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DIFFERENCED MODEL ANALYSIS OF SECTORIAL BANK CREDITS-ECONOMIC PERFORMANCE NEXUS: THE CASE OF NIGERIA (1987-2016)

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ABSTRACT: This study examined the nexus of sectoral allocation of bank credits and economic performance in Nigeria from 1987 to 2016 by a differenced model analysis. The study employed secondary data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin. The ordinary least squares (OLS) method of regression analysis was adopted at both level series and first difference models to ensure stationarity of data and eliminate serial correlation which was tested using the Breush-Godfrey serial correlation LM test in order to ensure that the results obtained were not spurious. The results revealed: (i) positive and significant relationship between bank credits to the agricultural sub-sector and economic performance; (ii) positive but insignificant relationship between bank credits to the real estate and construction sub-sector and economic performance; (iii) positive but insignificant relationship between bank credits to the mining sub-sector and economic performance; (iv) negative but insignificant relationship between bank credits to the manufacturing subsector and economic performance; and (v) bank credits to the overall production sector (comprising the agricultural, real estate and construction, mining, and manufacturing sub-sectors) of the economy did not significantly contribute to economic performance. The study, therefore, recommended that more attention should be given to the agriculture sub-sector in terms of the amount of loans granted; as well as the assistance given to the subsector to encourage more participation and greater output so that it will continue to contribute more to economic growth in Nigeria.

KEYWORDS: Sectoral Allocation, Bank Credit, Differenced Model Analysis, Economic Performance

INTRODUCTION

The role of deposit money banks in stimulating economic growth and national development through financial intermediation has been widely discussed in accounting, finance and economic literature. Banks were identified by early economists such as Schumpeter in 1911 to be playing a key role in facilitating technological innovation and national growth through their role as financial intermediaries. He believed that the ability of banks to identify and fund entrepreneurs with the best chances of successfully implementing innovative products and production processes through the efficient allocation of the savings deposits received from bank customers are tools in achieving effective financial intermediation for progressive economic growth. This postulation by Schumpeter (1911) about the significance of banks in national development have been widely supported by several other scholars, including McKinnon (1973), Shaw (1973), Fry (1988), King and Levine (1993) to mention a few.

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Though the role of financial intermediation can be handled by most financial institutions operating in the finance sector of every economy, banks are seen to be more dominant in that sector. Financial institutions operate in two markets, namely: the money market and the capital market. The money market is mainly made up of the commercial banks that render financial services in terms of intermediation. This involves channeling funds from the surplus spending units to the deficit spending units of the economy; therefore, transforming bank deposits into credits. Such credits are given to various sectors of the economy (some of which are directed by the government policies, by priority, while others are by the credit and lending policies of the various banks). Credits are obtained by various economic agents (in different sectors) to enable them meet operating expenses in their organizations; all of which are expected to contribute positively to the growth of the economy. For example, business firms obtain long term bank facilities to procure machinery and equipment. Farmers may collect loans from deposit money banks to put up farm buildings, purchase seeds and fertilizers to sustain their agricultural venture. Government bodies, individuals and families may want to obtain bank credits to meet various kinds of recurrent and capital expenditures, including the provision of infrastructure; to buy or pay for goods and services respectively (Adeniyi, 2006). All these are possible through the financial intermediation role of banks.

As expected, the credits provided to the economic agents that constitute the various sectors of the economy are to enhance the viability of these sectors to contribute positively to economic growth. Therefore, the questions addressed by this study are: (a) to what extent have the credits advanced to the various sectors of the economy significantly impacted growth? and (b) which sector loans contribute most to the growth of the economy? The foregoing questions form the basis of this study. The purpose of this study, therefore, was to determine the extent to which loans to various sub-sectors in the production sector of the Nigerian economy have been able to stimulate economic performance positively; or put differently, the responsiveness of the economy to commercial bank loans to various sub-sectors of the production sector of the production sector of the production sector of the economy to commercial bank loans to various sub-sectors of the production sector of the production secto

The remainder of the paper is organized into four sections. Immediately following this introduction is the review of related literature. Section three contains the methodology of the study. Section four covers the analysis of data and discussion of the findings. Finally, the summary, recommendations, and conclusion of the study are presented in section five.

REVIEW OF RELATED LITERATURE

This sections deals with the review of related literature, covering the conceptual and theoretical frameworks as well as past empirical studies to provide the justification for this study. The review is set out in the following sub sections.

Conceptual Framework

Conceptually the review commenced with the concept of bank credit. Spencer (1977) says that credit implies money advanced by one party to another or goods and services received, with a promise by the receiver to pay on an agreed future date at some cost. Also, Nwanyanwu (2010) defined credit as the money from a lender given to the borrower who agrees to pay in some future date with interest to compensate the lender for the time value of the money. In a formal setting, banks serve as the conduit for funds to be received in form of deposits from the surplus

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sectors of the economy and passed on to the deficit sectors (in the form of bank credits at a fixed or determined interest) who need funds for productive purposes. It is the traditional function of banks to give credit to customers who need same for various purposes, as part of the banking intermediation business.

Bank credit can be sub divided into two: credit to the private sector and credit to the public sector. Earlier studies had shown that credit to the public sector is weak in generating growth in an economy. This is because of the fact that they are prone to waste and politically motivated programmes, which may not deliver the best and desired results to the citizenry. This, for instance, is supported by the study findings of Beck, Cull and Jerome (2005), Levine (2002), Odedokun (1998), King and Levine (1993) and Boyreau-Debray (2003) all of which revealed that bank credits and economic growth had a negative correlation. The study by Boyreau-Debra (2003) in particular, found that Chinese banks were mobilizing and pouring funds into the declining parts of the Chinese State Enterprise, and hence bank intermediation did not promote economic growth in China. Demirguc-Kunt and Levine (2008) in their study emphasized the importance of focusing the allocation of bank credits to the private sector as opposed to public sector credits. Similarly, the study of Beck et al (2005) indicated that private sector credits are a good predictor of economic growth. This view was also supported by Crowley (2008) in a later study.

The concept of economic growth refers to an increase in the gross domestic product in a given period of time of the economy (Dewett, 2005). He went further to explain that economic growth is considered to be a quantitative change in economic variables, which can be sustained over successive periods for a long time. Todaro and Smith (2006) explained that economic growth is a steady process by which the productive capacity of the economy is increased over time to bring about rising levels of national output in goods and services. In the opinion of Jhingan (2006) economic growth is an increase in the national output in goods and services. He explained further that economic growth is related to the quantitative increase in the country's per capita income or output accompanied by expansion in its labour force, consumption, capital and volume of trade sustainable for a long period. The main characteristics of a sustainable national development and growth are high rate of growth of per capita income or output, high rate of productivity, high rate of structural and technological transformation, international flows of capital, labour, goods and services (Ochejele, 2007). Yet another way to measure economic growth is in terms of gross domestic product (GDP) and human development index (HDI). HDI is actually an index used to measure national growth based on measures of life expectancy at birth, high education attainment, high levels of literacy and adjusted real per capita income (Yakubu & Affoi, 2014).

Theoretical framework

There are several growth theories in economic literature. But there has been no consensus among scholars as to which growth model will be the best in achieving success (Nnanna, 2004). Some of the existing growth models are Harrod-Domar Theory of Growth, Endogenous Growth Theory, Neoclassical Model of Growth, Shumpeterian Theory, Marxian Theory and Two-Gap Model. The theories providing the foundation for this study are the Harrod-Domar, Endogenous and the Neo-Classical growth theories. This is because, they do not only explain the situation in developing economies such as Nigeria, Ghana, Cameron to mention a few, but also explains the relationship between the banking sector and economic growth in developed economies. The following subsections provide the review of the relevant growth theories.

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Harrod-Domar Growth Model (HDM) is a classical Keynesian model of economic growth (Solow, 2000). It holds the theoretical position that increased savings leads to the expansion of credit and investment, and ultimately to increase in economic output. The model basically suggests that the economy's rate of growth depends on the level of national savings, and the productivity of capital investment (also known as the capital-output ratio). The actual growth is the real rate of increase in a country's GDP per year. This model was developed by R. F. Harrod and E. D. Domar, working independently but almost con-currently. Harrod's book titled "Towards a Dynamic Economics" was published in 1948, while "Essays in the Theory of Economic Growth" by Domar was in 1957.

The Endogenous Growth Theory (also called new growth theory) was developed in the 1980's by Romer, Lucas and Rebelo, among other economists as a response to the criticism against the neo-classical growth theory (Jhingan, 2006). The endogenous growth model argued that policy measures can have significant impact on the long-run growth rate of an economy. The endogenous growth model is one in which the long-run growth rate is determined by certain variables within the model not by an exogenous factor such as technological innovations as identified in the neo-classical growth theory. In the view of Jhingan (2006), the endogenous growth theory places emphasis on technical progress resulting from the rate of investment, the size of the capital stock employed and the presence of a high level of human capital.

According to Nnanna, Englama and Odoko (2004) within the endogenous model of growth, it can be stated that financial development can affect growth in three ways, namely, raising the efficiency of financial intermediation, increasing the social marginal productivity of capital and influencing the rate of private savings. This means that financial institutions can enhance growth in an economy by efficiently and effectively carrying out their financial intermediation function, especially, in the provision of bank credits to deficit sectors of the economy. The development of endogenous growth theory gave a bigger scope of banking sector and economic growth as it suggests that a strong banking sector promotes economic growth and holds that policy measures can have an impact on the long run growth rate of an economy. Within this model, Lucas (1988), Romer (1986) and Romer 1990) enhanced the definition of investment to contain human capital and allow for externalities in investment. It need be noted that they suggested that the returns on investment are slightly diminishing or even non-diminishing. Following this idea, it is financial institutions, when properly fulfilling their role that can generate externalities in investment and by these secure non-diminishing returns to investment within the endogenous growth model. The main implication of this theory therefore, is that banking policies which embraces openness, competition, change and innovation will promote economic growth.

The Neo-Classical theory of growth was first advanced by R. M. Solow, who believes that a sustained increase in capital investment would only increase the rate of economic growth in the short run (Nnanna et al, (2004). This is because if the ratio of capital to labour goes up which means there would be more capital available for each worker to use, the marginal productivity of additional units of capital would be assumed to decline and the economy would eventually move back to a low rate of growth in the long run, with real GDP growing at the same rate as the labour force in addition to a co-efficient to reflect declinng "productivity". A "steady-state growth rate" can only be achieved when output, capital and labour are all growing at the same rate, meaning in fact that output per worker as well as capital per worker are constant.

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Those who belong to the Neo-Classical growth model school of thought believe that to raise the rate of growth of an economy in the long run would require an increase in the labour supply and an improvement in the productivity of labour as more capital is made available for the workforce. Differences in the rate of economic growth between the developed economies and developing economies can only be explained off as arising due mainly to technological developments and advancements happening in developed countries. The neo-classical growth theory treats productivity improvements as an exogenous variable, meaning that productivity is assumed to be independent of capital investments. Nnanna et al (2004) anchoring their arguments on Solow's analysis of American data from 1909 to 1949, noted that 87.5% of economic growth in America within the period was attributable to technological advancements while 12.5% of the growth was due to increased use of capital. In the view of the proponents of the Neo-Classical growth model, financial institutions (and more particularly, the money market operatives) had only minor influence on the rate of investment in physical capital and that the changes in investment are viewed as having only minor impact on economic growth.

Empirical review

Academic literature has extensively studied commercial bank credit in relation to its contribution to economic growth to achieve some specific objectives. Efficient commercial bank credit is expected to contribute positively to economic growth. The variables used in researches concerning commercial bank credit and related financial institutions and the details of how commercial bank contributes generally to economic growth were reviewed. For example, Fapetu and Obalade (2015) investigated the impact of sectoral allocation of bank credits and economic growth during the period of intensive regulation, deregulation and guided deregulation in Nigeria. Data for their study covering the period 1960 to 2010, obtained from the Central Bank of Nigeria (CBN) was analyzed using the Ordinary Least Squares method. The study found that bank credits to the production sector had positive and significant relationship with economic growth during the period of guided deregulation. The study therefore recommended the extension of more bank credits to the production sector as well as the continuation of guided deregulation.

Ayunku and Etale (2014) examined the relationship between banking sector development and economic growth in Nigeria using secondary data obtained from the annual reports of the Central Bank of Nigeria (CBN) covering the period 1977 to 2010. Real gross domestic product (RGDP) was used as proxy for economic growth which was the dependent variable, while credit to the private sector (PCR), domestic credit (DC) among others representing banking sector development were used as the independent variables. Data analysis techniques included Augmented Dickey Fuller (ADF), Phillip Perron (PP) Unit Root Test, Johansen Co-integration Test and Error Correction Model (ECM). The study findings among others, was that bank credits to the private sector was negatively related to real gross domestic product. The study recommended that banking sector reforms be sustained in Nigeria in order to enhance economic growth. Also, Ekpenyong and Ikechukwu (2011) investigated the contribution of banks in Nigeria to the growth of the economy. Variables used for the study are banks savings mobilization, credit to the real sector and Gross Domestic Product. The result of their analysis led to the conclusion that banks' contribution to economic growth within the period of 1980-2008 is insignificant. This led to the deduction that other factors (human resource, standard of education, political stability, power supply and other social infrastructure) may be playing more important role in growing the Nigeria economy.

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Similarly, Yakubu and Affoi (2014) analyzed the impact of commercial bank credits on economic growth in Nigeria using data for the period covering 1992 to 2012. The study employed commercial bank credits to the private sector as the independent variable, while gross domestic product used as proxy for economic growth was the dependent variable. Using the Ordinary Least Squares method of data analysis, the study found that bank credits significantly affected economic growth. Also investigating the intermediation role of banks on economic growth in Nigeria, Ogege and Boloupremo (2014) employ ADF, Johansen cointegration and ECM. The study concluded that only credit allocated to production sector is having a significant positive effect on growth.

In his study, Alex (2012) investigated the role of banks in capital formation and economic growth: the case of Nigeria, for the period 1980-2009. The variables used were commercial banks deposit liabilities, maximum lending rate, commercial banks credit, investment by banks in Nigeria, gross fixed capital formation and gross domestic product. The result showed that commercial bank credit had a positive impact on gross fixed capital formation. It was therefore recommended that effort should be made by the monetary authorities to effectively manage the banks maximum lending. This policy thrust will most likely result into increased investment activities which will enhance capital formation in Nigeria needed for its real sector investments and industrial growth.

Akpansung and Gidigbi (2014) examined the impact of sectoral allocation of bank credits and economic growth in Nigeria for the period covering 2004 to 2012. Time series secondary data for the period was compiled for the study from the Annual Reports and Statistical Bulletin of the Central Bank of Nigeria (CBN) and the National Bureau of Statistics. The study variables included real gross domestic product, proxy for economic growth (dependent variable) regressed against data for five sub sectors of the country's production sector. The method of data analysis adopted was the Ordinary Least Squares Technique. The study found improved allocation of bank credits to the production sector of the economy, indicating a positive relationship between allocation of bank credits to the production sector and economic growth. Similarly, Akano and Kazeem (2014) used ordinary least square technique and co-integration analysis to examine the impact of total bank credit on economic growth of Nigeria. It was revealed that total bank credit and inflation rate had a significant relationship with economic growth, though inflation rate shows a negative relationship while total bank credit shows a positive relationship.

Petkovski and Kjosevski (2014) also examined the effect of banking sector development on economic growth in selected 16 countries of Central and South Eastern Europe for the period 1991 to 2011. The study variables included bank credits to the private sector and economic growth among others. Data for the variables were obtained from the World Development Indicators (WDI) database, Heritage Foundation and Worldwide Governance Indicators. They employed a dynamic panel data analysis technique called Generalized Method of Moments (GMM) method. The results among others showed that bank credits to the private sector had negative relationship with economic growth. Similarly, Toby and Peterside (2014) in a study covering 1980 to 2010 use descriptive and inferential statistics. The descriptive results show that Nigeria's commercial and merchant banks are more active in financing the manufacturing sub sector than the agricultural sub sector even though the later contributed more to growth in GDP.

Also, Abubakar and Gani (2013) examined the relationship between financial development indicators and economic growth in Nigeria for the period 1970 to 2010. Data collected from

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the annual reports of the Central Bank of Nigeria (CBN) were analyzed using the Johansen Juselius Co-integration and Vector Error Correction Model (VECM) techniques. The study findings revealed that bank credits to the private sector exerted significant negative influence on economic growth. Obademi and Elumaro (2014) re-examined the financial repression hypothesis in order to determine the impact and direction of causality between banks and economic growth during intensive regulation, deregulation and guided deregulation regime. Using Ordinary least square regression and Causality test, the study concluded that bank credits had significant positive impact on growth in Nigeria especially during deregulation. Nevertheless, banks appear to be passive to growth in terms of causality.

Obamuyi, Edun and Kayode (2009) investigated the relationship between bank lending, economic growth and the performance of the manufacturing sector of Nigeria, using data covering 1973 to 2009. They adopted Co-integration and Vector Error Correction Model (VECM) techniques to analyze their study data. The results showed that bank lending to the manufacturing sector and manufacturing output were significantly related, while no relationship could be established between manufacturing output and economic growth. Also, Ogege and Shiro (2013) in a study covering 1974 to 2010 use co-integration and error correction model, discover a long-run relationship and conclude that commercial credits contribute positively to growth but it is significant in the long run.

Badun (2009) carried out a review of past empirical research linking financial intermediation by banks and economic growth. According to him, there are a few unresolved issues in empirical research that have created skepticism towards prioritizing financial sector policies in order to cause economic growth. There is an indication that the topic of finance and growth be treated as a multidisciplinary subject among perhaps accounting, finance, economics and political science scholars, and possible fruitful directions might only be reached when there is meaningful interaction between government and banks. The foregoing empirical review points to a lack of consensus in the findings of previous researchers indicating the existence of a research gap.

METHODOLOGY

The methodology adopted for this study is presented in this section, which is *ex-post facto* research design by relying on already existing secondary data. Other areas covered in this section are, the source of data and the variables of the study, techniques of data analysis and the regression model employed. These are discussed in the following sub sections.

Sources of data and variables

The data used for this study, covering the period from 1987 to 2016, was obtained from the Statistical Bulletin and Annual Reports of the Central Bank of Nigeria (CBN). For this type of study, this source of data is considered the most reliable. Economic growth represented by Real Gross Domestic Product (RGDP) was used as the dependent variable; while bank credit to various subsectors of the economy as the independent variables.

Estimation Technique

Descriptive statistics and the ordinary least square regression technique were used to estimate the impact of banks sectoral credit allocation on economic growth with the aid of E-view 9

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statistical package. The statistical significance of the regression model and the reliability of the predictors were determined using F-test and standard error test. Furthermore, both level series and first difference model tests as well as Breush-Godfrey serial correlation test were employed to ensure stationarity of data and eliminate serial correlation.

Model Specification

To facilitate the analysis of data, this study adopted the following regression model which has been widely used by several researchers such as Fapetu and Obalade (2015), Ayunku and Etale (2014), Yakubu and Affoi (2014), and Ogege and Boloupremo (2014) to mention just a few. The regression model is specified in its functional form as follows:

 $RGDP = f(AGRO_t, RECO_t, MANU_t, MINE_t)$

This model is translated and presented in equation 1 in explicit econometric terms as follows:

 $RGDP_{t} = \beta_{0} + \beta_{1}AGRO_{t} + \beta_{2}RECO_{t} + \beta_{3}MANU_{t} + \beta_{4}MINE_{t} + U_{t}$ (1)

At first difference, we have;

$$RGDP_{t-1} = \beta_0 + \beta_1 AGRO_{t-1} + \beta_2 RECO_{t-1} + \beta_3 MANU_{t-1} + \beta_4 MINE_{t-1} + U_{t-1}$$
(2)

Where:

RGDP = Real gross domestic product

AGRO = commercial banks credits to the agricultural sub-sector

RECO = commercial banks credits to the real estate and construction sub-sector

MANU = commercial banks credits to the manufacturing sub-sector

MINE = commercial banks credits to the mining sub-sector

U = stochastic error term

 β_0 = constant and β_1 - β_4 = coefficients of explanatory variables

- t = current period time series
- t-1 = first difference of the explanatory variables

f = functional relationship

Expected Results

 $\beta_1 - \beta_4 > 0$, as expected, the relationship between real gross domestic product and commercial bank credits to the production sector of the economy (namely, agricultural, real estate and construction, manufacturing, and mining sub sectors) be positive. The signs of the estimated coefficients are thus expected to be greater than zero, respectively.

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RESULTS OF ANALYSIS AND DISCUSSION

This section deals with the results of data analysis and the discussion of the findings of the study, so presented in the following sub sections.

Descriptive statistics

Table 4.1 Descriptive statistics of the variables

	RGDP	AGRO	RECO	MANU	MINE
Mean	34842.05	249.2041	1092.444	1028.331	354.6558
Median	27112.63	48.97745	460.1522	220.1819	70.47710
Maximum	69023.93	1979.800	5313.700	8266.100	2155.862
Minimum	15263.93	2.427100	2.892400	4.961200	0.227300
Std. Dev.	17493.14	541.9653	1792.882	2151.887	591.4976
Skewness	0.644164	2.583519	1.604159	2.621763	1.779055
Kurtosis	1.938652	7.994578	3.882717	8.380960	5.004864
Jarque-Bera	3.482808	64.55511	7.381660	70.56162	20.15454
Probability	0.175274	0.000000	0.024951	0.000000	0.000042
Sum	1045262.	7476.124	17479.11	30849.92	10285.02
Sum Sq. Dev.	8.87E+09	8518065.	48216413	1.34E+08	9796343.
Observations	30	30	16	30	29
Source: Eview	vs 9.0 output				

The results on table 4.1 above shows the description of the variables used in this study for the period under review. Aside from the fact that there was no data for RECO and MINE from 1994 to 2007 and 1994 respectively, the results reveal the following mean values: Real gross domestic product (RGDP) has N34,842.05 billion, loans to agriculture (AGRO), real estate and construction (RECO), manufacturing (MANU), and mining (MINE) have N249.20 billion, N1,092.44, N1,028.33 billion and N354.66 billion, respectively. This indicates that on the average, loans to the real estate and construction sub-sector has the highest value of N1,092.44 billion, while loans to agricultural sub-sector has the least value, on the average, of N249.2 billion. The results also show the following standard deviation values: RGDP N17,493.14 billion, AGRO N541.97 billion, RECO N1,792.88 billion, MANU N2,151.89, and MINE N591.50 billion, indicating that the data generally has a large disparity from the mean. The results further indicate that only the dependent variable, RGDP is normally distributed, while all the explanatory variables are not normally distributed (the Jarque-Bera statistics together with their respective probabilities are: RGDP 3.48 and 0.17, AGRO 64.56 and 0.0000, RECO 7.38 and 0.025, MANU 70.56 and 0.0000, and finally, MINE 20.155 and 0.0000).

Level series regression estimates

Table 4.2 shows the results of the level series regression parameter estimates of the model.

Table 4.2 Level series regression parameter estimates

Dependent Variable: RGDP Method: Least Squares

Date: 05/26/18 Time: 22:11 Sample: 1987 2016 Included observations: 16					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	
С	19364.03	2179.137	8.886099	0.0000	
AGRO	6.449328	23.31049	0.276671	0.7872	
RECO	-18.03902	20.53232	-0.878567	0.3984	
MANU	15.69322	16.15227	0.971580	0.3521	
MINE	19.84536	2.230907	8.895646	0.0000	
R-squared	0.944324	Mean dependent var		40759.28	
Adjusted R-squared	0.924078	S.D. dependent var		21380.09	
S.E. of regression	5891.048	Akaike info criterion		20.45056	
Sum squared resid	3.82E+08	Schwarz criterion		20.69200	
Log likelihood	-158.6045	Hannan-Quinn criter.		20.46293	
F-statistic	46.64299	Durbin-Watson stat		1.615044	
Prob(F-statistic)	0.000001				

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The results on table 4.2 above, showed a Durbin-Watson statistic of 1.6 which suggests the likelihood of the presence of serial correlation (autocorrelation) among the residuals, which has the potency of rendering the results misleading. In order to rule out this possibility, the study subjected the model to a test of serial correlation using the Breush-Godfrey LM test.

Test of serial correlation

Table 4.3 below shows the Breusch-Godfrey Serial Correlation LM test results carried out in order to correct the ascertained the presence of serial correlation.

Table 4.3 Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:						
F-statistic	2.059385	Prob. F(2,9)	0.1835		
Obs*R-squared	5.023362	Prob. Chi-S	Square(2)	0.0811		
Fest Equation: Dependent Variable: RESID Method: Least Squares Date: 05/26/18 Time: 22:36 Sample: 1987 2016 Included observations: 16 Presample and interior missing value lagged residuals set to zero.						
Variable	Coefficient	Std. Error	t-Statistic	Prob.		
С	-1521.296	2289.544	-0.664454	0.5231		

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AGRO	-16.57641	27.29121	-0.607390	0.5586
RECO	-11.77884	20.66712	-0.569931	0.5827
MANU	11.94331	17.83063	0.669820	0.5198
MINE	1.769127	2.305503	0.767350	0.4625
RESID(-1)	-0.006830	0.415988	-0.016418	0.9873
RESID(-2)	-0.811485	0.411530	-1.971872	0.0801
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.313960 -0.143400 5394.390 2.62E+08 -155.5899 0.686462 0.666491	Mean dependent var S.D. dependent var Akaike info criterion Schwarz criterion Hannan-Quinn criter. Durbin-Watson stat		8.53E-12 5044.792 20.32374 20.66175 20.34105 2.265203

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Table 4.3 above shows the observed *R-squared of 5.023 with the probability (chi-square) value of 0.0811 indicating the absence of serial correlation at 5 percent level of significance, but present at 10 percent. In order to correct the problem of serial correlation, the model was further regressed at first difference.

First difference regression estimates

Table 4.4 First difference regression estimates of the parameters

Dependent Variable: D(RGDP) Method: Least Squares Date: 05/26/18 Time: 23:42 Sample (adjusted): 1988 2016 Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C D(AGRO) D(RECO) D(MANU) D(MINE)	190.5724 40.06400 2.993066 -9.800463 5.028676	1299.795 18.50932 10.08934 8.977996 4.580513	0.146617 2.164531 0.296656 -1.091609 1.097841	0.8867 0.0586 0.7735 0.3034 0.3008
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.352266 0.064384 3692.577 1.23E+08 -131.7694 1.223647 0.366251	Mean dependent var S.D. dependent var Akaike info criterion Schwarz criterion Hannan-Quinn criter. Durbin-Watson stat		1189.709 3817.515 19.53849 19.76672 19.51736 1.954026

Source: E-views 9.0 output

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Table 4.4 shows the first differenced regression results with a Durbin-Watson statistic of 1.95 (approx.2), indicating the absence of serial correlation. Having ruled out serial correlation, the results can now be meaningfully interpreted.

Based on the results on table 4.4, the regression equation can be stated as:

RGDP = 190.57 + 40.06AGRO + 2.99RECO - 9.8MANU + 5.03MINE

It can be observed from the above equation (and of course, table 4.4) that out of the four explanatory variables in this study, three namely; AGRO, RECO and MINE are positively related to RGDP; while MANU is negatively related.

From table 4.4, a unit increase in loans to agriculture results in 40.06 units increase in RGDP, a unit increase in loans to real estate and construction results in 2.99 units increase in RGDP, a unit increase in loans to manufacturing results in 9.8 units decrease in RGDP, and a unit increase in loans to mining results in 5.03 units positive change in RGDP. The results also show that only loans to agriculture contributed significantly to RGDP, with a t-statistic of 2.16 with a probability value of 0.058.

R-squared is 0.35, which indicates that only 35 percent of changes in real gross domestic product (RGDP) can be accounted for by a combination of loans to the various sub-sectors used in this study, namely; agriculture, real estate and construction, manufacturing, and mining.

On the overall, the F-statistic shows 1.22 with a probability of 0.37 meaning that the combination of loans to the various sub-sectors used in this study did not contribute significantly to the growth of real gross domestic product during the study period.

DISCUSSION OF FINDINGS

This study analyzed the sectorial allocation of bank credits and economic performance nexus in Nigeria for the period 1987 to 2016. Real gross domestic product (RGDP) represented economic performance as the dependent variable; while loans to four sub-sectors of the economy, namely agriculture, real estate and construction, manufacturing, and mining were employed as explanatory variables. The results show that loans to agriculture, real estate and construction, and mining are positively related to real gross domestic product. This corroborates the work of Toby and Peterside (2014) who found that Nigeria's commercial and merchant banks are more active in financing manufacturing than agriculture even though the later contribute more to GDP. The results, however, are not consistent with the findings of Ogege and Boloupremo (2014).

The above findings, even though, agree with a priori expectations, to wit positive relationships, only loans to agriculture is significant; while the loans to the other three production sub sectors are not significantly related to economic performance. On the contrary, loans to the manufacturing sub-sector show a negative relationship with real gross domestic product. Even though, this is insignificant, but it is contrary to a priori expectations. In a similar vein, the combined effect of the loans to the various sub-sectors employed in this study did not contribute significantly to economic performance during the period under study. This suggests that the loans to these sub-sectors of the economy did not yield the desired results. This is in line with

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the findings of Ayunku and Etale (2014), but not in order with the findings of Yakubu and Affoi (2014).

SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

Based on the results of data analysis and the foregoing discussions in the previous section of this paper, the findings of this study are summarized as below:

- a. That there is positive and significant relationship between commercial bank credit to the agricultural sub-sector and economic performance.
- b. That there is positive but insignificant relationship between commercial bank credit to the real estate and construction sub-sector and economic performance.
- c. That there is positive but insignificant relationship between commercial bank credit to the mining sub-sector and economic performance.
- d. That there is negative but insignificant relationship between commercial bank credit to the manufacturing sector and economic performance.
- e. That the total credit to the agricultural, real estate and construction, mining, and manufacturing sub-sectors which made up the production sector of the economy did not significantly contribute to the economic performance of Nigeria for the period 1987 to 2016.

RECOMMENDATIONS

The study made the following recommendations in order to enhance the desired contributions of commercial bank credit to the economy:

- a. More attention should be given to the agriculture sub-sector in terms of the amount of loans granted; as well as the assistance given to the sector to encourage more participation and greater output so that it will continue to contribute more to the economy.
- b. Government should make the business environment in Nigeria more conducive in order to reduce the cost of doing business in Nigeria.
- c. Commercial banks should strictly adhere to credit administration policies and prudential guidelines in granting loans to various sectors of the economy; ensure effective monitoring.
- d. Commercial banks in Nigeria should be more favourably disposed to extending more credits to production subsectors namely agriculture, manufacturing, mining, quarrying, real estate and construction.

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CONCLUSION

This study analyzed commercial banks credits to four sub-sectors in the production sector of the Nigerian economy, namely: agriculture, manufacturing, real estate and construction, and mining vis-à-vis their relationship with Nigeria's economic performance. Secondary data were collected from the Central bank of Nigeria (CBN) Statistical Bulletin covering the period 1987 to 2016. The study used real gross domestic product as proxy for economic performance and regressed the commercial banks credits to the four sub-sectors mentioned earlier as explanatory variables. Among the commercial banks credits to the four sub-sectors, only credit to agriculture was found to be positively and significantly related to the economic performance of Nigeria. The implication of the above findings is that commercial bank credits to the various sub-sectors that made up the production sector of the Nigerian economy failed to yield the desired results of stimulating economy performance positively.

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