Does Private Sector Credit Impact on Private Sector Investment in Nigeria?

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Abstract: - **Theories have proved that a significant critical factor influencing private sector investment is credit to the private sector which has more significant effect on economic activities than credit to the public sector. This study therefore examines the extent to which private sector credit impacts on private sector investment in Nigeria. The ARDL model was engaged in data analysis. From the analysis, the following results were established, that private sector credit has positive and significant impact on private sector investment in the short run, but in the long run, private sector credit has positive and insignificant impact on private sector investment in Nigeria. Empirically, 1 percent increase in private sector credit in the short run leads to 0.77 percent increase in private sector investment. The study recommends that, monetary authorities pursue policies aimed at increasing availability of private sector credit. Such policies include reducing real interest rate by 1 percent so as to increase private sector investment by 0.01% in the short run. Furthermore, the study recommends that public expenditure should be channeled to addressing the poor state of physical infrastructure, particularly road networks, electricity and water supply.**

Key Words: **Private Sector Credit, Private Sector Investment, ARDL Model.**

I. INTRODUCTION

Achieving rapid and sustained economic growth has always remained the top most macroeconomic objective in the list of economic goals pursued by every developing nation. Incidentally, one major variable influencing economic growth is investment. At the domestic level, investment is categorized into public and private sector investments. Private sector investment refers to investment by individual people or firms as opposed to the government as an entity which is referred to as public sector investment. Economic theories have shown that some critical factors influencing private sector investment are those of credit to the private sector, the cost of capital, the rate of return, public sector investment, exchange rate etc.

Among these critical determinants of private sector investment is private sector credit. Private sector credit refers to financial resources provided by deposit taking corporations except central banks to the private sector. These financial resources made available to the private sector are regulated by credit policies. Credit policies involve imposition of quantitative ceiling on the overall and or sectoral distribution of banking system loans and advances, by monetary authorities (Anyanwu, 1993). The broad objectives of credit policies in Nigeria, over the years, have been the enhancement of availability, reduction of cost and access of credit to the private sector as well as the stimulation of growth in the productive sectors of the economy.

The study by Okafor (2011), established that credit delivery constitutes the primary platform through which banks promote the social and economic endeavours of the customers. Credit policies therefore, constitute key instrument relied upon by monetary authorities to promote national economic growth and balanced development.

Accordingly, bank credit is the most important source of investment financing among private enterprises in developing countries, Nigeria inclusive. The volume of and access to bank credit available for private sector borrowers have direct influence on private investment activity. The portion of total credit in the economy allocated to private sector was 66.7% in 1980, 59.7% in 1981 and 52.1% in 1982. Afterward credit to private sector of the Nigerian economy shrunk. It reduced to 28.9% in 1986 and 34.0% in 1993. The availability of bank credit for private investment and access to available bank credit by private sector operators in Nigeria had been greatly constrained by credit to the government and high interest rate prevalence during market-based monetary policy regime (Ekpo, 2016).

In Nigeria and elsewhere, the aggregate bank credit is always allocated to both private sector and public sector. However, studies have shown that credit to the private sector has more significant effect on economic activities than credit to the public sector. It is in the light of this background that this study sets out to ascertain if private sector credit impacts on private sector investment in Nigeria.

II. LITERATURE REVIEW

Private sector investment in Nigeria is faced with some daunting challenges. For decades, Nigeria's economy was characterized by growing dominance of the public sector over the private sector. The private sector faced numerous problems which include; the poor state of physical infrastructure, particularly road networks, electricity and water supply; inadequate credit to the private sector, which has dove tailed to high cost production; insecurity in the country; corruption at various levels; weak institutions, etc.

Studies have shown that availability of credit to the private sector, all things being equal is a potent tool for increasing private sector investment. The study by Calomiris and Himmelberg (1995) on directed credit programmes for agriculture and industry: arguments from theory and fact using vector autoregressive model reveal that policy-based finance was effective in stimulating initial growth and encouraging private investment in priority industries in Japan.

Eatzaz and Malik (2009) evaluated the relationship between financial development and economic growth in selected developing countries. The study was a panel data work and was evaluated with panel regression model. The result of the study shows that bank credits to the private sector significantly increase the productivity of workers and as such, facilitates long-run economic growth.

Murty, Sailaja and Demissie (2012) carried a study on the long-run impact of bank credit on economic growth in Ethiopia: evidence from Johansen's multivariate co-integration approach. The times series study was analysized by an error correction model. The study finds a significant long-run relationship between bank credits and economic growth in Ethiopia. The study concludes therefore, that through efficient resource allocation mechanisms and domestic capital accumulation, bank credits positively influence economic growth in Ethiopia.

In their study, Aliyu and Yusuf (2013) examined the impact of private sector credit on the real sector of Nigeria .The study employed the multiple regression model in the analysis. The study finds that there is a positive significant impact of credit to private sector on the real sector of Nigeria. This suggests that the performance of the real sector is greatly influenced by credit to private sector in the Nigerian economy.

Martin and Wasom (1992), in an econometric study of the determinants of private investment in Kenya using multiple regression model on real exchange rate, foreign exchange reserves, credit to private sector, public investment, interest rate and income establishes that all the coefficients are significant except those for interest rate and income. The implication of this study is that credit to private sector has a positive significant impact on private investment in Kenya.

Asante (2000) explored the determinants of private investment in Ghana using distributed lagged model and finds that, the most important determinants were the trade regime, real credit to the private sector and political and economic instabilities. The factors which seemingly strengthened private investment were public investment, credit to private sector, public debt, real exchange rates, and real interest rates and lagged private investment. The implication of the study is that credit to the private sector is critical to private investment.

Ouattara (2004) carried a study on modeling the long run determinants of private investment in Senegal. The researcher used OLS econometric process of estimating an equation of private investment while subjecting it to various statistical diagnostic procedures. The long-run equation was derived using Johansen cointegration techniques. The results indicate that public investment, real income and foreign aid flows positively affect private investment, while the impacts of credit to private sector and terms of trade were negative.

Badawi (2004) investigated the impact of macroeconomic policies on private investment in Sudan employing annual data over the period 1969-1998. The focus was on public investment, credit, devaluation, and interest rate policies. The study engaged cointegration, vector autoregressive (VAR) and error correction techniques to estimate the long and short run coefficients. The results suggest significant crowding-out effect of public investment on private investment in Sudan. The implication of this finding is that, as government of Sudan continues to compete with private sector investors on funds available in the country, the more private investors are put out business in Sudan.

Ghura and Goodwin (2010) investigated the determinants of private investment in Asia, Sub-Saharan Africa (SSA), and Latin America with panel data for the period 1975-1992 using a pooled data for all the 31 countries. Econometric tests indicated a preference for the random effects estimation procedure over other alternatives. The results show that private investment was stimulated by increases in private sector credit in Asia and Sub-Saharan Africa, but not in Latin America. Also, increases in credit to the government had significant adverse effects on private investment in Sub-Saharan Africa and Latin America.

Akpalu (2002) used annual time series data from 1970 – 1994, on private investment, public investment, real GDP, consumer price index (CPI), lending rate, credit to the private sector and GDP per capita to model the determinants of private investment in Ghana. He employed the Engle-Granger two Step procedure and the Johansen multivariate test. The study reveals that in relative terms private investment in the short-run responds more to real per capita income growth, credit availability and public investment. Public investment was found to crowd-out private investment. The implication of the study is that availability of private sector credit significantly impacts on private sector investment in Ghana.

Okorie (2013) carried a study on an error correction model of impact of private sector credit on private domestic investment in Nigeria using time series data and the error correction model technique. The study establishes that increase in private sector credit led to increase in private domestic investment. The empirical result shows that 10% increase in private sector credit leads to 6% increase in private domestic investment in Nigeria. The implication of the study is that private sector credit has significant impact on private domestic investment.

III. METHODOLOGY

To ascertain the impact of private sector credit on private sector investment in Nigeria, the study adopted an

Autoregressive distributed lag model (ARDL) which model is specified as follows:

$PIV_t = f(PIV_{t-1}, PUV_t, PRC_t, RIR_t, EXDR_t, RGDP_t, M2_t)$ 3. 1

Where,

PIV_t = private sector investment in Nigeria for period t (gross fixed capital formation is used as the proxy for private sector investment).

PIV_{t-1} = private sector investment in Nigeria for previous year

PUV_t = public sector investment in Nigeria for t (government capital expenditure is used as the proxy for public sector investment).

PRC_t = private sector credit in Nigeria for period t

RIR_t = real interest rate in Nigeria for period t

$EXDR_t$ = external debt GDP ratio in Nigeria for period t

$RGDP_t$ = real gross domestic product (proxy for demand conditions in the economy)

M2 = money supply

The linear function to be estimated is then given as follows:

$$PIV_t = \alpha_0 + \alpha_1 PIV_{t-1} + \alpha_2 PUV_t + \alpha_3 PRC_t + \alpha_4 RIR_t + \alpha_5 EXDR_t + \alpha_6 RGD_t + \alpha_7 M2_t + \boldsymbol{\mu}_{1t}$$ 3.2

Where, $\boldsymbol{\mu}_{1t}$ = a stochastic error term, assumed to be independently and normally distributed.

The a priori expectations would require that the parametric coefficients in equation (2) above have the following algebraic signs: $\alpha_1 > 0$, $\alpha_2 > 0$, $\alpha_3 > 0$, $\alpha_4 < 0$, $\alpha_5 < 0$, $\alpha_6 > 0$, $\alpha_7 > 0$

IV. PRESENTATION AND ANALYSIS OF RESULTS

Unit Root Test

Table 1

Variables	ADF Statistic	Critical Values	Order of Integration
RIR	-3.410946	1% = -3.626784 5% = -2.945842 10% = -2.611531	I(0) Stationary at level
ΔLnPIV	-4.902866	1% = -3.639407 5% = -2.951125 10% = -2.614300	I(1) Stationary at first difference
ΔLnPUV	-6.168753	1% = -3.632900 5% = -2.948404 10% = -2.612874	I(1) Stationary at first difference
ΔLnPRC	-4.412675	1% = -3.632900 5% = -2.948404 10% = -2.612874	I(1) Stationary at first difference
ΔLnEXDR	-4.463450	1% = -3.632900 5% = -2.948404 10% = -2.612874	I(1) Stationary at first difference
ΔLnRGDP	-3.339751	1% = -3.632900 5% = -2.948404 10% = -2.612874	I(1) Stationary at first difference
ΔLnM2	-3.195964	1% = -3.639407 5% = -2.951125 10% = -2.614300	I(1) Stationary at first difference

Source: Author's Computation from E-Views, version 9.

From the table above, the Mackinnon critical value for rejection of unit root hypotheses indicates that RIR was stationary at levels as such integrated at order zero, I (0). Furthermore, LnPIV, LnPUV, LnPRC, LnEXDR, LnRGDP and LnM2, were stationary after first differencing and as such they are integrated at order one, I (1). Given that variables are integrated at Order 1(0) and Order 1(1), the Auto – Regressive Distributed Lag (ARDL) estimation technique becomes the most appropriate method.

Co – integration Test

Table 4.2a: Bounds Test for co integration relationship in model

Model: Impact of private sector credit on private sector investment in Nigeria

ARDL Bounds Test				
Date: 10/14/18 Time: 10:11				
Sample: 1984 2016				
Included observations: 33				
Null Hypothesis: No long-run relationships exist				
Test Statistic	Value	k		
F-statistic	7.084622	6		
Critical Value Bounds				
Significance	I0 Bound	I1 Bound		
10%	2.12	3.23		
5%	2.45	3.61		
2.5%	2.75	3.99		
1%	3.15	4.43		

Source: Author's Computation from E-Views, version 9.

Table 4.2a shows there is co – integration between private sector credit and independent variables, which emphasize the relevance of the long run concept. The F – statistic value of 7.084622 is greater than the upper bound critical values of 3.23, 3.61, 3.99 and 4.43 at 10%, 5%, 2.5% and 1% significance levels respectively. This confirms the presence of co – integration between private sector credit and independent variables, hence, the null hypothesis of no co – integration is rejected.

Regression Model

Results of the ARDL Model of Impact of Private Sector Credit on Private Sector Investment in Nigeria

Since private sector investment, private sector credit and other explanatory variables are co integrated, the long run parameters of the ARDL model are estimated and both the short and long run results are presented below.

Table 4.3a: Impact of Private Sector Credit on Private Sector Investment in Nigeria

ARDL Cointegrating And Long Run Form				
Dependent Variable: LNPIV				
Selected Model: ARDL(3, 0, 3, 3, 2, 3, 1)				
Date: 10/14/18 Time: 10:11				
Sample: 1981 2017				
Included observations: 33				
Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNPIV(-1))	-0.313879	0.151775	-2.068054	0.0630
D(LNPIV(-2))	-0.385428	0.125354	-3.074723	0.0106
D(LNPRC)	0.765952	0.184318	4.155596	0.0016
D(LNPUV)	0.115520	0.065773	1.756326	0.1068
D(LNPUV(-1))	-0.300381	0.065434	-4.590617	0.0008
D(LNPUV(-2))	1.013683	0.121287	8.357690	0.0000
D(LNRGDP)	7.520305	0.765139	9.828682	0.0000
D(LNRGDP(-1))	1.709853	0.709160	2.411098	0.0345
D(LNRGDP(-2))	-3.780755	0.453261	-8.341231	0.0000
D(EXDR)	10.748492	1.630898	6.590538	0.0000
D(EXDR(-1))	-3.675007	0.890456	-4.127105	0.0017

D(RIR)	-0.005118	0.001281	-3.995011	0.0021
D(RIR(-1))	-0.007071	0.001640	-4.311176	0.0012
D(RIR(-2))	0.011912	0.001262	9.438628	0.0000
D(LNM2)	0.709763	0.242359	2.928567	0.0137
CointEq(-1)	-0.586942	0.208282	-2.818010	0.0167
Cointeq = LNPIV - (1.3050*LNPRC -0.2176*LNPUV + 5.9579*LNRGDP +				
18.8869*EXDR -0.0309*RIR -1.3622*LNM2 -54.5559)				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNPRC	1.304988	0.720830	1.810395	0.0976
LNPUV	-0.217634	0.285324	-0.762761	0.4616
LNRGDP	5.957918	1.327462	4.488203	0.0009
EXDR	18.886904	6.263813	3.015241	0.0118
RIR	-0.030858	0.011284	-2.734694	0.0194
LNM2	-1.362212	0.812364	-1.676850	0.1217
C	-54.555932	12.161006	-4.486136	0.0009

Source: Author's Computation from E-Views, version 9.

From table 4.3a above, most of the estimated coefficients have their expected theoretical signs, but not all are statistically significant. The results indicate 58.7% annual convergence of private sector investment towards long run equilibrium.

The results also point out that private sector credit has positive and significant impact on private sector investment in the short run. However, in the long run, private sector credit has positive and insignificant impact on private sector investments. A 1% increase in private sector credit in the short run leads to 0.77% increase in private sector investment. This conforms to a priori expectation. Furthermore, 1% increase in private sector credit in the long run results in 1.3% increase in private sector investment. This also conforms to a priori expectation.

Public investment of past years has positive and significant impact on private sector investment in the short run confirming a possible crowding in effect of government investment. This conforms to a priori expectation and the Keynesian theory on private sector investment which argues that government expenditure increases private sector investment due to the positive effect of government spending on the expectation of the investors. However, it has a negative and insignificant impact in the long run. The empirical results show that 1% increase in public investment leads to 1% increase in private sector investment in the short run.

Real gross domestic product has positive and significant impact on private sector investment both in the short run and in the long run. 1% increase in real gross domestic product in the short run leads to 7.5% increase in private sector investment while in the long run, a 1% increase in real gross product leads to 6% increase in private sector investment.

Consistent with theory, large external debt to GDP ratio has a negative impact on private sector investment in Nigeria thus confirming the hypothesized debt overhang effect. The coefficient of external debt to GDP ratio has a negative statistical significant impact on private sector investment in the short run at 5% significant level. Empirical result shows that 1% increase in previous year's external debt to GDP ratio leads to 3.7% decrease in current year's private sector investment.

However, in the long run, the coefficient external debt to GDP ratio has positive significant impact on private sector investment which is not in conformity with a priori expectation.

Real interest rate has a significant negative impact on private sector investment both in the short run and the long run. This result conforms to a priori expectation. Thus, 1% increase in real interest leads to 0.01% decrease in private sector investment in the short run and 0.03% decrease in the long run. The implication is that 1% increase in real interest rate decreases private sector investment both in the short run and in the long run.

Finally, money Supply has significant positive impact on private sector investment in the short run. However, in the long run, money supply has negative and insignificant impact on private sector investment. 1% increase in money supply in the short run leads to 0.7% increase in private sector investment while in the long run, 1% increase in money supply leads to 1.4% decrease in private sector investment.

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

The broad objective of this study is to ascertain the impact of private sector credit on private sector investment in Nigeria. The study engaged the ARDL model in data analysis.

From the result of the analysis, we established that the speed of adjustment of private sector investment to long run equilibrium in the impact of private sector credit on private sector investment has an error correction term coefficient of -0.586942 and t – statistic value of -2.818010. This result indicates that if there is disequilibrium in the short run, the speed of adjustment to long run equilibrium for the model is relatively high i.e. 58.7%. Furthermore, private sector credit has positive and significant impact on private sector investment in the short run, but in the long run, private sector credit has positive and insignificant impact on private sector investment. That is a1 percent increase in private sector credit in the short run leads to 0.77 percent increase in private sector investment while, a 1 percent increase in private sector credit in the long run results in 1.3 percent increase in private sector investment.

Since private sector credit has a positive and significant impact on private sector investment, indicating that as private sector credit increases by 1 percent private sector investment increase by 0.77 percent in the short run and 1.3 percent in the long run. The study, therefore, empirically recommends that monetary authority pursues policies aimed at increasing availability of private sector credit. Such policies include reducing real interest rate by 1 percent so as to increase private sector investment by 0.01% in the short run or 0.03 percent in the long run. Furthermore, the study recommends that public expenditure should be channeled to addressing the poor state of physical infrastructure, particularly road networks, electricity and water supply.

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