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Commercial Banks' Sectoral Credit Allocation and Growth of Nigeria Economy: An Impact Analysis (1994-2015)

Paul, Ndubuisi
Department of Banking and Finance
Abia State University, Uturu
Phone: +2348051821078
E-mail: pauloabsu2017@gmail.com

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Abstract

This study set out to analyse the impact of commercial banks sectoral credit allocation on the growth index of Nigeria economy. Data for the study were obtained from secondary sources and analysed using econometric methods namely: ADF unit root test, Johansen Cointegration test; vector error correction model and Granger causality test. The ADF test result indicate that the variables are stationary at first difference. The Johansen cointegration result revealed that there are three cointegrating equations among the variables. The vector error correction result indicate that economic growth is a positive and significant function of credit to agriculture, manufacturing and general services. The result of Granger causality shows that credit to agriculture is bidirectionally related to economic growth while credit to manufacturing sector granger causes economic growth without a feedback effect. The study therefore recommended that government should provide the enabling environment for small, medium and large business to operate. This could be do ne thro ugh business friendly monetary and fiscal policies. Commercial bank should reduce the interest rates on lendings to facilitate operations in various sectors and increases growths.

Key Words: Credit, sectoral allocation, economic growth; liquidity; liability management

Introduction

Credit is required for different purposes by different economic units (individuals, businesses and governments). However, financing of production activities remains the major reason for credit in any economy. To provide needed credit in the economy, various institutions especially commercial banks exists. Commercial banks are mainly involved in financial intermediation, (deposits mobilization) from surplus units for

onward channeling to the deficit units of the economy by way of granting of credits, thus creating money for the financing of production activities that creates employments, jobs, incomes and outputs in the economy (Ebiringa and Duruibe, 2015). The role of commercial bank sectorial credit allocation in output generation financing cannot be over emphasized as credits are often used by various economic entities to bridge their financing gaps. For instance, businesses obtain credit to bridge gap in equity for financing fixed assets (land, plant, machinery and equipment) acquisition as well as working capital (inventories, salaries and wages**).** Governments obtain commercial bank credits to meet shortfalls in recurrent (salaries) and capital expenditures (provision of social infrastructures). Individuals take commercial bank credits to balance shortfalls that often exist between households' periodic incomes and expenditures (Panzaru, 2011). Provision of appropriate credit with sufficient consideration for output generation is a critical driver of financial system development, which has the tendency of leading to high rate of enterprises, employment and jobs creation in any economy. The reason being that credit helps businesses create and maintain reasonable size (economies of scale) which affords businesses the opportunity of being productive and competitive. Commercial bank credit helps businesses diversify their financing risk to the extent that it attracts higher level of managerial efficiency and effectiveness due to increased supervision and control by more experienced and skilled finance professionals (Matoussi and Abdelmoula, 2010). The need to enhance output capacity of productive units of any economy especially small and medium enterprises (SMEs) through increased access to credits from commercial banks cannot be overemphasized (Nnanna, 2004).

Inadequate access to credit especially from commercial banks remains one key limiting factor to productivity and output growth in Nigeria; when access to credit is provided, appropriateness of such credits to peculiar needs of businesses seem lacking (Ebiringa and Duraibe,2015). This paper is aimed at examining the effect of commercial banks sectorial credits for economic growth in Nigeria. The objective is to analyse the nature and magnitude of the effects of commercial banks' credits to various sectors; agricultural, manufacturing, export, services and SME activities on output growth in Nigeria.

Theoretical Framework

There are various theories about the correct mode of operation of banks lending for industrial and economic development. The theories according to Solomon (2015), describe how the banking business portfolio management should be conducted to generate sufficient earnings, which still provides for adequate liquidity and safety. These theories include:

1) Commercial Loan Theory

Proponent of this theory maintains that commercial liquidity will be assured as long as -its' assets are held on short-term. Funds that could be liquidating in the normal course of business, the theory holds that since bank liabilities are principally repayable on demand or at very short notice, bank lending should be confined to short-term working capital advances for financing production, storage and movements of goods, the final sale of which will provide fund for repayment such loans are said to be self-liquidating. The theory posits that commercial banks, because of their funding base, should make

only short - term self- liquidity productive loans. However, some of the assumptions of the commercial loan theory are not as valid as they are thought to be, for instance, the assumption, that all working loans are self-liquidating is an illusion since they could be invested in paramount working capital. In practice, most of the short-term advances are not recalled but are rolled over. So, with periodic renewals, they are not economically different from long-term credit except to the extent that investment planning differs considerably when funds are obtained on assured long-term basis.

2) Shiftability Theory

This is based on the proposition that banks liquidity can be maintained if it holds assets that could be shifted or sold to other lenders or investors for cash. If loans are not repaid, the collateral, for example marketable securities could be sold in the market for cash. If funds are needed, loans could be shifted to the Central Bank. This individual commercial bank should be able to meet its liquidity needs provided it always has assets to sell. Similarly, the banking system will be liquid provided that Central Bank stands ready to purchase assets offered for discount. While operating with a set of shiftable assets, it does provide a bank with a broader base to satisfy its liquidity requirement than solely relying on commercial paper, it might still not prove adequate, for an asset to remain shiftable, it must readily be saleable. This buyer of the asset must be available while the asset may prove shiftable, buyers at acceptable prices may be difficult to find.

3) Anticipated Income Theory

This holds that liquidation can be planned, if scheduled loan repayments are based on the future income of the borrower. This does not deny, however, the applicability of the commercial self-liquidating and, shifitability theories, it emphasizes desirability of relating loan repayment to income rather than relying heavily on collateral. Also, it recognizes the influence the maturity structure of the loan and investment portfolios have on bank liquidity. The major shortcoming stems from the difficulty in accurately predating what the future income of the borrower will be.

4) Liability Management Theory

The fourth theory is the liability management, developed in the 1960s. This theory has been upheld by most banks in developed countries. According to the liability management theory, a bank no longer needs to observe traditional standards with respect to self- liquidating loans and liquidity reserve assets, since such lands can be acquired in money market whenever a bank needs liquidity. In this way a bank can meet its liquidity needs by creating additional liabilities.

This study adopts the liability management theory because it suites the dimension of this study. Thus, the ability of banks to grant loans is constrained by the amount of financial resources at their command, based on the capital requirements. The agency theory is concerned with how agency affect the form of the contract and the way they are minimised, particularly, when contracting parties are asymmetrically informed. Fundamentally, the problem arises because lenders are imperfectly informed about the characteristics of potential borrowers, and it may be impossible, as a result, for lenders to distinguish ‘good’ borrowers from 'bad' ones.

The distribution of funds between regions has the effect of opening up backward regions and paying the way for their economic development. Fluctuations in bank credit have an important bearing on the level of economic activity. Expansion of bank credit will provide more funds to entrepreneurs and, hence, will lead to more investment. Under conditions of *fall* employment, expansion of financial institutions credit will have the effect of inflationary pressure. But under conditions of unemployment, it will push up production in the country.

On the other hand, a decline in bank credit will result in decline in production, employment, sales and prices. From the view of an under-developed economy, the expansion of bank credit offering more financial resources to industries in one of the contributory causes for greater economic development. A very important service the banks render to the community is the creation of demand deposits in exchange of debts of other (viz, short and long-term securities)

Empirical Review

The role of bank credit to the growth of the economy has attracted the attention of many researchers in developed and developing economies of the world. Cappiello, Kadareja, Sorensen and Protopapa (2010) in their study of European Area found that in contrast to recent findings for the US, the supply of credit, both in terms of volumes and in terms of credit standards applied on loans to enterprises, have significant effects on real economic activity. In other words, a change in loan growth has a positive and statistically significant effect on GDP.

Muhsin and Eric (2000) carried out a study on Turkish economy; it was found that when banks deposit, private sector credit or domestic credit ratios are alternatively used as proxies for financial development; causality runs from economic growth to financial development. Their conclusion was that growth seems to lead financial sector development. Koivu (2002) analysed the finance-growth nexus using a fixed-effects panel model and unbalanced panel data from 25 transition countries during the period 1992-2000. His finding indicateds that: the interest rate margin was significantly and negatively related to economic growth, arise in the amount of credit did not seem to accelerate economic growth. Based on the findings, he concluded that the growth in credit has not always been sustainable and in some cases, it may have led to a decline in growth rates.

Chang, Philip C. Jia, Chunxin Wang, Zhicheng (2010) used branch panel data to examine bank fund reallocation and econo.nic growth in China and found a positive association between bank deposits and growth. Vazakidis & Adamopoulos (2009) employed a Vector Error Correction Model (VECM) to investigate the relationship between credit market development and economic growth for Italy for the period 1965-2007 raking into account the effect of inflation rate on credit market development. The empirical results indicated that economic growth had a positive effect on credit market development, while inflation rate had a negative effect.

Mishra *et al* (2009) examined the direction of causality that runs between credit x/market development and the economic growth in India for the period 1980 to 2008. In the VAR framework the application of Granger Causality Test provided the evidence in support of the fact that credit market development spurs economic growth. The

empirical investigation indicated a positive effect of economic growth on credit market development of the country. Mukhopadhyay and Pradhan (2010) recently examined the causal relationship between financial development and economic growth of 7 Asian developing countries (Thailand, Indonesia, Malaysia, the Philippines, China, India and Singapore) during the last 30 years, using multivariate VAR model. The study concluded that no general consensus can be made about the finance-growth relationship in the context of developing countries.

Obamuyi, Edun, and Kayode (2008) investigated the effect of bank lending and economic growth on the manufacturing output in Nigeria. Times series data covering a period of 36 years (1973-2009) were employed and tested with the cointegration and vector error correction model (VECM) techniques. The findings of the study show that manufacturing capacity utilization and bank lending rates significantly affect manufacturing output in Nigeria. However, the relationship between manufacturing output and economic growth could not be established in the country. These results, therefore, call for concerted effort by the government, manufacturers and the lending institutions to reviewing the lending and growth policies and provide appropriate macroeconomic environment, in order to encourage investment-friendly lending and borrowing by the financial institutions.

Akpansung and Babalola (20l2) examined the relationship between banking sector credit and economic growth in Nigeria over the period 1970-2008. The causal links between the pairs of variables of interest were established using Granger causality test while a Two-Stage Least Squares (TSLS) estimation technique was used for the regression models. The results of Granger causality test show evidence of unidirectional causal relationship from GDP to private sector credit (PSC) and from industrial production index (IND) to GDP. Estimated regression models indicate that private sector credit impacts positively on economic growth over the period of coverage in this study. However, lending (interest) rate impedes economic growth. The paper recommended the need for more financial market development that favours more credit to the private sector with minimal interest rate to stimulate economic growth.

Egbetunde (2012) examined the relationship Between commercial bank credits indicators and rural economic growth in Nigeria. Using a double-log equation within the context of Ordinary Least Square (OLS) framework and co-integration test, the study finds that rural economic growth is co-integrated with bank credits indicators in Nigeria. Within the OLS frame-work, the evidence of positive relationship exists between rural economic growth and commercial bank rural loans as well as commercial bank loans to agriculture and rural economic growth in the economy, while deposits of *rural* dwellers were negatively impacted on rural economic growth. Based on these results, the study argues that the rate at which commercial bank credit *in* terms of loans and deposits of rural dwellers contributed to rural economic growth in Nigeria were very high.

Okwo, Mbajiaku and Ugwuma (2012) examined the effect of bank credit to the private sector on economic growth in Nigeria. The data were obtained from Central Hank of Nigeria (CBN) statistical bulletin and span across 1981 to 2010. Data stationarity were ensured using the Augmented Dickey Fuller (ADF) statistic, while the OLS were applied to ascertain the impact of bank credit to the private sector on economic growth.

Results of the analysis showed that bank credit to private sectors has a statistical strong positive relationship with GDP and that as expected, bank credit to the private sector has statistically significant effect on economic growth. The study recommended that the CBN should lower its minimum rediscount rate to a moderate level that will enable banks fix low interest rates on their loanable funds while adopting direct credit control to favour preferred sectors like Agriculture and manufacturing.

Ugbani and Dike (2012) evaluated the challenges of bank-credit among SMEs in Nigeria. Both the questionnaire and personal interview methods were used to generate data. Data generated were coded and analyzed through tables, frequencies, percentages and Z-Test statistical technique. They observed that Nigerian Banks are still very slow in lending to SMEs as they believe that SMEs are usually not properly organized and therefore considered lending to the sector highly risky. Where they must lend, they insisted on stringent loan processes - including the provision of adequate collateral. These stringent loan processes frequently cut off many SMEs from having access to bank credit, and to check insider fraud, banks have placed embargo on lending without collateral. The study found that SMEs do not have significant access to bank credit in Nigeria.

Oluitan (2012) assessed the significance of real bank credit in stimulating real output growth in the case of Nigeria. The study observed that credit Granger causes output. In testing the factors that mobilise credit, it finds that exports in general are negatively related to credit. However, while oil exports are negatively related to credit, non-oil export has positive relationship with credit. Credit is also positively linked to capital in: lows and imports. These findings suggested that bank credit is inextricably linked to the opening of the economy to international trade and capital flows in non-oil.

In another study, Yakubu and Affoi (2014-) analyzed the impact of the commercial banks credit on economic growth in Nigeria from 1992 to 2012. Using the ordinary least square it was found that it the commercial bank credit has significant effect on the economic growth in Nigerian. As this is a good achievement, it requires more efforts to maintain and sustain it. The study recommended better and stronger credit culture be promoted and sustained while there should be strong and comprehensive legal framework that will continue to aid in monitoring the performance of credit to private sector and recovery debts owed' to banks.

Onuorah and Ozurumba (2013) explored the necessity of bank credit and economic growth of Nigeria. The study used Secondary data from banks credit on sectorial distribution such as production, General commerce, services and others were spread across the period 1980- 2011. Various statistical techniques such as Diagnostic test, Unit root, co-integration Var model and Casuality test are statistically used to test the stability function, stationary properties. The study also showed that all the bank credit measures such as Total Production Bank Credits, Total General Commerce Bank Credits Total Services Bank Credit, and Other Banks Credit did not granger cause GDP instead GDP exerted influencing factor on them. More so, short run relationship exited between bank credit measures and GDP as sustainable key player in the economy. It therefore recommended total supervision and over haul of the bank's credit activities towards encouraging Investors in Nigeria for economic growth.

Obademi and Elumaro (2014) examined the relationship between banks and economic growth in Nigeria with emphasis on the financial repression hypothesis. Regression analysis and Pairwise Granger Causality test was adopted. The results showed that banks have significant positive impacts on growth in Nigeria under all the regulatory regimes'. However, the impact is felt most under the regime of deregulation. The conclusion is that although banks have positive impacts on growth in Nigeria, banks cannot be said to be the propelling force for economic growth. This study recommended the continuation of the current policy of guided deregulation and adoption of entrepreneur friendb/policies in lending by banks.

Aruomoaghe and Olugbenga:(2014) study laid much emphasis on whether the banking industry is really financing capital investment thereby contributing immensely to the development of the economy. Data were collected from the CBN statistical bulletin spanning a period of 32 years (1981 - 2012). The data collected were analysed with regression using e-view software. It was discovered that the banks have contributed much in financing capital investments and stock market development in Nigeria. It was recommended that financial institutions should be encouraged to mobilize more deposit for lending that will aid capital investment.

Olowofeso, Adeleke and Udoji (2015) examined the impact of private sector 'credit on economic growth in Nigeria using; he Gregory and Hansen (1996) cointegration test that accounted for structural breaks and endogeneity problems. The method was applied to quarterly data spanning 2000: Q1 to 2014: Q4, while the fully modified ordinal/ least squares procedure was employed to estimate the model coefficients. The study found a cointegrating relationship between output and its selected determinants, albeit, with a structural break in 2012Q1. Amongst others, findings from the error correction model confirmed a positive and statistically significant effect of private sector credit on output, while increased prime lending rate was inhibiting growth. Despite the above numerous positive link between bank credit, industrial development and economic, some other authors found otherwise. Lucas (1988) believed that economists have badly overstressed the role of financial factors, in economic growth. In essence, banks only respond passively to industrialization.

Data and Model Specification

Data: The study used annual data covering the period 1994-2015 to examine the impact of commercial banks' sectorial credit allocation on Nigeria economic growth. Five sectors of the economy are identified and selected for the study namely:

Agriculture, export, manufacturing, small and medium enterprises, and miscellaneous and general sectors. The data for the study are collected from secondary sources particularly from Central Bank of Nigeria (CBN) statistical Bulletin. The research adopts the ex-post facto design approach.

Model Specification

Following the empirical literature on the impact of commercial Banks' credit allocation to sectors on growth, it becomes necessary to form the long-run relationship between GDP, AGC, EXC, MRC, MISC and SMEX as follows

$$GDP = f(AGC, EXC, MRX, MISC, SMEC) \quad (1)$$

The above equation can be re-written in econometric model and in their natural log form thus.

$InGDP_t = bo+b_1InAGC + b_2InEXC + b_3InMRC + b_4InMISC + b_5InSMEC + U_t$ (2)

Where:

$InGDP_t$ = Natural log of Gross Domestic Product (proxy for economic growth)

InAGC	=	Natural log of credit to agriculture
InEXC	=	Natural log of credit to exports
InMRC	=	Natural log of credit to manufacturing
InMISC	=	Natural log of credit to miscellaneous and general
InSMEC	=	Natural log of credit to small and medium enterprises
U_t	=	Stochastic error term
b_0	=	Constant parameter

b_1, b_2, b_3, b_4, b_5 are the elasticities with respect to change to GDP.

$b_1>0$, $b_2>0$, $b_3>0$, $b_4>0$, $b_5>0$

Estimation Procedure

Unit root Test

In time series analysis, before running the cointegration test the variables must be tested for stationarity. For this purpose, we use the conventional ADF tests. Therefore, before applying this test, we determine the order of integration of all variables using unit root tests by testing for null hypothesis H_0: β=0 (i.e β has a unit root), and the alternative hypothesis is H_1: β<0. This is to ensure that all the variables are integrated at 1(1) to avoid spurious result.

Johansen Cointegration

This study adopted a dynamic vector autoregressive regression (VAR) which explores cointegration. The essence is, to capture the causal dynamics relationship and at the same time to observe the long run and short dynamics. For instance, given a VAR with possible long run cointegration amongst a set of variables.

Therefore, we start with the Johansen co-integration equation which starts with the vector auto regression (VAR) of order p is given by:

$$y_t = \mu + A_1 y_{t-1} + \cdots + A_p y_{t-P} + \varepsilon_t \quad (3)$$

Where y_t *is a* $(n \times 1)$ *vector of variables uncler consiclertion in log form that are Integrated at order one- commonly denoted* $1(1), n = 5 A_P$ *are the parameters to be estimated,* ε_t *are the random* ***errors. This*** *(VAR)* can be rewritten as;

$$\Delta y_t = \mu + \Pi y_{t-1} + \cdots + \sum_{i=1}^{P=1} \Gamma_i \, y_{t-i} + \varepsilon_t \quad (4)$$

Where, $\Pi = \sum_{i=1}^{p} A_i - 1 \; and \; \Gamma_i = -\sum_{j=i+1}^{p} A_j$ (5)

The above equation is a pure Johansen Cointegration test. Gragory and Hansen 11996) noted that the Johansen test is a test for co-integration that allows for more than one co-integration relationship. If the coefficient matrix Π has reduced rank $r < n$, then there exist n x r matrices of $\alpha \; and \; \beta$ each with rank r such that

$$\Pi = \alpha\beta' \tag{6}$$

Where r is the number of co-integrating relationship, the element is α is known as the adjustment parameters in the vector error correction model and each column of β is a cointegrating vector. It can be shown that, for a given r, the maximum likelihood estimator of β define the combination of y_{t-1} that yield the *r* largest canonical correlations of Δy with y_{t-1}after correcting for lagged differences and deterministic variables when present. The two-different likelihood ratio test of significance of these canonical correlations are the trace test and maximum elgein value test, shown respectively below

$$\lambda_{trace}(r) = -T\sum_{i=r+1}^{n} In(1-\hat{\lambda}_l) \tag{7}$$

and

$$\lambda_{max}(r, r+1) = -TIn(1-\hat{\lambda}_{r+1}) \tag{8}$$

Here, T is the sample size and $\hat{\lambda}_l$ is the i^{th}ordered eigen value from the Π matrix in equation 3 or largest canonical correlation. The trace tests the null hypothesis that the number of r co-integrating vector against the alternative hypothesis of n co-integrating vector where $n \; i$s the number of endogenous variables. The maximum eigenvalue tests the null hypothesis that there are r cointegrating vectors against an alternative $of \; r +$ 1 (see Brooks 2002).

Vector Error Correction Model (VECM) and Granger Causality Test

After testing for cointegration among the variables, the long run coefficients of the variables are the estimated. This study used the Engle and Granger (1987) test augmented by the error correction term for detecting the direction of causality between the variables. The advantage of using vector error correction (VECM) modelling framework in testing for causality is that it allows for the testing of short-run causality through the lagged differenced explanatory variables and for long-run causality through the lagged ECM term. A statistically significant ECM_{t-1} term represents the long-run causality running from the explanatory variables to the dependent variable. For instance, if two variables are non-stationary, but become stationary after first differencing and are cointegrated, the pth-order vector error correction model for the Granger causality test assumes the following equations.

$$\mathrm{Y_t = \alpha_0 + \sum\nolimits_{-}(i=1) \wedge n \alpha_i^y Y_{t-1} \sum_{i=1}^{n} Xt - 1 \; \alpha_i x + U_t} \tag{9}$$

and

$$\mathrm{X_t = \beta_0 + \sum\nolimits_{-}(i=1) \wedge n \; \beta_i^y Y_{t-1} \sum_{i=1}^{n} Xt - K \; \beta_i x + Y_t} \tag{10}$$

where θ and? are the regression coefficients, U_t is error term and p is lag order of x and y. The presence of short-run and long-run causality can be tested. If the estimated coefficients of y is statistically significant, then that indicates that the past information of y has a statistically significant power of influence x suggesting that y Granger causes x in the short-run. The long-run causality can be found by testing the significance of the estimated coefficients of ECM_{t-1}. ECM_{t-1} is the error correction term obtained from the cointegration model. The error coefficients indicate the rate at which the cointegration model corrects its previous period's disequilibrium or speed of adjustment to restore the long run equilibrium relationship. A negative and significant ecmt-1 coefficient implies that any short run movement between the dependant and explanatory variables will converge back to the long run relationship. Indeed, it recovers any long-run information that is partially lost in the system with differenced coefficient. So, that this term is needed to gain model stability in the long-run. Narayan and Smyths (2008).

Data Analysis: The analytical technique has been segmented into two namely the descriptive statistics and empirical analysis.

Descriptive Statistics

	INGDP	InAGC	InEXC	InMRC	InMISC	InSMEC
Mean	0.902420	28.72102	2.67552	2.42204	3.12016	4.24604
Median	0.86040	24.5426	4.06201	4.20440	2.16002	3.42046
Maximum	3.46210	26.6502	6.04001	6.80402	3.76014	4.33046
Minimum	-0.30446	27.30420	-0.50421	-0.64024	2.3204	4.40461
Std. Dev	0.64215	0.45104	2.01124	1.94520	0.61104	1.22046
Skewness	-0.00606	0.64216	-0.46421	-0.31106	0.40502	0.30046
Kurtosis	2.32060	1.66402	1.63246	1.56402	2,01146	2.11506
Jarque-Bera	0.34266	4.26021	4.34021	4.50110	2.41107	2.6604
Probability	0.84530	0.112214	0.16830	0.16605	0.16407	0.12464
observations	22	22	22	22	22	22

Table 1: Summary statistics of the variables (1994-2015).

Source: extract from eview

Table I above provides the summary descriptive statistics of the variables used in the study with their probability values. It is clear that all the statistics show the characteristics common with most time series.

For instance, normality in the form of Platykurtic. There are a number of noticeable differences between the variables, first credit to agriculture (AGC) has the largest unconditional average of 28.72% while gross domestic product (GDP) has the least unconditional average of 0.9024%. The standard deviation shows the level of volatility in the variables. It displays the rate at which each variable deviates from the mean value. From the table above, credit to export is the most volatile at 2.0112% while the credit to agriculture is the least volatile with 0.45104%.

The skewness measures the asymmetric nature of the data. Skewness is a measure of the asymmetry of the probability distribution of a real-valued random variable about its mean. A normal distribution is symmetrical at point 0. if the value is greater than zero (>0) it is positively skewed, but if less than zero (<0) it is negatively skewed (Wooldridge, 2010). From the table above, Gross Domestic Product (GDP) credit to exports (EXC) and Credit to manufacturing (MRC) are negatively skewed. Whereas, AGC, MISC and SMEC are positively skewed.

Kurtosis measures the sharpness of the peak of a normal distribution curve. It is a measure of "tailedness" of the probability distribution of a real-valued random variable (Hosking 2006). If the value is approximately equal to 3, it is mesokurtic distribution implying normal distribution. If approximately greater than 3, it is leptokurtic distribution which has tails that asymptotically approach zero slowly and has more outliers than the normal distribution. While if approximately, less than 3 it is platykurtic which means that the distribution produces fewer and less outliers than the normal distribution (Wooldridge, 2010). Therefore, all the series show evidence of platykurtic with values less than 3.

The Jarque-Bera is a test for normality of the distribution where the null hypothesis is that the distribution of the sample is a normal one. If the probability value of the Jarque-Bera test is significant, then the null hypothesis is rejected and the alternative is accepted which says that the sample is not normally distributed. If each variable is statistically significant (indicated by a zero probability), then the series are not normally distributed. Therefore, the farther the probability statistic of a variable is to zero, the lower the value of its Jarque-Bera statistic and the more normally distributed it is and vice versa (Hosking, 2006) Hence, the variables can be describd to be normally distributed.

Empirical Results and Discussion of Findings

Table 2: Summary of Stationarity Test

Variable	ADF Coefficient calculated	ADF Critical @5%	Order of Integration	Remark
InGDP	-3.632529	-3.020686	1(1)	Stationary @ 1st difference
InAGC	-4.570716	-3.020686	1(1)	Stationary @ 1st difference
InEXC	-5.454381	-3.020686	1(1)	Stationary @ 1st difference
InMRC	-4.176703	-3.020686	1(1)	Stationary @ 1st difference
InMISC	-4.437672	-3.020686	1(1)	Stationary @ 1st difference
InSMEC	-4.618562	-3.020686	1(1)	Stationary @ 1st difference

Sources: Printout of Computer Analysis of table 4

Table 2 show that all the variables are integrated of order one 1(1) and are therefore said to be stationary because the ADF test statistics are more negative than the critical value at 5% level. The conclusion therefore is that the likelihood of the variables generating spurious results when used is farfetched. Since variables are stationary at first difference, we now test for cointegration to determine if longrun relationship exists

among the variables. The result of the cointegration test is presented in table 3 as follows.

Table 3: Johansen Cointegration Test

Date: 04/06/17 Time: 12:30

Included obs: 20 after adjustments

Sample (adjusted) 1996-2015

Trend assumption: linear deterministic trend

Series: InGDP, InAGC, InSMEC, InMRC, InEXC, InMISC

Lag interval (in first difference): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No of CE(s)	Eigen value	Trace Statistic	0.05 Critical value	Prob. **
None*	0.965630	172.3361	95.75366	0.0000
At most 1*	0.886878	104.9249	69.81889	0.0000
At most 2*	0.805739	61 .33919	47.8561	0.0017
At most 3	0.653911	28.56811	29.79707	0.0688
At most 4	0.293912	7.346910	15.49471	0.5376
At most 5	0.019145	0.386614	3.841466	0.5341

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No of CE(s)	Eigen value	Trace Statistic	0.05 Critical value	Prob. **
None*	0.965630	67.41116	40.07757	0.0000
At most 1*	0.886878	43.58575	33.87687	0.0026
At most 2*	0.805739	32.77109	27.58434	0.0098
At most 3	0.653911	21.22119	21.13162	0.0486
At most 4	0.293912	6.960296	14.26460	0.4938
At most 5	0.019145	0.386614	3.841466	0.5341

Max-eigen test indicates 4 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 3 shows that there are three cointegrating equations among the variables. This implies that there exists a long run relationship among the variables. The existence of la long run relationship informs our use of the error correction model to determine how each of the variables impacts on economic growth in the longrun. The result of the error correction model is presented in table 4 as follows.

Table 4: Parsimonious Results of the Vector Error Correction Model

Date: 04/06/17 Time: 12:09

Included obs: 19 after adjustments

Sample (adjusted) 1997-2015

Series: InGDP, InAGC, InSMEC, InMRC, InEXC, InMISC

Variable	Coefficient	Std. Error	t-statistic	Prob.
Δ(InGDP(-1))	0.880427	0.084311	10.44258	0.0090
Δ(InAGC(-1))	9.983513	1.866378	5.349139	0.0332
Δ(InAGC(-2))	22.42766	2.294161	9.775975	0.0103
Δ (InAGC(-3))	54.25941	6.083269	8.919449	0.0123
Δ(InEXC(-1))	-41.77172	5.324560	-7.845103	0.0159
Δ(InEXC(-2))	-40.59352	5.833163	-6.959093	0.0200
Δ(InEXC(-3))	-83.10287	5.420003	-15.33263	0.0042
Δ(InMRC(-1))	-34.56005	3.108186	-11.11904	0.0080
Δ(InMRC(-3))	7.838658	1.475759	5.311611	0.0337
Δ(InMISC(-2))	4.601660	0.451991	10.18088	0.0095
Δ(InMISC(-3))	3.536330	0.241471	14.64495	0.0046
Δ(InSMEC(-1))	-20.27110	4.548071	-4.457077	0.0468
Δ(InSMEC(-2))	-26.93925	3.441961	-7.826713	0.0159
Δ(InSMEC(-3))	-14.62792	6.529500	-2.240282	0.1544
ECT (-1)	-0.530377	0.076535	-6.929881	0.0202
C	813.8095	100.0132	8.137024	0.0148

R-squared	0.999553	Mean dependent var	2193.856
Adjusted R-squared	0.996204	S.D. dependent var	2170.336
S.E. of regression	133.7229	Akaike info criterion	12.20997
Sum squared resid	35763.60	Schwarz criterion	13.00141
Log likelihood	-93.88972	Hannan-Quinn criter.	12.31910
F-statistic	298.4051	Durbin-Watson stat	2.129911
Prob(F-statistic)	0.003345		

The results of the error correction model in table 4 shows that GDP is positive and significant and reinforces itself at lag one. The finding further reveals that economic growth is a positive and significant function of credit to agriculture, credit to manufacture at lag 3 and credit to Miscellaneous and General Services. In other words, credit to agriculture, credit to manufacture at lag 3 and credit to Miscellaneous and General Services exert positive and significant impact on economic growth. It is however shown that in the first year, credit to manufacturing exerts a negative impact on the growth of the economy suggesting that initially, when the firm raised funds and invested the credit facilities and other resources, the investment takes some time to yield positive and significant result.

Credit to export and Small-Scale Enterprises exert negative and significant impact on economic growth. The negative impact exerted by export credit could partly be due to the nature of goods (not oil but mainly perishable goods) exported by Nigerian exporters and partly because of high exchange rate in securing material inputs and high interest rate in acquiring credit. The economy is monocultural and the oil that dominates the exportable goods is under the cartelistic control of OPEC. While the behavior of credit to Small Scale Enterprises on economic growth could be attributable to the unconducive business environment in which they operate. The error correction term is correctly signed and indicates that about 53 percent of short run deviation from the long run equilibrium between economic growth and sectorial credit is corrected periodically.

To determine the causal relationship between economic growth and sectorial credit, the researcher employed Granger Causality test. The result of the causality test is presented in table 5 as follows.

Table5: Pairwise Granger Causality Tests

Sample: 1996-2015 **Lag:2**			
Null hypothesis:	**Obs**	**F-statistic**	**Prob.**
AGC does not Granger Cause GDP	**20**	4.30062*	0.0334
GDP does not Granger Cause AGC		9.89991*	0.0018
EXC does not Granger Cause GDP	**20**	.49073*	0.0296
GDP does not Granger Cause EXC		0.49507	0.6191
MRC does not Granger Cause GDP	**20**	7.84159*	0.0047
GDP does not Granger Cause MRC		2.33319	0.1311
MISC does not Granger Cause GDP	**20**	0.95147	-0.4083
GDP does not Granger Cause MISC		0.96088	0.4049
SMEC does not Granger Cause GDP	**20**	0.08725	0.9169
GDP does not Granger Cause SMEC		1.39138	0.2791

Sources: Printout of Computer Analysis

The results of table 5 show that commercial bank credits to agriculture and economic growth (GDP) significantly granger cause each another at 5% level. On the other and, credits to export activities does granger cause economic growth. Equally, credit to manufacturing granger causes economic growth. However, commercial banks' credit to Miscellaneous & General services as well as that of Small and Medium Scale enterprises all did not exhibit significant effects.

Conclusions

From the analysis, it is concluded that economic growth is a positive and significant function of credit to agriculture, credit to manufacture and credit to Miscellaneous and General Services in Nigeria. In other words, credit to agriculture, credit to manufacture and credit to Miscellaneous and General Services are good predictors of economic growth. Credit to agriculture is bidirectionally related to economic growth while credit to the manufacturing sector granger causes the growth of the economy without a feedback effect.

Credit to export and Small-Scale Industries is a negative and significant function of economic growth implying that credit extension to these sectors is destabilizing rather than stabilizing the economy. Credit to export leads to economic growth but in a negative direction. The behavior of export credit on economic growth could be attributed to the perishable nature of traded goods and high exchange and interest rate. While the behavior of credit to Small Scale Enterprises on economic growth could be attributable to the un-conducive business environment in which they operate.

Recommendations

From the discussion and summary of findings, the study recommends as follows:

(1) Government monetary policy should be directed towards ensuring stability in the foreign exchange market to boost exports.

(2) The apex bank, the Central Bank of Nigeria, should through its moral suasion encourage commercial banks to reduce interest rates on lending to boost manufacturing, export, small and medium enterprises and related sectors activities. This would in the longrun increase economic growth.

(3) The National Assembly should enact business friendly laws to reduce the risk of doing business in the various sectors of the economy and boost investors' confidence.

(4) The Central Bank of Nigeria **(**CBN) should ensure that its directive to commercial or deposit money banks with respect to the percentage of their loans to various sectors of the economy is adhered to or complied with**.**

APPENDIX 1

Commercial banks' credit to sector and National output

Year	GDP (N,000)	AGC (N'000)	SMEC (N,000)	MRC (N'000)	EXC (N,000)	MISC (N'000)
1994	875.30	7.00	20.40	15.40	1.30	2.00
1995	1089.70	10.80	15.46	23.10	1.60	5.30
1996	1399.70	17.80	20.55	34.80	7.60	34.00
1997	2907.40	25.30	32.37	58.10	19.40	29.70
1998	4032.30	33.30	42.30	72.20	33.00	11.90
1999	4189.20	27.90	40.84	82.80	16.40	237.80
2000	3989.50	27.20	42.26	96.70	29.80	96.40
2001	4679.20	31.00	46.82	115.80	18.80	132.50
2002	6713.60	41.00	44.54	141.30	25.30	268.40
2003	6895.20	55.80	52.43	206.90	34.50	428.40
2004	7795.80	59.80	82.37	233.50	26.70	564.40
2005	9913.50	62.10	90.18	294.30	34.50	723.20
2006	11411.10	67.70	54.98	332.10	31.30	957.00
2007	14610.90	48.60	50.67	352.00	26.40	1377.20
2008	18564.60	49.40	25.71	445.80	52.70	1724.90
2009	20657.30	149.60	41.10	487.60	66.60	3619.10
2010	24296.30	106.40	13.51	932.80	75.20	2622.10
2011	24794.20	135.70	16.37	993.50	45.90	2134.90
2012	33984.80	128.40	12.44	987.60	44.80	1681.30
2013	37409.90	255.20	15.61	1053.20	36.20	1325.40
2014	40544.10	316.40	13.86	1068.30	65.60	1870.10
2015	42396.80	342.70	15.35	1179.70	3.90	2183.90

Source: CBN Statistical Bulletin (2015)

Where GDP= Gross Domestic Product; AGC= Credit for Agriculture activities; EXC= Credit for Export activities; MRC= Credit for Manufacturing activities; SMEc= Credit for Small and Medium Enterprises activities; MISC= Credit for Miscellaneous & General services.

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