EFFECT OF BANK LENDING ON ECONOMIC GROWTH OF NIGERIA

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Abstract

Bank lending or credit is one of the monetary instruments use by government through CBN to control banks as well as boosting the nations activities. This study examinesthe effect of lending by Deposits Money Banks' (DMBs) on economic growth of Nigeria from 1981 to 2016. The population of study is 64 DMBs that includes 45 defunct and 19 existing DMBs operating in the Nigeria banking industry as at December, 2016. The entire population constitute the sample frame for the study and tool for analysis is regression.The study found that estimated coefficient Beta values of the DMBs' lending and DMBs' lending rate fall withinlower and upper boundary of confident interval at 95%. This means bank lending affects the economic growth of Nigeria. The regression results indicated that DMBs' lending has positive and significant effect on economic growth. But DMBs' lending rate haspositive and insignificant effect on economic growth. The results of this study have both theoretical and practical implications to economy of Nigeria. Thus, this study recommends that the management of DMBs should encourage their banks to increase bank lending to key sectors of economy that will use it in productive ventures, thereby boosting the economic growth of Nigeria. The reason is that one percent increase in DMBs' lending will significantly increase the economic growth of Nigeria for the periods of study.

Keywords: Bank lending, Bank lending rate, DMBs, GDP, Economic growth

■1.0   INTRODUCTION

Banks are financial institution that mobilizes savings from surplus economic units to deficit economic units.While the banks perform their main function of deposit taking and credit disbursement to customers, they add value to economic growth of a country. Economic growth is total market value of domestically produced goods and services in a nation usually in a year. It is measured by total value of domestically produced goods and services in a nation, per capita income of all citizens living in a nation and the standard of living of citizens in an area or nation. Economic growth of a nation is mostly weighted by total value of domestically produced goods and services known as Gross Domestic Product (GDP). In Nigeria, GDP per annum at current market prices was N89,044 Billion in year 2014as against N94,144.96Billion and N101,489.49Billion in year 2015 and 2016 respectively (StaBull, 2016).

The GDP which is a measure of economic growth may also be affected by bank lending as well as its lending rate. These variables were made use by some academic researchers in their previous studies. The results of some previous studies such as Yakubu and Affoi (2014) and Timsina (2017)were inconclusive because of the mixed findings due to differences in place and period of study. The gaps identified in the previous studies reviewed are scope, conceptual and methodological gaps.

The current study intends to fill the identified gaps by examining problems in bank lending and economic growth of Nigeria from 1981 to 2016.This is because it was within this period that banks contribute immensely to the growth of Nigerian economy through the issuance of credits to economy as a result of increase in the asset base, capital base and number of banks as well as branch network (Somoye, 2008). Therefore, this study is conducted by adapting the work of Yakubu and Affoi (2014) in the field of social sciences after slight modifications in their model. The modifications affect the variables and scope of the studies. The modifications make this work unique and different from some of the earlier studies such as Saymeh and Abu-Orabi (2013), Akingunola et al. (2014) and Timsina (2017). This makes this study to contribute to knowledge and it will be beneficial to policy makers like CBN as well as reference material to potential academic researchers. The research questions arising are:

i.   To what extent does DMBs' lending affect the economic growth of Nigeria?
ii.   To what extent does DMBs' lending ratedetermine the economic growth of Nigeria?

In order to answer the above research questions to solve the problems, the following objectives arise. The basic objective of the study is to examine the effect of bank lending on economic growth of Nigeria. To be specific, the study intends to achieve the following objectives.

i.   To investigate the effect of DMBs' lending on economic growth of Nigeria.
ii.   To explore the effect of DMBs' lending rate on economic growth of Nigeria.

The above specific objectives are achieved through the following null hypotheses after testing.
HO1: DMBs' lendinghas no significant effect on economic growth of Nigeria.
HO2: DMBs' liquidity rate has no significant effect on economic growth of Nigeria.

■**2.0 LITERATURE REVIEW AND THEORETICAL FRAMEWORK**

Concepts of Economic Growth
Economic growth is increase in the total value of domestic produced goods and services in a nation. Adewuyi and Olowookere (2011) define economic growth as the process by which domestic income or output is increased. Growthokwo, Mbajiaku and Ugwunta (2012) view economic growth as the process by which national income or output is increased. Therefore, an economy is said to be growing if there is a sustainable increase in the actual output of goods and services per head. Kira (2013) defines economic growth as total market value of all final goods and services produced within the country in a given period of time (normally one year). Yakubu and Affoi (2014) view economic growth as a sustained increase in the actual output of goods and services per head. Ismaila and Imoughele (2015) opine that economic growth is the quantity of goods and services produced in a nation and it is mostly measured by real GDP. Ozurumba and Onuorah (2013) in Olusola (2016) define economic growth as positive change in the national income or level of domestically production of goods and services of a nation over time. Hence, this study operationally defines economic growth as total market value of domestically produced goods and services in a nation usually in a year. This is because a nation's commodities consist of both domestic and foreign produced goods and services known as Gross National Product (GNP).

Concepts of Bank Lending
Bank lending or credit is loan and advances given to a customer by a banker which may be pledged with collateral security. Interests are paid on the amount borrowed or lent in accordance with loan agreement between the customer and the banker. Spencer (1977) in Yakubu and Affoi (2014) opines that credit implies a promise by one party to pay another the money borrowed or goods and services received.

Business Dictionary (2015) defines loan as a written or oral agreement for a temporary transfer of a property (usually cash) from a banker (lender) to a customer (borrower) who promises to return it according to the terms of the agreement, usually with interest for its use. If the loan is repayable on the demand of the lender, it is called a demand loan. If repayable in equal monthly payments, it is an installment loan. If repayable in lump sum on the loan's maturity period, it is a time loan. Banks further classify their loans into other categories such as consumer, commercial, and industrial loans, construction and mortgage loans, and secured and unsecured loans. A written promise to repay the loan is called a promissory note. There is also the issue of credit risk which is a probability of loss from a debtor's or customer's default. In banking, credit risk is a major factor in determination of interest rate on a loan. The longer the term of loan agreement, the higher the interest rate that is known as credit exposure. Timsina (2017) defines credit as the aggregate amount of funds provided by commercial banks to individuals, business organizations and government. Hence, this study operationally defines bank credit as a promise by a customer (debtor) to pay a bank (lender) the money borrowed. The credit includes DMBs' credits to governments, core private sectors, other private sectors and individuals.

Concepts of Bank Lending Rate
Interest rate is the price of money paid for deposits known as deposit rate and the price of money paid for loan known as lending rate expressed in percentages usually in a year. Keynes in Jhingan (2010) defines interest rate as the reward not only for saving money but the reward for parting with liquidity for the specific period of time. Interest rate is also the price the lender that takes credit or loan is willing to pay the borrower. The lender (banker) wants to charge enough interest rate to ensure each loan is profitable and cover the risk in the business. On the other hand, the business customer (borrower) needs a reasonable rate to be able to repay back the credit. Interest rate is also the price a borrower must pay to secure a credit or loan from a lender for a specific period of time. Rose (1989) in Bosire, Mugo, Owuor, Oluoch and Kakiya (2014) defines interest rate as a percentage charged for use of borrowed money. The scholar further states that interest rate is an amount received in relation to an amount loaned expressed in percentages. Churchill, Kwaning and Ababio (2014) state that interest rate is the price of money paid per unit of time expressed as a percentage of the amount borrowed. The cost of borrowing money is stated in percentages per annum. Sheriff and Amoako (2014) view interest rate as the amount charged on money borrowed or lent out expressed in percentages within one year. It is also sometimes referred to as the cost/price of money given out for a defined period of time. Gitau (2015) see interest rate as maximum interest rate that a financial institution can charge a borrower for an adjustable rate. Therefore, this study operationally defines interest rate as the price paid for money lent known as lending rate and express in percentages.

Review of Related Empirical Studies
The empirical studies related to variables of study include the following research work. Acha (2011) empirically assessed banks financial intermediation and economic growth of Nigeria from 1990 to 2008. The result shows that bank credit to private sector has significant negative effect on economic growth. However, the study did not investigate bank lending rate as a predictor that may affect economic growth. Chagwiza (2012) that empirically studied the role of financial intermediaries and economic growth of Zimbabwe from 1998 to 2005. The finding shows that bank lending rate is not significant in determining economic growth. But the research work utilized eight years time series data that ended in 2005. Ribeiro, Vaicekauskas and Lakštutienė (2012) studied determinants of economic growth of 13 selected European countries from 2000 to 2011. The regression result indicates that banking sector private credit flow has significant effect on economic growth of the European countries such as Greece, Italy, Portugal, Belgium, France, Germany, Spain, Finland, Estonia, Hungary, Denmark, Lithuania and Sweden. However, the research work used 12 years time series data that ended in 2011. Awdeh (2012) investigated banking sector development and economic growth of Lebanon 1992 to 2011. The result shows that banking sector deposit and credit to local private sector have significant impact on economic growth. Conversely, credit provided by banks to the resident private

sector and the banking sector size, efficiency and concentration do not impact significantly economic growth. But the research work used time series of 20 years that ended in year 2011.

Akpansung and Babalola (2012) investigated banking sector credit and economic growth from 1970 to 2008 in Nigeria. The regression result indicates that banking sector credits to private sector has positive and significant effects on economic growth. On the contrary, banks lending rate has insignificant negative effect on economic growth. The study recommends the need for more financial market development that favours more credit to the private sector with minimal interest rate to stimulate economic growth. However, the research work did not look at the effect of banking lending rate on economic growth. Azeez and Oke (2012) studied effect of banking reforms on Nigeria's economic growth from 1986 to 2013. The regression results show that banking system credit to private sector has significant negative effect on economic growth. On the contrary, interest rate margin and savings account deposits have insignificant positive impact on economic growth. But the study made use of 28 years time series data that ended in 2010.Okwo,Mbajiaku and Ugwunta (2012) investigated the effect of DMBs credit on Nigerian economic growth from 1981 to 2010. The findings show that DMBs' credit to the private sector has significant positive effect on economic growth. Conversely, DMBs prime lending rate has insignificant positive effect on economic growth. The paper recommends that the CBN should lower its minimum rediscount rate to a moderate level that will enable banks fix low interest rates on their loanable funds while adopting direct credit control to favour preferred sectors like Agriculture and manufacturing. However, the research work investigates prime lending rate instead of maximum lending rate.Growthokwo et al. (2012) examined the effect of DMBs' credit on Nigerian economic growth from 1981 to 2010. The OLS regression results reveal that DMBs' credit to private sectors has statistically significant effect on economic growth. The paper recommends that the CBN should lower its minimum rediscount rate to a moderate level that will enable banks to fix low rates on their loanable funds while adopting direct credit control to favour preferred sectors like agriculture and manufacturing. The study contributes significantly to knowledge but it failed investigate influence bank lending rate on economic growth.

Abubakar and Gani (2013) studied the impact of banking sector development on economic growth of Nigeria from 1970 to 2010. The findings show that the liquid liabilities (deposit liabilities) of commercial banks have significant positive impact on economic growth. Conversely, credit to the private sector and interest rate spread of commercial banks have significant negative impact on economic growth. However, the study used interest rate spread which is the difference between deposit and lending rate. The current study used DMBs' maximum lending rate.Saymeh and Abu-Orabi (2013) studied interest rate and GDP in Jordan from 2000 to 2010. The result shows that nominal interest rate (current lending rate) has an influence power on growth rate. But the study used 11 years time series data. Banu (2013) studied the impact of credit on economic growth of Romania using quarterly data from 2008 to 2011. The results of the analysis show that bank credit offered to households (private sectors) contribute significantly to economic growth than bank credit offered to public administration (government). However, the study used four years quarterly time series data that ended in 2011.

Akingunola et al. (2014) investigated the effect of the financial liberalisation on economic growth of Nigeria 1976 to 2006. The findings indicate that DMBs prime lending rate is insignificantly affect economic growth. But the study made used of prime lending rate as against DMBs maximum lending rate.Emecheta and Ibe (2014) studied the impact of bank credit on economic growth of Nigeria from 1960 to 2011. The results indicate that bank credit to private sector has significant positive impact on economic growth. However, the research work failed to assess the impact of bank interest rate on economic growth. Nwakanma, Nnamdi and Omojefe (2014) studied banking sector credits to the private sector and economic growth of Nigeria from 1980 to 2011. The regression result indicates that bank credits to the private sector have no significant effect on economic growth of Nigeria. Measures including development of relatively long tenured bank credit products as well as enforcement of credit regularization contracts are recommended in order to strengthen the operations of banks in Nigeria and their expected roles in financing entrepreneurship. But the research work failed to investigate the influence of bank lending rate on economic growth of Nigeria. Kamaan (2014) studied the effect of monetary policy on economic growth of Kenya from using monthly data from January, 1997 to October, 2012. The findings indicate that banking credit to private sector has insignificant effect on economic growth. However, the research work used monthly data.Yakubu and Affoi (2014) empirically analyzed commercial banks' credit on economic growth from 1992 to 2012 in Nigeria. The OLS regression result indicates that the commercial bank credits to private sector has significant effect on the economic growth in Nigerian. The paper recommends better and stronger credit culture should be promoted and sustained. But the study did not consider bank lending rates that may affect borrowing of money.

Olowofeso,Adeleke and Udoji(2015) examined the impact of private sector credit on economic growth of Nigeria using quarterly data from 2000-2014. The results indicate that banking sector credit to private sector has positive and significant impact on economic growth. On the other hand, the prime lending rate has negative and significant impact on economic growth. But the study used prime lending rate.Awoyemi and Dada (2015) examined the effect of financial sector reforms on Nigeria's economic growth from 1991 to 2012. The regression results indicate that banking system credit to private sector and prime lending rate have significant positive impact on economic growth of Nigeria. It is recommended among other things that reform policy thrust be geared toward proper reserves management. However, the study made use of 22 years time series data that ended in 2012.Ayenagbo (2015) empirically analysed the impact of economic credits on the inflation and economic growth from 1970 to 2010 in Togo. The results of regression show that banking sector credit to private sector has no significant impact on economic growth. The result contributes significantly to knowledge but the study did to look at the impact of bank lending rate on economic growth.Mandiefe (2015) studied the impact of financial sector development on economic growth of Cameroon and South Africa from 1980 to 2010. The findings show that credit to private sector do not cause economic growth in both Cameroon and South Africa. But the findings of the study may not be applicable to other nations in Africa.

Onaolapo (2015) empirically assessed the effect of financial inclusion on the economic growth of Nigeria from 1982 to 2012. The results indicate that banking system liquidity ratio and loan to deposit ratio have insignificant positive effect on economic growth. Again, banking system credit to private sector has significant positive effect on economic growth while money supply has significant negative effect on economic growth. However, the study did not look at the effect of lending rates on economic growth.Nnamdi (2015) studied financial market funds and economic growth of Nigeria from 1981 to 2011.The result shows that no significant causality is observed between banking sector credit to private sector and economic growth. But the study failed to look at the effect of lending rate on economic growth.Eta (2015) empirically assessed financial sector reforms and economic growth in Nigeria from 1986 to 2012. The result shows that DMBs' prime lending rate has significant negative effect on economic growth. The study recommends that management of banks in Nigeria should enhance their capacity in credit analysis and loan administration. However, the findings the study may not be

reliable because no stationary test was conducted on the variables.Awoyemi and Dada (2015) examined the effect of financial sector reforms on Nigeria's economic growth from 1991 to 2012. The regression results indicate that banking system credit to private sector and primelending rate have significant positive impact on economic growth of Nigeria. Itis recommended among other things that reform policy thrust be geared towardproper reserves management. But the study utilized prime lending rate and this make use of maximum lending rate.Olowofeso et al. (2015) examined the impact of private sector credit on economic growth of Nigeria using quarterly data from 2000-2014. The results indicate that banking sector credit to private sector has positive and significant impact on economic growth. On the other hand, the prime lending rate has negative and significant impact on economic growth. The paper supports the ongoing efforts of the Central Bank of Nigeria (CBN) in promoting a sound and real-sector-friendly financial system. However, the study used prime lending rate.

Agbanike, Onwuka and Eyoghasim (2016) investigated commercial bank lending and output growth of some selected sectors in Nigeria from 1980 to 2012. The estimated OLS regression result indicates that bank lending (commercial bank credits to economy) has significant negative impact on output growth. On the other hand, bank lending rate has insignificant positive impact on output growth of selected sectors such as agriculture, manufacturing, and mining and quarrying. But, the study used output of some real sector of economy instead of GDP as measure of output growth.Falade and Folorunso (2016) investigated the influence of fiscal, monetary policy instruments and economic growth of Nigeria from 1970 to 2013. The result shows that domestic interest rate has significant influence on economic growth. However, the study failed to stipulate the type of domestic interest rate that significantly affect the economic growth of Nigeria. Olusola (2016) critically evaluated banking lending and economic development from1980 to 2013 in Nigeria. The findings reveal that there is statistical significant relationship between banking sector credit to private sector and economic growth of Nigeria. The study recommends that banks should finance economic development. However, the study did not look at the effect of bank lending rate on economic growth of Nigeria.

Bongini, Iwanicz-Drozdowska, Smaga and Witkowski (2017) investigated the financial development and economic growth of foreign-owned banks in Central, Eastern and South-Eastern European (CESEE) countries from 1995 to 2014. The result shows that banking sector domestic credit to private sector foster economic growth. However, the research work failed to investigate the effect of lending rates on economic growth. Timsina (2017) investigated determinants of bank lending in Nepal from 1975 to 2014. The result shows that there is significant positive relationship between commercial banks credit to private sector and economic growth. But the findings may not be generalized to other parts of the world because the research work was conducted in Nepal. Karimo and Ogbonna (2017) assessed financial deepening and economic growth in Nigeria from 1970 to 2013. The findings show that there is negative relationship between banking sector credit to private sector to economic. Also, there is positive relationship prime lending rate and economic growth. However, the study did not report causality relationship that exists among the variables. Also, the study utilized the banks prime lending rate as against maximum lending rate.

From the review of the previous studies, the gaps identified are scope, conceptual and modeling gap. Therefore, this research work is different from past studies and intends to contribute to knowledge by examining the effect of bank lendingon economic growth.

Theory Underpinning the Study
The theories underpinning this study is supply leading and demand following theory. The supply leading and demand following theory states that the existence of financial institutions such as Deposit Money Banks (DMBs) and the supply of their financial assets, liabilities and related financial services in advance of demand for them would provide efficient allocation of resources from surplus economic units to deficit units thereby leading to economic growth (Patrick, 1966; Gitau, 2015 and Karimo & Ogbonna, 2017). The theory suggests that the financial institutions are engine for economic growth. So, they should make available of credit facilities and other financial services to the productive sectors of the economy at affordable costs before demand for them. The theory is criticized because the supply leading theory view became less essential if financial and economic development progresses. Then, gradually, the demand leading theory view begins to take a lead. Despite the criticism, the theory is still important because investors at least get access to the supply leading funds which increase their expectation and new investment opportunities (Patrick, 1966 in Karimo & Ogbonna, 2017). Thus, this study supported supply leading and demand following theory for the reason that banks are part and parcel member of financial institutions that assist investors with credit facilities for betterment of the economy.

■3.0 METHODOLOGY

This study adopts ex post facto research design. This is because the study has to do with cause and effect relationship that exists among the variables using longitudinal secondary data. The secondary data of Deposit Money Banks (DMBs) were extracted from Central Bank Statistical Bulletins from 1981 to 2016 (StaBull, 2016). This is because it was within this period that banks contribute immensely to the performance of Nigerian economy through the issuance of credits to economy as a result of increase in the asset base, capital base and number of banks as well as branch network (Somoye, 2008). Also, it was within this period that 45 banks closed their businesses and licences revoked by CBN (NDIC, 2016).

The population of study is 64 Deposit Money Banks (DMBs) in Nigeria banking industry from 1981 to 2016. This population includes 45 defunct and 19 existing DMBs operating in the Nigeria banking industry as at December, 2015 (NigeriaGalleria, 2015; CBN, 2015). The entire population constitute the sample frame for the study.

In this study, multiple regression model is used. The dependent variable in the model is GDP and the independent variables are DMBs' lending and lending rate. These proxies are chosen because they are variables of interest. Secondly, empirical literatures relating to similar studies indicated how the explanatory variables affect the economic growth in which some results are not significant. So, this study adapts analytical framework and model ofYakubu and Affoi (2014)in order to test causality relationships that exist between bank lending and its lending rate and the economic growth (GDP) of Nigeria. However, the research work by Yakubu and Affoi (2014) was conducted in Nigeria using commercial bank credits to private sector and nominal GDP from 1992 to 2012 neglecting banking lending rate in its model. Also, their study failed to conduct stationarity test using unit root test on the variables of study and result may not be reliable.

gdp = α + $\beta_1$dcp + $\beta_2$dlr + e$_i$ ……………………………………………………………………1

Based on the unit root test of stationarity, the model is estimated as follows:

gdp = α + $\beta_1\Delta$ dcp + $\beta_2\Delta$ dlr + e$_i$ 2

βs are betas coefficients to be estimated and the prefix Δ on the variable indicates the use of the first difference or a change of the respective variable in the unit root test. The unit root test of stationarity is line with the research works of Aurangzeb (2012), Okwo et al. (2012), Awoyemi and Dada (2015) and Korkmaz (2015). The study variables are explained as follow:

gdp	=	Gross Domestic Product per annum atcurrent basic prices or current market prices regarding Naira in Nigeria known as nominal GDP. The GDP is a measure of economic growth as the data of nominal GDP of Nigeria was stationary when Dickey-Fuller (ADF) statistical testconducted. Nominal GDP at current market prices used by past research scholars (Aurangzeb, 2012; Okwo *et al.*2012; Azeez & Oke, 2012; Awdeh, 2012; Abubakar & Gani, 2013; Kamaan, 2014; Yakubu & Affoi, 2014; Emecheta & Ibe, 2014;Nnamdi, 2015; Eta, 2015; Awoyemi & Dada, 2015; and Onaolapo, 2015).In addition, Acha (2011); Growthokwo *et al.* (2012); Akpansung and Babalola (2012); Akingunola *et al.* (2014);Olowofeso *et al.* (2015) and Ayenagbo (2015) measured economic growth as GDP in terms of the real market value of all domestic produced goods and services in a country over a period of one year and Mandiefe (2015)used real GDP growth rate to measure economic growth.Again, Bongini*et al.* (2017) measured economic growth using GDP per capita income.
dcp	=	DMBs' domestic credits to private sector per annum regarding Naira value which is the Bank lending. These credits are loans and advances to core private sector like manufacturing, mining and agricultural sectors that need the facility for investment purposes. This is in line with the studies of Ribeiro *et al.* (2012), Abubakar and Gani (2013), Emecheta and Ibe (2014), Nwakanma *et al.* (2014), Kamaan (2014),Onaolapo (2015), Nnamdi (2015), Awoyemi and Dada (2015), Olowofeso *et al.* (2015), Mandiefe (2015), Ayenagbo (2015), Olusola (2016),Timsina (2017), Karimo and Ogbonna (2017) and Bongini *et al.* (2017) that gauged bank credit utilizing bank credit to private sector. However, Aurangzeb (2012), Chagwiza (2012), Korkmaz (2015) andEta (2015) measured bank credit making use of bank credits to theeconomy while Banu (2013) and Gitau (2015) measured bank credit using bank credit to thegovernment.
dlr	=	DMBs' interest rate which is the Bank lending rate (weighted average maximum lending rates of DMBs). This is line with the studies of Chagwiza (2012), Okwo *et al.* (2012), Saymeh and Abu-Orabi (2013), Nwadiubu *et al.*(2014), Akingunola *et al.* (2014), Gitau (2015), Eta (2015), Awoyemi and Dada (2015), Olowofeso *et al.* (2015), Awoyemi and Dada (2015) and Eta (2015), Agbanike *et al.* (2016) that measured interest rate using bank lending rate.But Okwo *et al.* (2012), Akingunola *et al.* (2014), Eta (2015), Awoyemi and Dada (2015), Olowofeso *et al.* (2015); Awoyemi and Dada (2015) and Eta (2015) gauged interest rate utilizing prime lending rate while Abubakar and Gani (2013) weighted interest rate using interest rate spread.

$\propto$	=	Constant or interceptor
$\beta_{1...}\beta_2$	=	Regression Coefficients
e$_i$	=	Error term.

Data collected on the variables of thestudy were inputted and processed in STATA version 13.

The confidence intervalis used to ascertain whether the estimated coefficient β value of the independent variables of the study falls in between lower and upper boundary at 95% confidence interval. Also, the regression results are used to test the hypotheses and draw conclusions at 1%(0.000 − 0.006) and 5% (0.006 − 0.050)significant. Otherwise, the study fails to reject the null hypotheses because of nonsufficient reasons for rejection. The significance of study variables can also be observed through confidence intervals alternative.

■4.0 RESULTS AND DISCUSSIONS

This section discusses diagnostic tests relating to the variables of study as well as hypotheses tests to conclude..

Stationarity Test
Table 4.1 presents summary unit root test to ascertain whether the data of study variables are stationary or not.

Table 4.1 Summary of Unit Root Test

Variables	ADF Test Statistics	Order of integration
gdp	-2.943 (-2.775)**	I(0)
dcp	-3.181 (-3.058)*	I(1)
dlr	-5.796(-3.770)***	I(1)

Source: Author Computation, 2016 (STATA-3.0)

Table 4.1 shows that GDP is stationary at levels or zero order of integration. But,DMBs' credit to private sector and DMBs' interest rates are stationary at first difference, or first order of integration with their ADF test statistics is less than the critical values. Hence, the shocks have been removed from the model as the time series data is confirmed stationary to run the regression output.

Results of the Null Hypotheses Testing

Table 4.2 presents summary information concerning theeffect of bank lending on economic growth of Nigeria.

Table 4.2 Summary of Estimated Linear Regression Results

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 Number of obs =      36
                          F(2,   33) =   7.83
                                                      Prob > F      = 0.0016
                                                      R-squared     = 0.3418
                                                      Root MSE      =   25901
        -------------------------------------------------------------------------------
              |                Robust
        gdp   |     Coef.   Std. Err.      t     P>|t|     [95% Conf. Interval]
        ------+------------------------------------------------------------------
        dcp   |  .7760556   .2297756     3.38    0.002     .3085738    1.243538
        dlr   |  1155.511   711.8227     1.62    0.114     -292.703    2603.725
       _cons  | -9065.766   12081.2     -0.75    0.458    -33645.15    15513.62
        -------------------------------------------------------------------------------
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Durbin-Watson d-statistic(3, 36) = 0.7434245
Dependent variable: gdp (Economic growth)
Significance Level: 1% (**), 5% (*)
Source: Author Computation, 2016 (STATA-3.0)

Table 4.2 shows 95% confident interval of the explanatory variables which is a range between lower boundary and upper boundary. The lower boundary and upper boundary of DMBs' credit to private sector are 0.3085738 and 1.243538 respectively. The estimated coefficient β value of DMBs' credit to private sector is 0.7760556. This means DMBs' lending has effect on economic growth. This is because the coefficient value of DMBs' credit to private sector falls in between the lower and upper boundary.

Again, the lower boundary and upper boundary of DMBs' interest rate are -292.703 and 2603.725 respectively. The estimated coefficient β value of DMBs' interest rate is 1155.511. This reveals that DMBs' lending rate has effect on economic growth. This is because the coefficient value of DMBs' interest rate falls in between the lower and upper boundary.

Apart from the confident interval alternative, the multiple linear regression outputs revealed the influence of DMBs' credit to private sector and interest rate on GDP is expressed in the equation form as follows. gdp = -9065.766 + 0.7760556* dcp + 1155.511* dlr

The result of regression output between the explanatory variables and GDP with aconstant β value of -9065.766 and standard error of 12081.2. DMBs' credit to private sector has positive estimated coefficient β value of 0.7760556, standard error of 0.2297756, t-value of 3.38 and significance level of 0.002 (1%). Thus, DMBs' lending has significant positive effect on GDP, and hypothesis one (Ho1) rejected. The results disclose that 1 percent rise in DMBs' lending will significantly increase economic growth by the same proportion.The result is similar with the findings of Acha (2011), Ribeiro et al. (2012), Awdeh(2012), Azeez and Oke (2012), Akpansungand Babalola(2012), Okwoet al. (2012), Growthokwo et al. (2012), Abubakar and Gani(2013), Emecheta and Ibe (2014), Yakubu and Affoi (2014), Olowofesoet al.(2015), Awoyemi andDada (2015), Onaolapo (2015), Ayenagbo (2015) that observed bank lending to private sector has significant effect on economic growth. But the result is different from the findings of Nwakanma et al.(2014), Kamaan (2014), Nnamdi (2015), Mandiefe(2015) that showed bank lending to private sector has insignificant effect on economic growth.

DMBs' interest rate has positive estimated coefficient β value of 1155.511, standard error of 711.8227, and t-value of 1.62 and significance level of 0.114. So, DMBs' lending rate has an insignificant positive effect on GDP and hypothesis two (Ho2) rejected. The results mean 1 percent rise in DMBs' lending rate will insignificantly increase economic growth by 1 percent.

This result is similar with the findings of Chagwiza (2012), Okwo et al. (2012), Akingunola et al. (2014) and Agbanike et al. (2016) that found bank lending rate has insignificant effect on economic growth of Nigeria.However, the finding is different from the studies ofEta (2015),Awoyemi and Dada (2015) and Olowofeso et al. (2015) that indicated bank lending rate has significant effect on economic growth of Nigeria.

In diagnose test of the model, the values of R, and R2 are 0.5846 and 0.3418 respectively. The R-value is the coefficient of correlation that explains the relationship between the dependent and independent variables which is a strong positive relationship. Also, the R^2 value is the coefficient of determination that indicates that 34.18 percent of the variation in the dependent variable (GDP) explained by the independent variables of the model. The value of R^2 is moderate because a value of R^2 below 0.2 is considered weak; a value of R^2

between 0.2 and 0.4 is moderate; and a value R^2 above 0.4 is strong (SSRL, 2010). Also, the R^2 is strong because variables correlated and homoscedasticity as no evidence of omitted variables in heteroskedasticity test.

The F statistic value (P- value) is 7.83 with a significance level of 0.0016. If the significance of F statistic value is less than 0.005 ($p < 0.005$) it means independent variable contributes to the prediction of the dependent variable (Pallant, 2001;Hair, Black, Babin & Anderson, 2014).

The Durbin Watson (DW) value is 0.7434. This DW value is in line with the study of Yakubu and Affoi (2014) that was adopted. Normally, the value of DW statistic ranges from 0.0 to 4.0. So, the value of DW close to 2 or around 2 indicates the absence of autocorrelation problem. Autocorrelation is a problem in time series data because the ordinary regression residuals usually correlated over time (SAS Institute, 2016).

Implications of the Study

The outcome of this study has theoretical implication that suggests financial institutions should make supply of credit facilities to productive sectors of the economy at affordable costs before demandfor it. The practical implication of this study is that an increase in DMBs' credit to private sector will significantly increase the economic growth of Nigeria.This is because bank credits constitute a large portion of banks' assets and a key to the economic growth of any nation. Again, the findings also revealthat an increasein DMBs' lending rate will not significantly increase the economic growth of Nigeria. For the reason that private sectors' borrowing rate for investment purposes will reduce which in turn will reduce the economic activities as well as economic growth of Nigeria from 1981 to 2016.

■5.0 CONCLUSION AND RECOMMENDATION

The economic growth of a nation is affected by banks intermediary function of accepting deposits and disbursing credits to customers in need.The factor that significantly affectseconomic growth of Nigeria is lending to the private sectors by Deposits Money Banks (DMBs).Central Bank of Nigeria (CBN) that is the agency of government and regulator to banks operating in the countrymust encourage policies directing the supply of bank lending to private sectors at low lending rate.So, this study recommends that the management of DMBs should encourage their banks to increase bank lending to key sectors of economy that will use it in productive ventures, thereby boosting the economic growth of Nigeria. The reason is that one percent increase in DMBs' lendingwill significantly increase theeconomic growth of Nigeria for the periods of study.

■6.0 SUGGESTION FOR FUTURE STUDIES

This study investigated the effect of bank lending on economic growth of Nigeria for the periods ranging from 1981 to 2016. Future studies should replicate this study by extending the study period from 1981 to 2018. This will enable the academic researchers and other stakeholders to see magnitude of bank lending as contributor to economic growth overtime.

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Appendix

Descriptive Statistics

Variables	Obs.	Min	Max	Mean	Std. Dev	Skewness	Kurtosis
gdp	36	94.3	101489.5	20151.11	31000.99	1.560839	3.932797
dcp	36	8.3	121574	5862.881	20223.25	5.4161360	31.50226
dlr	36	10	36.09	21.34722	5.833656	0.0081223	3.134281

Source: Author Computation, 2016 (STATA-3.0)

Correlations Matrix among Independent Variables

	dcp	dlr
dcp	1.000	0.1739
dlr	0.173	91.000

Source: Author Computation, 2016 (STATA-3.0)

```
vif

    Variable |       VIF       1/VIF
-------------+----------------------
         dcp |      1.03    0.969775
         dlr |      1.03    0.969775
-------------+----------------------
    Mean VIF |      1.03

. estat imtest, white

White's test for Ho: homoskedasticity
        against Ha: unrestricted heteroskedasticity

        chi2(5)      =     33.12
        Prob > chi2  =    0.0000

Cameron & Trivedi's decomposition of IM-test

-----------------------------------------------------
             Source |      chi2     df       p
--------------------+--------------------------------
 Heteroskedasticity |     33.12      5    0.0000
           Skewness |     13.08      2    0.0014
           Kurtosis |      3.72      1    0.0538
--------------------+--------------------------------
              Total |     49.91      8    0.0000
```