



Effect of Deposit Money Banks' Lending Activities on the Growth of Real Sector of Nigeria's Economy: A Disaggregated Approach 1986 – 2019

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Authors' contributions

This study was carried out in collaboration among all authors. Author ENM conceptualized the study, wrote the first draft of the manuscript and critically reviewed it thereafter. Author PKA sourced and managed relevant literature. Author ACA sourced the data, performed the analysis and interpreted the result of the econometric analysis. All authors read and approved the final manuscript.

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ABSTRACT

To the best of our knowledge, we presented an analysis of how the growth of Nigeria's real sector has been affected by lending activities of deposit money banks. We examined how agricultural, industrial, and building & construction sectors of the real economy have grown owing to the fund they received from the deposit money banks moderated by the cost of fund/interest rate amidst information from 1986 to 2019. Model estimation adhered strictly to the Autoregressive Distributive Lag (ARDL) model/bound test for a long and short-run relationship. How agricultural, industrial, and building & construction sectors of the real economy have been affected by deposit money banks' lending activities were evaluated following the approach of the granger causality test. From the result of the analysis, we concluded that deposit money banks' lending activities have not significantly affected the growth of the real sector of the Nigerian economy. The equity investment scheme of small and medium enterprises requires that all deposit money banks operating in the

country to keep 10 percent of their net income in an attempt to encourage the growth of small and medium enterprises. Although the Bankers' Committee willingly came up with the initiative in 1999, we urge the Bankers' Committee to review upward to let say 15 – 20 percent. This will in no small measure cause an upsurge in the output agricultural, industrial, and building & construction sectors of the real economy which are dominated by small and medium enterprises.

Keywords: Real sector; deposit money banks' lending.

1. INTRODUCTION

The interrelated sectors of the economy according to Aliyu and Yusuf [1] are the real, external, fiscal or government, and financial sectors. The activities of the real sector include agriculture, industry, building and construction, and services as opposed to the part of the economy that is concerned with buying and selling on the financial markets. The sector is strategic for a variety of reasons. The production of goods and services to the extent that the welfare of the citizens are effected positively depicts the successfulness of government policies towards growth and development of the economy. The real sector of the economy is faced with the challenge of required finance for production. Even if the credit is available, the present economic recession coupled with high interest rate have made it difficult for individuals and corporate entities to access credit for productive economic activities.

There have been studies in this subject matter however, there are a lot of conflicting results. Ubesie, Echeboba, Chris-Ejiogu, and Ananwude [2], Olowofeso, Adeboye, Adejo, Basse, and Abraham [3], Ogunmuyiwa, Okuneye, and Amaefule [4], Nteegah [5], Makinde [6], Udoka, Mbat, and Duke [7], Ayeomoni and Aladejana [8], Okosodo [9], Nwankwo [10], etc. have utilized different tools in econometrics to discuss the nexus between banks credit as it related with the growth and development of the Nigerian economy but that of Ubesie, Echeboba, Chris-Ejiogu, and Ananwude [2] was more methodical as the real economy was disaggregated into four sectors. This study differs from previous studies in three ways. First, we use the growth rate of credit to the three sectors in the real economy as well as their output. We are of the view that the growth rate of credit to the different sectors of the real economy captures the actual change in deposit money banks' credit to the real economy alongside, these sectors' contribution to the real gross domestic product from previous to current year. Secondly, we introduced the prime lending rate as a macroeconomic variable that may

inhibit the ability of productive economic units to access credit from deposit money banks. When the prime lending is high, the cost of the fund would also be high, whereas the reverse is the case when the prime lending rate is low. Finally, we improved on the period covered/number of observations by using time series data spanning from 1986 to 2019.

The background of this paper is introduced in section one. Section two features related literature review; section three unveils the methodological approach utilized; section four presents our analysis and the discussion as well, while in section five, recommendations and policy implications were stated.

2. LITERATURE REVIEW

The concept of lending and the real sector is known in finance literature. Consequently, we are very precise in discussing them. Deposit money banks' lending activity disguised in an overdraft or a full loan deal with the credit they extend to the economy at a specified rate of cost/interest rate. Deposit money banks do not just lend to customers as part of its function, they do so chiefly on three principles: Safety, suitability, and profitability. For the banks to perform their function of lending to stimulate the real economy, they must first mobilize credit from the surplus units of the economy. The real sector of any economy houses the production of goods and services which are attributed to national output. According to Ubesie, Echeboba, Chris-Ejiogu and Ananwude [2], the productive activities of an economy rest in the real sector. This is completely different from other sectors like the financial sector that is concerned with financial transactions.

The Finance-Led Growth Hypothesis was the theory we based this study on. The theory views the importance of the development of the financial system as a catalyst for the growth and development of an economy. The theory assumes that the efficient and effective intermediation function of the financial system is

a stimulant to the growth of the real sector. This proposition is one that we wish to prove or rebut in this research, to know whether deposit money banks contribute to growth and development. The empirical literature on deposit money banks' lending activities has witnessed different contributions over the years, some researchers agree that banks' lending has a significant effect and casual relationship with economic growth and development, while some conclude otherwise and others have mixed findings. A consequence of this, we only reported the findings of various authors without following the orthodox flamboyance of stating the research topic, country studied, method of data analysis, and period covered among others. Previous studies of Olowofeso, Adeboye, Adejo, Bassey, and Abraham [3], Ayeomoni and Aladejana [8], Okosodo [9], Udoka, Mbat, and Duke [7], Akujobi and Nwezeaku [11], Ogar, Nkamare, and Effiong [12], Uzomba, Chukwu, Jumbo, and Nwankwo [13] and Nwankwo [10] have found the existence of a positive significant relationship between banks' credit and economic growth in Nigeria. The significant effect of banks' lending activities has been reported in Anyanwu, Ananwude, and Okoye [14], Ogunmuyiwa, Okuneye, and Amaefule [4], Nteegah [5], Okafor, Ezeaku, and Ugwuegbe [15], Mohanty, Kumar and Patra [16], Makinde [6], Atseye, Edim and Ezeaku [17], Bakare, Akano, and Kazeem [18], Iwedi, Igbaniho, and Onuegbu [19], Olowofeso, Adeleke, and Udoji [20], Oni, Akinlo, and Oladepo [21], Yakubu and Affoi [22], Obilor [23], Leitao [24], Oluitan [25], Akpansung and Babalola [26]. On the contrarily, Fapetu and Obalade [27], Nwaru and Okorontah [28],

Ojeaga, Odejimi, Okhiku, and Ojeaga [29] and Ehikioya and Mohammed [30] established that banking lending activities have not affected growth of Nigeria economy. Ubesie, Echekoba, Chris-Ejiogu, and Ananwude [2] have it that deposit money banks' credit has not significantly affected the Nigerian real sector.

3. METHODOLOGY

Model estimation was in line with the technique of Autoregressive Distributive Lag (ARDL) model/bound test for a long and short-run relationship. How agricultural, industrial, and building & construction sectors of the real economy have grown owing to the fund they received from the deposit money banks moderated by the cost of fund/interest rate were evaluated following the approach of the granger causality test. The data spanned from 1986 to 2019 and sourced from the Central Bank of Nigeria statistical bulletin. The real sector of the economy was decomposed into three sectors: agriculture, industrial, and building & construction. Equally, deposit money banks' lending to these sectors were also explored. Agricultural, industrial, and building & construction real gross domestic products serve as the dependent variables, while deposit money banks' lending to agricultural, industrial, and building & construction were the independent variables moderated by prime lending rate. The Autoregressive Distributive Lag (ARDL) form for the three sectors are stated in Equ. 1 – 3; the long-run estimates in Equ. 4 – 6; whereas the short-run estimates in Equ. 7 – 9.

3.1 Autoregressive Distributive Lag (ARDL) Estimates

$$\begin{aligned}
 ARGDP_t = & \beta_{01} + \beta_{11}ARGDP_{t-1} + \beta_{21}DMBLA_{t-1} + \beta_{31}PLR_{t-1} + \sum_{i=1}^p a_{1i}ARGDP_{t-i} + \sum_{i=1}^q a_{2i}DMBLA_{t-i} \\
 & + \sum_{i=1}^q a_{3i}PLR_{t-i} + \varepsilon_t
 \end{aligned} \tag{1}$$

$$\begin{aligned}
 IRGDP_t = & \beta_{01} + \beta_{11}IRGDP_{t-1} + \beta_{21}DMBLI_{t-1} + \beta_{31}PLR_{t-1} + \sum_{i=1}^p a_{1i}IRGDP_{t-i} + \sum_{i=1}^q a_{2i}DMBLI_{t-i} \\
 & + \sum_{i=1}^q a_{3i}PLR_{t-i} + \varepsilon_t
 \end{aligned} \tag{2}$$

$$\begin{aligned}
 BCRGDP_t = & \beta_{0i} + \beta_{1i} BCRGDP_{t-1} + \beta_{2i} DMBLBC_{t-1} + \beta_{3i} PLR_{t-1} + \sum_{i=1}^p a_{1i} BCRGDP_{t-i} \\
 & + \sum_{i=1}^q a_{2i} DMBLBC_{t-i} + \sum_{i=1}^q a_{3i} PLR_{t-i} + \varepsilon_t
 \end{aligned}
 \tag{3}$$

3.1.1 Long – run estimates

$$ARGDP_t = a_0 + \sum_{i=1}^p a_{1i} ARGDP_{t-i} + \sum_{i=0}^{q_1} a_{2i} DMBLA_{t-i} + \sum_{i=0}^{q_2} a_{3i} PLR_{t-i} + \varepsilon_t
 \tag{4}$$

$$IRGDP_t = a_0 + \sum_{i=1}^p a_{1i} IRGDP_{t-i} + \sum_{i=0}^{q_1} a_{2i} DMBLI_{t-i} + \sum_{i=0}^{q_2} a_{3i} PLR_{t-i} + \varepsilon_t
 \tag{5}$$

$$BCRGDP_t = a_0 + \sum_{i=1}^p a_{1i} BCRGDP_{t-i} + \sum_{i=0}^{q_1} a_{2i} DMBLBC_{t-i} + \sum_{i=0}^{q_2} a_{3i} PLR_{t-i} + \varepsilon_t
 \tag{6}$$

3.1.2 Short – run estimates

$$\begin{aligned}
 ARGDP_t = & a_0 + \sum_{i=1}^p a_{1i} ARGDP_{t-i} + \sum_{i=1}^q a_{2i} DMBLA_{t-i} + \sum_{i=1}^q a_{3i} PLR_{t-i} + \alpha ECM_{t-i} \\
 & + \varepsilon_t
 \end{aligned}
 \tag{7}$$

$$\begin{aligned}
 IRGDP_t = & a_0 + \sum_{i=1}^p a_{1i} IRGDP_{t-i} + \sum_{i=1}^q a_{2i} DMBLI_{t-i} + \sum_{i=1}^q a_{3i} PLR_{t-i} + \alpha ECM_{t-i} \\
 & + \varepsilon_t
 \end{aligned}
 \tag{8}$$

$$\begin{aligned}
 BCRGDP_t = & a_0 + \sum_{i=1}^p a_{1i} BCRGDP_{t-i} + \sum_{i=1}^q a_{2i} DMBLBC_{t-i} + \sum_{i=1}^q a_{3i} PLR_{t-i} + \alpha ECM_{t-i} \\
 & + \varepsilon_t
 \end{aligned}
 \tag{9}$$

Where:

ARGDP = Agricultural sector real gross domestic product

IRGDP = Industrial sector real gross domestic product

BCRGDP = Building and construction sector real gross domestic product

DMBLA = Deposit money banks' lending to the agricultural sector

DMBLI = Deposit money banks' lending to the industrial sector

DMBLBC = Deposit money banks' lending to the building and construction sector

PLR = Prime lending rate

β_i = parameters not known but estimated in the model

a_{1i} - a_{3i} = coefficient of the short-run dynamics convergence to equilibrium of the model estimate

α = speed of adjustment to equilibrium

ε = random term

4. RESULTS OF ANALYSIS AND DISCUSSION

We started with the presentation of the descriptive attributes of the data as shown in Table 1. The focal point was on their minimum and maximum values, the number of observations, mean, and standard deviations. The real sector of the economy has a minimum and maximum values of -3.29, and 35.72 for the agricultural sector real gross domestic product; -9.71, and 16.17 for the industrial sector real gross domestic product; and -7.2, and 13.56 for the building and construction sector real gross domestic product. For deposit money banks' lending activities, lending to the agricultural sector has -77.63, and 66.98 as the minimum and maximum values; -5.32, and 47.73 for the industrial sector, and -47.81, and 40.01 for the building and construction sector. Similarly, the minimum and maximum values of the prime lending rate were observed as 10.50 and 29.80 respectively. The mean of the real sector is reported as 5.32, 2.35, and 5.77 respectively for the agricultural, industrial, and building & construction sectors. Deposit money banks' lending activities have 13.90, 16.75, and 2.26 equivalently for agriculture, industrial, and building & construction sectors. Prime lending

shows the mean of 18.59 and a standard deviation of 3.74. The standard deviation for agricultural, industrial, and building & construction sectors are 5.87, 5.39, and 5.03, while lending received by these sectors is 27.76, 12.29, and 14.90 accordingly.

The robustness of the estimated models was evaluated via the serial correlation LM, heteroskedasticity, and Ramsey Reset Specification tests. The crux of this is to make certain the dependability of the statistical output. With inference from Tables 2 – 4, the consistency of the models is realized as the p-values of the f-statistics are insignificant at a significant level of 5 percent.

Tables 5 – 6 presents the stationarity test of the data executed with the Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) test. It is imperative to check the unit root properties of data to avoid stationarity defects that is often attributed to most time-series data. This unit root test absolves the data of stationarity defect that may undermine the consistency of the statistical output as the ADF and PP test statistics are greater than the critical value at a 5 percent significant level.

Table 1. Descriptive attributes of data

	Min.	Max.	Obs.	Mean	Std. Dev.
Panel A: Real Sector of the Economy					
ARGDP	-3.290000	35.72000	34	5.317647	5.872591
IRGDP	-9.710000	16.17000	34	2.352353	5.389716
BCRGDP	-7.270000	13.56000	34	5.765294	5.032996
Panel B: Banks' Lending Activities					
DMBLA	-77.63000	66.98000	34	13.90147	27.76390
DMBLI	-5.320000	47.73000	34	16.75471	12.29059
DMBLBC	-47.81000	40.01000	34	2.259118	14.90440
Panel C: Moderating Variable					
PLR	10.50000	29.80000	34	18.59059	3.741623

Source: Statistical Output from E-views 10.0

Table 2. Serial correlation LM test

Statistical Estimates	F-statistic	P-value
Equ. 1: ARGDP → DMBLA + PLR	0.990071	0.3846
Equ. 2: IRGDP → DMBLI + PLR	0.021882	0.9784
Equ. 3: BCRGDP → DMBLBC + PLR	0.919365	0.4109

Source: Statistical Output from E-views 10.0

Table 3. Heteroskedasticity test

Statistical Estimates	F-statistic	P-value
Equ. 1: ARGDP → DMBLA + PLR	1.676016	0.1939
Equ. 2: IRGDP → DMBLI + PLR	2.126969	0.1039
Equ. 3: BCRGDP → DMBLBC + PLR	0.351300	0.7885

Source: Statistical Output from E-views 10.0

Table 4. Ramsey reset test

Statistical Estimates	F-statistic	P-value
Equ. 1: ARGDP → DMBLA + PLR	0.149524	0.7019
Equ. 2: IRGDP → DMBLI + PLR	2.682219	0.0873
Equ. 3: BCRGDP → DMBLBC + PLR	2.339875	0.1156

Source: Statistical Output from E-views 10.0

Table 5. Result of ADF test

Variables	ADF Test Statistic	Test Value at 5%	Remark
Panel A: Real Sector of the Economy			
ARGDP	-5.644305	-2.954021	Stationary
IRGDP	-5.359028	-2.954021	Stationary
BCRGDP	-4.007896	-2.954021	Stationary
Panel B: Banks' Lending Activities			
DMBLA	-6.411744	-2.954021	Stationary
DMBLI	-4.607006	-2.954021	Stationary
DMBLBC	-8.100321	-2.957110	Stationary
Panel C: Moderating Variable			
PLR	-4.493669	-2.954021	Stationary

Source: Statistical Output from E-views 10.0

Table 6. Result of PP test

Variables	PP Test Statistic	Test Value at 5%	Remark
Panel A: Real Sector of the Economy			
ARGDP	-5.647084	-2.954021	Stationary
IRGDP	-5.350079	-2.954021	Stationary
BCRGDP	-4.000881	-2.954021	Stationary
Panel B: Banks' Lending Activities			
DMBLA	-6.603416	-2.954021	Stationary
DMBLI	-4.659619	-2.954021	Stationary
DMBLBC	-6.744422	-2.954021	Stationary
Panel C: Moderating Variable			
PLR	-4.672528	-2.954021	Stationary

Source: Statistical Output from E-views 10.0

The confirmation of the unit root properties of the data gave us the go-ahead to ascertain the long-run relationship between deposit money banks' lending activities and the growth of the real sector of the economy following the bound test approach. The statistical output in Tables 7 – 9 provides evidence that there exists a long run relationship between deposit money banks'

lending activities and the growth of the real sector of the economy. The support to this claim is that the f-statistics of 8.342804, 9.284429, and 4.804705 respectively in Tables 7 – 9 are higher than the lower and upper bound test values of 3.10 and 3.87 at a significant level of 5 percent.

With the determination of the presence of a co-integration relationship between deposit money banks' lending activities and the growth of the real sector of the economy, we proceeded to the evaluation of the nature of the relationship in the long run as well as the speed of adjustment to equilibrium. In Table 10, we found that in the long run that there is a positive relationship between deposit money banks' lending to agriculture, the output of the agricultural sector, and prime lending rate however, this is insignificant. The speed of adjustment unveils the supposed negative sign, and significant. The implication is that the model moves towards equilibrium, and about 104.19 percent of error in the previous period is corrected in the current year. The statistical output in Table 11 gives insight that lending to the industrial sector is negatively

related to the sector's output in the long-run. That notwithstanding, it was observed that the prime lending rate remains positive in the long-run when deposit money banks' lending activity is equated with the out of the industrial sector. The error correction coefficient points toward the ability of the model to shift to equilibrium and 107.20 percent of the previous year error was addressed in the current year. On the nature of the long-run relationship between deposit money banks' lending and the output of the building and construction sector, Table 12 depicts that it is negative and the same with the prime lending rate. Even though the expected sign of the error correction model was right, only 68.55 percent of error rectified in the current year was attributed to the previous year.

Table 7. Bound test for the agricultural sector and deposit money banks' lending

T-Test	5% Critical Value Bound		Remark
F-Statistic	Lower Bound	Upper Bound	
8.342804	3.10	3.87	Null Hypothesis Rejected

Source: Statistical Output from E-views 10.0

Table 8. Bound test for the industrial sector and deposit money banks' lending

T-Test	5% Critical Value Bound		Remark
F-Statistic	Lower Bound	Upper Bound	
9.284429	3.10	3.87	Null Hypothesis Rejected

Source: Statistical Output from E-views 10.0

Table 9. Bound test for the building & construction sector and deposit money banks' lending

T-Test	5% Critical Value Bound		Remark
F-Statistic	Lower Bound	Upper Bound	
4.804705	3.10	3.87	Null Hypothesis Rejected

Source: Statistical Output from E-views 10.0

Table 10. ECM regression of agricultural sector and deposit money banks' lending

Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.084248	5.895132	-0.353554	0.7262
ARGDP (-1)*	-1.041982	0.182942	-5.695699	0.0000
DMBLA	0.004063	0.039401	0.103125	0.9186
PLR	0.396905	0.316702	1.253245	0.2201
CointEq(-1)*	-1.041982	0.171711	-6.068230	0.0000
Nature of Relationship in the Long Run Equation				
DMBLA	0.003900	0.037898	0.102897	0.9188
PLR	0.380914	0.301071	1.265195	0.2159
C	-2.000274	5.676735	-0.352363	0.7271

Source: Statistical Output from E-views 10.0

Table 11. ECM regression of industrial sector and deposit money banks' lending

Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-9.027720	6.120957	-1.474887	0.1514
IRGDP(-1)*	-1.072015	0.177793	-6.029557	0.0000
DMBLI	-0.133113	0.082438	-1.614703	0.1176
PLR(-1)	0.740804	0.343754	2.155043	0.0399
D(PLR)	0.184148	0.277540	0.663499	0.5124
CointEq(-1)*	-1.072015	0.167183	-6.412235	0.0000
Nature of Relationship in the Long Run Equation				
DMBLI	-0.124171	0.075596	-1.642546	0.1117
PLR	0.691039	0.316016	2.186723	0.0373
C	-8.421260	5.715958	-1.473289	0.1518

Source: Statistical Output from E-views 10.0

Table 12. ECM regression of building & construction sector and deposit money banks' lending

Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.01839	4.694639	2.134006	0.0414
BCRGDP (-1)*	-0.685495	0.166109	-4.126777	0.0003
DMBLBC	-0.047560	0.056631	-0.839829	0.4079
PLR	-0.309629	0.241139	-1.284025	0.2093
CointEq(-1)*	-0.685495	0.148856	-4.605103	0.0001
Nature of Relationship in the Long Run Equation				
DMBLBC	-0.069381	0.082628	-0.839678	0.4080
PLR	-0.451686	0.369605	-1.222079	0.2315
C	14.61482	7.054420	2.071725	0.0473

Source: Statistical Output from E-views 10.0

The short-run relationship in Table 13 discloses that there is an insignificant positive relationship between deposit money banks' lending to agriculture and agricultural sector output, whereas the prime lending rate dispels a positive but insignificant relationship with out of the agricultural sector. The coefficient of the constant is negative, an indication that when deposit money banks lend to agriculture on the condition that the prime lending rate would be constant, agricultural sector output would be on a negative record. The adjusted R-square followed the same scenario as it is negative (-4.07 percent), a shred of evidence that deposit money banks' lending to agriculture moderated by prime lending rate would not positively explain the changes in agricultural output within the period under study. This is supported by the f-statistic (0.58) which is insignificant (0.63) at a 5 percent level of significance even though the Durbin Watson coefficient (1.82) cleared the model of the presence of autocorrelation. For the ARDL short-run relationship in Table 14, deposit money banks' lending to industries was found to be insignificantly and negatively related with the industrial sector output, while the prime lending

rate was positively related with the output of the industrial sector. This is contrary to theoretical expectations for an emerging economy like Nigeria. Holding deposit money banks' lending to agriculture constant as well as the prime lending rate, agricultural sector output would still not improve. This is affirmed by the adjusted R-square which only explained a paltry 5.72 percent changes in the value of agricultural output growth. Even though the Durbin Watson did not detect any issue of autocorrelation, the f-statistic (1.49), and p-value (0.23) give credit to the paltry change in the industrial sector output attributed to variation in deposit money banks' lending to industries amidst high prime lending rate. In Table 15, we found evidence also that the output of the building & construction sector was negatively and insignificantly related to the loans received from the deposit money banks. Though the prime lending rate was negatively related to the output of the building & construction sector, it is still not significant. The output of the building & construction sector would only improve by a factor of 10.02 on the assumption that deposit money banks' lending and prime lending rate remain constant, and this is still small for an

Table 13. Short-run ARDL of agricultural sector and deposit money banks' lending

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ARGDP(-1)	-0.041982	0.182942	-0.229480	0.8201
DMBLA	0.004063	0.039401	0.103125	0.9186
PLR	0.396905	0.316702	1.253245	0.2201
C	-2.084248	5.895132	-0.353554	0.7262
Adjusted R-squared	-0.040681	Durbin-Watson stat		1.8153
F-statistic	0.583036	Prob (F-statistic)		0.6309

Source: Statistical Output from E-views 10.0

Table 14. Short-run ARDL of industrial sector and deposit money banks' lending

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IRGDP(-1)	-0.072015	0.177793	-0.405050	0.6885
DMBLI	-0.133113	0.082438	-1.614703	0.1176
PLR	0.184148	0.277540	0.663499	0.5124
PLR(-1)	0.556656	0.285827	1.947529	0.0616
C	-9.027720	6.120957	-1.474887	0.1514
Adjusted R-squared	0.057210	Durbin-Watson stat		1.9954
F-statistic	1.485455	Prob (F-statistic)		0.2333

Source: Statistical Output from E-views 10.0

Table 15. Short-run ARDL of building & construction sector and deposit money banks' lending

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BCRGDP(-1)	0.314505	0.166109	1.893363	0.0683
DMBLBC	-0.047560	0.056631	-0.839829	0.4079
PLR	-0.309629	0.241139	-1.284025	0.2093
C	10.01839	4.694639	2.134006	0.0414
Adjusted R-squared	0.104538	Durbin-Watson stat		1.9491
F-statistic	2.245251	Prob (F-statistic)		0.1041

Source: Statistical Output from E-views 10.0

emerging economy like Nigeria. The adjusted R-square only portrays that 10.45 percent changes in the output of the building & construction sector were due to the joint influence of lending received by this sector from the deposit money banks, and the prime lending rate. However, the f-statistic (2.24) and p-value (0.10) would not statistically align with this result. The Durbin Watson did not in any way point towards the presence of autocorrelation in the estimated model.

In our effect to determine how Nigeria's real sector has been affected by the lending activities of the deposit money banks, the granger causality test as stated in section three of this study was employed. Our insistence of the usage of the granger causality test is on the premises that for a variable to affect another, it must have the tenacity to cause it to move towards its direction. From the output of statistical analysis in

Table 16, there is no causal effect of deposit money banks' lending activities on the growth of the real sector of the Nigerian economy. There is no objection to this on the argument that the p-values of 0.7603 for deposit money banks' lending to agriculture; 0.4277 for industries, and 0.4381 for building & construction are insignificant at a 5 percent level of significance. This is an indication that causality does not flow or run from either direction hence, no significant effect of deposit money banks' lending activities on the growth of the real sector of Nigeria's economy. The prime lending rate was also found to have no significant effect on the growth of the real sector of the economy within the period studied.

We started the discussion of findings by first, looking at Tables 7 – 9 were the statistical output revealed the existence of a long-run relationship between deposit money banks' lending activities

Table 16. Granger causality test

Null Hypothesis:	Obs	F-Statistic	Prob.	Remarks
DMBLA does not Granger Cause ARGDP	33	0.09480	0.7603	No Causality
ARGDP does not Granger Cause DMBLA		0.14349	0.7075	No Causality
PLR does not Granger Cause ARGDP	33	0.01586	0.9006	No Causality
ARGDP does not Granger Cause PLR		0.22205	0.6409	No Causality
DMBLI does not Granger Cause IRGDP	33	0.64642	0.4277	No Causality
IRGDP does not Granger Cause DMBLI		0.14176	0.7092	No Causality
PLR does not Granger Cause IRGDP	33	2.82514	0.1032	No Causality
IRGDP does not Granger Cause PLR		0.01868	0.8922	No Causality
DMBLBC does not Granger Cause BCRGDP	33	0.61754	0.4381	No Causality
BCRGDP does not Granger Cause DMBLBC		0.46063	0.5025	No Causality
PLR does not Granger Cause BCRGDP	33	0.66366	0.4217	No Causality
BCRGDP does not Granger Cause PLR		0.06768	0.7965	No Causality

Source: Statistical Output from E-views 10.0

and the growth of the real sector of the Nigerian economy. Theoretically, it is expected, especially for an emerging economy like Nigeria that her financial system is still at its developing stage. However, based on the reality of the macroeconomic environment, such an assertion would not be said to exist. Nigeria depends on importation for her basic consumption. Aside from the lack of basic infrastructures to accelerate the growth of the real economy, deposit money banks see the real economy as very vulnerable to uncertainty in macroeconomic fundamentals. In the real sense, they are not to blame as they are not charity organizations, there are in business to make a profit, and offset their obligations to shareholders. Taking a swipe at the nature of the relationship in the short-run as depicted in Tables 13 – 15, it was revealed that deposit money banks' activities have in no way related significantly with the growth of the real sector of the economy. This is in disagreement with the results of Olowofeso, Adeboye, Adejo, Basse, and Abraham [3], Ayeomoni and Aladejana [8], Okosodo [9], Udoka, Mbat, and Duke [7], Akujuobi and Nwezeaku [11], Ogar, Nkamare and Effiong [12], Uzomba, Chukwu, Jumbo and Nwankwo [13] and Nwankwo [10] that there is a positive significant relationship between banks' credit and economic growth in Nigeria. This appears so absurd when you look at the Adjusted R-square that provided evidence that deposit money banks' lending activities would only account for a paltry change in the performance of the real sector. This is not the case in many European and Asian countries where the banking sector has helped in the growth of their real sector.

We observe from the granger causality test that deposit money banks' activities have no significant effect on the growth of the real economy. This supports the findings of Ubesie, Echekeba, Chris-Ejiogu, and Ananwude [2]. It is also in line with Fapetu and Obalade [27], Nwaru and Okorontah [28], Ojeaga, Odejimi, Okhiku, and Ojeaga [29] and Ehikioya and Mohammed [30] who have established that banking lending activities have not affected the growth of Nigeria economy. On the other hand, it refutes the findings of Anyanwu, Ananwude, and Okoye [14], Ogunmuyiwa, Okuneye, and Amaefule [4], Nteegah [5], Okafor, Ezeaku, and Ugwuegbe [15], Mohanty, Kumar, and Patra [16], Makinde [6], Atseye, Edim, and Ezeaku [17], Bakare, Akano, and Kazeem [18], Iwedi, Igbanibo, and Onuegbu [19], Olowofeso, Adeleke, and Udoji [20], Oni, Akinlo, and Oladepo [21], Yakubu and Affoi [22], Obilor [23], Leitao [24], Oluitan [25], Akpansung and Babalola [26] that banks' lending activities have significantly influenced the growth of the real sector. In reality, many factors may be the reason for this situation. For instance, investors see the government as not sincere in terms of ease of doing business owing to the incidence of multiple taxations by Federal, State, and Local governments. Furthermore, the government does little to encourage industries in Nigeria to grow and compete globally. There are dearth of basic infrastructures (power supply, good roads, telecommunication, etc.) for industries to operate at a less cost relative to other developed countries of the world. Where capital projects are awarded in yearly budgets, there are either uncompleted or abandoned without the government prosecuting the parties involved in the contract execution. Sometimes,

people in the realms of government affairs embezzle the fund allocated for these capital projects that would upsurge the growth of the real sector of the economy. Agriculture which Nigeria relied upon in the 1960s through the 1970s as main source of foreign exchange has been in-fact completely abandoned by the government owing to the discovery of oil in large quantities, especially in the Niger Delta region of the country. This attitude by the government may be connected to the preference that deposit money banks' have for the oil and gas sector relative to the other sectors of the economy. Nigeria depends vehemently on oil revenue for her yearly budget.

5. CONCLUSION AND POLICY IMPLICATIONS

To the best of our knowledge, in this study, we presented an analysis of the effect of deposit money banks' lending activities on the growth of the real sector of the Nigerian economy. The effect of deposit money banks' lending activities on agricultural, industrial, and building & construction sectors output were specifically evaluated. Model estimation was in line with the technique of Autoregressive Distributive Lag (ARDL) model/bound test for a long and short-run relationship. How the various sectors of the real economy have been affected by deposit money banks' lending activities were evaluated following the approach of the granger causality test, and using data that spanned from 1986 to 2019. On personal note, following the Finance Led Hypothesis and the output of the Granger Causality test, we are of the opinion that deposit money banks' lending to the different sectors of the real economy should significantly affect the growth of the real economy. However, it is disappointing to state that the growth of the real economy is independent of the credit/fund received from the deposit money banks operating in the country. Consequently, we concluded that deposit money banks' lending activities have not significantly affected the growth of the real sector of the Nigerian economy.

We are of the perspective that the Central Bank of Nigeria: the apex regulator of the banking system to liaise with deposit money banks to lend a considerable amount of the deposit mobilized from surplus economic agents to various sectors in the real economy in an attempt to improve national output. This could be realized by way of reducing the monetary policy rate from

12.5 percent (as of 31st August 2020) to say 6 – 8 percent. This will assist the deposit money banks to reduce the interest rate they charge in extending to the economy. Deposit money banks charge between 20 – 22 percent to give loans. The equity investment scheme of small and medium enterprises requires that all deposit money banks operating in the country to keep 10 percent of their net income in an attempt to encourage the growth of small and medium enterprises. Although the Bankers' Committee willingly came up with the initiative in 1999, we urge the Bankers' Committee to review upward to let say 15 – 20 percent. This will in no small measure cause an upsurge in the output agricultural, industrial, and building & construction sectors of the real economy which are dominated by small and medium enterprises.

The results revealed a positive and significant relationship between deposit volume and loan and advances in the selected banks. The study recommends that future researchers should investigate other factors which may exert some influence on the lending behaviour of deposit money banks in Nigeria beside deposit volume.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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