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Analysis of the impact of banking sector credit on the real sector

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Abstract

This study examines the impact of banking sector credit on Nigeria's real sector based on data from 1986 to 2019 using the ARDL model. The bound testing result indicates that there is a long-run relationship between the variables of interest with real gross domestic product (RGDP) as the dependent variable. The result indicates that commercial bank credit (CBC) has a positive impact on RGDP in the long and short runs, which is consistent with a priori expectations. Domestic private investment (DPI) was found to have a negative and significant relationship with RGDP in the long and short runs. The estimated equations of the specified models show a significant positive relationship between government capital expenditure (GCE) and RGDP. In the short run, a significant increase in DPI, CBC, and GCE will bring about a significant increase in RGDP. The parameter estimates of DPI, CBC and GCE are statistically significant, as indicated by the t-value. The study reveals that effective utilization and distribution of bank credit to the real sector promotes economic growth. Therefore, the study recommends that there should be improved banking sector credit which will improve the output of the real sector and, in turn, boosts the economy.

Keywords: Commercial bank credit, Financial institutions, Financial sector, Government capital expenditure, Domestic private investment, Real gross domestic product, Real sector.
JEL Classification: E6.

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Contents

Contribution of this paper to the literature

From the findings, this study contributes to the existing literature by showing that a favorable and significant connection exists between commercial bank credit and real GDP. Government capital expenditure has a positive significant relationship with RGDP. Unlike previous studies, this study comprehensively explains the impact of banking sector credit to the real sector. The study differs from other studies by incorporating variables that were not captured by other studies. It also emphasizes the importance of government capital expenditure (GCE) on the real sector, unlike other studies, and these are the gaps which this study aims to fill.

1. Introduction

The significance of financial institutions in attaining economic growth in the economy has attracted attention in recent times. With various studies justifying its significance in previous years, the credit volume of Nigeria has been on the increase, and this increase is expected to enhance economic agents, minimize the impact of economic shocks and achieve economic growth. Despite these assertions, economic growth has remained relatively low. Sustainable growth is only attainable if financial resources are effectively and efficiently mobilized and allocated for optimum economic performance (Owusu, 2016).

The critical role of financial institutions has prompted successive Nigerian governments to carry out reforms and innovations in the banking sector aimed at attaining financial stability to induce economic growth. Hasanov, Bayrumil, and Al-Musehel (2018) highlighted the necessity of a self-sustaining banking system in overcoming adverse economic circumstances and financial distress, particularly in countries that produce raw materials, such as Nigeria. Alkhazaleh (2017) advocates that the banks' core function of providing credit is essential financing for all sectors in the country. Timsina (2017) asserts that credit is the largest single source of income in the portfolios of most banks, which explains why credit management is a key focus.

Recently, commercial banks have increased the total amount of credit they provide to the economy; however, despite the steady increase, it has not translated into an improved level of development in the country through the standard of living, employment rate, poverty rate, and industrial output, among others, as the effect of bank credit to the real sector is expected to be seen in both quantitative and qualitative terms. Determining the extent to which bank credit has impacted human development, decreased unemployment, and alleviated poverty in the economy is important.

The real sector in Nigeria has been shaky in recent times. This is evident in the low level of GDP, which is the total market value of all the finished goods and services produced in the country in a given year. The real sector is a fundamental part of the economy as the activities carried out in this sector generate an economic output which is important in boosting GDP. This further indicates that the real sector is capable of contributing to economic prosperity if accompanied by a healthier financial system. The recent dwindling progress of the real sector in Nigeria is basically due to the importation of large amounts of finished goods and insufficient financial support for the sector, which has ultimately contributed to the reduction in capacity utilization of the real sector (Obim & Orok, 2018).

Nigeria's financial system has improved recently as a result of several reforms, but not as much as other emerging economies, such as South Africa, Brazil, and Egypt, which raises concerns about the inefficient utilization of the sizable amount of bank credit that commercial banks have extended to the economy over the years. In Nigeria, the implicitness connected to bank credit is a recurrent phenomenon as manufacturers and businesspeople are unable to access financing. In addition to having extremely high interest rates, many small businesses find it difficult to obtain credit because it requires collateral (Igwe, Magaji, & Darma, 2021). Consequently, production is hampered, which ultimately affects GDP and, in turn, economic growth.

Financial intermediation mobilizes deposits from surplus units and allocates credit facilities to borrowers and investors for productive economic investment. Economic development comprises the activities of both the private and public sectors, which are limited by the expense of bank debt instruments but require bank lending to expand and develop their businesses. However, banks incur financial intermediation costs when they mobilize and extend access to credit (loans and advances) to both the private and public sectors of the economy (Magaji & Darma, 2021). This is due to the likelihood that high lending rates will discourage the use of bank credit while endangering banks' liquidity positions (Takon, John, Ononiwu, & Mgbado, 2020). For businesses dealing with money, including banks and other non-bank institutions, managing risk is a crucial task, which implies the need for an interest rate or the cost of financial intermediaries (Obim & Orok, 2018). Nevertheless, cost and risk of financial intermediation depends on the forces of demand and supply as tested using the supply leading and demand following hypothesis (Nazifi, Magaji, & Amase, 2022).

Research on credit facilities and their capacity to spur growth has garnered renewed interest on a global scale, but there is little evidence available regarding the impact of bank credit on the real sector in Nigeria. Some of the previous research uses short-term data, while others use out-of-date data. It has therefore become imperative to contextually measure and ascertain the level of the impact of bank credit on the real sector in

Nigeria for effective policies to be developed accordingly. This study's goal is to evaluate the effects of credit provided by the banking sector on Nigeria's real estate market.

The literature review in the next section illustrates huge academic interest on the topic of banking sector credit and the real sector. What is missing is a clear-cut approach that discuss in detail the impact of banking sector credit on the real sector of the Nigerian economy with emphasis on commercial bank credit, domestic private investment and government capital expenditure. This is the gap that this research intends to fill.

2. Theoretical Framework and Review of Empirical Literature

2.1. Theoretical Framework

Credit is an important aspect of financial intermediation that provides funds to economic entities that can put them to the most productive use. Theoretical studies have established that a relationship exists between financial intermediation and economic growth. Some of these existing growth models are the two-gap model, Marxian theory, Schumpeterian theory, the Harrod–Domar theory of growth, the neoclassical model of growth and endogenous growth theory. The growth models relevant to these are the neoclassical model of growth and endogenous growth theory. This is because they explain the situation in developing economies, such as Nigeria, Cameroon, and so on. Therefore, we have chosen the Harrod–Domar theory and the Solow–Swan growth model to underpin our research.

2.2. Harrod–Domar

The Harrod–Domar model emphasizes the key role of investment in the economic growth process. The model explains a steady long-run state of capital output and saving investment flow equilibrium for economic growth. This model posits that every economy must save a certain proportion of its national income to replace worn out capital. Secondly, for an economy to grow, it requires new investments representing net addition to capital stock (k) and national income (Y). Any net addition to the capital stock in the form of new investment will bring about a corresponding increase in the flow of national output (GDP).

$$S = sY \tag{1}$$

Equation 1 shows that savings (S) is a proportion of national income (sY).

In Equation 2, savings depends on national income, in that an increase in national income affects savings positively, all other things being equal. Investment is determined by the level of total savings. Net investment (l) is the change in the capital stock (k).

$$l = \Delta k \tag{2}$$

In Equation 3, the total capital stock (k) has a direct relationship with national income (Y), as expressed by the capital output ratio. An increase in national income brings about an increase in total capital stock.

$$\Delta k = k\Delta Y \tag{3}$$

In Equation 4, it should be noted that what is saved must be equal to the net investment; therefore, total savings always happens to be the total investment. Thus,

$$S = I \tag{4}$$

By combining Equation 2 and Equation 3, we get:

$$I = \Delta k = k\,\Delta Y \tag{5}$$

By combining Equations 1 and 5, we get:

$$S = sY = k\Delta Y = \Delta k = I \tag{6}$$

In Equation 6, savings is equal to change in national income, which equates $k\Delta Y$, Δk and I

Therefore,
$$sY = k\Delta Y \tag{7}$$

$$\frac{sY}{Y} = \frac{K\Delta Y}{Y} \tag{8}$$

$$s = \frac{k\Delta Y}{\mathrm{Y}} \tag{9}$$

Dividing both sides by K:

$$\frac{\mathrm{S}}{\mathrm{K}} = \frac{\mathrm{K}\,\Delta Y}{\mathrm{KY}} \tag{10}$$

$$\frac{s}{k} = \frac{\Delta y}{y} \tag{11}$$

This means that the rate of growth of the national income of GDP is determined jointly by the net savings ratio and the national capital output (k).

The Harrod–Domar model is a long-run analysis; it notes that what is saved has to be invested for growth to be realized. Aggregate supply in an economy is stimulated by aggregate demand (demand creates supply), with consumption as the major component. The demand for investible funds from the capital market is derived from the goods and services in the economy. Net investment is supposed to be proportional to the changes in output of the economy.

2.3. Solow–Swan Model

The Solow–Swan model is an extension of the 1946 Harrod–Domar model that dropped the restrictive assumption that only capital contributes to growth (as long as there is sufficient labor to use all capital). Important contributions to the model came from the work done by Solow and Swan (1956), who independently developed relatively simple growth models. Solow's model fitted available data on US economic growth with some success. In Solow (1987) was awarded the Nobel Prize in Economics for his work. Today, economists use Solow's sources of growth accounting model to estimate the separate effects of technological change, capital, and labor on economic growth.

Solow's model is also one of the most widely used models in economics to explain economic growth. Basically, it asserts that "total factor productivity (TFP) can lead to limitless increases in the standard of living in a country."

Solow extended the Harrod–Domar model by adding labor as a factor of production and capital output ratios that are not fixed, as they are in the Harrod–Domar model. These refinements allow increasing capital intensity to be distinguished from technological progress. Solow sees the fixed proportions production function as a "crucial assumption" of the instability of the results in the Harrod–Domar model. His own work expands upon this by exploring the implications of alternative specifications, namely the Cobb–Douglas production function and the more general constant elasticity of substitution (CES). Although this has become the canonical and celebrated story in the history of economics featured in many economic textbooks, recent reappraisal of Harrod's work has contested it. Criticisms of Harrod's original piece include the fact that it was not concerned with economic growth and he did not explicitly use a fixed proportions production function.

A standard Solow model predicts that, in the long run, economies converge to their steady state equilibrium and that permanent growth is achievable only through technological progress. Shifts in saving and in population growth only cause level effects in the long run (that is in the absolute value of real income per capita). An interesting implication of Solow's model is that poor countries should grow faster and eventually catch up to richer countries. This convergence could be explained by:

- Lags in the diffusion of knowledge. Differences in real income might shrink as poor countries receive better technology and information.
- Efficient allocation of international capital flows, since the rate of return on capital should be higher in poorer countries. In practice, this is seldom observed and is known as the Lucas paradox.
- A mathematical implication of the model (assuming that poor countries have not yet reached their steady state).

Baumol attempted to verify this empirically and found a very strong correlation between a countries' output growth over a long period of time (1870 to 1979) and its initial wealth. His findings were later contested by DeLong, who claimed that the non-randomness of the sampled countries and the potential for significant measurement errors in the estimates of real income per capita in 1870 caused Baumol's findings to be biased. DeLong concluded that there is little evidence to support the convergence theory.

The key assumption of the Solow–Swan growth model is that capital is subject to diminishing returns in a closed economy.

- Given a fixed stock of labor, the impact on output of the last unit of capital accumulated will always be less than the one before.
- For simplicity, assuming that there has been no technological progress or labor force growth, diminishing returns imply that at some point the amount of new capital produced is only just enough to make up for the amount of existing capital lost due to depreciation. At this point, because of the assumptions of no technological progress or labor force growth, the economy ceases to grow.
- Non-zero rates of labor growth complicate matters somewhat, but the basic logic still applies – in the short run, the rate of growth slows as diminishing returns take effect and the economy converges to a constant "steady-state" rate of growth (that is, *no* economic growth per capita).
- Non-zero technological progress is very similar to the assumption of non-zero workforce growth in terms of "effective labor"; a new steady state is reached with constant output per worker-hour required for a unit of output. However, in this case, per capita output grows at the rate of technological progress in the steady state (that is, the rate of productivity growth).

2.4. Review of Empirical Literature

The relationship between financing and economic expansion has been the subject of numerous empirical studies, but the explanatory factors have not been agreed upon. The goal of Ahmed, Jayaraman, and Ahmed (2020) was to examine how these important economic indicators affected the total amount of credit provided by traditional commercial banks in the Sultanate of Oman. The study's findings indicate that macroeconomic indicators have a favorable effect on the amount of credit provided by traditional commercial banks in the Sultanate of Oman. Takon et al. (2020) sought to assess the importance of the cost of financial intermediaries and to suggest measures that could accelerate economic growth in Nigeria. They focused on the factors that determine the cost of financial intermediaries in Nigeria's pre- and post-consolidated banking sector. From the analysis, it was found that there was a significant correlation between credit for the private sector and GDP. Further research revealed a strong correlation between Nigeria's GDP and total deposits. Additionally, it was discovered that interest rates significantly impacted Nigeria's GDP.

Okoroafor, David, and Eze (2018) examined how adjustments in the economic system and growth were affected by the development of the banking sector. They asserted that the growth of the banking industry had different effects on the growth of the agricultural and industrial sectors. The banking sector's development is supported by the economic structure and growth. The growth of the banking industry has a detrimental effect on the growth of the industrial and agricultural sectors. Only in nations with a high level of banking sector growth is the negative effect of banking sector growth on agriculture industry development visible.

Zeqiraj, Hammoudeh, Iskenderoglu, and Tiwari (2020) examined the dynamic relationship between banking sector performance and GDP growth in 13 Southeast European nations between 2000 and 2015, taking into account factors such as trade openness, investment, and human capital, among others. The major empirical finding suggests a favorable and significant impact of banking sector performance on growth in the economy using a detailed generalized method of moments (GMM).

Okoroafor et al. (2018) assessed the effect of deposit money banks on capital formation in Nigeria, taking into account the liquidity ratio, bank savings, and deposit rate. To determine the long-run and short-run relationships, they performed unit root tests, ARDL cointegration tests, and an error correction model (ECM). The findings demonstrated a favorable association between bank savings and government capital expenditure (GCE).

Anyanwu, Ananwude, and Okoye (2017) investigated the effect of commercial bank lending on real GDP and the industrial production index to empirically evaluate the impact of bank lending on Nigeria's economic development, from 1986 to 2015. Heterogeneity was identified in the data from the preliminary statistics of the Central Bank of Nigeria (CBN). CBC and GDP are predicted to have a long-term relationship by Johansen's cointegration, and this is true for the Industrial Production Index. According to the findings of the Granger impact assessment, private sector lending has a substantial impact on real GDP, while CBC's impact on GDP is not as substantial as private sector lending.

Chinedu, Magaji, and Musa (2021) used the autoregressive distributed lag (ARDL) and bound testing approaches to examine the impact of money market instruments on economic growth. Their findings revealed that there is a long-run relationship among the money market instruments. They also found that the money market variables have a negative but significant impact on economic growth in the long and short runs. Their study recommends that, since the treasury certificate was proven to have the most influential impact on economic growth, the Central Bank should give it priority. In addition, interest rate as the major determinant in money market operation should be well positioned in order for it not to tilt in favor of one of the players in the market.

3. Research Methodology

The econometrics methodology was employed as the analytical tool for the examination of the impact of banking sector credit on the real sector in Nigeria. Three variables were selected to represent banking sector credit: commercial bank credit, domestic private investment, and government capital expenditure.

A descriptive analysis was carried out to capture the nature and structure of the data, while an autoregressive distributed lag model (ARDL) was employed to show the impact of the independent variables on the dependent variable. The econometrics technique of the multiple regression analysis was used to obtain the estimates.

The mathematical expression of the regression model is given as:

$$Y = f(X1, X2, X3) \quad (12)$$

Where Y is the dependent variable and the Xs are the independent variables.

The econometric model of this study is expressed as follows:

$$GDP = \beta 0 + \beta 1CP + \beta 2BA + \beta 3TB + + \mu \quad (13)$$

$$RGDP = f(CBC, DPI, GCE, \mu) \quad (14)$$

$$RGDP = \alpha + \beta CBC + \lambda DPI + \delta GCE + \mu \quad (15)$$

Where:
RGDP = real GDP (proxy for the real sector).
CBC = commercial bank credit.
DPI = domestic private investment.
GCE = government capital expenditure.
α = intercept of drift term.

The βs are slope parameters that measure the partial impact of the explanatory variables on the 14 regressions, and μ is the arbitrary variable or error term; it is the proxy of all other variables that influence the regressed variable which is not included in this regression equation.

Based on theoretical expectations, real GDP is expected to have a positive relationship with commercial bank credit, domestic private investment, and government capital expenditure. We used banking sector credit from 1986 to 2019 for the real sector in Nigeria obtained from CBN (2020).

4. Research Finding/Results

The results of the unit root tests using the Phillips–Perron (PP) technique are reported in Table 1. The results show that real GDP, commercial bank credit, domestic private investment, and government capital expenditure are of order of integration I.

Table 1. Results of the Phillips–Perron unit root test.

Variable	Level	T-stat critical value 5%	First difference	T-stat critical value 5%	Order of integration
Real gross domestic product (RGDP)	-3.68	-3.55	-	-	I(1)
Commercial bank credit (CBC)	-0.42	-3.55	-5.32	-3.56	I(1)
Domestic private investment (DPI)	-2.93	-3.55	-5.63	-5.56	I(1)
Government capital expenditure (GCE)	-1.63	-3.55	-6.62	-3.56	I(1)

Table 2. VAR lag order selection criteria output.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1171.213	NA	9.320e+26	73.451	73.634	73.511
1	-1043.620	215.313*	8.810e+23*	66.476*	67.392*	66.780*
2	-1030.335	19.097	1.100e+24	66.646	68.295	67.193

Note: * denotes the lag order of the criteria; LR: sequentially modified LR test statistic, each test was conducted at the 5% level, FPE: Final prediction error, AIC: Akaike information criterion, HQ: Hannan–Quinn information criterion, SC: Schwarz information criterion.

Table 2 shows that in the first step of the ARDL procedure the appropriate lag length for the model is determined using the Akaike information criterion approach of the restricted vector autoregressive (VAR) estimate.

Table 3. Bound test for cointegration.

Test statistic	Coefficient	Lag length	Significance level	Pesaran, Shin, and Smith (2001) bound critical value	
				I(0)	I(1)
F-test	5.56	3	10%	2.72	3.77
			5%	3.23	4.35
			2.5%	4.29	5.61

Source: Pesaran et al. (2001) bounds test f-statistic for the unrestricted constant and no trend model.

A two-step process is used to approximate the long-run relationship after applying the lag selection criteria. First, it is investigated whether the variables in equation 13 have a long-run relationship, and then the short- and long-run strictures are estimated.

The Wald test F-statistic (5.56) surpasses the 95% and 90% upper bound critical values of Pesaran et al. (2001) (3.77 and 4.35, respectively), according to the results in Table 3. We, therefore, conclude that there is a long-term relationship between RGDP, CBC, DPI, and GCE, that is the variables move together over the long term with GDP as they regress, and the null hypothesis of no cointegration cannot be accepted.

Table 4. Long-run relationship estimates.

Dependent variable: RGDP				
Variable	**Coefficient**	**Std. error**	**T-statistic**	**Prob.**
Commercial bank credit (CBC)	4.630	2.200	2.100	0.040
Domestic private investment (DPI)	-12.690	7.280	-1.740	0.090
Government capital expenditure (GCE)	0.610	0.330	1.820	0.080
C	25.340	20.970	1.210	0.240

$$\underset{(1.21)}{RGDP = 25.34} + \underset{(2.10)}{4.63}*CBC - \underset{(-1.74)}{12.69}*DPI + \underset{(1.82)}{0.61}*GCE \quad t$$

Table 4 shows the result of regressing RGDP on CBC, DPI, and GCE. From the regression output above, there is a favorable and significant correlation between RGDP and CBC. A unit change in CBC sustained in the long run will, on average, bring about a 4.63 net increase in RGDP, holding other explanatory variables constant. The parameter estimate of CBC is statistically significant as the computed t-value (2.10) is greater than the t-critical value (2.04) at the 5% significance level. Thus, the evidence leads to rejection of the null hypothesis, which states that the real sector in Nigeria is not significantly impacted by CBC. This is consistent with the a priori expectation and the findings of Simon and Marshal (2017) and Safdar, Shehzadi, Ali, and Ullah (2015).

A negative but significant relationship exists between DPI and RGDP. A unit increase in DPI sustained in the long run will, on average, bring about a 12.69-unit decrease in RGDP, holding other explanatory variables constant. The parameter estimate of DPI is statistically significant as the computed t-value (-1.74) is greater in absolute terms than the t-critical value of 1.64 at the 10% level of significance. Therefore, there is sufficient evidence to disprove the null hypothesis, which claims that DPI has no significant impact on the real sector in Nigeria. This result is not consistent with the a priori expectation.

GCE has a positive significant relationship with RGDP. A unit change in GCE sustained in the long run will, on average, bring about a 0.61-unit increase in RGDP, holding the other 17 explanatory variables constant. The parameter estimate of GCE is statistically significant as the computed t-value (1.82) is greater than the t-critical value (1.64) at the 10% significance level. Thus, the null hypothesis, which states that GCE has no significant impact on the real sector in Nigeria, can't be rejected. This is consistent with the a priori expectation and the findings of Safdar et al. (2015).

Table 5. Error correction model estimates.

Dependent variable: RGDP				
Variable	**Coefficient**	**Std. error**	**T-statistic**	**Prob.**
D commercial bank credit (CBC)	3.180	1.450	2.190	0.040
D domestic private investment (DPI)	-8.710	4.750	-1.830	0.080
D government capital expenditure (GCE)	0.420	0.210	1.950	0.060
CointEq(-1)	-0.690	0.160	-4.290	0.000
Diagnostic test				
Test statistics			LM version	
Serial correlation		Obs.R^2 = 5.410	Prob.$\chi^2(1)$ = 0.077	
(Breusch–Godfrey) Heteroscedasticity		Obs.R^2 = 9.240	Prob.$\chi^2(17)$ = 0.060	
(Breusch–Pagan–Godfrey) Normality (Jarque–Bera)		1.420	Prob. = 0.490	

4.1. Short-run Regression Results

From Table 5, the estimated ARDL short-run model passes all diagnostic tests. The test results revealed that the residual estimate of the error correct term (ECT) is free from serial correlation and heteroscedasticity problems as the probability of obs*R^2 is greater than 5% in both cases. The estimated residuals are normally distributed based on the Jarque–Bera test result.

The predicted coefficient of ECTt-1 is projected to be negative (-0.69) and significant at the 1% level based on the calculated short-run dynamic growth model presented above. This suggests that the annual adjustment for a shock-induced variance from the long-run growth trajectory is 69%. According to the regression results above, there is a significant and positive correlation between CBC and RGDP. Keeping other explanatory variables constant, a unit change in CBC will, on average, result in a 3.18-unit increase in RGDP. The parameter estimate of CBC is statistically significant as the computed t-value (2.19) is greater than the t-critical value (2.04) at the 5% significance level. Thus, the evidence rejects the null hypothesis, which states that CBC has no significant impact on the real sector in Nigeria in the short run. This is consistent with the a priori expectation and the findings of Simon and Marshal (2017) and Safdar et al. (2015).

A negative but significant relationship exists between DPI and RGDP. A unit increase in DPI will, on average, bring about an 8.71-unit decrease in RGDP, holding other explanatory variables constant. The parameter estimate of DPI is statistically significant as the computed t-value (-1.83) is greater in absolute terms than the t-critical value of 1.64 at the 10% level of significance. There is therefore sufficient evidence to disprove the null hypothesis, according to which DPI in Nigeria's real sector has no discernible impact. This result is not consistent with the a priori expectation.

GCE has a positive significant relationship with RGDP. A unit change in GCE will, on average, bring about a 0.42-unit increase in RGDP, holding other explanatory variables constant. The parameter estimate of GCE is statistically significant as the computed t-value (1.95) is greater than the t-critical value (1.64) at the 10% significance level. Thus, the null hypothesis, which states that GCE has no significant impact on the real sector in Nigeria, can't be rejected. This is consistent with the a priori expectation and the findings of Safdar et al. (2015).

4.2. Summary of Findings

The findings indicate that a favorable and significant connection exists between CBC and RGDP. A unit increase in CBC brings about a 4.63-unit increase in RGDP. This indicates that a change in CBC is accompanied by a significant change in RGDP. It was also found that a negative but significant relationship exists between DPI and RGDP. A unit increase in DPI brings about a 12.69-unit increase in RGDP in the long run. Therefore, a significant increase in DPI will bring about a greater increase in RGDP in the long run as indicated by the t-value.

GCE has a positive significant relationship with RGDP. A unit increase in GCE will bring about a 0.61-unit increase in RGDP. In the short run, a significant increase in DPI, CBC, and GCE will, on average, bring about a significant increase in RGDP. A unit increase in DPI, CBC, and GCE will bring about an increase in RGDP by 8.71, 3.18, and 0.42 units, respectively, and the parameter estimates of DPI, CBC and GCE are statistically significant as shown by the t-values of -1.83, 2.19 and 1.95, respectively.

5. Conclusion and Recommendations

The estimations from the study show that banking sector credit has a significant impact on the real sector of Nigeria's economy. This is shown by the significant contribution of banking sector credit to the improvement of the real sector through government capital expenditure. Positive variations in banking sector credit lead to improvements in Nigeria's real sector.

Based on the findings of the study, it is recommended that banking sector credit should be expanded to ensure that commercial banks have enough credit facilities available. The Central Bank should introduce innovative policies that will strengthen commercial banks to allow them to offer more credit facilities to investors in all sectors of the economy.

The government should also establish a supportive and enabling environment within the economy, remove all administrative bottlenecks for registering small- and medium-scale businesses, and ensure there is adequate basic infrastructure, such as roads, hospitals, clean piped water, a steady provision of electricity, and social infrastructure that will promote domestic private investment, especially in the real sector, which will boost economic growth.

Finally, the Central Bank should enforce regulations against countering loans and advances to sectors such as oil and gas and improve credit access for agriculture and the general industry but more specifically the manufacturing industry.

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