

The Relative Impact of Domestic Credit to the Private and Public Sectors on Economic Growth in Nigeria

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Abstract. Despite the adoption of multiple policy measures aimed at promoting credit growth, the Nigerian economy has failed to experience remarkable progress. The financial sector continues to face challenges such as insufficient long-term funding, liquidity mismatch, inefficiencies in fund allocation, inadequate domestic credit to investors, among others that hinder its growth. To address this gap, this study aims to investigate the relative contributions of domestic credit to the private and public sectors to economic growth in Nigeria from 1981 – 2020. The study employs descriptive and inferential statistical techniques, including stationary tests, lag selection criteria, and an Autoregressive Distributed Lag bound model to capture the short- and long-run relationships among the variables. The findings indicate that credit to the private sector contributes significantly to economic growth, while credit to the public sector has an insignificant impact. The study recommends that the government must avoid a one-size-fit-for-all policy in promoting domestic credit in Nigeria. Rather, domestic credit policy should be sector specific. There is a need for increased synergy of public and private sector collaboration as well. Effective risk management practices should be introduced to monitor credits, especially those to the public sector, to improve the impact of domestic credit on economic growth.

Keywords: Domestic Credit (to public and private sectors), Economic Growth, Autoregressive Distributed Lag (ARDL)

1. Introduction

The desire to achieve sustained economic growth over the years has necessitated the need for a developed financial system, which brought about the implementation of different financial reforms in Nigeria since independence. Financial reforms were implemented through the deregulation of the

financial sector in 1986 under the Structural Adjustment Programmes (SAP), the banking recapitalization exercise in 2005, and the establishment of Credit Bureaus in 2008. The purpose of these reforms was to encourage the growth of the financial services sector, including domestic credit, that would contribute to sustainable economic growth.

It is expected that a sophisticated financial system will improve the operations of the banking sector by enabling efficient intermediation and allocation of credit from the surplus sector to the deficit sector in the economy.

Credit plays a crucial role in driving economic growth in developing countries like Nigeria. By increasing the purchasing power of individuals and households, it generates ripple effects throughout the economy (Evans, 2013). Scholars such as Schumpeter (1934), McKinnon (1973), and Awad and Karaki (2019) have highlighted that a robust banking sector is essential for promoting technological innovation and effective allocation of funds through financial intermediation, which is crucial for achieving desired growth targets. Additionally, a well-developed banking system encourages investment by identifying and financing profitable business ventures, mobilizing savings, facilitating trading activities, diversifying risk among investors, and efficiently allocating credit (Odufuye, 2017), (Adekunle, Salami & Adedipe, 2013).

Credit creation increases economic activities through investments by businesses beyond their savings capacity, household items purchase on credit, government spending structuring by mitigating cyclical patterns of tax returns and investing in infrastructural projects (Awad & Karaki (2019).

The amount of credit that is accessible and how it is distributed to various stakeholders, including private investors and public sector agents, is a critical factor in determining whether or not the desired macroeconomic goals can be achieved. (Levine, 2005, Abina, 2020). Credit extended to the Private sector is a critical driver of investment in the private sector and economic development, as evidenced by research demonstrating its promotion of innovation, efficiency, competition, and growth (Erzen, 2008; Alaba & Lawal, 2019). Despite this, in developing countries, the lack of incentives for private investment and the expected beneficial impact of government spending on the economy, consistent with Keynesian theory, have emphasized the government's responsibility for economic management. As a result, the banking sector has experienced an increase in credit extended to the public sector by domestic banks.

Research studies have shown that extending credit to the public sector can be an effective tool for stimulating economic growth and development by facilitating the provision of essential business infrastructure that can promote credit to the private sector. (Khan & Reinhart, 1990).

While it is commonly acknowledged that credit is critical for promoting economic growth, in Nigeria, the ratio of net aggregate credit to real GDP has remained below 50% for a considerable portion of the 1981 to 2020 study period, despite various financial policies aimed at boosting credit. The financial sector suffers from inefficiencies, including problems with long-term funding, liquidity mismatches, and inefficient allocation of funds. The persistently low rate of credit expansion is both a symptom and a driver of the weak state of the economy.

Although extending credit to the private sector is crucial for driving economic growth, the high lending rates in the banking sector and the limited effectiveness of credit on the public sector have restricted its impact on economic growth. The

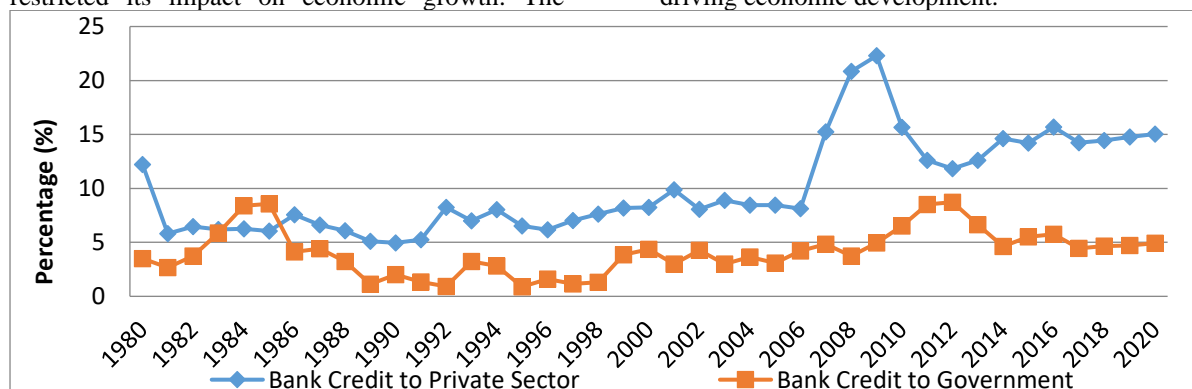
deregulation of the financial sector in 1986 and the bank recapitalization exercise in 2005 were intended to address the issue of insufficient domestic credit. However, the insufficient level of investment in the economy and the unstable growth that has been observed have impeded the meaningful impact of domestic credit on the economy.

The relative contribution of domestic credit extended to the private sector (CPR) and domestic credit extended to the public sector (CPB) on economic growth in Nigeria is difficult to ascertain. Arguments exist in previous studies that domestic credit extended to the public sector crowds-out domestic credit extended to the private sector, thereby reducing the potential impact of domestic credit extended to the private sector in promoting economic growth.

Generally, previous studies have primarily focused on examining the separate impacts of domestic credit to the private and public sectors on economic growth in Nigeria. While some studies have examined the relationship between domestic credit and macroeconomic variables, particularly economic growth (Akani & Onyema, 2017; Anyanwu et al., 2017; Adelegan, 2018), and the real sector (Ume et al., 2017), there is a lack of research on the relative contribution of these two types of domestic credits to economic growth in Nigeria, unlike in Romania (Banu, 2013). This article aims to fill these gaps.

2. Literature Review

Credit plays a crucial role in fostering economic growth, especially as private sector investment contributes significantly to overall investment in many economies. Monetary authorities utilize credit policies as a means to achieve macroeconomic goals, including the promotion of growth in particular sectors. It is therefore undeniable that credit has immense importance in driving economic development.



Source: Author's computation using data from Census and Economic Information Center (CEIC), 2020.

Figure 2.1: Bank Credit to Private Sector and Bank Credit to Government in Nigeria

Figure 2.1 from the study period indicated that the domestic credit ratio to the private sector in relation to real GDP was higher than the credit to the government ratio and public enterprise in relation to real GDP. However, both private and public sector credit showed significant volatility. A significant decline occurred in 2010, which can be attributed to the delayed effects of the 2007/2008 United States financial crisis that impacted financial institutions worldwide. On average, the domestic credit to the private sector ratio in relation to real GDP and the credit to the government and public enterprise ratio in relation to real GDP were 9.7% and 4.1%, respectively. Nonetheless, these figures fall below the global averages in 2019 and 2017, which were 54.77% and 12.06%, respectively (The Global Economy, 2020).

The findings suggest that there is room for improvement in the domestic credit extended to the private sector in Nigeria. As per the World Development Indicators (2020), the proportion of credit to the private sector in Nigeria as a percentage of GDP was merely 11.2%, which is substantially lower than that of South Africa, Sub-Saharan Africa, and the global economy, which had percentages of 62%, 26.7%, and 98%, respectively. A study by Nwanyanwu (2012) aimed to investigate the impact of bank credit on the economic growth of Nigeria. Surprisingly, the results revealed no significant positive correlation between bank credit and economic growth, which was attributed to the lack of interest in lending to the private sector for productive purposes. The study recommended that regulatory bodies such as the Central Bank of Nigeria (CBN) should implement direct credit controls that would benefit the real sector of the economy.

In their study covering the period from 1970 to 2008, Akpansung and Babalola (2012) investigated the relationship between credit in Nigeria's banking sector and economic growth, using the Granger causality test. The results revealed a one-way causal relationship between GDP to private sector credit (PSC) and the industrial production index (IND) to GDP. The study concluded that credit extended to the private sector has a positive impact on economic growth, whereas lending rates hinder economic growth.

Banu (2013) conducted a study to examine the impact of credit on economic growth in Romania. The research revealed that credits offered to households contributed significantly more to GDP formation than those extended to the public sector. Based on these findings, the study recommended that Romania should implement measures to attract foreign investments and utilize European funding to promote economic growth.

Aliero, Abdullahi, and Adamu (2013) conducted a study to investigate the relationship between credit advances to the private sector by banks and economic growth in Nigeria from 1974 to 2010, utilizing the Autoregressive Distributed Lag estimation technique. The results indicated that in the long run, bank credit to the private sector has a positive and significant impact on economic growth.

Modebe, Ugwuegbe, and Ugwuoke (2014) conducted a research study with the objective of examining the impact of bank credit on economic growth in Nigeria, using annual time series data spanning from 1986 to 2012 and the Ordinary Least Square method. The results indicated a negative and significant long-term relationship between gross domestic product and total bank credit to the private sector. However, the study also revealed that the requirements for accessing credit in Nigeria's banking industry were not favorable to the most active sector of the economy due to their informal nature.

Emecheta and Ibe (2014) utilized annual data from 1960-2011 and the reduced Vector Auto-regression approach to study the relationship between bank credit and economic growth in Nigeria. The study found a significant positive relationship between bank credit to the private sector, broad money, and economic growth. The study recommended further steps to ensure the stability of the banking sector in Nigeria.

Aliyu and Yusuf (2014) used the OLS methodology to investigate the effects that bank lending has on economic growth in Nigeria. The investigation found about 82.6% changes in economic growth in Nigeria was as a result of bank lending. The research indicated that bank lending tremendously influenced the activities of the Nigerian economy.

Olowofeso, Adeleke, and Udoji (2015) applied fully modified ordinary least squares (FMOLS) to analyze the effect of the increase of private sector credit on output. The study revealed a positive impact of private sector credit growth on output. The study also found that an important element of financial intermediation is the banking sector and that through this, financial resources are galvanized for productive investment.

Iwedi, Igbani, and Onuegbu (2015) conducted a thirty-three-year analysis (1980-2013) to investigate how bank domestic credits impact economic growth in Nigeria, utilizing ordinary least squares regression. The findings demonstrated a correlation between credit to both the private and government sectors and GDP in the short run. Nonetheless, the study concluded that there exists

an insufficient long-term association between domestic credit indicators and gross domestic product in Nigeria.

Okafor and Chijindu (2016) examine the effect of public sector credits on economic growth in Nigeria from 1987-2013. The study found that public sector credit had negative and insignificant effects on economic growth in Nigeria.

Makambi, Muhindi and Nduku (2017) analysed the link between domestic bank lending to the government and credit to the private sector in Kenya for the period spanning 1966 – 2014. The study utilized the Markov switching model and the autoregressive distributed lag model. The ARDL estimate showed that fiscal policy regimes are significant in explaining the relationship between government debt-private sector credit. More so, the study showed evidence that persistent increase in government debt crowds out private sector credit.

Mohammad, Mohammad, and Zarinah (2018) investigated the link between domestic credit and economic growth in Bangladesh. Adopting Autoregressive Distributed Lag (ARDL), they found that an increase in real domestic credit had a positive effect that was statistically significant on real GDP. Nevertheless, an increase in real lending rates had a negative impact on real GDP.

Kouam and Mua (2020) examined the impact of private-sector credit and government lending on real GDP growth in Cameroon. The study observed that private-sector credit significantly enhanced economic growth more than the effects of public-sector lending on economic growth. More so, the study observed that greater linkages between commercial banks and the public sector promote financial stability risks as weaker oil prices affect the capacity of the public sector to pay back its loans to Cameroon’s commercial banks.

3. Methodology

3.1 Theoretical Framework

The theoretical framework of this research is based on the endogenous theory; the AK model espoused by Pagano (1993). The theory posits that financial development has a positive impact on economic growth and development. Following the above theoretical exposition, a simple endogenous production function without diminishing returns is expressed as:

$$Y = AK \tag{1}$$

Where A is a positive constant that reflects the level of the technology and K in a broad sense to include both physical and human capital.

Expressing equation (1) as a ratio of Labour (L) to obtain output per labour, we have:

$$\text{Where } y = \frac{Y}{L} \tag{2}$$

$$\text{and } k = \frac{K}{L} \tag{3}$$

Then equation (1) becomes:

$$y = Ak \tag{4}$$

Equation (4) is the output per capita, and the average and marginal products of capital are constant at the level $A > 0$.

For the linear function of this study, therefore, from the simple endogenous production function in equation (4) ($y = Ak$), according to Lucas (1988), capital (k) can be broken down into human capital (k_H^α) and physical capital (k_P^β) as in

$$\text{Thus, } k = (k_H^\alpha, k_P^\beta) \tag{5}$$

Incorporating equation (5) into the endogenous production function:

$$y = Ak_H^\alpha k_P^\beta \tag{6}$$

The physical capital k_P^β can be decomposed into accumulated capital k_{CP}^ϕ and incremental capital or investment k_{IP}^ϕ . Incorporating this into equation (6) becomes:

$$y = Ak_H^\alpha k_{CP}^\phi k_{IP}^\phi \tag{7}$$

Investment k_{IP}^ϕ in equation (7) can be divided into public investment k_{PB}^γ and private investment k_{PR}^η . Thus equation (7) becomes:

$$y = Ak_H^\alpha k_{CP}^\phi k_{PB}^\gamma k_{PR}^\eta \tag{8}$$

Furthermore, the endogenous growth theory implicitly highlighted the influence of institutional quality (IQ) on growth (Recuero & Gonzalez, 2019). Thus, incorporating “ IQ ” into equation (3.14):

$$y = Ak_H^\alpha k_{CP}^\phi k_{PB}^\gamma k_{PR}^\eta IQ^\kappa \tag{9}$$

From equation (9), α , ϕ , γ , η and κ are elasticities of human capital, accumulated capital, public investment, private investment and institutional quality respectively. Public investment and private investment are adapted as domestic credit to the

public sector and domestic credit to the private sector respectively.

Domestic credit (to the public and private sectors) channeled to productive use will increase investments; income will improve, and this will result in growth in capital and economic growth. Strong institutional quality is expected to cause an increase in domestic credit and economic growth. Notably, human capital and accumulated capital are crucial determinants of growth and are endogenously provided. Arrow (1962) regarded labour (human capital) as endogenous when he introduced the concept of learning by doing, thus leading to economic growth.

3.2 Model Specification

From the theoretical framework and (9) above, the empirical models for this study is derived from the endogenous growth approach, which throws light on the impact of endogenous variables like domestic credit to the public and private sectors on economic growth in an economy. Thus, the model for this study, adapted from Pagano (1993) and Recuero and Gonzalez (2019) is specified as

$$y = f(Ak_H^\alpha k_{CP}^\phi k_{PB}^\gamma k_{PR}^\eta IQ^\kappa) \tag{10}$$

Taking natural logarithms of equation (10), we obtain:

$$\ln y = \ln A + \alpha \ln k_H + \phi \ln k_{CP} + \gamma \ln k_{PB} + \eta \ln k_{PR} + \kappa \ln IQ \tag{11}$$

All variables are expressed in natural logarithmic forms to give a better result as compared to linear functional form and also to reduce problem of heteroscedasticity.

From equation (11), (y) is economic growth, (k_H) is human capital (lab), (k_{CP}) is cumulative capital stock (cps), (k_{PB}) is domestic credit to public sector (cpb), (k_{PR}) is domestic credit to private sector (cpr), and (IQ) is institutional quality. Re-writing equation (11) in estimation form taking into cognizance vital control variable (that is government expenditures (gxp), which have been identified by literature (Farkas, 2012), thus equation (11) becomes:

$$\ln y_t = \delta_0 + \delta_1 \ln lab_t + \delta_2 \ln cps_t + \delta_3 \ln cpb_t + \delta_4 \ln cpr_t + \delta_5 \ln IQ_t + \delta_6 \ln gxp_t + \varepsilon_t \tag{12}$$

Equation (12) is the empirical model of this study, to determine the relative impact of domestic credit to the private sector on economic growth more than domestic credit to the public sector. Theoretically, it is expected that δ_1 , δ_2 , δ_3 , δ_4 , and δ_5 would promote economic growth.

To determine the relative contribution to economic growth by credit to private sector and credit to the public sector, the ARDL framework is adopted and it is expressed as follows:

$$\begin{aligned} \Delta \ln y_t = & \delta_0 + \sum_{i=1}^n \delta_{1i} \Delta \ln lab_{t-i} \\ & + \sum_{i=0}^n \delta_{2i} \Delta \ln cps_{t-i} \\ & + \sum_{i=0}^n \delta_{3i} \Delta \ln cpb_{t-i} \\ & + \sum_{i=0}^n \delta_{4i} \Delta \ln cpr_{t-i} \\ & + \sum_{i=0}^n \delta_{5i} \Delta IQ_{t-i} \\ & + \sum_{i=0}^n \delta_{6i} \Delta \ln gxp_{t-i} + \delta_7 \ln y_{t-1} \\ & + \delta_8 \ln lab_{t-1} + \delta_9 \ln cps_{t-1} \\ & + \delta_{10} \ln cpb_{t-1} + \delta_{11} \ln cpr_{t-1} \\ & + \delta_{12} IQ_{t-1} + \delta_{13} \ln gxp_{t-1} \\ & + \mu_{1t} \end{aligned} \tag{12a}$$

Where δ_0 is the intercept; $\delta_1 - \delta_{6i}$ and $\delta_7 - \delta_{13}$ are short-run and long-run elasticities respectively, of output with respect to the variables identified above; while μ_{1t} is the error term; Δ is the difference operator; and n is the lag length.

Thus, the expression for the error correction model of the ARDL model is as follows:

$$\begin{aligned} \Delta \ln y_t = & \delta_0 + \sum_{i=1}^n \delta_{1i} \Delta \ln lab_{t-i} \\ & + \sum_{i=0}^n \delta_{2i} \Delta \ln cps_{t-i} \\ & + \sum_{i=0}^n \delta_{3i} \Delta \ln cpb_{t-i} \\ & + \sum_{i=0}^n \delta_{4i} \Delta \ln cpr_{t-i} \\ & + \sum_{i=0}^n \delta_{5i} \Delta IQ_{t-i} \\ & + \sum_{i=0}^n \delta_{6i} \Delta \ln gxp_{t-i} \\ & + \alpha_1 ECM_{t-1} + \mu_{1t} \end{aligned} \tag{12b}$$

Where α_1 represents the coefficient of the ECM; ECM_{t-1} is the error correction term lagged by one period; and all other variables are as previously defined.

3.3 Estimation Techniques

Equation (12) is estimated with appropriate technique, the magnitudes and the signs of the coefficients δ_3 and δ_4 determines if domestic credit to public sector (cpb) and domestic credit to private sector (cpr) have relative impact on economic growth.

4. Results and Discussion

4.1 Descriptive Statistics and Correlation Matrix

The results of the descriptive statistics of the variables and major statics are presented in Table 4.1. The results indicated that the average value of economic growth (Y) is ₦46,855.79b while the median value is ₦46,012.52b, suggesting an increasing trend in economic growth within the period. Also, the mean value of the labour force (lab) is 48,157,271 billion with a median value is 48,620,127 billion. This supports the view that the labour force was on the increase over time.

The capital stock (cps) has average value of ₦4,683.1b, with a median value of 2,053.01b, while the mean value of institutional quality (IQ) is 1.988 with a median value of 1.97. The average values of credit to the public sector (cpb) and Credit to the private sector (cpr) are ₦18.59b and ₦9,335.28b respectively. The credit to the public sector (cpb) and Credit to the private sector (cpr) recorded median values of ₦5.30b and ₦6,920.5b respectively. This corresponds to the view that the trend of credit to both public and private sector were unstable within the period, partly because of the delayed effect of the 2007/2008 USA financial crises that affected almost all the global economies. Accordingly, the average value of government

expenditure is ₦3541.48b with median value of ₦3240.8b

The maximum values of economic growth, labour force and capital stock are N73,681.8b, 6,322,671.8m and ₦11,815.13b respectively while their minimum values are ₦21,177.92b, 34,803.27m and 204,047.6b respectively. For the credits to the public sector and credits to the private sector, their maximum values are ₦137.61b and ₦25,835.01b respectively while the minimum values are ₦0.079m and ₦238.6m respectively.

The results of the standard deviation showed that institutional quality showed the least value of 0.57 while labour force (lab) showed the highest standard deviation value of 8301981.

The skewness statistics showed that economic growth (Y) and institutional quality (IQ) are negatively skewed, which means it has a tail to the left, while the remaining variables were positively skewed, which means they have a long tail to the right.

The kurtosis statistics disclosed that economic growth (Y), labour force (lab), capital stock (cps), and credit to private sector (cpr) are platykurtic because they are less than 3, suggesting that their distributions are flat relative to normal distribution while credit to the public sector (cpb) is leptokurtic, suggesting that the distribution of the variable is peak relative to normal distribution. However, the distributions of institutional quality (IQ) and government expenditure (gxp) are relatively mesokurtic, suggesting that the variable had a normal distribution. Finally, the Jarque-Bera statistic rejected the null hypothesis of normal distribution for credit to the public sector (PBI) while the null hypothesis of normal distribution of Jarque-Bera statistic was not rejected for the remaining variables at a five percent critical value.

Table 4.1 Descriptive Statistics

	rgdp	lab	cps	cpb	cpr	IQ	gxp
Mean	46855.79	48157271	4683101	18.85863	9335.279	1.9876	3541.481
Median	46012.52	48620127	2053006	5.3043	6920.5	1.97	3240.82
Maximum	73681.83	63226718	11815129	137.6100	25835.01	3.1	9925.13
Minimum	21177.72	34803279	204047.6	0.079	238.60	0.69	337.218
Std. Dev.	18944.56	8301981	4546249	38.07368	9196.297	0.572417	2837.776
Skewness	-0.02082	0.122046	0.363342	2.324766	0.499231	-0.23641	0.792412
Kurtosis	1.461968	2.036005	1.312735	6.760348	1.702708	2.838967	2.748612
Jarque-Bera	2.465913	1.03007	3.515555	37.24829	2.791554	0.259891	2.682149
Probability	0.29143	0.59748	0.172428	0.0000	0.247641	0.878143	0.261564

Source: Author's computation from E-views 9, 2023.

From the correlation matrix presented in Table 4.2, the results showed that economic growth is positively associated with labour force (lab), capital stock (cps), public sector credit (cpb) private sector credit (cpr), Institutional quality (IQ) and government expenditure (gxp). The degree of association between the variables and economic growth is above 60 percent with exception to public sector credit which is 48 per cent. The results reveal that there is no high correlation between the variables, thus, there is no serious concern for multicollinearity in the estimation models. The evidence from the correlation matrix would be substantiated by the regression estimates.

Table 4.2 Correlation Matrix

	rgdp	Lab	cps	cpb	Cpr	IQ	gxp
RGDP	1.0000	0.8732	0.7551	0.4869	0.6588	0.6290	0.7299
LAB		1.0000	0.8162	0.6245	0.7519	0.5455	0.6670
CPS			1.0000	0.4864	0.7667	0.5267	0.6130
CPB				1.0000	0.5831	0.0102	0.7119
CPR					1.0000	0.4662	0.7656
CPI						1.0000	0.4345
GXP							1.0000

Source: Author's computation.

4.2 Unit Root, Co-Integration and Lag Order Selection Tests

The Augmented Dickey Fuller (ADF) and the Phillip-Perron (PP) tests were used to test the stationarity of the variables used in this study. Results from both tests, as shown in Table 4.3, indicate that none of the variables were stationary at the levels but became stationary after the first differencing, indicating that the series were integrated of order one, that is, the variables were I(1) series.

Table 4.3. Stationarity Test.

Augmented-Dickey Fuller (ADF) Test				Phillip-Perron (PP) Test			
Variables	Level	1 st Difference	Status	Level	1 st Difference	Status	
ly	-1.6723	-4.4803*	I(1)	-1.2604	-5.3045*	I(1)	
llab	-1.2335	-3.7721*	I(1)	-1.3709	-3.5152**	I(1)	
lcps	-1.2157	-4.3126*	I(1)	-1.2322	-4.3138*	I(1)	
lcpb	-1.2641	-6.0005*	I(1)	-1.2641	-6.1784*	I(1)	
lcpr	-1.4880	-4.6468*	I(1)	-1.8636	-8.2778	I(1)	
IQ	-2.6420	-5.0282*	I(1)	-2.6666	-5.005*	I(1)	
lgxp	-1.5875	-8.1797*	I(1)	-2.0608	-8.0339	I(1)	
CRITICAL VALUES				CRITICAL VALUES			
1%	-3.737853	-3.752946	1%	-3.737853	-3.752946		
5%	-2.991878	-2.998064	5%	-2.991878	-2.998064		
10%	-2.635542	-2.638752	10%	-2.635542	-2.638752		

Source: Author's computation from E-views 9, 2023. Note: * and ** indicate 1% and 5% significant values respectively. LY = log of real gross domestic product; LLAB = log of labour force; LCPS = log of capital stock; LCPB = log of credit to the public sector; LCPR = log of credit to the private sector; IQ = Institutional quality; and LGXP = government expenditure.

4.3 Lag Order Selection

To ensure appropriate estimation technique, the study conducted the lag order selection criteria and the results is presented in Table 4.4. From the results, lag order two was selected as the most apt lag value for the estimated model as indicated by four of the selection criteria. Thus, the study proceeded in estimating the relationship among domestic credit, institutional quality and economic growth using the autoregressive distributed lag technique at order two.

Table 4.4. Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-34.7341	NA	8.89e-08	3.6291	3.9746	3.7160
1	82.3766	152.7530	2.94e-10*	-2.2936	0.4711	-1.5983
2	209.9704	88.7610*	1.51e-12	-9.1279*	-3.9441*	-7.8242*

Source: Author's computation from E-views 9, 2023. * indicates lag order selected at 5% significance level. FPE = Final Prediction Error; AIC = Akaike Information Criterion; SC = Schwarz Information Criterion; and HQ = Hannan-Quinn Information Criterion

The co-integration test to ascertain if the variables have long run relationship among each other was conducted using the autoregressive distributed lag (ARDL) bound co-integration technique. The results of the estimate

presented in Table 4.5, showed that the variables were co-integrated. This is because the F-statistic value which is 55.37 was greater than the upper bound critical value (4.43 at one percent significance level. This shows that the variables have long run relationship.

Table 4.5 ARDL Bounds Co-Integration Test

ESTIMATED MODELS	F-statistic Value	
Objective One Model	55.3681	
Objective Two Model	11.2854	
Objective Three Model	18.1093	
Objective Four Model	4.0031	
Critical Value Bounds	I(0)/Lower Bound	I(1)/Upper Bound
10%	2.12	3.23
5%	2.45	3.61
1%	3.15	4.43

Source: Author's computation from E-views 9, 2023.

4.4 Regression Results

Table 4.6. Regression Estimate on Domestic Credit and Economic Growth in Nigeria

Regressors	Estimated Co-efficient	Standard Error	t-Statistics	Prob.
Long Run Regression Estimate				
<i>llab</i>	0.607730	0.442617	1.373039	0.1857
<i>lcps</i>	0.116665	0.036709	3.178105	0.0050
<i>lcpb</i>	-0.000227	0.000403	-0.562811	0.5801
<i>lcpr</i>	0.123806	0.053119	2.330748	0.0309
<i>lgxp</i>	-0.032082	0.067356	-0.476308	0.6393
C	-2.540808	7.302109	-0.347955	0.7317
Short Run Regression Estimate				
$\Delta(LLAB(-1))$	-2.058537	0.777571	-2.647395	0.0331
$\Delta(LCPS)$	0.006300	0.036982	0.170360	0.8695
$\Delta(LCPS(-1))$	0.097631	0.029701	3.287094	0.0134
$\Delta(CPB(-1))$	0.001084	0.000334	3.248919	0.0141
$\Delta(CPR(-1))$	0.207357	0.063279	3.276865	0.0135
$\Delta(LGXP)$	0.010208	0.046600	0.219055	0.8329
CointEq(-1)	-0.372573	0.112698	-3.305954	0.0048
R ² = 0.7102		F-stat. (Prob.) = 9.19 (p <0.05)		
Adjusted R ² = 0.6329		Durbin-Watson = 1.8539		
Diagnostic Tests				
Serial Correlation		Normality Test		
F-Statistics: 0.837043		Jarque-Bera: 0.311591		
Prob: 0.4721		Prob: 0.855734		

Source: Authors' computation from E-views 9, 2023. * and ** signifies 1% and 5% level of significance.

The aim of the study is to ascertain the relative impact of domestic credit to the private sector on economic growth more than the impact of domestic credit to the public sector on economic growth in Nigeria. The result found that credit to the private sector had the expected theoretical sign and indicated a positive and significant impact on economic growth while credit to the public sector did not have the expected theoretical sign and also it is insignificant, indicating a negative and insignificant relationship with economic growth. Consequently, a unit increase in credit to the private sector is expected to enhance economic growth by 0.124 units in the long-run.

An increase in labour is expected to increase economic growth by 0.61, while a unit increase in credit to the public sector has an insignificant negative impact on economic growth. More so, a unit increase in government expenditure will affect economic growth by 0.03. As noted, credit to the private sector has a positive significant impact on economic growth in the long-run. It shows that

economic growth will go with increases in credit to private sector, especially as credit to the private sector will lead to the creation of more jobs, grow wages, accelerate private consumption and improve living standard. The positive and significant impact of credit to the private sector on economic growth can be attributed to the increased efficiency of credit to private sector (private investment) over credit to the public sector. It is also an indication that private sector is relying on bank credits for expansion of business activities and it could be seen that the credit policies of government is yielding result. Therefore, more credit extended to the private sector will contribute to improvement in productive and capital investment, as well as sustainable economic growth in Nigeria. This result aligns with the findings of Orji (2012). Specifically, the significant and positive impact of credit to the private sector on economic growth is an indication that an increase in the credit to the private sector will boost productivity level and investment capital in Nigeria.

While credit to private sector positively enhanced economic growth, the credit to public sector had insignificant contributions to economic growth in Nigeria. The positive-significant impact of credit to private sector on economic growth is in line with Akpansung and Babalola (2012), Aliero *et al.* (2013), Emecheta and Ibe (2014) and Olowofeso *et al.* (2015), but in contrast with Abubakar and Gani (2013), and Modebe *et al.* (2014). More so, the relative impact of credit to private sector and credit to public sector on economic growth is in line with Banu (2013) and Kouam and Mua (2020) which observed that credit to the private sector significantly enhanced economic growth more than the impact of public sector lending on economic growth. The positive impact of credit to private sector to economic growth in Nigeria can be attributed to the desire of private investors in maximizing returns on their investment while the insignificant impact of credit to public sector on economic growth in Nigeria might be attributed to the unproductive investment on credit to the public sector which is mostly used in financing consumption. This result supports that improvement in the credit to the private sector will boost economic activities and indeed lead to sustainable economic growth.

Regarding the short-run estimate, the results found that the first lagged values on capital stock ($\Delta\text{CPS}(-1)$), credit to the public sector ($\Delta\text{LCPB}(-1)$), and credit to the private sector ($\Delta\text{CPR}(-1)$) had positive and significant effect on economic growth in the short run while the first lagged value of labour force ($\Delta\text{LLAB}(-1)$) had a negative and significant impact on economic growth. More so, current values of capital stock (ΔLCPS) and government expenditure (ΔLGXP) had an insignificant impact on economic growth in the short run. In addition, the estimated models showed a stable long-run relationship among the variables, as evidenced by the expected negative signs of the error correction term. The error correction term had a coefficient of -0.3726, indicating that the model corrects its short-run disequilibrium by 37.26 percent towards the long-run equilibrium. The coefficient of determination (R^2) demonstrated a good fit, with about 71.02 percent of the variation in economic growth explained by the explanatory variables, while the remaining 28.98 percent was attributed to variables outside the model. The regression estimate was relatively free from auto-correlation problems, as shown by the Durbin-Watson statistics of 1.8539, making it appropriate for policy references. The diagnostic tests using serial correlation LM and normality estimate supported the results of the Durbin-Watson statistics, as the tests were insignificant.

5. Summary

The aim of this study was to investigate the relative contribution of domestic credit to the public sector and the private sector to economic growth in Nigeria over the period 1981 to 2020.

The results of the co-integration test carried out indicated that the null hypothesis of no co-integration between the variables was rejected, suggesting the presence of co-integration among the variables from 1981 to 2020.

The results of the regression analysis indicate that credit to the private sector has a positive impact on economic growth, while credit to the public sector does not significantly contribute to economic growth in Nigeria.

Drawing from the above findings, the study concludes that credit to the public-sector and credit to the private sector had relatively different impact on economic growth in Nigeria. The contribution of Credit to the private sector to economic growth is statistically significant while the contribution of credit to the public sector to economic growth in Nigeria is not statistically significant.

Arising from the empirical outcomes of this study the study, therefore, recommends that the government must avoid a one-size -fit-for-all policy in promoting domestic credit in Nigeria. Rather, domestic credit policy should be sector specific. There is a need for increased synergy of public and private sectors credit options. From the study, understanding the relevance of credit to the private sector and noting that it is still low compared to SSA and Global economy, a robust credit system should be put in place to improve credit options and credit availability. Lastly, it is important to accelerate risk management practices in both public and private sectors of the economy, to monitor credits, and enhance the impact of domestic credit on economic growth. This would go beyond what the credit bureaus are currently doing and would also ensure that there are interventions before the credits go bad. This will also help in ensuring a good fiscal policy discipline that would ensure that credits to the public sector are appropriately used for a growth-enhancing purpose.

References

- Abina, A. P. (2020). Sectorial Allocation of Bank Credits and Economic Development in Nigeria. *Journal of Contemporary Research in Business, Economics and Finance* ISSN: 2641-0265 Vol. 2, No. 1. p27
- Abubakar, A., & Gani, I. M. (2013). Impact of Banking Sector Development on

- Economic Growth: Evidence from Nigeria. *Journal of Business Management & Social Sciences Research (JBM&SSR)*, 2 (4), 47- 59.
- Adekunle, O.A., Salami, G.O., & Adedipe, O.A. (2013). Impact of Financial Sector Development on the Nigerian Economic Growth. *American Journal of Business and Management*, 2(4), 347 - 356.
- Adelegan, A.E. (2018). Private Domestic Investment, domestic Credit to the Private Sector and Economic Performance: Nigeria in Perspective, *IOSR Journal of Economics and Finance (IOSR-JEF)*, 9(3), 22-31.
- Akani H.W., & Onyema J. I. (2017). Determinants of Credit Growth in Nigeria: A Multi-Dimensional Analysis Nigeria, *Journal of Economics and Sustainable Development*, 8(20),
- Alaba J. S., Lawal, Y., R. (2019). Impact of Sectoral Allocation of Banks' Credit on Economic Growth in Nigeria. *International Journal of Accounting and Finance (IJAF)*, *The Institute of Chartered Accountants of Nigeria (ICAN)*, 8(2) p107,
- Aliero, H. M., Abdullahi, Y. Z., & Adamu, N. (2013). Private sector credit and economic growth nexus in Nigeria: An Autoregressive Distributed Lag Bound Approach. *Mediterranean Journal of Social Sciences*, 4 (1.1). <http://dx.doi.org/10.5901/mjss.2013.v4n1p83>
- Aliyu, M., & Yusuf, H. (2014). Impact of Bank Lending on Economic Growth in Nigeria, *Research Journal of Finance and Accounting*, 5(18), 174-183.
- Anyanwu, F., Ananwude, A., & Okoye, N. (2017). An Empirical Assessment of the Impact of Commercial Banks' Lending on Economic Development of Nigeria, *International Journal of Applied Economics, Finance and Accounting*, 1(1), 14-29.
- Akpansung, A. O. & Babalola, S. J. (2012). Banking Sector Credit and Economic Growth in Nigeria: An Empirical Investigation. *CBN Journal of Applied Statistics*, 2 (2), 51 -62.
- Arrow, K. (1962). The Economic Implications of Learning by Doing, *Review of Economic Studies*.p155 - 173
- Awad, I.M. and Karaki, M.S. (2019). The impact of bank lending on Palestine economic growth: An econometric analysis of time series data. *Financial Innovation*, 5. p2-21 <https://doi.org/10.1186/s40854-019-0130->
- Banu, I.M. (2013). The Impact of Credit on Economic Growth in the Global Crisis Context *Romania International Economic Conference of Sibiu 2013 Post Crisis Economy: Challenges and Opportunities, IECS*.
- Emecheta, B. C. & Ibe, R. C. (2014). Impact of Bank Credit on Economic Growth in Nigeria: Application of Reduced Vector Autoregressive (VAR) Technique, *European Journal of Accounting Auditing and Finance Research*, 2(9), 11-21
- Erzen, S. (2008). The Determinants of Financial Development and Private Sector Credits: Evidence from Panel Data. Unpublished Master's Thesis, Middle East Technical University.
- Evans, O. (2013). On the Causality between Domestic Credit Aggregates and Economic Growth in a Multivariate VAR Framework: Evidence from Nigeria, *MPRA Paper*, 51731. https://www.theglobaleconomy.com/rankings/bank_credit_to_government/ https://www.theglobaleconomy.com/rankings/domestic_credit_private_sector/
- Iwedi, M., Igbani, D.S., & Onuegbu, O. (2015). Does Domestic Credit and Economic Growth Nexus in Nigeria (1980-2013), *International Journal of Finance and Accounting*, 4(5), 236-244.
- Khan, M.S., & Reinhart, C. (1990). Private Investment and Economic Growth in the Developing Countries. World Bank: Washington, DC, USA, 19–27.
- Kouam, H., & Mua, K.K. (2020). Impact of Private Sector Credit and Government Lending on Real GDP Growth in Cameroon. Available at <https://www.researchgate.net/publication/342734007>.
- Levine, R. (2005). Bank-Based or Market-Based Financial Systems: Which is Better? *Journal of Financial Intermediation*, 11(1), 398–428
- Levine, R. (2005). Financial Development and Economic Growth: Views and Agenda, *Journal of Economic Literatures*, 35, 688-726.
- Lucas, R.E. (1988). On the Mechanics of Economic Development, *Journal of Monetary Economics*
- Makambi, S., Muhindi, R., & Nduku, G. (2017). Influence of Bank Lending to the Government on Private Sector Credit in Kenya: A Fiscal Deficit Specification, *Kenya Bankers Association (KBA) Centre for Research on Financial Markets and Policy Working Paper Series*, WPS/02/17.
- McKinnon, R.I. (1973). Money and Capital in Economic Development. Washington. DC: Brookings Institution.

- Modebe, N. J., Ugwuegbe, S.U., & Ugwuoke R.O. (2014). The Impact of Bank Credit on the Growth of Nigerian Economy: A Co-Integration Approach, *Research Journal of Finance and Accounting*, 5(10) p 87 – 95.
- Mohammad,S.A., Mohammad, I. A. & Zarinah, H. (2018). Does Domestic Credit of the Banking Sector Promote Economic Growth? Evidence from Bangladesh, *International Journal of Islamic Business*, 3(1), 33-55
- Nwanyanwu, O. J. (2012). Analysis of banks' credit on Nigeria's economic growth (1992 - 2008), *Jos Journal of Economics*, 4(1), 43 - 58.
- Odufuye, B. M. (2017). Bank Credit and its Impact on Nigerian Economic Growth, *International Journal of Development Strategies in Humanities, Management and Social Sciences (IJDSHMSS)*, 7(3), 39-52.
- Okafor. I.G., & Chijindu, E.H. (2016). Effect of Public Sector Credit on Economic Growth: Empirical Evidence from Nigeria, *European Academic Research*, IV (6), 5300-5314.
- Olowofeso, E.O., Adeleke, A.O. & Udoji, A.O. (2015). Impact of Private Sector Credit on Economic Growth in Nigeria, *CBN Journal of Applied Statistics*, 6(2), 81-101.
- Pagano, M. (1993). Financial Markets and Growth: An Overview. *European Economic Review*, 37, p 613 - 622
- Recuero, L.H., & Gonzalez, R.P. (2019). Economic Growth, Institutional Quality and Financial Development in Middle-Income Countries, *BANCO De ESPANA Working Paper*, 1937.
- Schumpeter, J. A. (1934). *The Theory of Economic Development*. Cambridge: Harvard University Press.
- The Global Economy (2020).
- Tomola, M. O., Adebisi, T. E., & Olawale, F.K. (2012). Bank Lending, Economic Growth and the Performance of the Manufacturing Sector in Nigeria, *European Scientific Journal*, 8(3), 19-34.
- Ume, K.E., Obasikene, A.C., Oleka, C.D., Nwadike, A.O., & Okoyeuzu, C. (2017). The Relative Impact of Bank Credit on Manufacturing Sector in Nigeria, *International Journal of Economics and Financial Issues*, 7(2), 196-201.
- World Bank (1992). *Governance and Development*, Washington.
- World Economic Forum (2014). *New Growth Models: Challenges and Steps of More Equitable, Inclusive and Sustainable Growth*.