Commercial Bank Loans and Real Sector Output in Nigeria: A Comparative Approach

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Abstract

This study investigated the relationship between commercial bank loans and real sector output in Nigeria from 1991 to 2018 using a comparative approach. The study employed the Auto Regressive Distributed Lag (ARDL) methodology and found that bank consolidation had a negative and insignificant relationship with the Real Sector Gross Domestic Product (RSGDP) both in the short run and in the long run within the pre and post consolidation period of the study. Thus, the study recommended that it is not enough to consolidate; the Central Bank of Nigeria (CBN) should monitor the activities of Deposit Money Banks (DMBs) and ensure that the real sector of the economy is funded adequately in order to achieve the stated objective of the banking policy.

Keywords: Auto Regressive Distributed Lag (ARDL), Bank Consolidation, Commercial Bank Loan and Real Sector Output.

Introduction

Generally, the real sector of an economy is the pillar that upholds the growth and development of that nation. More so it is the principal driver of the economy because it deals with the production of goods and services for consumption and export for the purpose of income generation. Oduyemi (2013) opined that every economy is generally divided into four segments, namely: the real sector, external sector, fiscal or government sector and the financial sector. In Nigeria, the real sector of the Nigerian economy encompasses: agriculture, manufacturing, real estate and construction, mining and quarrying subsectors. The growth and development of the real sector of the economy is highly dependent on the cooperation of the external sector, government sector and the financial sector of the economy. These four components of the economy are interwoven in the sense that government policies directly (through taxation and subsidies) or indirectly (through directives from regulatory bodies of the financial sector) influence lending to the real sector that tend to exhibit positive spinoffs as multipliers to growth in other sectors. The external sector influences the real sector through fluctuations in prices of raw materials and exchange rate differences. While, the real sector of the economy generates employment, profits, produces semi- finished and finished products for consumers and for export, generates national income, among others for citizens and the country at large. (Angargren, Bjellerup & Shahnazarian, 2017).

The availability of funds has been identified as a major determinant of growth and development of the real sector of the economy (Oduyemi, 2013). The numerous challenges faced by the operators of the real sector of the economy in terms of inadequate supply of inputs, stringent conditions in loan assessment, poor infrastructure, high cost of raw materials, high tax rates, poor electricity supply, among others can only be surmounted by adequate and timely provision of financial resources to the operators of the real sector. Financial reforms are meant to reposition institutions for better service delivery and greater financing of the real sector of the economy. Nigeria has had many banking reforms since independence. Further, Oduyemi (2013) laid focus that between 1986 and 1993, the banking sector was deregulated to allow for private sector participation. The banking sector was re-regulated between 1993 and 1998 while by 1999; the universal banking system was initiated but was fully implemented in the year 2001.

Sanusi (2010) opined that the 2004 bank consolidation policy, which is the basis of the comparative analysis of this study was meant to restructure the banks and position them strategically so that they all be able to support the real sector of the economy in order to increase production. The 2004 bank consolidation laid the basis for the major financial reform shifts captured in Bank recapitalization from N2billion to N25billion, as well as the emergence of 25 banks from the 89 that were in existence given the pre-consolidation exercise. The idea that banks all be strategically poised to assist the real sector was called to question, given that banks recapitalization meant a reduction of banks contribution to the development of the economy (Okoye, Adetiloye, Erin & Evbuomwan, 2017). To this rationale, the relevancy of empirical analysis becomes germane to assist in providing answers to this problem. Towards this banking reform, the study intends to evaluate the impact of the 2004 bank consolidation policy, given its impact towards savings mobilization for credit to the real sector of the Nigerian economy, while taking the timeframe of 1991 to 2018 to provide a structural break date at 2004 for comparative analysis. It is against this backdrop that this study seeks to examine the influence of commercial bank loans on real sector output in Nigeria from 1991 to 2018.

Conceptual Clarification

Bank consolidation

Bank funds are channelled from the surplus spending units of the economy to the deficit spending units of the economy. Bank consolidation is simply the increase in the capital base of commercial banks, which results from either recapitalization or merger or acquisition of financial institutions. Soludo (2004) opinion, that before the 2004 banking consolidation, banks were unable to play their intermediary roles as principal drivers of growth and development in the country mainly because of their weak financial base. To this extent, with the 2004 consolidation of banks in Nigeria, it is expected that the real sector of the Nigerian economy should be able to contribute meaningfully to Gross Domestic Product (GDP), create more job opportunities and increase the general welfare of domestic citizens.

Commercial bank loans

Loans are financial resources given to operators of a particular business with the view of paying back the loan with interest after certain duration. Loans can be short term, medium term and long term, depending on the duration of payback. Loans are generally obtained from credit banks, cooperatives or thrifts, government, individuals, among others. Loans are extended to the real sector of the economy in order to increase output of the sector (Ijaiya & Abduraheem, 2000). For the purpose of this study, commercial bank loans are loans given to the operators of the real sector of the economy in agriculture, manufacturing, mining and quarrying, and real estate and construction by commercial banks in order to boost real sector output.

Theoretical Framework

The endogenous growth theory anchored around Romer (1986) and Cobb–Douglas theory (1927) formed the theoretical underpinning of this study. Endogenous growth theory developed by Frankel, (1962) and Cass (1965) (innovative capital); intellectual capital (Aghion & Howitt 1992; Grossman & Helpman 1991; Romer 1986) and human capital (Lucas 1988) opined that economic growth primarily is an outcome of endogenous and not external forces. While the Cobb-Douglas production theory suggests that growth of the economy is a function of capital and labour; the endogenous growth theory suggests that policy formulation is equally a factor that determines growth. Thus for this paper, the endogenous growth theory in triangulation with the modified Cobb-Douglas production theory has provided the basis to anchor the flow of commercial bank loans and advances into the real sector of the economy, using the 2004 bank consolidation policy as a structural break date to envisaged positive contribution to economic growth in Nigeria over the period of the analysis.

Empirical Review

Using the Ordinary Least Square (OLS) method on annual data from 1980 to 2018; Medugu, Musa and Abalis (2019) investigated the impact of Commercial Banks' credit on Agricultural output in Nigeria. The findings of the study revealed that bank's credit positively and significantly influenced agricultural output in Nigeria. The study recommended that government should increase the funding of the agricultural sector and ensure that funds provided to farmers are properly used.

From 1999 to 2004, using stepwise regression, Gidigbi (2017) recommended pre-crisis reforms testing by the apex bank, after the author's assessment of the impact of banking reforms on banks' performance and economic growth. Findings revealed that bank reforms contributed positively to economic growth of the Nigerian economy but negatively influenced the productivity of banks over the study period. Further recommendations, in this regard, show that the regulatory agencies of the financial system should monitor banks and initiate reforms to position the banks for better service delivery before the emergence of crisis in the banking industry.

Using the Ordinary Least Square (OLS) methodology, Ugwu, Ohakah and Kalu (2017) examined the effect of bank consolidation on economic growth of Nigeria from 2006 to 2015. The study revealed that, Commercial Bank Deposit over the period of the study impacted positively and significantly on Real Gross Domestic Product (GDP). The study recommended that the government through the regulatory agencies of the financial system should monitor the implementation of the banking policy and ensure that banks play their intermediary role of providing funds for the growth of the real sector of the economy. They also advocated for flexible processes that all lead to the success of the banking policy.

Using data points from 1981 to 2014, Achugamonu, Babajide, Olokoyo and Adeshina (2016) posed the question 'has post consolidation of deposit money banks affected the real sector?' While using the Error Correction Model (ECM), the authors concluded that post consolidation has not significantly influenced the growth of the real sector of the economy within the period of the study after findings revealed that long run relationships existed among the variables of interest used in the research.

Using the ordinary least square (OLS) method on annual data from 1995 to 2014, Ene and Onwumere (2016) analysed the effects of consolidation policy in Nigerian banking institutions on agribusiness sector performance. The study concluded that bank consolidation positively impacted on the flow of loans into the agricultural sector which in turn influenced agricultural output in Nigeria. In effect that bank consolidation policy plays an important role in influencing agricultural productivity as such the funding of the agricultural sector should be increased in order to ensure enhanced productivity in the sector.

Primus (2016) investigated the effect of commercial bank's credit on agricultural productivity in Nigeria from 1981 to 2016. The study employed the Error Correction Model (ECM). Findings revealed that bank credit influenced agricultural productivity positively and significantly in Nigeria. The study concluded that commercial banks significantly affect agricultural productivity in Nigeria and recommended that all processes that make the assessment of loans by farmers difficult should be eliminated.

Mbaeri, Adioha and Uzokwe (2015) after finding a positive nexus between bank reforms and economic growth, advocated for the supervision of loan disbursement to beneficiaries by regulatory agencies to ensure proper channeling of loans in order to ensure continuous success of the banking consolidation policy in Nigeria. The authors employed regression analysis in the course of their work as basis for their suggestions.

Using Vector Error Correction Model (VECM), Olorunsola, Abiodun, Adeyemi, Valli, Kufre and Kumafan (2015) investigated the dynamics of deposit money banks (DMB) credit and the role of consolidation in credit growth in Nigeria using quarterly data from 1999 to 2013. Findings from the research revealed that the inflow of bank loans after consolidation exerted positive influence on the real sector output but however, its impact was not significant. The study, therefore, recommended that policy makers should monitor

how banks react to government policies targeted at improving the productivity of the real sector of the economy.

Oni, Akinlo and Oladepo (2014) investigated the impact of bank credit on the real sector in Nigeria from 1980 to 2010. The study advocated for increase in the funding of the manufacturing sector in order to increase real sector output. This suggestion was arrived at by using the Error Correction Model (ECM) to find out that bank credit significantly influenced real sector output in Nigeria during the period reviewed in the study.

Adeusi and Oke (2013) while using the Vector Error Correction Mechanism to investigate the impact of bank consolidation on Nigeria economy from 1986 to 2010, the study revealed the presence of a significant relationship among the variables of interest used in the research. Further results portray that bank consolidation within the period under review had no significant impact on the economy, in as much as bank consolidation is an expectant strategy towards situating the banking sector for financial stability and sustainable development. The study recommended that the regulatory and supervisory framework should be further strengthened and healthy competition should be promoted, while further reforms and consolidation that could enhance efficiency of the banking industry should be embarked on.

Using descriptive statistics to analyse the effects of the banking sector consolidation in financing the real sector of the economy, Ningi (2013) concluded that the Federal Government through the Central Bank of Nigeria (CBN) should encourage commercial banks to continuously increase their funding of the real sector of the economy especially Agriculture, Manufacturing, and Small Scale industries which constitute the engine of growth of the economy. In addition, that the deposit base of commercial banks be increased considerably over the five years' period following the banking consolidation in 2005. Furthermore, the study recommended that commercial banks' capacity to fund the real sector of the economy be increased considerably after the banking sector consolidation.

From 2000 to 2011, Nwankwo (2013), using the Vector Error Correction Mechanism (VECM) framework as its methodology, found out that the post bank consolidation results impacted positively on the growth of the Nigerian economy. Towards this regard, the author advocated for merger and acquisition as a strategy to raise capital base, as well as enhancing bank's profitability via investment diversification.

Using the ordinary least square method of analysis to evaluate the impact of commercial banks' credit to agricultural development in Nigeria, Obilor (2013) found out that the Agricultural Credit Guarantee Scheme Fund and government allocation to the agricultural sector had a significant and positive effect on agricultural productivity. The study suggested that for agricultural activities and its productivity to be enhanced, there is the need for farmers to be assisted in soliciting bank loans.

From the foregoing empirics, the variegated sets of opinions have shown mixed results of the impact of bank consolidation on sectoral and economic growth. These divergent results

might be attributable to either the variables adopted for the aggregated studies, the sectoral or disaggregated representations, and or the methodology adopted for the analysis.

Towards this end, it is evident that the discourse is unending especially given the sectoral or disaggregated representation of the impact of the 2004 bank consolidation policy. It is in this light that the current study finds basis to situate its contribution to the body of knowledge as it frames a comparative approach of pre and post 2004 bank consolidation periods and its significance, while situating the effect of commercial bank loans on real sector output in Nigeria.

Model Specification

The Cobb-Douglas Production function is generally given as:

$Y = AK^{\beta}L^{\alpha}$ ----------1

Where,

Y = Total Output

L = Labour

K = Capital

β and α = Substitution parameters or Elasticities of Capital and Labour respectively given data transformation. β = (1-α) and β + α = 1.

Linearizing the function by introducing logarithm, we have:

$LnY = LnA + \beta LnK + \alpha LnL$ ……..Equation 2

Note that hereafter $\beta = \alpha_0$ while $\alpha = \alpha_1$ to α_n ; Ln= logarithm

However, the modification of the Cobb-Douglas production function theory for this study encompasses: the real sector gross domestic product (RSGDP) or output as the dependent variable and the subsectors of the real sector of the Nigerian economy or inputs (commercial bank loans and advances to agriculture (CBLAA); commercial bank loans and advances to manufacturing (CBLAM); commercial bank loans and advances to mining and quarrying (CBLMQ); and commercial bank loans and advances to real estate and construction (CBLRC) as the independent variables encompassed in Labour and Capital. This modification is reflected in equation (3).

$LnRSGDP_t = \alpha_0 + \alpha_1 LnCBLAA_t + \alpha_2 LnCBLAM_t + \alpha_3 LnCBLAMQ_t + \alpha_4 LnBLARC_t + \lambda_t$ ……..equation (3)

Further modification of the Cobb-Douglas theory when triangulated with the endogenous growth theory, which gives credence to the interaction of the bank consolidation policy as a major determinant of economic growth can be rewritten as shown in equation (4).

$LnRSGDP_t = \alpha_0 + \alpha_1 LnBC_t + \alpha_2 LnCBLAA_t + \alpha_3 LnCBLAM_t + \alpha_4 LnCBLAMQ_t + \alpha_5 LnCBLARC_t + \lambda_t$ …..eqn (4)

Where:

RSGDP = real sector gross domestic product

BC = bank consolidation (dummy variable), 0 = pre consolidation and 1 = post consolidation

CBLAA = commercial bank loan and advances to agriculture
CBLAM = commercial bank loans and advances to manufacturing
CBLAMQ = commercial bank loans and advances to mining and quarrying
CBLARC = commercial bank loans and advances to real estate and construction
α_0 , α_1, α_2, α_3, α_4, and α_5 = structural parameters
λ_t = random term.
The specification of equation (4) into the conventional ARDL form for estimation becomes:

$$\Delta LnRSGDP_t = \alpha_0 + \Sigma^n_{i=1}\alpha_{1i}\Delta LnRSGDP_{t-i} + \Sigma^n_{i=1}\alpha_{2i}\Delta LnBC_{t-i} + \Sigma^n_{i=0}\alpha_{3i}\Delta LnCBLAA_{t-i} + \Sigma^n_{i=0}\alpha_{4i}\Delta LnCBLAM_{t-i} + \Sigma^n_{i=0}\alpha_{5i}\Delta LnCBLAMQ_{t-i} + \Sigma^n_{i=0}\alpha_{6i}\Delta LnCBLARC_{t-i} + \varkappa_1 LnRSGDP_{t-1} + \varkappa_2 LnBC_{t-1} + \varkappa_3 LnCBLAA_{t-1} + \varkappa_4 LnCBLAM_{t-1} + \varkappa_5 LnBLAMQ_{t-1} + \varkappa_6 LnBLARC_{t-1} + \tilde{\upsilon}_1 ECT_{t-1} + \lambda_{1t} \quad \ldots\ldots\ldots\ldots\ldots (5)$$

Note: Δ = Differenced Operator; α = Short run parameter estimates; $\varkappa$ = Long run parameter estimates; α_0 = Constant term; ECT = which is lagged by one year represent the adjustment speed to equilibrium in the event of a distortion given the existence of a long run model; $\tilde{\upsilon}$ = the adjustment parameter.

A priori: The estimated coefficients are all expected to be greater than zero (> 0).

Data is sourced from the Central Bank of Nigeria's Statistical Bulletin (2018) for the period 1991 to 2018. It should be noted that while Hyndman (2014) favours 16 minimum observations, Simonton (1977) enlist 4 observations to suffice for OLS regression-based approach. However, Box and Tiao (1975) favours 50 but preferably 100 observations for Autoregressive Integrated Moving Average (ARIMA) models. Nevertheless, Hydnman and Athanasopoulos (2018) having acknowledged the import of asymptotic properties of data, conclude that it depends on the modelling approach and the planned intent of the analysis. Such that when a study is compelled to provide forecast from few data points than it would like to have, then 16 observations as a minimum can reasonably give adequate and reliable forecast.

Estimation Techniques and Procedures

The variables for this study were examined by ADF tests, which checked for unit root. In order to detect the long-run relationship between the Real Sector Gross Domestic Product (RSGDP) and the independent variables, the Auto Regressive Distributed Lag (ARDL) bound test was employed. The Auto Regressive Distributed Lag (ARDL) short run and long run form and bounds tests were used to estimate the short run and long run dynamics of the model. Furthermore, the Auto Regressive Distributed Lag (ARDL), Error Correction Regression Model (ECM) was used to estimate the speed of adjustment.

Data presentation, analysis and interpretation

Table 1: Descriptive statistics of macroeconomic variables of interest from 1991-2018

	RSGDP	CBLAA	CBLAM	CBLAMQ	CBLARC
Mean	16738.70	164.1998	686.4071	355.2951	358.9467
Maximum	31138.49	610.1497	2230.150	2155.862	1422.570
Minimum	7,165.00	5.01	10.91	0.54	3.57
Jarque-Bera	2.939229	6.231218	4.479444	17.79594	5.025079
Probability	0.230014	0.44351	0.106488	0.000137	0.081062
Observations	**28**	**28**	**28**	**28**	**28**

Source: Researcher's extraction from e-views 11 output.

Table 1 revealed the descriptive statistics of the variables of interest from 1991 to 2018. The real sector gross domestic product (RSGDP), bank consolidation (BC), commercial bank loans and advances to agriculture (CBLAA), commercial bank loans and advances to manufacturing (CBLAM), commercial bank loans and advances to mining and quarrying (CBLAMQ), and commercial bank loans and advances to real estate and construction (CBLARC) averaged at ₦16738.70 billion, ₦164.20 billion, ₦686.41 billion, ₦355.30 billion and ₦358.95 billion respectively between 1991 and 2018.

Maximum values of real sector gross domestic product (RSGDP), bank consolidation (BC), commercial bank loans and advances to agriculture (CBLAA), commercial bank loans and advances to manufacturing (CBLAM), commercial bank loans and advances to mining and quarrying (CBLAMQ), and commercial bank loan and advances to real estate and construction (CBLARC) stood at ₦31138.49 billion, ₦610.15 billion, ₦2230.15 billion, ₦2155.86 billion, and ₦1422.57 billion respectively. These connotes the highest values that were attributable to the performance of these variables over the timeframe used for this study.

Minimum values for real sector gross domestic product (RSGDP), bank consolidation (BC), commercial bank loans and advances to agriculture (CBLAA), commercial bank loans and advances to manufacturing (CBLAM), commercial bank loans and advances to mining and quarrying (CBLAMQ), and commercial bank loan and advances to real estate and construction (CBLARC) stood at ₦7,165.14 billion, ₦5.01 billion, ₦10.91 billion, ₦0.54 billion, and ₦ 3.57 billion respectively. These represent the lowest performance of these variables of interest over the period of analysis. Worthy of note is that there was no commercial bank loans and advances to the mining and quarrying (CBLAMQ) subsector in 1994 while the real estate and construction (CBLARC) subsector was also not funded between 1994 and 2007.

The Jarque-Bera test of normality for real sector gross domestic product (RSGDP), bank consolidation (BC), commercial bank loans and advances to agriculture (CBLAA), commercial bank loans and advances to manufacturing (CBLAM), commercial bank loans and advances to mining and quarrying (CBLAMQ), and commercial bank loans and

advances to real estate and construction (CBLARC) revealed values of 2.94, 4.67, 6.23, 4.48, 17.80 and 5.03 units respectively with corresponding high probability values. This implies that the variables of interest used in the research are normally distributed except commercial bank loans and advances to mining and quarrying (CBLAMQ).

Unit Root Test

Table 2: Unit root results of macroeconomic variables of interest

Variables	ADF t-test @ levels	Mackinnon Critical Value @ 5%	ADF t-test @ first difference	Mackinnon Critical Value @ 5%	Order of Integration
RSGDP	-3.244509	-3.05216			1(0)
CBLAA	2.587604	-2.981038	-5.997204	-2.981038	1(1)
CBLAM	3.617349	-3.004861	-5.007618	-2.981038	1(1)
CBLAMQ	-1.987625	-2.976263	-5.045863	-3.020686	1(1)
CBLARC	0.293357	-2.986225	-4.060345	-2.986225	1(1)

Source: Researcher's extraction from e-views 11output.

Note: if t*≤ADF (Critical Values) = Unit root does not exist.

Table 2 presented the result of the Augmented Dickey Fuller Unit Root test. The result revealed that the macroeconomic variables of interest used in the research are all integrated of order I(1) except the real sector GDP which is I(0) after a structural break was identified and removed accordingly. The probable reason for this break might be adduced to the fact that in 2002, the Central Bank of Nigeria (CBN) through the Universal Banking Guidelines (UBG), authorized banks to engage in non-core banking financial activities either directly as part of banking operations or indirectly through designated subsidiaries. The universal banking regime exposed banking business to greater risks that challenged the stability of the financial system. The banks also abandoned the core business of banking and focused on ancillary services that yielded higher rates of returns. Banks easily abused the process and used it as a conduit for the diversion of depositors' funds from the banks as equities into subsidiaries that became channels for siphoning funds. Thus, the real sector of the economy suffered greatly (CBN, 2010). Due to the occurrence of the mixed order of integration, the researcher adopted the ARDL methodology to check for the long run relationship among the variables, with results presented in Table 4. Prior to this, it is of import to select the lag order whose results are presented in Table 3.

Table 3: VAR Lag Order Selection Criteria

Endogenous variables: RSGDP BC CBLAA CBLAM CBLMQ CBLARC

Date: 06/11/20 Time: 12:49

Sample: 1 28

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-20.38184	NA	2.84e-07	1.954211	2.242174	2.039837
1	139.2610	236.5079*	3.22e-11*	-7.204516*	-5.188770*	-6.605129*

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Source: Researcher's extraction from e-views 11 output.

The VAR lag order selection criteria revealed the selection of lag 1 by the entire selection criterion as identified by the asterisk. As such, this becomes the optimal lag structure for the ARDL model (100010). The ARDL long run form and bounds test is estimated and the result is shown in Table 4 below.

Table 4: ARDL Long Run Form and Bounds Test

Dependent Variable	D (RSGDP)			
Selected Model	ARDL (100010)			
F-Bounds Test		**Null Hypothesis: No levels relationship**		
Test Statistics	**Value**	**Signif.**	**I(0)**	**I(1)**
			Asymptotic: n =1000	
F-Statistic	**6.402909**	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Source: Researcher's extraction from e-views 11 output.

Results from Table 4 revealed that the null hypothesis of no long run relationship exist is rejected since the F-statistic value 6.40 is greater than the upper bound I(1) which has a value of 3.38 at 5% level of significance. With the evidence of long run form as reported by the bounds test, the ARDL long run and short run models are estimated with results listed on Table 5.

Table 5: ARDL Short run and Long Run Form Models

Dependent Variable D (RSGDP)
Selected Model ARDL (100010)

Sample: 1991-2018 **Date:** 06/11/20 **Time:** 13:11

Included observations: 27

ARDL Short run model

Variable	**Coefficient**	**Std. Error**	**t-statistic**	**Prob.**
C	0.219372	0.416305	0.526950	0.6043
RSGDP(-1)*	-0.064464	0.118293	-0.544956	0.5921
BC**	-0.003396	0.024482	-0.138733	0.8911
CBLAA**	-0.002192	0.036852	-0.059492	0.9532
CBLAM**	0.023968	0.037805	0.633980	0.5337
CBLAMQ(-1)	0.012942	0.007466	1.733412	0.0992
CBLARC**	-0.003959	0.006483	-0.610726	0.5486
CBLAMQ	-0.001597	0.010505	-0.152001	0.8808

ARDL Long run model

Variable	**Coefficient**	**Std. Error**	**t-statistic**	**Prob.**
BC	-0.052687	0.451876	-0.116595	0.9084
CBLAA	-0.034010	0.597517	-0.056918	0.9552
CBLAM	0.371799	0.676227	0.549814	0.5889
CBLAMQ	0.200767	0.428023	0.469057	0.6444
CBLARC	-0.061416	0.183311	-0.335036	0.7413
C	3.403000	0.486967	6.988153	0.0000
ECM	**-0.064464**	**0.008394**	**-7.679463**	**0.0000**
R-squared	0.388873			
Adjusted R-squared	0.364428			
Durbin-Watson Stat	2.074060			
Log likelihood	**70.15348**			

Breuch-Pagan-Godfrey Heteroskedasticity Test

F-statistic	0.640093	Prob. F (7,19)	0.7178
Obs*R-squared	5.152223	Prob.Chi-square (7)	0.6414

Breuch-Godfrey Serial Correlation LM Test

F-statistic	0.052575	Prob. F (1,18)	0.8212
Obs*R-squared	0.078633	Prob.Chi-square (1)	0.7792

Source: Researcher's extraction from e-views 11 output.

The result from the short run model revealed that the 2004 bank consolidation policy (BC); commercial bank loans and advances to agriculture (CBLAA); and commercial bank loans to the mining and quarrying (CBLAMQ) and Commercial bank loans to real estate and construction subsector (CBLARC) had a negative and insignificant impact on the real

sector output (RSGDP) over the period of the study. These results are at variance with the a priori and disagree with the work of Medugu, Musa and Abalis (2019); and Oni, Akinlo and Oladepo (2014) that suggest significant and positive impact of commercial bank credits to the real sector output. However, commercial bank loans to manufacturing (CBLAM) exert a positive influence on the real sector output but its impact is insignificant. Furthermore, the coefficients of bank consolidation (BC) in the short run suggests that this policy was not impactful on real sector output.

In the long run, bank consolidation policy (BC); commercial bank loans to agriculture (CBLAA); and Commercial bank loans to real estate and construction subsector (CBLARC) maintained a negative and insignificant relationship with the real sector output. However, commercial bank loans to manufacturing (CBLAM) and commercial bank loans to the mining and quarrying (CBLAMQ) subsectors exert positive and insignificant influence on the real sector output. These findings revealed that the manufacturing and the mining and quarrying subsectors have the potentials of contributing positively to real sector output if adequate funding is provided.

The result on bank consolidation (BC) did not conform to a priori, however it agrees with the works of Achugamonu, Babajide, Olokoyo and Adeshina (2016); and Adeusi and Oke (2013) while disagreeing with the works of Ene and Onwumere (2016), and Gidigbi (2017). Thus, bank consolidation (BC) has not contributed positively and significantly to the real sector GDP of the Nigerian economy in the pre and post consolidation era, given by the duration of the study. This may be due to commercial banks' non-compliance with the rules and regulations guiding the implementation of the policy. Furthermore, the implementation of the universal banking policy in 2001, which permitted deposit money banks (DMBs) to engage in non-traditional banking operations is another likely factor, which must have caused diversions in the funding of the real sector, within the period of this study. On the whole, the joint influence of the independent variables on real sector output (RSGDP) is significant with a value of 70.15 as indicated by the loglikelihood. This implies that these subsectors of the real sector should be funded adequately, since they are highly dependent on each other for the overall growth of the real sector of the economy.

The speed at which the Real Sector Gross Domestic Product (RSGDP) returns to equilibrium (ECM) due to change in the regressors is negative and significant with a value of -0.064464 (6.4 percent). The adjusted R-squared suggests that the total representation of the regressors as explaining the real sector GDP is low at a value of 36 percent, implying that other factors influencing real sector GDP, but not captured in the model accounted for 64 percent variations in real sector GDP. The results of the Breuch-Pagan-Godfrey heteroskedasticity test and the Breuch-Godfrey serial correlation LM test revealed that the null hypothesis of no heteroskedasticity and no autocorrelation is accepted; this is desirable for the model.

Conclusion

This study investigated the relationship between commercial bank loans and real sector output in Nigeria from 1991 to 2018 with the 2004 banking consolidation policy as the basis for the comparative analysis. The study concluded based on the findings of the study that bank consolidation (BC) had a negative and insignificant relationship with the real sector output within the period of the study both in the short run and in the long run. Second, commercial bank loans to manufacturing (CBLAM) had a positive and insignificant influence on the Real Sector Gross Domestic Product (RSGDP) both in the short run and in the long run. Third, commercial bank loans to agriculture (CBLAA) and commercial bank loans to real estate and construction (CBLARC) both maintained a negative and insignificant relationship with the real sector output both in the short run and long run. Fourth, commercial bank loans to mining and quarrying had a negative influence on real sector output (RSGDP) in the short run but exerted a positive influence on the real sector output (RSGDP) in the long run.

Recommendations

Based on the findings of this study, it is recommended that:

i. Firstly, it is not enough to consolidate. The Central Bank of Nigeria (CBN) should monitor the activities of Deposit Money Banks (DMBs) and ensure that the real sector of the economy is funded adequately in order to achieve the supposed objective of the banking policy.
ii. Secondly, DMBs should increase their lending to farmers in the country to enable them produce enough agricultural products that will positively and significantly influence the real sector output.
iii. Thirdly, attention should be paid to the real estate and construction subsector with the intention of increasing the flow of loans into the subsector by DMBs in order to increase productivity.
iv. Fourthly, the manufacturing, mining and quarrying subsectors should be adequately supplied with loans to increase their contributions to the real sector since they have the potentials of impacting positively on real sector output.

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