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Achieving Economic Growth through the Role of Banking Sector Credit in Nigeria

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ABSTRACT

This study delved into the achieving economic growth through the banking sector credit in the Nigerian economy. Through a comprehensive exploration of the subject, the research aims to shed light on whether volume of deposits has significant impact on private sector credit growth in Nigeria, Determine the relationship between money supply (M_2) and private sector credit growth in Nigerian, Investigate whether the prime lending rate/monetary policy rate (PLR) has a significant influence on the private sector credit growth in Nigeria, Evaluate the effect of cash reserve ratio (CRR) on private sector credit growth in Nigeria. The obtained data underwent analysis through statistics and different tests such as unitroot test, cointegration test, error correction model test and Correlation etc. Findings reveal that, from OLS regression analysis indicated that GDP, broad money supply and cash reserve ratio are significant determinants of private sector credit growth in Nigeria. This means that they have a significant relationship, impact or influence on private sector credit in Nigeria, however, that of cash reserve ratio is significantly negative. On the contrary, monetary policy rate and liquidity ratio have negative relationship with private sector credit while deposit volume has positive relationship with private sector credit and is theoretically based but they are not statistically significant. This is due to the fact that, in short run banks do not issue immediate loans and advances from currently deposited amount by account holders. Moreover, it might also, due to consequent of high cost of production for firms, low profit margin and high lending rate in Nigeria. The cointegration equation shows that the variables are related in the long run and the speed of adjustment needed to correct the disequilibrium in the short run was 74%. The study recommended among others that Commercial banks should strategize on how to attract and retain more deposits so as to further improve on their lending performance. This can be achieved if banks expand new branches in rural areas and introduce new and fast banking innovations or technology to attract and retain the customers.

Keywords: Banking Credit, Error Correction Model, Co-integration, Economic Growth,

1.Introduction

Deposit Money Banks (DMBs) are the most important savings mobilization and financial resource allocation institutions. Consequently, these roles make them an important phenomenon in economic growth and development. Banks have the potential, scope and prospects for mobilizing financial resources and allocating them to productive investments. Therefore, no matter the sources of the generation of income or the economic policies of the country, commercial banks would be interested in giving out loans and advances to their numerous customers bearing in mind the three principles guiding their operations namely; profitability, liquidity and solvency. However, commercial banks decisions to lend out loans are influenced by a lot of factors such as the prevailing interest rate, the volume of deposits, the level of their domestic and foreign investment, banks liquidity ratio and customers profile to mention a few (Ogbuji, & Lawal, 2024).

The role of credit is considered to be the key to economic growth and financial stability of the economy. Lending is one of the services that commercial banks render to their customers. In other words, banks grant loans and advances to individuals, business organizations as well as government in order to enable them embark on investment and development activities (Olokoyo, 2011). Access to credit has a positive impact on economic growth and multiplier effects on the distribution of income. Findings reveal that there is a positive relationship between bank credit and economic growth in Nigeria (Akpansung and Babalola, 2012). Notwithstanding, the evidence that finance is a constraint on development is overwhelming as studies have shown that a significant and positive correlation exists between variables which capture channels in the financial system, such as the ratio of money supply to GDP, or the ratio

of banking system credits to the private sector to GDP, on the one hand, and the level of per capita growth and income, on the other (Onwioduokit, & O'Neill, 2023; Alade, 2023).

Lending practices in the world could be traced to the period of industrial revolution which increased the pace of commercial and production activities thereby bringing about the need for large capital outlays for projects. Many captains of industry at this period were unable to meet up with the sudden upturn in the- financial requirements and therefore turn to the banks for assistance. However, the emergence of banks in Nigeria in 1872 with the establishment of the African Bank Corporation (ABC) and later appearance of other banks in the scene during the colonial era witnessed the beginning of banks' lending practice in Nigeria. Prior to the advent of Structural Adjustment Programme (SAP) in Nigeria in 1986, the lending practices of banks were strictly regulated under the close surveillance of the bank's supervisory bodies. The SAP period brought about some relaxation of the stringent rules guiding banking practices. The Bank and Other Financial Act Amendment (BOFIA) 1998, requires banks to report large borrowing to the Central Bank of Nigeria (CBN). The CBN also requires that their total value of a loan credit facility or any other liability in respect of a borrower, at any time, should not exceed 20% of the shareholders' funds unimpaired by losses in the case of commercial banks.

Other banking enactment stipulated that banks loans should be directed to preferred sectors of the economy in order to enhance economic growth and development. In full consideration of all these regulations, the banks resorted to prudential guidelines necessary to avoid failures and to enhance maximum profitability in their banks' lending activities. These generally depend on type of bank, the capital base, the deposit base and density of the deposit, the credit guidelines issued from time to time by the controlling authority, and internal policies of the banks since loans and advances account for the highest percentage of the total assets of the banks. The recent consolidation initiative which has enhanced the capital based of DMB's from N2 billion to N25 billion has consequently reduced the number of banks from eighty-nine (89) to twenty-four (24) due to mergers and acquisitions was a step towards this market-based direction. It aims at reducing the cost of funds by allowing domestic economic units to achieve efficiency in portfolio diversification in order to increase the liquidity of investments; and opening the financial market to foreign investors. Notwithstanding, the reform initiative is meant to produce a sound and healthy financial services sector, which is critical if the country must avail itself of the windows of prospect opened up by globalization, to develop the economy and further the country's development.

This study becomes imperative because commercial banks in Nigeria need to understand how to manage these huge assets in terms of their loans and advances. For the banks to balance their main objectives of liquidity, profitability and solvency, lending must be handled effectively and the banks must behave in a way that their existing and potential customers are attracted and retained.

Access to financial services is important for growth and poverty reduction. Access to credit that enables an individual to accumulate funds in a secure place over time can strengthen productive assets by enabling investment in micro- enterprises, in new tools, equipment or fertilizers, or in education or health, all of which can play an important role in improving their productivity and income (Anthony, 2012). There is consensus of opinion that credit to the private sector is an important mechanism through which financial development matters for growth. In the 1980's most developing countries intervene in the financial sector by directing the allocation of credit in the economy as well as setting interest rates for savings and lending, to accelerate and direct them in the area of high economic growth and social priority. By the early 1990s, however it became apparent that the approach was counter-productive as the repressed financial sector could no longer mobilize loanable funds for investment. Financial sector reforms were therefore introduced to correct the problems caused by financial crisis.

Notwithstanding, in Nigeria, the ratio of credit to provide sector as percentage to GDP has not increase significantly. The quantity, quality, and cost and availability of loanable funds have continued to constraint the expansion of businesses and self-employment. According to the global economy report, a country is said to have well developed financial system, when its banking credit to the private sector as percentage of GDP must amount to 70% or above. In some very advanced economy it is even higher than 200%. However, in some poor countries, the amount of credit could be lower than 15% of GDP. Based on this, determinants of banks credit have recently been a subject of a growing body of empirical work. However, the issue still remains largely unresolved. Besides, most existing studies on the determinants of credit growth are focused on developed and industrialized countries with many institutional structures that are different from developing countries. This, by implication, means that some of the results obtained for the developed and industrialized countries might not hold for developing countries such as Nigeria. There is, therefore, the need for more studies on the core determinants of credit growth in Nigeria. This is particularly compelling in the light of the boom-burst cycles many developing economies experienced before and after the global crisis of 2008.

This work is essentially driven by the need to confirm the applicability of some of the established determinants of credit growth in developed economies to developing economies, the lack of agreement among existing studies on the factors that determine credit, and the paucity of empirical work on determinants of credit in Nigeria. In contrast to other research projects that are being conducted over a period of ten to twenty years, such as studies conducted by Imran and Nishat (2024), Neelam (2024), Akinlo and Oni (2015), Olokoyo (2011). In order to restructure and stabilize the financial market, numerous policy changes occurred during the study periods. These changes included interventionist measures in the early 1980s, the structural adjustment program (SAP) in 1986, guided deregulation in 1998, bank consolidation in 2005, and the current reformation era.

Following the above-mentioned study motivation, three (3) research gap strands are identified: First, even with the growing body of research, it is still uncertain if some of the known factors that influence credit growth in industrialized economies can be applied to developing ones, and whether financial development has a positive or negative effect on bank credit. Second, this analysis expands the proxies of bank credit, hence broadening the scope of economic growth. To give a comprehensive view of bank credit, the current research includes two proxies from the World Bank and a relatively new bank credit measure created by the International Monetary Fund (IMF).

Achieving economic growth through the role of banking sector lending in the Nigerian economy is the main goal of this study. The particular goals are to: Determine whether deposit volume significantly affects the expansion of private sector lending in Nigeria. Identify the connection between Nigeria's private sector loan growth and the money supply (M2). Examine if Nigeria's private sector credit growth is significantly impacted by the prime lending rate, often known as the monetary policy rate (PLR). Analyze how Nigeria's private sector loan growth is impacted by the cash reserve ratio (CRR).

2. The theoretical underpinnings and empirical literature

According to economic theory, there are two factors that determine how much private credit a financial system would give to businesses and individuals. The first holds that the power of creditors is what is important for the sustainability of private lending. Lenders are more inclined to offer credit when it is easier to collect collateral, enforce repayment, or even take over the company. Lawal and Ogbuji, 2024; Hart and Moore, 1994, 1998. The second perspective holds that information is what counts when it comes to lending. Lenders are more willing to issue credit when they have greater knowledge about borrowers, their credit history, or other lenders to the company. This is because they are less worried about the lemon dilemma of funding unprofitable ventures.

The Arguments for Signaling

According to the signaling theory, reputable businesses should offer more collateral in order to let banks know that their debtors are less risky, which would result in lower interest rates. Conversely, according to the reverse signaling theory, banks only demand collateral and/or covenants from businesses that are more riskier and offer higher interest rates (Ewert and Schenk, 2022). This approach is used to blue-chip corporations like Nestle, KPMG, Dangote, and Dantata & Sawoe that have remarkable financial sheets.These companies' goodwill and net worth serve as sufficient grounds for obtaining bank credit.These businesses should also be well-liked by stock market participants and have a solid credit history and corporate governance.

Theory of Credit Markets

Credit terms are assumed to clear the market in a neoclassical or monetarist credit market model. If collateral and other terms and conditions, restrictions (covenants) stay unchanged, the interest rate is the only price mechanism. The interest rate increases when there is a greater demand for credit and a given supply of customers, and vice versa. Accordingly, it is thought that the interest premium will increase as the borrower's failure risk increases (Ewert et al, 2022).

Loanable Funds Theory (LFT).

The loanable theory of interest rate is also known as neoclassical theory of interest rate. It is also called the monetary theory of interest rate. Same was developed by Neoclassical like Prof Wicksel, Ohlin, Robertson, Herberler and Viner. They postulate that the interplay of monetary/non-monetary forces is the determination of interest rate. The loanable funds theory is synthesis between the Classical theory and Keynesian Liquidity Preference Theory. Keynes takes into account that savings and investment demand of the Classical theory as well as Liquidity preference of Keynes theory. This theory explained the determination of interest in terms of demand and supply of loanable funds or credit. Thus, the theory states that the rate of interest is the price of credit which is determined by the demand and supply of loanable funds. (Jhingan, 2009)

According to empirical research, banks ought to be less likely to engage in share lending, also known as loan syndication, when there are robust equity markets and following a consolidation process. Additionally, banks' lending capacities are increased by outside equity and mergers and acquisitions, which lessens the requirement for them to oversee and diversify through share lending (Adebesi 2023; Carletti et al, 2006; Karceski et al, 2004). Given the previous industry consolidation in 2005 and the subsequent reformation efforts by the then-CBN Governor Sanusi Lamido Sanusi in 2009, this hypothesis has significant implications for Nigerian banks.Because the full profit from such lending will go to the institution rather than being split as income or profit, Deposit Money Banks prefer to lend standing alone rather than through syndication. Similar to this, since the credit facility is permitted jointly, the bank was able to take corrective action quickly to recover the depositor's money or to use the mortgaged property as collateral for foreclosure rather than waiting for the entire syndication banks to take collective action.

Gap in Literature

Research on the factors influencing the expansion of credit in the banking sector focuses on industrialized and developed nations, which have major institutional differences from emerging nations. This implies that some of the outcomes seen in industrialized and established nations may not apply to developing nations like Nigeria. Thus, additional research on the fundamental factors influencing credit expansion in Nigeria is required. According to Assefa's (2014) analysis of the Ethiopian economy, for example, banks' long-term lending to the private sector is significantly impacted by domestic deposits, foreign liabilities, real lending interest rates, M2 as a percentage of NGDP, GDP, and inflation.

3. Methodology

Ordinary least squares (OLS) regression analysis is used to specify the model. The model looked at the factors that influence the expansion of credit in the banking sector in the Nigerian economy. While the regressors are deposit volume, broad money supply (M2), prime lending rate (PLR), cash reserve ratio (CRR), liquidity ratio (Lr), and national output as measured by GDP, the dependent variable is private sector credit (PSC), which served as a stand-in for banking sector credit. However, the model's selection of these parameters and regressors was informed by both current empirical research and theory and literature reviews.

Therefore, the model estimated in the study is stated as follows:

PSC = F(Dep vol, M_2, PLR, CRR, LR, GDP) ---------- (3.1)

While the econometric model is represented as follows:

(PSC) = $\beta_0+\beta_1$ (Depvol) +β_2 (M_2) +β_3 (PLR) +β_4 (CRR) + $\beta 4_5$ (LR) + β_6 GDP +μ-(3.2)

Where;

Bo = Intercept of the regression line.

PSC = Private Sector credit growth.

D/Volume = Deposit Volume.

M_2 = Broad money supply (M_1 plus savings and term deposits)

PLR = Prime lending rate/Monetary policy rate.

CRR = Cash reserve ratio.

LR = Liquidity ratio as prescribed by the monetary authority.

GDP = Gross Domestic Product proxied for national output.

μ = Error term.

β_0, β_1, β_2, β_3, β_4, β_5, β_6, are the coefficients of the model

A priori Expectations

This refers to the expected signs and magnitude of parameters of economic relationships to know if they agree with economic theory. Theoretically, it is expected that deposit volume, money supply (M_2) and Gross Domestic Product (GDP) have significant and positive relationship with Private Sector Credit (PSC), while monetary policy rate, cash reserve ratio and liquidity ratio are expected to have inverse relationship with Private Sector Credit. Thus, based on economic theories, the coefficients estimated were expected to have the following signs.

$B_0 > 0$, $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 < 0$, $\beta_4 < 0$, $\beta_5 < 0$, $\beta_6 > 0$

3.1 Data Estimation

The model was estimated using the OLS regression procedure which have addressed all the six objectives of the study as stated above by the researcher. The choice of OLS is due to its popularity in estimating time series econometric models. The parameters estimates of OLS regressions normally have the Best Linear Unbiased Estimator (BLUE) property (Anthony, 2012). However, prior to this, the following diagnostic tests were performed:

3.1.1 Unit Root Test

The Augmented Dickey Fuller (ADF) and Philip-Perron (PP) unit root test approaches was employed as a prior diagnostic test before the estimation of the model to examine the stochastic time series properties of the parameters. This is to avoid the problems of spurious regression that are associated with non-stationary time series data.

3.1.2 Co-integration Test

Co-integration is a diagnostic test in order to determine whether there is a long run relationship between two or more variables in a model. When time series variables are non-stationary, it is interesting to see if there is a certain common trend between those non-stationary series that will establish a long run relationship. There are two broad approaches to test for the co-integration, Engel and Granger and Nwebolt (1974) and Johansen (1988). Broadly speaking, co-integration test is equivalent to examine if the residuals of regression between two non-stationary series are stationary. This work employed a simple test of co-integration; the Johansen test develops maximum likelihood estimators of co-integrating vectors.

3.1.3 Error Correction Model (ECM)

The Error correction model (ECM) was used to determine the speed of adjustment in case of disequilibrium. It will show how long it will take to return to equilibrium when there is disequilibrium.

3.1.4 Serial Correlation Test

The serial correlation tests of the residuals was based on Breusch-Godfrey Serial Correlation LM Test. The LM (Lagrange Multiplier) test is a general test for error autocorrelation (Asteriou & Hall, 2011). The null hypothesis of the LM test is that there is no serial correlation up to lag order P, where P is a pre-specified integer.

The null hypothesis of no auto-correlation will not be rejected if the value of computed F-statistic is greater than P-value at 5 per cent level of significance, meaning that there is no evidence of serial correlation in the residuals or this model does not have serial correlation. This test was further confirmed by the Durbin Watson statistic tests. According to Brooks (2014) and Gujarati (2012), in the Durbin-Watson test, the value of two and above suggests that successive residual terms are, on average, very different in value to one another. Absence of serial correlation implies that the estimated model will be used for making inferences and valid economic policy suggestions.

3.1.5 Heteroscedasticity Test

Heteroscedasticity is a common problem in data analysis. Heteroscedasticity occurs when the variance of the errors varies across observations. Therefore, it was necessary in this study to test for heteroscedasticity as the estimated standard errors can be either too large or too small. This could be as a result of economic behaviour, in either case resulting in incorrect inferences (Hendry, 1995). There are several indicators to establish whether there was a problem of heteroscedasticity in the data or not. In this study, heteroscedasticity test was conducted using Breusch-Pagan-Godfrey technique.

The null hypothesis (the model has heteroscedasticity) was rejected if both F-statistic and R-squared are found to be greater than 5 per cent significance level. This will imply that the estimated model does not have a heteroscedasticity problem.

3.1.6. Structural Stability test

The structural stability of the model parameters was examined using statistics of Cumulative Sum of Recursive Residuals (CUSUM) and Cumulative Sum of Squares of Recursive Residuals (CUSUMSQ). The former test was used to investigate systematic changes in the estimated coefficients while the latter test was used to examine sudden and accidental changes in stability of the coefficients. If the statistics lie between boundary lines drawn as two separate lines, then the null hypothesis claiming stability of parameters will not be rejected. In other words, the model was considered stable if the recursive residuals lie completely within the 5 per cent significance critical lines or critical region.

4. Results and discussion

The study's main results were estimated after a number of preestimation procedures were carried out to determine whether the data set was suitable for the model estimation. First, we used the Philip-Perron (PP) Unit Root Test and the Augmented Dickey-Fuller (ADF) Unit-root Test to examine the stationarity and significance of the study variables as suggested by the determining factors of (PSC) Private Sector credit growth (Table 2). The results shown in Table 2 show that the estimated outcomes are within acceptable ranges.

Table 1: Augmented Dickey –Fuller (ADF) Unit Root Test Result at 5% Significance Level (Trend and Intercept included).

Variables	Critical Values	ADF Test Statistics	Order of Integration	P Values
PSC	-3.540328	-4.181013	1(1)	0.0114
PLR/MP	-3.544284	-6.242421	1(1)	0.0000
MS	-3.540328	-8.643262	1(1)	0.0000
LI/RATIO	-4.234972	-6.595615	1(1)	0.0000
GDP	-3.544284	-4.123915	1(1)	0.0011
D/VOLUME	-3.540328	-5.834813	1(1)	0.0001
CRR	-3.557759	-3.812809	1(1)	0.0005

4.1 Cointegration Test Result

Cointegration test was conducted using Johansen test technique to determine whether variables included in the model are related in the long run or not. The result is presented in tables 2 and 3.

Table 3: Johansen Unrestricted Cointegration Rank Test (Trace); Series: PSC, PLR/MPR, MS, LI/RATIO, GDP, D/VOLUME, CRR

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.868465	219.8211	150.5585	0.0000
At most 1 *	0.749082	148.8243	117.7082	0.0001
At most 2 *	0.723009	100.4323	88.80380	0.0056
At most 3	0.557726	55.50034	63.87610	0.2068
At most 4	0.330043	26.94647	42.91525	0.6842
At most 5	0.211801	12.92752	25.87211	0.7438
At most 6	0.123092	4.597355	12.51798	0.6548

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level, * denotes rejection of the hypothesis at the 0.05 level

From the Johansen cointegration test (trace) result shown in Table 2, there are three (3) cointegrating equations as marked by the asterisk (*). This is because the p-values of the cointegrating equations at 5% significance level are less than 0.05. Therefore, since there are 3 equations that are cointegrated in the long run, it means the variables are linearly related in the long run.

Table 4: Johansen Unrestricted Cointegration Rank Test (Maximum Eigenvalue) Result; Series: PSC, PLR/MPR, MS, LI/RATIO, GDP, D/VOLUME, CRR

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.868465	70.99680	50.59985	0.0001
At most 1 *	0.749082	48.39198	44.49720	0.0179
At most 2 *	0.723009	44.93198	38.33101	0.0076
At most 3	0.557726	28.55387	32.11832	0.1282
At most 4	0.330043	14.01895	25.82321	0.7209
At most 5	0.211801	8.330169	19.38704	0.7910
At most 6	0.123092	4.597355	12.51798	0.6548

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level, * denotes rejection of the hypothesis at the 0.05 level

From the Johansen cointegration test (Maximum Eigenvalue) result shown in Table 3, there are three (3) cointegrating equations as marked by the asterisk (*). This is because the p-values of the cointegrating equations at 5% significance level are less than 0.05. Therefore, since there are 3 equations that are cointegrated in the long run, it means the variables are linearly related in the long run

4.2 Error Correction Model (EC) Test Result

This is regarded as the final step in confirming that time series variables exhibit linear cointegration (short run). The purpose of this study was to determine how quickly the predicted error term of the variables would adapt or rectify the disequilibrium condition in the near term. Using the Error Correction Model (ECM), the variables in the cointegrating equation were estimated at their first difference lagged values, including the lagged value of the error correction term (EC). With a coefficient value of -0.743459, the EC variable is significant at the 5% level of significance, according to the results in table 4.5.This indicates that, in the short term, the rate of adjustment at which the series' predicted disequilibrium condition occurs is roughly 74%.

Table 4 : ECM Test Result at 5% Significance Level, Dependent Variable:D(PSC)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.159644	0.000328	-1.690443	0.1017
D(GDP)	0.000448	9.71E-05	4.612920	0.0001
D(CRR)	0.033328	0.042497	0.784238	0.4393
D(L/ RATIO)	0.136234	0.079565	1.712232	0.0975
D(M2)	0.227560	0.337421	0.674409	0.5054
D(MPR)	-0.096293	0.136205	-0.706977	0.4852
D(D/ VOLUME)	-0.961091	0.425465	-2.258919	0.0316
EC(-1)	-0.743459	6.355685	0.613876	0.0274

F-statistic	17.398623	Durbin-Watson stat	1.943325
R-squared	0.841046		
Adjusted R-squared	0.754402		
Prob (F-statistic)	0.000000		

4.3 Ordinary Least Square (OLS) Result

The OLS regression was conducted or adopted to achieve the objectives of the study which is displayed in table 4.5

Table 5: OLS Result at 5% Significance Level; Dependent Variable, PSC

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D/VOLUME	6.36E-05	0.000136	0.468338	0.6429
GDP	0.000108	4.67E-05	2.318392	0.0274
L/RATIO	-0.017298	0.031095	-0.556292	0.5821
M2	0.380524	0.115901	3.283193	0.0026
PLR/MPR	-0.004118	0.052419	-0.078552	0.9379
CRR	-0.151315	0.067683	-2.235640	0.0330
C	4.313437	2.357695	1.829515	0.0773

R^2 = 0.93954, Adjusted R-squared = 0.917145,

Durbin Watson Statistics = 1.331475

F- Stat = 67.41537,

Prob (F-Statistics) = 0.00000

Table 5. shows that the deposit volume is favorably correlated with private sector credit and statistically insignificant. The coefficient value of 6.36 indicates that a 1% increase in deposit volume will result in a 636% rise in private sector credit, which is consistent with previous projections and the research of Assefa (2014). The outcome also validates Imran and Nishat's (2024) empirical findings and the loanable money theory. However, given the p-value of 0.6429, it is not significant. The domestic deposit therefore has no short-term impact on private sector financing. Because banks do not immediately lend out the money that account holders have placed, this is the cause. This may also not be unconnected with high cost of production by firms, high lending rate and low profit margin in Nigeria. National output which was proxied by GDP is also statistically significant and positively related to private sector credit, based on the value of the coefficient of 0.000108, increase in GDP by 1% will make private sector credit to grow by 0.01%. This agrees with economic theory and in line with the study of Akpansung and Babalola (2012). Similarly, the result also indicated that liquidity ratio is negatively related with private sector credit as shown by the coefficient value of -0.017298 which means that 1% increase in liquidity ratio will decrease private sector credit by 1.72% but is statistically insignificant. This is in view of the fact that banks in Nigeria tends to have excess reserves as a result of huge resources from oil, monetary policy such as liquidity ratio and the likes, may not have adverse effect on credit growth in the country (Akinlo and Oni, 2015)

Money supply (M_2) is significant at 5% level and positively related to private sector credit based on the coefficient value of 0.380524 which means that 1% increase in broad money supply will increase private sector credit to increase by 38% .This will make commercial banks mobilize deposit liabilities and increase credit to private sector (Akinlo and Oni, 2015). The monetary policy rate or prime lending rate is negatively related to private sector credit and insignificant at 5% level, it means that increase in monetary policy rate by 1% will reduce private sector credit by 0.41% as indicated by the coefficient value of -0.004118 and this is justified by the study of Guo and Stepayan (2011).The implication is that though the lending rate charged by banks is relevant to their lending performance, the effect of high lending rate on banks' lending is not pronounced. This may be due to the fact that DMB's still have the highest market share in Nigeria and the other financial institutions are not yet tough competitors. Another reason may be the relationship factor whereby the trusts the customers have in the banks, make them overlook the high rate. Commercial banks should however take cognizance of the long-run effect as this may not always be the case. The cash reserve ratio is statistically significant at 5% level and negatively related to private sector credit as shown by the coefficient value of -0.151315 which means that 1% increase in cash reserve ratio will decrease private sector lending by 15% and this agrees with aprior expectations. The significant of GDP on banks' lending suggests that banks are expected to have considerable familiarity with the economic features of their locality and general economic trends. That is why banks should be in the project-evaluation business. Another implication is that monetary policies such as liquidity requirement and cash requirement ratio do impact negatively on banks' lending behaviour. Bank should therefore always ensure adjustment to these policies.

However because of the long-run relationship that exist between these policies and bank lending, there is need to ensure that these policies are implemented with needed promptness for the effects to be felt on time. Volume of deposit has the highest coefficient value of 6.36. The implication of this, is that this explanatory variable has the highest impact and influence on the lending behaviour of commercial banks and a change in it will yield the highest change in banks' loans and advances. Therefore banks should strive hard to manage their deposits efficiently so that their objective of profitability, liquidity and solvency can be achieved and the multiplier effects maintained to the maximum. Consequently, this implies that generation of more deposits is tangent to the survival of Nigerian banking system as a whole.

The R^2 and adjusted R^2 are 0.930954 and 0.917145 respectively which shows the goodness of fit and adjusted measures. Based on the result presented in table 4.6, the model accounts for 93% of the variations in the dependent variable explained by the independent variables while the remaining 7.00% was explained by those variables that affect private sector credit growth in Nigeria but were not captured in the model. The F-statistics value of 67.41537, which measure the joint effects of the explanatory variables, was found to be significant as indicated by the corresponding probability value 0.000000. This implies that the variables of the model are jointly and statistically significant determining private sector credit growth in Nigeria. The Durbin-Watson statistics (1.33) is higher than R^2 (0.93) indicating that the model is non-spurious and can be used for control or policy formulation. Thus, DW Statistics value of (1.33) was also tending towards the bench mark of two (2), indicating very likelihood but negligible presence of/or positive autocorrelation. Notwithstanding, this provides the basis for conducting serial correlation and heteroscedasticity test to verify the presence or otherwise of autocorrelation.

4.4: Serial Correlation Test (LM) Test

The serial correlation test was carried out to determine the present of serial correlation in the model. The test indicated the absence of serial correlation as shown by its probability value of more than 5% level of significance.

Table 4.8: Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

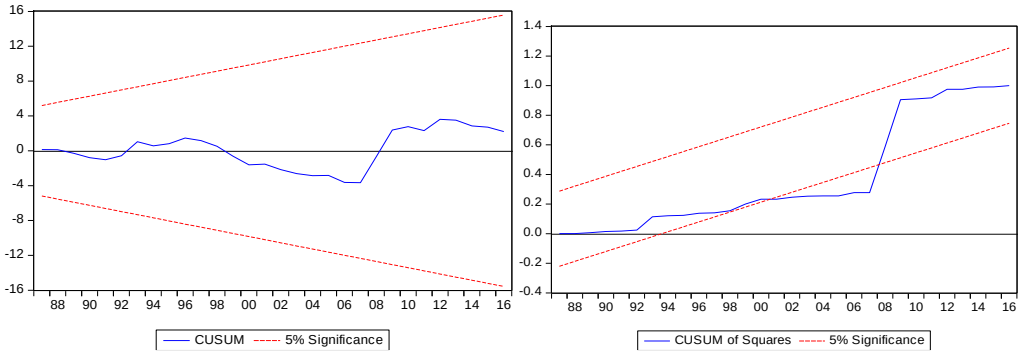
F-statistic	2.077997	Prob. F(4,26)	0.1127
Obs*R-squared	8.963152	Prob. Chi-Square(4)	0.0620

Source: Researcher's Result

4.5 Structural Stability Test

Cumulative Sum of Recursive Residuals (CUSUM) and Cumulative Sum of Recursive Residuals Squares (CUSUMSQ) were conducted to determine the stability of the variables included in the model where the -CUSUM revealed that the parameters of private sector credit has been stable over the time period of the study. This is because the CUSUM statistics lies within the 5% critical region. However, the CUSUMSQ showed that there was a deviation from 2001 to 2009 which means it was not stable during that period. Consequently, this was largely due to the global economic recession experienced which consequently had multiplier effect on the Nigerian economy. Also banking consolidation era was witness in the economy during the said period.

Fig 4.1: Plot of Cumulative Sum of Recursive Residuals (CUSUM) and Cumulative Sum of Recursive Residuals Square (CUSUMS)



4.6 Discussion of Major findings

Findings from OLS regression analysis indicated that GDP, broad money supply and cash reserve ratio are significant determinants of private sector credit growth in Nigeria. This means that they have a significant relationship, impact or influence on private sector credit in Nigeria, however, that of cash reserve ratio is significantly negative. On the contrary, monetary policy rate and liquidity ratio have negative relationship with private sector credit while deposit volume has positive relationship with private sector credit and is theoretically based but they are not statistically significant. This is due to the fact that, in short run banks do not issue immediate loans and advances from currently deposited amount by account holders. Moreover, it might also, due to consequent of high cost of production for firms, low profit margin and high lending rate in Nigeria. This has provide evidence that banking industry need a structural overhaul to make it more sensible to the deposit change. The cointegration equation shows that the variables are related in the long run and the speed of adjustment needed to correct the disequilibrium in the short run was 74%. The CUSUM test shows that the variables are stable at 5% significance level over the time period while the CUSUM-Squared showed some deviations which means some degree of instability. This was as consequent to global economic recession that had multiplier effects on the Nigerian economy and the era of banking consolidation as at that given period.

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