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Bank Credits and Economic Growth in Nigeria

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Abstract

This study investigates the relationship between bank credit and economic growth in Nigeria. In this study, bank credit was proxied by credit to production sector, credit to general commerce sector, credit to service sector and credit to other sectors, while the dependent variable being economic growth was proxied by gross domestic product. Secondary data were sourced from Central Bank of Nigeria Statistical Bulletin, for the period spanning through from 1992 to 2022. Multiple regression analysis was employed using Ordinary Least Square (OLS) in the empirical analysis. The findings from the study indicates that credit to production sector has a positive and significant relationship with gross domestic product; credit to general commerce sector revealed a positive but insignificant relationship with gross domestic product; credit to service sector had a negative and insignificant relationship with gross domestic product; while credit to other sectors revealed a positive and insignificant relationship with gross domestic product. Based on the findings, the study recommended amongst others that; policies be formulated to facilitate easier access to credit for the production sector. This can be done through interest rate adjustments, relaxed collateral requirements, or specific loan programs tailored for businesses in the production sector; government and affected institutions to explore and encourage alternative investment channels for businesses in general commerce instead of solely relying on bank credit. These alternatives could include venture capital or government backed initiatives that have the potential to stimulate growth in the commerce sector.

Keywords: Bank Credit, Economic Growth, Production Sector, General Commerce, Service Sector

1. Introduction

In recent times, theoretical discussions about the importance of financial development and the role that financial intermediation plays in economic growth have remained controversial and thus occupied a key position in the literature of development finance. Bank credit is one of the instruments of monetary policy that can be used by the Central bank of Nigeria, to regulate the economic system (Eburajolo & Aisien, 2019) [11]. The traditional role of banks in a financial system are collection of deposits, lending of money to customers, acting of referees and agents on behalf of customers, issue of travellers' cheque and honouring of cheques, financing and discounting bills of exchanges in other to create liquidity for promotion of Economic Growth (Abina, 2022) [1].

Deposit money banks generally perform the function of financial intermediation. This is simply defined as the mobilization and aggregation of scattered monetary resources from the surplus economic units and, afterward, the channelling and disaggregation of the already pooled resources to the needy and deficit economic units (Balago, 2014) [7]. This financial intermediation brings about loans and advances, which comprise the main assets in the bank's balance sheet; extending loans and advances involves a high level of risk that must be managed effectively for growth in the bank's performance (Bridget, Onuchuku & Nteegah, 2021) [8].

Over the years, the Central Bank of Nigeria has been seen to be playing a leading and catalytic role by using direct controls not only to control overall credit expansion but also to determine the proportion of bank loans and advances going to "high priority sectors" and "others". This sectoral distribution of bank credit is often meant to stimulate the productive sectors (agriculture, industry and manufacturing) and consequently lead to increased economic growth in the country (Balago, 2014) [7].

Unfortunately, the Central Bank of Nigeria (2019), noted that the flow of credit to the priority sectors did not meet the prescribed targets and failed to impact positively on investment, output and domestic price level. Certainly, these comments have evoked certain questions bothering on the strength, effectiveness, and productivity of bank credit in the Nigerian economy.

The provision of credit by banks' intermediation activities has contributed significantly to the growth of the economy. Financial institutions are most frequently exposed to credit risk, which is the likelihood that the actual results of an investment or loan may differ from those anticipated (Mgbomene & Nnamocha, 2020) [20]. Again, because of the legal reserve requirements imposed by the central banks' ability to create credit because of cash constraint and regulation imposed by the financial authorities, the CBN came up with a guideline of credit classification for the economy into production, general commerce, services, and other sectors in the economy, which made many banks not to extend a lot of credit because of the riskiness associated with prudential guidelines (Mgbomene & Nnamocha, 2020) [20].

When there is a leakage of cash out of the banking system, the amount of money created will be reduced by the multiplier of the leakages. Therefore, for banks to aid the economy's development, the willingness of the banking public to bank and borrow must be backed up by appropriated collateral to enable banks to lend to the general public. Some borrowers may not be able to afford the stringent collateral demanded by the banking system, thereby discouraging genuine borrowers in favour of dubious borrowers wishing to borrow for entrepreneurial activities. This study therefore, is aimed at investigating the effect of bank credit on economic growth in Nigeria.

Objectives of the Study

The general objective of this study is to examine the effect of bank credits on the economic growth of Nigeria. Specifically, this study was directed at the following objectives;

1. To determine the relationship between bank credit to the production sector and gross domestic product,
2. To examine the relationship between bank credit to general commerce sector and gross domestic product,
3. To evaluate the relationship between bank credit to service sector and gross domestic product,
4. To investigate the relationship between bank credit to other sectors and gross domestic product.

2. Literature Review

Conceptual Underpinning

Concept of Bank Credit

Credit is the system by which goods and services are provided in return for differed rather than immediate payment; it may be provided by the seller, or by a bank or finance company (Nwaru & Okorontah, 2014) [24]. Bank credit is the credit made available to the economy by the deposit money banks. Atseye, Edim and Ezeaku, (2015) [5], asserted that discussion in theoretical background regarding the relevant of bank credits and their role in economic development have received considerable attention in the literature of finance over the years. Effective and efficient financial intermediation depends mostly on the development in the banking sector, especially in a developing economy like Nigeria. This is on the argument that deposit money banks are very important agent of economic growth and development on the bases of the capability to mobilizing savings from surplus units of the economy and distributing same to deficit units in the economy for production. With bank credit, the lacuna between the borrower and the lender is filled owing to the attribute of bank credit as a blood stream of an economy (Ogunmuyiwa, Okuneye & Amaefule, (2017) [25].

The level of credit to the different sectors of the economy from the banking system determines the level of productive activities which influences growth and development reflected mostly by the growth rate of real gross domestic product because, sectoral investments can be enhanced by the provision of credits. Ogunmuyiwa *et al*. (2017) [25] stated that for small scale enterprises, medium and large firms in to contribute adequately to growth and development in Nigeria, adequate and regular supply of loans to business concerns is imperative. While arguing that under normal circumstance, bank credit is expected to be seen in both quantitative and qualitative terms, Akujuobi and Nwezeaku (2015) [2] expressly affirmed the necessity to determine the extent bank credit has affected human development, reduced unemployment and poverty in the economy.

Bank Credit and Economic Growth

Bank credit is no doubt a driver of the real economy, especially in developing economies where the financial markets are not well developed to mobilize the necessary resources to accelerate or propel the desired level of economic growth and development. The success or progress of productive economic activities in Nigeria greatly depends on the intermediation function of the banking system relative to the stock market. In spite of the high interest rate charge by deposit money banks in Nigeria, the growth of the real economy is largely dependent on bank credit amidst the intervention in priority sectors like agriculture by the government, mostly through the Central Bank of Nigeria development programs.

The contribution of the banking system towards the growth of an economy is primarily credited to the role it plays in savings mobilization and allocation of resources to deficit sectors of the economy (Nwakoby & Ananwude, 2014). The banking sector through financial intermediation, mobilizes savings from surplus units in the economy and channels same to deficit units thus entrepreneurs' access to credit is actualize by the ability of the banking system to mobilize savings from savers with no pressing requirements for funds (Ekine & Onwukuru, 2018) [13]. Fapetu and Adefemi (2015) [14], endorsed that Nigerian deposit money banks should be more favourably disposed to extending more credits to production subsectors namely agriculture, manufacturing, mining, quarrying, real estate and construction. Also, credit allocated to other subsector namely government, personal, and professional at a reasonable interest rate. The significance of providing credit to various sectors of the economy stresses the sensitive and vital roles that banks play in financial intermediation and facilitation of capital formation to promote economic growth (Uzomba, Chukwu, Jumbo & Nwankwo, 2014) [29].

Economic growth is a key objective of macroeconomic policy however, the financial sector is crucial in the achievement of this goal, since bank credit is considered a vital means of elevating standards of living, as well as

achieving economic development (Leitão, 2021) [17] Further, Echekoba, Adigwe, Ananwude and Osigwe, (2017) [12] affirm that the growth of an economy would depends on the sturdiness, unassailability and stability of the financial system. Bank credit, indeed contributes to economic expansion, in that it is an important link in money transmission; it finances production, consumption and capital formation, which in turn affects economic activity but, the reverse is also applicable, in that as the economy grows, the incentive to borrow and the ability to repay heightens, given positive developments with regard to consumer demand and employment (Cong, *et al*, 2019) [9].

Theoretical Underpinning

The Financial Liberalization Theory

This theory was developed by McKinnon (1973) [19] and Shaw (1973) [28]. The hypothesis considers the role of government intervention in the financial markets as a major constraint to savings mobilization, investment and growth. Government's role in controlling interest rates and directing credit to the appropriate sectors of the economy in developing countries, inhibits savings mobilization and impedes the holding of financial assets, capital formation and economic growth. Indirectly, deposit interest rates discourage financial saving which leads to excess liquidity outside the banking system. According to McKinnon and Shaw (1973), pervasive government intervention and involvement in the financial system through the regulatory and supervisory network, particularly in controlling interest rates and the allocation of credit, tends to distort the financial markets. To this extent, government intervention adversely affects savings and investment decisions of market participants, and lead to fragmentation of financial mediation.

The ultimate result is a financially repressed economy. The central argument of McKinnon and Shaw (1973) is that financial markets should be liberalized and allocation of credit be determined by the free market. In this case, the real interest rate will adjust to its equilibrium levels and low-yielding project will be eliminated. This will lead to increase in overall efficiency of investment, savings and total real supply of credit would increase. This, in turn, induces a higher volume of investment which will then lead to economic growth. The main critique of the financial liberalization theory emanates from the imperfect information paradigm. This school of thought disagrees with the proposition of these scholars and examines the problem of financial development in the contest of information asymmetry and costly information that results in credit rationing.

As observed by Stiglitz and Weiss (1981), asymmetric information leads to two serious problems. First, adverse selection of imperfect information paradigm and the second is moral hazard, that is, the implication is the information asymmetries of higher interest rates, which actually follow financial reforms and financial liberalization policies in particular, exacerbate risk taking throughout the economy and therefore threatens the stability of the financial system, which can easily lead to financial crises.

The Demand-Following Theory

According to the theory, the growth of the economy generates additional and new demand for financial services, which bring about a supply response in the growth of the financial system). The theory suggests a demand following relationship between financial and economic development. High economic growth creates the demand for modern financial institutions, their services, assets, liabilities and arrangements, by investors and savers. In this case, the evolutionally development of the financial system is a continuing consequence of the pervasive, and sweeping process of economic development. The level of demand for financial services depends upon growth of real output, commercialization and monetization of agriculture and other traditional substance sectors.

An accelerated growth rate of real national income stimulates greater demand for external funds by enterprises, and this will bring about as firms find it increasingly difficult to pursue expansion policy form internally generated funds. Moreover, the greater the differences in the growth rates among the different sectors of the economy, the greater will be the responsibility of the financial system to perform the role of financial intermediation, by allocation saving to fast-growing industries away from slow-growing industries and firms. In this way, the system can support and sustain the leading sectors in the process of growth. The demand – following financial hypothesis assumes that there is a high elasticity in the supply of entrepreneurship in the financial services "relative to growing opportunities for profit from provision of financial services", to the extent that there is sufficient expansion in the number and diversity of types of financial institutions. It is also assumed that there is in existence, favourable legal, institutional and economic environment.

The Supply-Leading Theory

The theory establishes the link between finance and economic growth. A well-functioning financial sector, according to Schumpeter (1934) [26], is required to support expansion in the real sector, which leads to economic growth. To put it another way, how well the financial sector is grown or deepened determines economic growth. As the financial industry matures, the supply of financial services expands. The central argument underlying supply-leading hypothesis is that financial deepening is a determining cause of economic growth. It claims that the development of the financial sector leads to optimal resource allocation. According to the supply-leading hypothesis, causality flows from finance to economic growth without any feedback from economic growth. A well-developed financial sector is a pre-condition for economic growth. The supply-led growth model assumes that financial sector development granger causes economic growth.

Schumpeter (1934) [26] argued that in the long-run, efficient allocation of savings through the identification and extension of credit to entrepreneurs with the best chances of successfully implementing innovative products and manufacturing processes accelerates output growth. Financial intermediation, according to Schumpeter, is a useful tool for increasing the economy's productive capacity. This theory was later supported by Goldsmith (1969) [15], Shaw (1973) [28], and McKinnon (1973) [19], who theorized that finance is a very important and primary requirement for both short- and long-term economic growth in their works. Financial institutions facilitate the exchange of goods and services by assisting in the mobilization of savings. They also gather and process information about investors and investment projects in order to facilitate efficient fund

allocation, monitor investments, and provide corporate governance after funds have been allocated, and assist in risk diversification, transformation, and management. When financial institutions and markets function well, they allow all market participants to benefit from the best investments by channelling funds to their most productive uses.

Empirical Review

Abina (2022) [1] evaluated the economic benefit of banks' credit to the productive sector and its implications for economic growth in Nigeria. Time series data was gathered from the annual statistical bulletin of the Central Bank of Nigeria, which ranged from 1981 to 2021. The stationarity test displayed that all the variables were stationary at level 1, which suggests that co-integration exists between the variables under investigation. The result of the vector error correction model in lag one (-1) showed that credit allocated to mining and quarrying has a negative and insignificant relationship with gross domestic product, whereas in lag 2, a positive and significant relationship was identified. The study thus recommends that there is a need for policies to stimulate recycling processes that will help convert waste from mining to animal feed supplements and fertilizer for plants, as potassium, phosphorous, and nitrogen are essential nutrients for plants, and all this could be sourced from mining processes that serve as feed for livestock, leading to huge economic outputs in terms of productivity that will increase both the agriculture and mining sectors.

Azevedo, Mateus and Pina, (2022) [6] investigated whether credit extended by the Portuguese banking system has been allocated to the most productive firms within each sector. With a data set covering 95% of total outstanding credit to non-financial corporations recorded in the Portuguese credit register, the authors investigated whether outstanding loans by resident banks to 64 economic sectors have been granted to the most productive firms. First, the authors estimated a baseline, reduced-form model of credit reallocation, where the parameter of interest gives the response of total credit granted to each firm to its level of productivity. Second, the authors assessed how this response is affected by the share of credit allocated to unproductive firms. Third, the authors redid the analysis with credit granted to each firm by each banking group, instead of by the entire banking system, so that bank indicators can be taken on board. They discovered evidence of misallocation, which reflects the joint effects of credit supply and credit demand decisions taken over the course of time, and the adverse cyclical developments following the accumulation of imbalances in the Portuguese economy for a protracted period. In 2008–2016, the share of outstanding credit granted to firms with very low productivity (measured or inferred) was always substantial, peaking at 44% in 2013, and declining afterwards with the rebound in economic activity and the growing allocation of new loans towards lower risk firms and away from higher risk firms. Furthermore, they discovered that misallocation is associated with slower reallocation. The responsiveness of credit growth to firm relative productivity is much lower in sectors with relatively more misallocated credit and when banks have a high share of such credit in their portfolios.

Zhang, Deng and Wu (2022) [30] studied the impact of banking sector development on changes in economic structure and growth. They argue that banking sector development has differential effects on industrial sector development and agricultural sector development. They test whether economic structure and growth foster banking sector development. In testing the hypotheses, they construct a panel sample of all countries in the world during 1960–2016. From the result, they discovered that banking sector development has a negative effect on agricultural sector development but exerts no effect on industrial sector development. The negative effect of banking sector development on agricultural sector development is only observed for countries with high degrees of banking sector development. Our results further show that agricultural sector development exerts a negative effect on banking sector development while industrial sector development has a positive effect on banking sector development.

Alzyadat (2021) [3] aimed to investigate the impact of sectoral bank credit facilities provided by commercial banks on the non-oil economic growth in Saudi Arabia. Bank credit facilities are given for nine economic sectors: Agriculture, manufacturing, mining, electricity and water, health services, construction, wholesale and retail trade, transportation and communications, services, and finance sector. The study employs annual data from 1970 to 2019. The study employed the Autoregressive Distributed Lag (ARDL) approach to identify the long-run and short-run dynamics relationships among the variables. The main results reveal that the overall impact of total bank credit has a significant and positive effect on non-oil economic growth in Saudi Arabia. The results revealed that the effect of bank credit on the non-oil GDP growth in the short and long run was uneven. The established that all sectors have a positive and significant impact in the long run, except for the agricultural and mining sectors. Likewise, all sectors have a positive and significant impact in the short run, except for construction, finance, services, and transportation & communications. As a result, bank credit facilities in different sectors have played an important role in enhancing the non-oil economic growth in the Kingdom Saudi Arabia.

Bridget, Onuchukwu, and Nteegah (2021) [8] used descriptive statistics, the PhillipsPerron unit root test, the cointegration test, and an error correction mechanism to explore the impact of deposit money bank (DMB) credit on manufacturing sector performance in Nigeria between 1981 and 2019. The unit root test results show that all the variables are stationary at the first difference. It was observed from the Johansen cointegration test that the variables have a long-term relationship. This is the precondition for fitting the error correction model. The parsimonious ECM results revealed that deposit money banks' credit to the manufacturing sector impacted positively on its performance. This implies that an increase in deposit money and banks' credit stimulated output in the sector. It was further observed from the results that the interest rate was significant in explaining changes in the performance of the manufacturing sector's output. This confirms the critical role of the cost of funds in investment decisions and the performance of the economy at large. The inflation rate was also significant in explaining changes in the performance of the manufacturing sector. Given the findings, the study recommended that there should be an increase in banks' funding for manufacturing sector businesses to boost production and economic growth in the country.

Sahiti Ramushi and Sahiti (2021) [27] adopted secondary data and sought to analyze the credit risk management of commercial banks in Kosovo through a developed DEA

(Data Envelopment Analysis) model. The study covers seven commercial banks in Kosovo for the period 2008–2016 and uses Tobit regression to determine credit risk efficiency. The estimation results show a statistically significant positive relationship between bank efficiency, capital adequacy, and loans. Moreover, the study found that banks' efficiency factors, including profitability, deposits, costs, bank size, GDP growth, and inflation, are not statistically significant.

Dong, Wen, and Liu (2020) [10] studied how credit decisions made by banks affect environmental pollution and the sustainable growth path. In their model, they suggest that with credit discrimination, the economy may experience a high output and heavy pollution steady state, but there will be welfare losses. Based on the model, they performed an empirical study using panel data from 30 provinces in China. The study results show that credit preference toward highly polluting sectors has an adverse impact on the environment. Arguably, encouraging sustainable banking may help developing countries like China address environmental challenges.

3. Methodology

3.1 Research Design

The expo-factor quasi-experimental research design was adopted in this research due to its suitability for use in timeseries related research study (Angrist & Pischke, 2010) [4]. Consequently, the data used for this study were obtained from the Central Bank of Nigeria Statistical Bulletins, and the period covered by the study is 1992-2022 on annual basis.

3.2 Model Specification

The main aim of this study is to evaluate the relationship between deposit money bank credit and the growth of the Nigeria Economy, Therefore, from the foregoing; the multiple equation models estimated was stated as follows:

$$GDP = f(BCPS, BCGC, BCSS, BCOS) \quad (1)$$

Transforming equation (1) into a mathematical model gives:

$$GDP = \beta 0 + \beta 1BCPS + \beta 2BCGC + \beta 3BCSS + \beta 4BCOS \quad (2)$$

This study's model is therefore specified in the following econometric form:

$$GDP = \beta 0 + \beta 1BCPS + \beta 2BCGC + \beta 3BCSS + \beta 4BCOS + \mu t \quad (3)$$

Where:

GDP = Gross Domestic Product
BCPS = Bank credit to the production sector
BCGC = Bank credit to general commerce
BCSS = Bank credit to service sector
BCOS = Bank credit to other sectors
β0 = Constant Parameters
β1 - β4 = Estimation parameters
μt = Error term

3.2.1 A priori Expectations

An a priori expectation is one where certain basic principle are assumed to be true. Therefore, it is not necessary to use empirical evidence but rely on the axioms being true. Therefore, on a priori,

1. Bank credit to the production sector is expected to contribute positively to gross domestic product in Nigeria.
2. Bank credit to general commerce sector is expected to contribute positively to gross domestic product in Nigeria.
3. Bank credit to service sector is expected to contribute positively to gross domestic product in Nigeria.
4. Bank credit to other sectors is expected to contribute positively to gross domestic product in Nigeria.

In summary, $\beta 1BCPS, \beta 2BCGC, \beta 3BCSS, \beta 4BCOS > 0$

3.3 Data Analysis Technique

The data obtained to be used for the research must be analysed in order for it to have any meaning. To analyse the data obtained, the raw data was classified, grouped, and tabulated. Obtained data was analysed with the use of the Econometric View (E-views) statistical package. E-Views is a statistical package used mainly for time series-oriented econometric analysis. However, the data obtained was fitted to the equation by using the Ordinary Least Squares (OLS) techniques for regression analysis. Ordinary least squares regression (OLS) is a common technique for estimating the coefficients of linear regression equations that describe the relationship between one or more independent quantitative variables and a dependent variable (simple or multiple linear regression).

Furthermore, the model was evaluated using the following tests:

T-Test: This is used to test the validity of the parameter estimate. In other words, it is used to decide whether the estimate (Independent variables) is individually significant or not.

Regression Coefficient (C): This measures the extent to which the independent variable affects the dependent variable in the study.

Coefficient of Determination: This is also known as the R-squared. The R-squared (R2) measures the goodness of fit. It further shows the percentage of total variations in the dependent variable that is explained by the independent variable.

The Adjusted R2: This is known as the "coefficient of multiple determinations." It measures the percentage of total variations of the dependent variable explained by the change in the independent variables.

The F-Test: The F-test was adopted to test the overall and total significance of the model. It was used to test the joint significant effect of the independent variables on the dependent variable.

4. Results and Discussion

4.1 Data Presentation

Table 4.1: Annual time series data for Gross domestic product, Bank credit to production sector, general commerce sector, service sector and other sectors

Year	GDP (₦'bn)	BCPS (₦'bn)	BCGC (₦'bn)	BCSS (₦'bn)	BCOS (₦'bn)
1993	1,257.17	40.69	7.61	4.42	7.06
1994	1,768.79	52.58	19.44	0.00	33.99
1995	3,100.24	95.44	33.00	0.00	29.69
1996	4,086.07	120.55	16.37	0.00	15.89
1997	4,418.71	131.37	29.77	0.00	237.81
1998	4,805.16	146.76	18.77	0.00	96.36
1999	5,482.35	171.49	25.31	0.00	132.50
2000	7,062.75	214.61	34.53	0.00	268.38
2001	8,234.49	333.21	26.71	0.00	428.42
2002	11,501.45	363.49	34.47	0.00	564.43
2003	13,556.97	452.39	31.35	0.00	723.18
2004	18,124.06	530.91	26.43	0.00	956.99
2005	23,121.88	573.13	52.69	0.00	1377.15
2006	30,375.18	746.66	66.55	0.00	1724.95
2007	34,675.94	1127.87	220.07	0.00	3619.07
2008	39,954.21	2352.90	1245.08	1889.84	3336.59
2009	43,461.46	3098.03	943.19	2081.97	2487.07
2010	55,469.35	2964.45	791.86	1743.09	2055.70
2011	63,713.36	3057.22	756.58	1638.75	1824.90
2012	72,599.63	3695.96	766.70	1244.61	2452.89
2013	81,009.96	4406.17	1045.19	1930.12	2902.60
2014	90,136.98	5024.10	985.69	2650.57	4169.56
2015	95,177.74	5342.07	984.90	2875.72	3882.72
2016	102,575.42	7414.26	1023.78	3377.86	4340.27
2017	114,899.25	7412.18	1076.72	3414.30	3890.34
2018	129,086.91	7427.86	1247.37	3192.11	3437.51
2019	145,639.14	7918.85	1343.59	3396.18	4625.37
2020	154,252.32	9591.63	1354.29	3773.09	5665.18
2021	176,075.50	11368.96	1708.38	4273.27	7027.58
2022	199,431.90	13594.87	2648.97	4541.39	9777.26

Source: Central Bank of Nigeria (CBN) Annual Statistical Bulletin 2022

4.2 Data Analysis

This section analyses the data sourced and presents the empirical results obtained which are econometric in nature. The multiple regression model specified in this study i.e., GDP = β0 + β1BCPS + β2BCGC + β3BCSS + β3BCOS + μt is estimated in this section through Ordinary Least Square (OLS) technique while the data analysis is carried out by E-views 12.0 statistical package. The results obtained from our multiple regression is presented in table 4.2:

Table 4.2: Multiple Regression Result

Dependent Variable: GDP				
Method: Least Squares				
Date: 10/19/23 Time: 07:53				
Sample: 1993 2022				
Included observations: 30				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4244.623	2181.756	1.945507	0.0635
BCPS	16.84090	2.205054	7.637410	0.0000
BCGC	16.17051	10.93803	1.478375	0.1523
BCSS	-11.23819	6.161282	-1.824002	0.0806
BCOS	2.008339	2.201696	0.912178	0.3707
R-squared	0.952901	Mean dependent var		52952.50
Adjusted R-squared	0.910051	S.D. dependent var		52862.00
S.E. of regression	7466.217	Akaike info criterion		20.82975
Sum squared resid	1.34E+09	Schwarz criterion		21.06549
Log likelihood	-297.0314	Hannan-Quinn criter.		20.90358
F-statistic	344.9006	Durbin-Watson stat		1.357392
Prob(F-statistic)	0.000000			

Source: E-views 12 Output

4.2.1 Interpretation of Regression Coefficient

Bank Credit to Production Sector and Gross Domestic Product: The coefficient of bank credit to the production sector (BCPS) from the regression result as shown in table 4.2 is 16.84090. This positive value (16.84090) indicates that bank credit to the production sector has a positive relationship with gross domestic product. The implication of this is that a unit increase in bank credit to the production sector will lead to 16.84090 increase in gross domestic product. While a unit decrease in bank credit to the

production sector will lead to a 16.84090 decrease in gross domestic product.

Bank Credit to General Commerce Sector and Gross Domestic Product: The coefficient of bank credit to the general commerce sector (BCGC) from the regression result as shown in table 4.2 is 16.17051. This positive value (16.17051) indicates that bank credit to the general commerce sector has a positive relationship with gross domestic product. The implication of this is that a unit increase in bank credit to the general commerce sector will lead to 16.17051 increase in gross domestic product. While a unit decrease in bank credit to the general commerce sector will lead to a 16.17051 decrease in gross domestic product.

Bank Credit to the Service Sector and Gross Domestic Product: The coefficient of bank credit to the service sector (BCSS) from the regression result as shown in table 4.2 is -11.23819. This negative value (-11.23819) indicates that bank credit to the service sector has a negative relationship with gross domestic product. The implication of this is that a unit increase in bank credit to the service sector will lead to a 11.23819 decrease in gross domestic product. While a unit decrease in bank credit to the service sector will lead to a 11.23819 increase in gross domestic product.

Bank Credit to Other Sectors and Gross Domestic Product: The coefficient of bank credit to other sectors (BCOS) from the regression result as shown in table 4.2 is 2.008339. This positive value (2.008339) indicates that bank credit to the other sectors has a positive relationship with gross domestic product. The implication of this is that a unit increase in bank credit to other sectors will lead to 2.008339 increase in gross domestic product. While a unit decrease in bank credit to the other sector will lead to a 2.008339 decrease in gross domestic product.

4.2.2 The R-Squared

The R-squared measures the goodness of fit. It shows the percentage of variation in the dependent variable that is explained by the independent variable. The R-squared (R2) value obtained from our regression result as shown in table 4.2 is 0.952901. This result indicates that the regression value is significantly higher than 0.5. This also implies that about 95% of the total variation in gross domestic product was explained by the changes in the level of bank credit to the production sector, bank credit to general commerce sector, bank credit to service sector and bank credit to other sectors.

4.2.3 Adjusted R-Squared

The adjusted R2 also known as the coefficient of determination (adjusted R2 = 0.910051) confirmed that about 91% variation in the dependent variable was explained by the independent variable within the period of study. In other words, the value of the adjusted R-squared (R2) for the model is very high, pegged at 91% thus implying that bank credit to the production sector, bank credit to general commerce sector, bank credit to service sector and bank credit to other sectors explained about 91% systematic variations in banks' profitability while the remaining 9% variation is explained by other determining variables outside the model.

4.3 Test of Hypotheses

Our hypotheses testing in this study were carried out using the p-values from the regression results. The decision rule for accepting or rejecting any of the hypotheses (specifically the null hypothesis) is stated below:

1. Reject the null hypothesis (H0) at 5% level of significance if the p-value is less than the alpha value of 0.05.
2. Accept the null hypothesis (H0) at 5% level of significance if the p-value is greater than the alpha value of 0.05.

Hypothesis 1: Ho_1: There is no significant relationship between bank credit to production sector and gross domestic product.

Decision: The first hypothesis in this study states that bank credit to production sector has no significant relationship with gross domestic product. Considering that p-value of the result (0.0000) representing bank credit to production sector, is less than the 0.05 we reject the null hypothesis. Therefore, we conclude that bank credit to production sector has a significant relationship on economic growth.

Hypothesis 2: Ho_2: There is no significant relationship between bank credit to general commerce sector and gross domestic product.

Decision: The second hypothesis for this study states that bank credit to general commerce sector does not have significant impact on the gross domestic product. Given that the p-value of 0.1523, representing bank credit to general commerce sector, is greater than the 0.05 we retain the null hypothesis. Therefore, we conclude that bank credit to general commerce sector has no significant relationship with gross domestic product.

Hypothesis 3: Ho_3: There is no significant relationship between bank credit to service sector and gross domestic product.

Decision: The third hypothesis in this research states that bank credit to service sector does not have significant impact on the gross domestic product. Given that the p-value of 0.0806, representing bank credit to service sector, is greater than the 0.05 level of significance. We retain the null hypotheses and reject the alternate hypothesis. Therefore, we conclude that there is no significant relationship between bank credit to service sector and the gross domestic product.

Hypothesis 4: Ho_4: There is no significant relationship between bank credit to other sector and gross domestic product.

Decision: The fourth hypothesis for this study states that bank credit to other sectors does not have a significant impact on the gross domestic product. Given that the p-value of 0.3707, representing bank credit to other sectors, is greater than the 0.05 we retain the null hypothesis. Therefore, we conclude that bank credit to other sectors has no significant relationship with gross domestic product in Nigeria.

5. Conclusion and Recommendations

5.1 Conclusion

Bank Credit to the Production Sector and Gross Domestic Product: A positive and significant relationship exists between bank credit to the production sector and gross domestic product. This implies that bank credit to the production sector exerts a significant positive effect on economic growth. The outcome of this finding is attributed to the fact that bank credit provides the necessary capital for businesses in the production sector to invest in machinery,

technology, infrastructure, and other resources that enhance productivity and output. From our a priori expectation, it was expected that there will be a positive relationship (β1BCPS > 0) between bank credit to the production sector and gross domestic product. Thus, the positive a priori is accepted as the outcome of the regression result shows that bank credit to the production sector contributes positively to gross domestic product (β1BCPS > 0). Also, the observed result is in correspondence with the findings of Balago, (2014) [7], John and Lawal, (2019) [16] and Nwanji and Okorie (2018) [23] which stated that a positive and significant relationship exists between bank credit to the production sector and gross domestic product in Nigeria.

Bank Credit to the General Commerce Sector and Gross Domestic Product: A positive and insignificant relationship exists between bank credit to the general commerce sector and gross domestic product. This implies that bank credit to the general commerce sector exerts an insignificant positive effect on economic growth. This positive and insignificant relationship is as a result of the rate of business expansion and export competitiveness. From our a priori expectation, it was expected that there will be a positive relationship (β2BCGC > 0) between bank credit to the general commerce sector and gross domestic product. Thus, the positive a priori is accepted as the outcome of the regression result shows that bank credit to the general commerce sector contributes positively to gross domestic product (β2BCGC > 0). The result of this finding is in correspondence with the findings of Balago, (2014) [7] while nullifying the results of John and Lawal, (2019) [16] and Nwanji and Okorie (2018) [23] which identified the existence of a negative relationship between these variables.

Bank Credit to The Service Sector and Gross Domestic Product: Also, a negative and insignificant relationship exists between bank credit to the service sector and gross domestic product (GDP). This implies that bank credit to the service sector exerts an insignificant negative effect on economic growth. From our a priori expectation, it was expected that there will be a positive relationship (β3BCSS > 0) between bank credit to the service sector and gross domestic product. Thus, the positive a priori is rejected as the outcome of the regression result shows that bank credit to the service sector contributes negatively to gross domestic product (β3BCSS > 0). This result confirms the findings of several scholars like; Makinde, (2014), Alzyadat, (2021) [3], Akujuobi and Nwezeaku (2015) [2] which stated that a negative and insignificant relationship exist between the credit allocated to the service sector and economic growth in Nigeria.

Bank Credit to Other Sector and Gross Domestic Product: A positive and insignificant relationship exists between bank credit to other sectors and gross domestic product (GDP). This means that bank credit to the other sector exerts an insignificant positive effect on economic growth. From our a priori expectation, it was expected that there will be a positive relationship (β4BCOS > 0) between bank credit to other sectors and gross domestic product. Thus, the positive a priori is accepted as the outcome of the regression result shows that bank credit to other sectors contributes positively to gross domestic product (β4BCOS > 0). The observed result corresponds with the findings of Nteegah, Udeorah and Owede, (2017) [21] which stated that a positive relationship exists between bank credit to other sectors and gross domestic product. However, this result is against the finding of John and Lawal, (2019) [16].

5.2 Recommendations

In view of the finding of this study, the following recommends were proffered:

1. Since there is a positive and significant relationship between bank credit to the production sector and gross domestic product, the study recommends that policies be formulated to facilitate easier access to credit for the production sector. This can be done through interest rate adjustments, relaxed collateral requirements, or specific loan programs tailored for businesses in the production sector. Also, government should consider investing in infrastructural projects that directly support the production sector, which can stimulate credit demand. For example, upgrading roads, ports, and utilities can improve productivity and encourage businesses to seek credit for expansion.
2. Given that a positive and insignificant relationship exists between bank credit to the general commerce sector and gross domestic product, it is necessary for the government and affected institutions to explore and encourage alternative investment channels for businesses instead of solely relying on bank credit. These alternatives could include venture capital or government backed initiatives that have the potential to stimulate growth in the commerce sector.
3. Also, since a negative and insignificant relationship was identified between bank credit to the service sector and gross domestic product, we can say that flows of bank credit to the service sector are not significantly influencing the overall economic output. Therefore, it's important to consider alternative strategies and areas for economic growth. Based on this, it is recommended that diversification of the economy be encouraged by promoting growth in sectors that are not solely dependent on bank credit, such as exploring opportunities in manufacturing, technology, agriculture, or other industries.
4. In relation to the identified positive yet insignificant relationship between bank credit to other sectors and gross domestic product, it is necessary to explore diversifying the sectors where banks allocate credit given that there might be certain sectors where credit allocation could have a more impactful relationship with Gross Domestic Product. Hence, understanding these sectors and strategically adjusting credit allocations could be beneficial. Also, balancing risk across these sectors while ensuring credit flow will help in optimizing the impact on gross domestic product.

6. References

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