_1 lnPDEBT_t + \beta_2 lnGDFLA_t + \beta_3 lnGFC_t + \beta_4 lnRATE_t + \beta_5 lnGOVEX\square_t + \sum_{i=-j}^{i=j} \partial_t \Delta lnPDEBT_{t-i} + \sum_{i=-k}^{i=k} \theta_t \Delta lnGDFLA_{t-i} + \sum_{i=-l}^{i=l} \mu_t \Delta lnGFC_{t-i} + \sum_{i=-m}^{i=m} \delta_t \Delta lnRATE_{t-i} + \sum_{i=-n}^{i=n} \tau_t \Delta lnGOVEXP_{t-i} + \varepsilon_t \quad \text{(DOLS 1)}$$

$$lnBANK_t = \beta_0 + \beta_1 lnPDEBT_t + \beta_2 lnGDFLA_t + \beta_3 lnGFC_t + \beta_4 lnRATE_t + \beta_5 lnGOVEXP_t + \sum_{i=-j}^{i=j} \partial_t \Delta lnPDEBT_{t-i} + \sum_{i=-k}^{i=k} \theta_t \Delta lnGDFLA_{t-i} + \sum_{i=-l}^{i=l} \mu_t \Delta lnGFC_{t-i} + \sum_{i=-m}^{i=m} \delta_t \Delta lnRATE_{t-i} + \sum_{i=-n}^{i=n} \tau_t \Delta lnGOVEXP_{t-i} + \varepsilon_t \quad \text{(DOLS 2)}$$

$$lnDEPTH_t = \beta_0 + \beta_1 lnPDEBT_t + \beta_2 lnGDFLA_t + \beta_3 lnGFC_t + \beta_4 lnRATE_t + \beta_5 lnGOVEXP_t + \sum_{i=-j}^{i=j} \partial_t \Delta lnPDEBT_{t-i} + \sum_{i=-k}^{i=k} \theta_t \Delta lnGDFLA_{t-i} + \sum_{i=-l}^{i=l} \mu_t \Delta lnGFC_{t-i} + \sum_{i=-m}^{i=m} \delta_t \Delta lnRATE_{t-i} + \sum_{i=-n}^{i=n} \tau_t \Delta lnGOVEXP_{t-i} + \varepsilon_t \quad \text{(DOLS 3)}$$

Where j, k, l, m, n and p are lengths of the leads and lags of the regressors. If any of the dependent variables are I(1) and at least some of the explanatory variables are I(1) or I(0), then DOLS estimates are obtained by the regression analysis of the above equations.

4.3 Unit Root and Cointegration Tests

Augmented Dickey-Fuller and Phillips-Perron tests are used to test for the unit root. The results of the tests show that all the eight variables used in the model are integration of order one I(1) and the results are presented in table 1. Given that all the series in the financial development function are stationary at first difference, the Johansen and Juselius's test of cointegration is performed in table 2 to show that the series have a long-run relationship. Both the max eigenvalue and trace statistics for the three equations indicates that the series are cointegrated. For instance, the trace statistics shows that there are two cointegrating equations for all the three models while the max eigenvalue

statistics indicates two cointegrating equations for the series with the exception of DOLS 1 which has one cointegrating equation.

Table 1 Result of the Augmented Dickey-Fuller and Phillips-Perron Test of Unit Roots

	AugmentedDickeyFuller(ADF)		Phillips-Perron		
Variable	Level	1st Difference	Level	1st Difference	Conclusion
lnBANK	-1.161526	-5.465098*	-1.446626	-5.431795*	I(1)
lnDEPTH	-1.796649	-4.947199*	-1,796649	-5.045664*	I(1)
lnGDFLA	-0.830121	-5.499625*	-0.845971	-5.501693*	I(1)
lnGFC	-1.610135	-2.964966**	-1.955808	-4.457220*	I(1)
lnGOVEXP	1.122226	-5.058942*	1.173598	-5.083092*	I(1)
lnRATE	-2.759873	-4.104769*	-2.263544	-5.387285*	I(1)
lnPDEBT	-2.712419	-4.035314*	-2.558496	-4.038933*	I(1)
lnPRIVATE	-1.477722	-5.534844*	-1.460489	-6.867127*	I(1)

*Source: Author's computation. Notes: the null hypothesis for each column is the presence of unit roots. *, **, *** represent 1%, 5% and 10% respectively. All variables are constant with no trend.*

Table 2 Results of Johansen and Juselius's Test for Cointegration

Equations	Hypotheses		Test Statistics	
	H_0	H_1	Max-Eigenvalue	Trace
PRIVATE	r = 0	r > 0	44.00971**	115.0563
	r ≤ 1	r > 1	33.77331	71.04659**
	r ≤ 2	r = 3	16.03826	37.27328
BANK	r = 0	r > 0	47.55046	121.6324
	r ≤ 1	r > 1	34.07369**	74.08196**
	r ≤ 2	r = 3	17.73723	40.00827
DEPTH	r = 0	r > 0	47.43933	122.0529
	r ≤ 1	r > 1	34.87687**	74.61359**
	r ≤ 2	r = 3	16.11750	39.74185

Source: Author's computation. Note: r indicates the number of cointegrating relationships. The optimal lag structure for the VAR was selected by *minimizing Akaike's FPE criteria. Critical values are sourced from Johansen and Juselius (1990). ** indicates rejection at the 95% critical values.*

4.4 Estimation and Discussion of Results

Given the presence of cointegration among the variables, the results indicate there exists a long-run relationship in the financial development functions. We may now

proceed to discuss the results of the Stock and Watson Dynamic OLS estimated in Table 3.

Table 3 Stock-Watson Dynamic OLS Estimates of the Impact of Public Debt on Financial Development

	Explanatory Variables					
Equations	Constant	lnPDEBT	lnRATE	lnGOVEXP	lnGFC	lnGDFLA
DOLS 1	-31.2064 (-3.5375)*	0.18076 (1.04386)	-0.18447 ((-0.5420)	1.05324 (2.4761)*	0.03525 (0.1465)	0.25201 (-1.679)***
DOLS 2	23.49201 (3.1961)*	0.393492 (2.7273)*	-0.076029 (-0.2681)	-0.391744 (-1.1054)	0.34151 (-1.703)***	0.338622 (-2.708)**
DOLS 3	-23.0137 (-2.6802)*	0.28582 (1.6986)***	-0.36861 (-1.1127)	0.82597 (1.9949)***	0.00498 (0.0213)	0.328427 (-2.249)**
	R-squared	Adjusted R-squared		S.E	SSR	No. of Lag
DOLS 1	0.704773	0.650101		0.243905	1.606214	None
DOLS 2	0.908422	0.891463		0.161508	0.704290	None
DOLS 3	0.602578	0.528982		0.216185	1.261875	None

*Source: Author's computation. Notes: *, **, *** represent statistical significance at 1%, 5% and 10% respectively while t-statistics appear in parenthesis and the lags and leads are null due to a small number of the observations.*

Starting with the DOLS 1, the indicator of the financial development, which is the dependent variable is the ratio of private credit to GDP (PRIVATE). In the equation, only two variables are statistically significant apart from the constant term. The variables include GOVEXP and GDFLA. Public debt (PDEBT) has a positive effect on financial development. One per cent rise in public debt will lead to 0.18 per cent rise in financial development but it is not statistically significant. This is in support of safe asset view. Lending rate is of correct sign and 1 per cent rise bring about 0.18 per cent fall in PRIVATE which is not statistically significant. Also, Government expenditure (GOVEXP) conforms to the a priori expectation as 1 per cent rise leads to 1.053 per cent rise in financial development. GFC has 0.04 positive effects on PRIVATE as a result of 1 per cent

rise in it. This does not, however, have correct sign and it is statistically insignificant. GDFLA is of no correct sign but is statistically significant at 1 per cent increase bring about 0.25 per cent rise in PRIVATE.

For DOLS 2, three variables are significant excluding the constant. The variables are PDEBT, GFC and GDFLA. The dependent variable is the ratio of the commercial bank asset to the sum commercial bank assets and Central Bank assets (BANK). For the first time, the key variable (PDEBT) will be significant but the sign is against the a priori expectation. 1 per cent rise in PDEBT brings about 0.39 per cent increase in BANK at 1 per cent significant level. RATE is of correct sign as it has a 0.08 positive impact on BANK due to 1 per cent rise in it. GOVEXP has 0.39 negative effects and GFC also has 0.34 per cent negative impact on BANK. Though GOVEXP is not of correct sign, GFC conforms to the theory and it is statistically significant at 10 per cent. GDFLA is not of the correct sign but is statistically significant at 5 per cent as 1 per cent rise will lead to 0.34 per cent increase in BANK.

Lastly, DOLS 3 has the ratio of broad money supply (M2) to GDP (DEPTH) as the independent variables and has three variables to be significant. All the variables conform to the expectation with the exception of GFC. 1 per cent increase in PDEBT lead to 0.29 per cent rise in DEPTH at 10 per cent significance. On the other hand, 1 per cent increase in lending rate, bring about 0.37 per cent fall in DEPTH. GOVEXP has 0.83 per cent positive effect on DEPTH at 10 per cent

significant level. Also, 1 per cent rise in GFC will lead to 0.005 per cent increase in DEPTH but is not statistically significant. Finally, 1 per cent rise in GDFLA will lead to 0.33 per cent fall in DEPTH at 5 per cent significant level.

From the foregoing, it is discovered public debt in Nigeria has a positive effect on financial development irrespective of the indicators of financial development. Hence public debt financial development nexus in Nigeria is in support of the safe asset view. This shows that public debt crowd in financial development as pointed out by Kumhof and Taner (2005).

5.0 Conclusion and Policy Implication

This study has examined the effects of public debt on financial development in Nigeria from 1981 to 2016. It is a country-specific study that proxies financial development with the ratio of private credit to GDP, the ratio of the broad money supply, M2 to GDP and the ratio of commercial bank asset to the sum of commercial bank asset and Central bank asset. The results from various financial development functions using Dynamic Ordinary Least Square are similar.

From the various regression analyses, it is found out that the impact of public debt on financial development is positive. This shows that in Nigeria government borrowing crowd in financial development. This is therefore consistent with the safe asset hypothesis. Thus, the findings have important policy implications as

they show that government borrowing does not necessarily crowd out private sector credit and this will be beneficial to the financial development and to the economy at large if the borrowed funds are channeled to the productive sector of the economy. Moreover, the rise in financial development as a result of increased public borrowing will engender economic growth which will ultimately lead to economic development.

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