مجلة بحوث الإدارة والاقتصاد

Management & Economics Research Journal
ISSN 2710-8856 (Online)
ISSN 2676-184X (Print)

Vol. 3 No. 1 (2021), pp. 76-94

https://doi.org/10.48100/merj.2021.150

Determinants of Deposit Money Banks' Lending Behaviour to Private Sector of the Economy in Nigeria (1986-2017)

Tonia Akindutire [1]♦

[1]Lecturer, Banking and Finance Department, Afe Babalola University, Ado-Ekiti, Ekiti State (Nigeria)

✉toniaakindutire@gmail.com

Received: 09-11-2020 *Accepted: 18-01-2020* *Available online: 27-01-2021* *Published: 16-03-2021*

How to Cite:
Akindutire, T. (2021). Determinants of Deposit Money Banks' Lending Behaviour to Private Sector of the Economy in Nigeria (1986-2017). *Management & Economics Research Journal*, *3*(1), 76-94. https://doi.org/10.48100/merj.2021.150

Abstract:

The study examined those factors that determine the deposit money bank's lending behaviour to private sector of the economy in Nigeria using annual time series data spanning from 1986 to 2017. Secondary data were sourced majorly from CBN Statistical Bulletin (2017). In measuring the variables, determinants of deposit money bank lending behaviour to private sector were subjected to bank-specific factors, regulation factors, financial deepening and macroeconomic factors. The bank-specific factors were proxied by volume of deposit (VD) and lending rate (LDR), regulation factor was proxied by reserve requirement (RSR), financial deepening was proxied by the ratio of the money supply to GDP (M2G) while macroeconomic variables were proxied by inflation (INF). The estimation techniques used for the study were the Augmented Dickey-Fuller test, pairwise Granger causality test and autoregressive distributed lag (ARDL).

♦**Corresponding author:** Afe Babalola University, Ado-Ekiti (Nigeria).
[✉toniaakindutire@gmail.com]

It was found that the variables in the series were integrated of difference order l(0) and l(1) and there was a significant relationship between bank lending behaviours and the identified determinants. In addition, it was revealed that the variables move in the long run, however, among the variables of interest, the volume of deposit and M2G determines bank lending behaviour in the short and long run while RSR, INF and LDR retard lending to private sector. The study also found that causality runs from the volume of deposits to private sector credit. Hence, the study concluded that there is a significant relationship between bank lending behaviour private sector and its determinants. It was recommended that bank lending rate should be brought down or flexible to meet up the categories of borrowers since there is common knowledge that high-interest rate discourages borrowers and influences banks to select bad loan offer which may affect the bank returns in the long run. Secondly, the reserve requirement dictated by CBN on deposit money banks should be reduced so as to enable banks to be more liquid for the private sector to access funds for their productive purposes and lastly, inflation should be made below 2 digits, as inflation above a digit may be unfriendly to economy activities thereby affecting the private-sector output which is germane to the economic growth.
Keywords: Private Sector, Bank Lending, Macroeconomic Factor, ARDL.
JEL Codes: G21, E21, E24, C25.

1. Introduction

The private sector of the economy comprises economic sectors such as manufacturing, agriculture, service, construction and trade sector (Ayodeji & Ajala, 2018). These sectors are so important in their contributions to economic growth, since economic growth is the add up of all the outputs produced by these sectors, as a result, the federal government in her wisdom has categorized them based on their importance, which is preferred and less preferred sector. The reason for this lies in motivating banks to extend credit to the preferred sector because they are a catalyst to rapid economic development in an economy as evidenced in many advanced countries such as the United States of America, Japan, Germany, United Kingdom etc. More importantly, continuous growths of these sectors automatically help in the improvement of other small industries and at the same time, employ the labour force and earn foreign exchange earnings to the government through the exportation of their produce.

The above is supported by many empirical studies both in developed and developing economies on emphasizing the importance of the private sector in inducing economic growth (Ajibola, 2015; Ganiyu, Eboreime,

Adam & Belonwu, 2017). Hence, for the private sector to continue to spur growth in an economy there is a need for finance (King & Levine, 1993). These can be sourced through the banking sector, especially money deposit banks in form of credit and it can either be in short-term, medium-term or long-term forms. However, while short term credit can be used in financing working capital, medium- and long-term credit can majorly be used in financing long term investment for productive purposes.

However, looking at the trend of deposit money banks credit to the private sector in the last 32 years, it was discovered that credit to the private sector of the economy has been fluctuating. Analytically, in 1986, % the growth rate of deposit money banks credit to the private sector was 52.47%, but there was a drastic decline from 1987 to 1990 from 38% to 10.34%. From 1991 to 1993, there was an increase recorded on credit to private sector from 23.26% to 118.70%, however, there was a decline in 1994 to 12% but 1997 to 1999, there was an upward trend in the private sector credit from 25.51% to 32.53%. Again in 1998, there was also a decline to 11.31%, however, from 1991 to 2001 private credit increased by 22.51% to 44.23%. Unfortunately, between 2002 and 2003, there was a decline from 21.64% to 17.84%. In 2004and 2005, there was also an increase recorded which stood at 29% for the two years. There was a decline in 2006 but in 2007 and 2008, there was an increase in the credit channelled to the private sector. In 2009, there was a decrease to 47.22% and it continues until it enters into a negative decrease in 2010 by -3.81. In 2011, the banks bounced back from global financial crises and recorded a 44.28% increase in the private sector, however, since 2012 till date, the credit to the private sector has been on the decrease in which as of 2017, it was 1.40% (CBN, 2017).

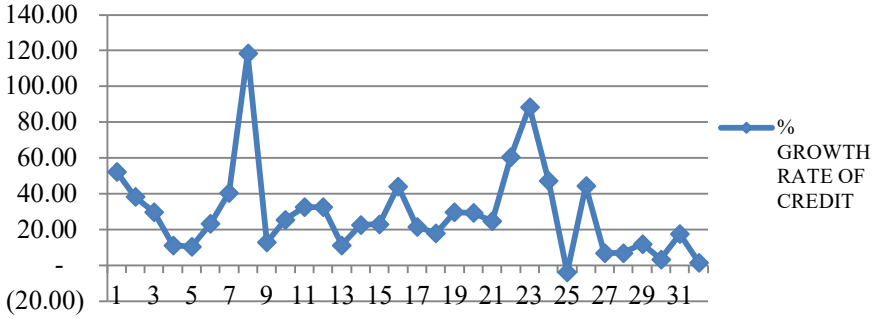

Figure 1. The percentage growth rate of Banks Credit to Private Sector in Nigeria (1986-2017)
Source: CBN Statistical Bulletin of Various Editions

From the above analytical stance of deposit money banks credit to the private sector, there is a need to ask what factors are responsible for the decline and increase in the growth of credit to the private sector of the economy. There have been many studies on the effect of private sector credit on economic growth (Malaki,2014; Mamman & Hashim, 2014; Ajibola, 2015; Ganiyu et al. 2017). However, there is limited study in the area of determinants or factors responsible for the lending behaviour of banks to the private sector. While some studies supported bank size as the determinant of bank lending behaviour, some others supported that it is deposit volume, interest rate and economic growth. Unfortunately, few studies have incorporated financial deepening and regulation factors as determinants so as to see how they have influenced bank lending to the private sector in Nigeria. Hence, due to few studies in this area, this study is imitated to fill the gap.

2. Literature Review

Banks and their lending constitute important and active inducers to the economic growth and development of a country (Ajibola, 2015; Alkhazaleh, 2017). It has been acknowledged that, if the banking system of a country is effective, efficient, disciplined and sound, it brings about rapid growth in the various sectors of the economy (Melanie, 2014). This is to say that, a well monitored and regulated bank is an inducer of economic growth through their lending to individuals and other sectors of the economy. These sectors have been categorized by CBN based on their importance and they are agriculture, industry, service, trade and construction sector. Their joint outputs contributed to the aggregate economy. Meaning that increase in the outputs of these sectors would lead to an increase in the economic output and vice versa (Ayodeji & Ajala, 2018).

Bank lending is always explained under financial intermediation theory which explains the function of banks as an intermediary between the surplus sector and deficit sector of the economy provide liquidity insurance, reduce transaction cost, the transformation of the deposit to bank assets in form of loan and advances etc. Although, the intermediation role is performed by financial institutions such as the banking sector and capital market where medium to long term funds are raised (Ayodeji & Ajala, 2018). However, deposit money bank is very important as they hold the major money supply of the economy and they transform the short-term deposit into long term investment, this is made possible by their special nature.

Most of the time, banks lend funds to a different sector of the

economy for productive purposes and at the same time, their lending behaviour to these sectors is determined by several factors which may be bank-specific and macroeconomic specific in nature (Alkhazaleh, 2017). Although, there have been serious empirical studies on the subject matter yet with different views on what determines bank lending behaviour. Some found that the volume of deposit determines bank lending (Olokoyo, 2011), while some said it is lending rate Gambacorta and Iannati (2005), Sacedoti (2005) and Okunneye and Ogunmuyiwa (2016), some said it is bank size, some other said it was growth (Gambacorta and Mistull (2003), Robert, et al. (2004), Obamuyi (2007) and Obasan and Arikewuyo (2012). However, limited studies are looking at regulation and financial deepening as factors determining bank lending behaviour. Although, few studies on these two variables were from other developing countries (Imran & Nishat, 2012; Million, 2014).

2.1. Theoretical Framework

2.1.1. The Financial Intermediation Theory

Financial intermediation is the process of mobilizing savings from the surplus units and channelling them to deficit units of the economy for productive investment. It is the art of channelling funds from savers to investors by mobilizing funds and ensuring the efficient transformation of funds into productive activities that can enhance the level of economic growth.

It can also be described as the transformation of mobilized deposits liabilities by financial intermediaries such as banks into bank assets or credits such as loans and overdraft. Hence, the theory builds on the notion that intermediaries serve to reduce transaction costs (Benston and Smith, 1976), Liquidity insurance (Diamond and Dybvig, 1983), informational asymmetries (Leland and Pyle, 1977) and delegated monitoring (Diamond, 1984, 1996). In addition, the approach of financial intermediaries is based on the method of regulation of the monetary creation, a process of monetary creation, saving and financing of the economy. The method of regulation influences the liquidity and solvability of intermediaries (Gurley & Shaw, 1960). Diamond and Rajan (2002) shows that regulations regarding the capital of intermediaries influence their health, the ability for refinancing and the method for recovering debts. Furthermore, because financial institutions can break down assets into small units, they can reduce transaction costs and also employ diversification for the benefit of both their customers and equity holders.

2.2. Empirical Review

Olokoyo (2011) investigated the determinants of commercial banking lending behaviour in Nigeria from 1980 to 2005 using regression analysis. The study employed secondary sources of data employed from the CBN Statistical Bulletin. The dependent variable was proxied using the loan and commercial bank loan and advances to the private sector while the independent variable was proxied by volume of deposit, investment portfolio interest rate, and cash reserve requirement and liquidity ratio. The study revealed that bank deposit among all variables has a greater impact on the lending behaviour of money deposit banks in Nigeria. Further results show that every 1% increase in cash reserve requirement for commercial banks caused the loans and advances to change by 0.12%. This indicates that the stipulated cash reserve requirement ratio of commercial banks may not necessarily translate into poor lending performance or a lower proportion of commercial banks' funds available for lending respectively.

Olusanya, Oyebo and Obadere (2012) accessed those factors that determined the lending behaviour of commercial banks in Nigeria using co-integration techniques from 1975-2010. Using secondary data and variables such as commercial bank Loan and advances (LOA) and other Volume of deposits (Vd), the annual average exchange rate of the naira to the dollar (Fx), Investment Portfolio (Ip), Interest rate (lending rate) (Ir), Gross domestic product at current market price (Gdp) and Cash reserve requirement ratio (CRR). It was found that there is a positive relationship between loan and advances and volume of deposits, the annual average exchange rate of the naira to dollar, gross domestic product at current market price and cash reserve requirement ratio except for investment portfolio and interest rate (lending rate) that have a negative relationship. It was also revealed from the result that there is a long-run relationship between loans and advances and all the explanatory variables in the model.

Imran and Nishat (2012) evaluated the determinants of bank credit in Pakistan, a supply-side Approach covering the period between 1971 and 2010 using the autoregressive distributed lag model. Findings revealed that foreign liabilities, domestic deposits, economic growth, exchange rate, and the monetary conditions proxy by the ratio of M2/GDP have a significant and positive association with private credit in the long run while the inflation and money market rate do not affect the private credit. However, in the short run, all the variables are significant and positively associated with private credit except domestic deposit and inflation which do not influence the private credit in Pakistan.

Makali (2014) accessed the effect of commercial bank loans on economic growth in Kenya from 2008 to 2012. Pool data were sourced from 43 commercial banks on variables such as rate of change on loans and growth rate and panel regression was used as the estimation technique. It was found that economic growth in Kenya is not driven by changes in lending, this is an indication that Kenya's economic growth is not strongly determined by the loans issued by banks to private borrowers.

Mamman and Hashim (2014) investigated the impact of bank lending on economic growth in Nigeria spanning from 1987 to 2012. Annual time series data were sourced from the CBN statistical Bulletin of various editions and it covers variables such as real gross domestic product and bank lending and bank total assets while multiple regression was used as the estimation technique. Findings revealed that there is a relationship between bank lending and economic growth, however, this relationship is insignificant and negative but bank assets have a significant positive effect on economic growth in Nigeria.

Million (2014) researched the determinants of growth in bank credit to the private sector in Ethiopia from 1978 to 2011. Annual time series data were sourced on variables such as bank credit to private sector, commercial bank credit, commercial bank foreign liability, lending rate, reserve requirement broad money, consumer price index and GDP. The study employed autoregressive distributed lag as the estimation technique. It was found that, that domestic deposits, foreign liabilities, real lending interest rate, M2 as a percentage of GDP, GDP and inflation have a significant impact on banks' credit to the private sector in the long run. Whereas reserve requirement does not affect commercial banks' credit to the private sector both in the long and short-run. Moreover, in the short run domestic deposit and economic growth do not influence commercial banks' credit to the private sector. It further revealed that the long and short-run results do not provide strong support of the influence of banking sector reform on the growth of bank credit to the private sector as shown by the coefficient for the dummy variables in Ethiopia.

Ajibola (2015) examined commercial bank loans, inflation, exchange rate, and political instability as key determinants of economic growth in Nigeria from 1970 to 2013. Secondary data were sourced on variables such as gross domestic product, exchange rate, inflation, commercial bank loans and political instability (i.e., coup and trade dispute) and regression analysis as an estimation technique. It was found that the previous and current year’s loans and advances have a positive impact on economic growth in Nigeria. Likewise, the equation shows that both the foreign exchange rate and

inflation rate had positive effects on Nigeria's output growth whereas political instability had a negative effect during the period of study.

Enisan and Oluwafemi (2015) examined the determinants of bank credit to the private sector in Nigeria using time series data covering a period from 1980 to 2010. Credit to the private sector was used as the dependent variable while the explanatory variables are broad money supply, liquidity ratio, bank total asset, inflation rate, reserve ratio, cyclical risk premium, prime lending rate, exchange rate, minimum rediscount ratio and real gross domestic product. The estimation technique used was the error correction mechanism. It was revealed that broad money, cyclical risk premium and liquidity ratio tend to increase credit to the private sector. However, the prime lending rate and reserve ratio lead to a reduction in credit to the private sector. Private credit increases with inflation.

Ayieyo (2016) examined determinants of lending behaviour in selected commercial banks in Kenya from 2002 to 2011. Secondary data were sourced on variables such as loan and advances to the private sector, the volume of deposits, average and interest rate while ordinary least square was used as the estimation technique. It was found that lending interest rates are negatively related and significantly affect the total loans advanced. Further, the volume of deposits in commercial banks has a significant and positive effect on the total loan advanced to the private sector in Kenya.

Okunleye and Ogunmuyiwa (2016) examined the determinants of the development of small and medium scale enterprises in Nigeria from 1980 to 2013 using the ordinary least square method. Secondary sources of data were sourced from the CBN statistical Bulletin of various editions. Variables such as small and medium scale enterprises' gross domestic products; commercial bank loans to SMEs, interest rate, inflation rate and exchange rate were employed. Results revealed that credit facilities, interest rates as well as inflation rates are key determinants of the growth and survival of SMEs in Nigeria.

Timsina (2017) also accessed the determinants of bank lending in Nepal within the time scope of 1975 and 2014. Using annual time series data, the study used private sector credit as the dependent variable and volume of deposits, gross domestic product, interest rate, cash reserve ratio, liquidity ratio, inflation and exchange rate as the independent variable while the estimation technique used were the co-integration test, pairwise Granger causality test and ordinary least square. Findings show that the Gross Domestic Product and liquidity ratio of banks have the greatest impacts on their lending behaviour. Granger Causality Test shows the evidence of a unidirectional causal relationship from GDP to private sector credit. The

study implies that GDP is the barometer of the economy and commercial banks should pay attention to the overall macroeconomic situation of the country, factors affecting the GDP in general and their liquidity ratio in particular while making lending decisions.

Ganiyu, et al. (2017) investigated the impact of private sector credit on economic growth in Nigeria covering a temporal period from 1993 to 2013. It employed variables such as real gross domestic product as the dependent variable while trade openness monetary policy, fiscal policy, Budget Surplus/Deficit to GDP, domestic investment, infrastructure [Electricity Power Consumption per Capita (EP)] and domestic credit to the private sector, local conditions index and policy index as independent variables sourced from Central Bank of Nigeria Statistical Bulletin 2013; the National Bureau of Statistics; World Bank; and The Economist Intelligence Unit. Ordinary least square was used as the estimation technique. It was found that credit is growth-enhancing, even when trade openness, monetary policy, investment climate and infrastructure are low. Also, the composite local condition index analysis revealed that private sector credit increased economic growth when domestic or local conditions were favourable.

Adzis, Sheng and Abu-Bakar (2018) accessed macroeconomic and bank-specific determinants of commercial banks' lending in Malaysia covering a period from 2005 to 2014. The study used a pool of data sourced from financial statements of 27 banks on total loans which is the dependent variable and total assets, non-performing loan, liquid assets, bank deposit, the annual growth rate of GDP, lending rate, reserve requirement and the dummy for macroprudential policy while panel regression was used as the estimation technique. It was found that bank size and volume of deposit positively influence commercial bank lending while liquidity negatively influences the lending activities in Malaysia. However, the study found no conclusive evidence, on the other hand, no conclusive evidence to support the influence of gross domestic product (GDP), lending rate and cash reserve requirement on commercial bank lending activities in Malaysia. Moreover, the findings of this study also reveal that the macroprudential policy measure which was implemented in 2010 to curb the high level of household indebtedness does not give any significant impact on lending activities in Malaysia during the study period.

3. Methodology

The study employed annual time series data covering a time scope from 1986 to 2017. Secondary data were sourced from CBN Statistical

Bulletins of various editions. Determinants of bank lending behaviour in this study are centred on bank-specific, regulatory specific, financial deepening factors and macroeconomic specific. For bank-specific, the volume of deposit of the deposit money bank and bank lending rate was used. On regulatory specific, the study used reserve requirement as a proxy. The financial deepening was also used as one of the variables in determining the bank lending and this is proxied by M2/GDP while the macroeconomic variable was proxied by inflation. However, the study made use of Augmented Dickey-Fuller to test the stationarity of the variables, followed by the Breusch-Godfrey test for serial autocorrelation. The main estimation technique, therefore, was autoregressive distributed lag.

3.1. Model Specification

The study adopted a model from the empirical work of Imran and Nishat (2012). The model stated that:

$$PCt = \beta o + \beta_1 FL_t + \beta_2 DD_t + \beta_3 CPI_t + \beta_4 GDP_t + \beta_5 ERt + \beta_6 MMR_t + \beta_7 M2_t + U_t$$

Where PC is Private Credit, FL is Foreign Liabilities, DD is Domestic Deposit, CPI is Consumer Price Index, GDP is Real Gross Domestic Product, ER is Exchange Rate, MMR is Money Market Rate, M_2 is M_2 as a percentage of GDP and μt is the error term. However, this model was adopted and adapted by incorporating regulation intervention that is, reserve requirement and by removing foreign liabilities, money market rate. The adapted model is stated thus in a functional form as:

$$PSC = f(VD, LDR, RSR, M2G, INF) \quad (1)$$

In an explicit form, the model is stated as:

$$PSC_t = \beta o + \beta_1 VD_t + \beta_2 LDR_t + \beta_3 RSR_t + \beta_4 M2G_t + \beta_5 INFt + U_t \quad (2)$$

Estimating the model using Autoregressive Distributed lag, the model is stated as:

$$\Delta InPSC_t = \beta_0 + \sum_{i=1}^{n} \beta_1 \Delta InPSC_{t-1} + \sum_{i=0}^{n} \beta_2 \Delta InVD_{t-1} + \sum_{i=0}^{n} \beta_3 \Delta InLDR_{t-1} + \sum_{i=0}^{n} \beta_4 \Delta InRSR_{t-1}$$

$$+ \sum_{i=0}^{n} {}_5 \Delta InM_2G_{t-1} + \sum_{i=0}^{n} \beta_6 \Delta InINF_{t-1} + \beta_7 InPSC_{t-1} + \beta_8 InVD_{t-1} + \beta_9 InLDR_{t-1}$$

$+ \beta_{11}InM_2G_{t-1} + \beta_{12}InINF_{t-1} + U_t$ (3)

Where:
n = optimal lag length.
Δ = first difference of the concerned variables.
PSC = Private sector Credit.
VD = Volume of Deposit.
LDR = Lending rate.
RSR = Reserve requirement.
M2G = Ration of the money supply to GDP.
INF = Inflation.
βo = Constant Term.
β1-β5 = parameter to be estimated.
U_t = Error term.

4. Analysis and Interpretations

The test of unit root using augmented dickey fuller is presented in table 1 below. The outputs at levels and first differences were presented. It was revealed that, except bank lending rate that was integrated at level l(0), other variables were integrated at the first difference (1). The null hypothesis of the presence of unit the root is therefore rejected while the alternate is accepted that the variables are free from the unit root. Hence, the variables are said to be integrated at different levels, that is, at l(0) and l(1).

Table 1. Summary of Augmented Dickey-Fuller Test

Variables	Critical Value/P-value	At Level	at first diff.
PSC	T-Test	-1.4168	-4.2531
	Prob	0.5613	0.0023
VD	T-test	-1.1728	-4.2352
	Prob	0.6733	0.0024
LDR	T-test	-4.5874	-5.5916
	Prob	0.0009	0.0001
M2G	T-test	-0.8666	-5.1957
	Prob	0.7853	0.0002
RSR	T-test	-1.5834	-3.4484
	Prob	0.9990	0.0191
INF	T-Test	-2.6877	-6.7234
	Prob	0.0875	0.0000

Source: Author's Computation using Eviews, 9

The residual of the series was diagnosed using Breusch pagan and Godfrey serial correlation tests. The results revealed that the series was free from serial correlation and heteroskedasticity problems which may affect

the output of the estimation. The probabilities of the two tests were 0.7237 and 0.8059 which are greater than a 5% level of significance.

Table 2. Summary of Diagnostic Test

Diagnostic	F-stat	Prob.	Obs-R2	Prob.
BPG	0.5239	0.8038	4.4754	0.7237
BGSC	0.1281	0.8807	0.4315	0.8059

Source: Author's Computation using Eviews, 9

Before the model estimation, lag selection criteria were done using VAR selection criteria and it was found that lag 1 was suitable based on the AIC. Hence, the result of the bound test is presented in Table 3 below. It was revealed that the F-statistics of 5.1383 was greater than the lower bound of 2.62 and upper bound of 3.79 at a 5% level of significance which indicates the presence of a long-run relationship between private sector credit and other explanatory variables in the model. As result, the null hypothesis of no long-run relationship was rejected and the alternate was accepted that the series has a long relationship and they moved together in a long run.

Table 3. Summary of ARDL Bound Test

Null Hypothesis: No long-run relationships exist		
Test statistic	Value	k
F-statistic	5.13823	5
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.50%	2.96	4.18
1%	3.41	4.68

Source: Author's Computation using Eviews, 9

The model is estimated using Autoregressive Distributed Lag at lag 1. Hence, the result is presented in Table 4 below. It was found that private sector credit at lag1 has a significant negative effect on its innovation. Likewise, VD was found to have an insignificant positive effect of 0.1980 on private sector credit while other variables in the model, that is, LDR of -0.0171, M2G of -0.0233, RSR of -0.0003 and INF of -0.0001 were found to have a negative effect on private sector credit. However, while all other variables were found to be insignificant, RSR was found to have a

significant effect on private sector credit. The coefficient of determination was found to be 0.6756, which indicates that, about 67.56% variation in PSC were caused by the variables such as LVD, M2G, INF, RSR, LDR while 32.44% was caused by variables not captured in the model. The adjusted R^2 was also found to be 53.37% which was based on the number of variables included in the model. F-stat. of 4.76 and p-value of 0.0046 indicated that the model is significant and has a good fit. In addition, the Durbin Watson of 1.75 is close to 2 which indicated that the series was free from serial autocorrelation. Summarily, the study concluded that bank-specific, regulation intervention, financial deepening and macroeconomic variables have a significant effect on the deposit money banks credit to the private sector in Nigeria.

Table 4. Summary of Parameterized ARDL Estimate

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DRSR)	-0.00014	0.00011	-1.26859	0.2227
C	0.56571	0.33118	1.70819	0.1069
DLVD(-1)	0.19804	0.13236	1.49627	0.1540
LDR(-1)	-0.01713	0.01680	-1.01965	0.3231
DM2G(-1)	-0.02334	0.02361	-0.98850	0.3376
DRSR(-1)	-0.00037	0.00015	-2.40168	0.0288
DINF(-1)	-0.00015	0.00312	-0.04761	0.9626
DLPSC(-1)	-1.04454	0.21749	-4.80266	0.0002
R-Squared= 0.6756	Adj-R2=0.5337	F-Stat=4.7611	Prob=0.0046	D.W=1.75

Source: Author's Computation using Eviews, 9

The results of the short and long-run dynamics of the determinants of deposit money bank behaviour to the private sector of the economy is are presented in table 5 below and it revealed that coin Eq(-1) which is denoted as the speed of adjustment was rightly signed by -0.9528 and it is highly significant at 5% level of significance. This implies that the short-run inconsistencies or discrepancies are adjusted and incorporated into the long run. It also indicates that the speed of adjustment is about 95% annually. In addition, it was also revealed that a 1% increase in LDR, RSR and INF will bring about a reduction in the banking lending behaviours in lending to the private sector of the economy while a 1% increase in VD and M2G will bring about an increase or improvement in the banking lending behaviours to the private sector. Interestingly, M2G and INF were highly significant in the short run, however, M2G and RSR were found to be significant in the long run.

Table 5. Summary of Cointegrating/Long and Short form

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DLVD)	0.08621	0.08869	0.97202	0.3455
D(LDR)	-0.0076	0.01163	-0.65301	0.5230
D(DM2G)	0.04725	0.01377	3.43087	0.0034
D(DRSR)	-6.7E-05	0.00007	-0.91089	0.3759
D(DINF)	-0.00507	0.00232	-2.18653	0.0440
CointEq(-1)	-0.95280	0.14746	-6.46142	0.0000
Cointeq = DLPSC - (0.0905*DLVD -0.0080*LDR + 0.0496*DM2G -0.0002 *DRSR -0.0053*DINF + 0.3448)				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLVD	0.09048	0.09664	0.93621	0.3631
LDR	-0.00797	0.01256	-0.63450	0.5347
DM2G	0.04959	0.01505	3.29488	0.0046
DRSR	-0.00020	0.00009	-2.18802	0.0439
DINF	-0.00532	0.00277	-1.91984	0.0729
C	0.34482	0.23190	1.48695	0.1565

Source: Author's Computation using Eviews, 9

In the same vein, the causal relationship among the variables was also tested using the pairwise Granger causality test. The results are presented in table 6 below, and it was found that, while other independent variables were not Granger causing the dependent variables, that is there is no causal relationship between the independent variables (Lending rate, Reserve requirement, Money supply as a percentage of GDP and inflation rate) and the dependent variables namely; private sector credit, evidence of unidirectional causality existed between the volume of deposit to private sector credit. This indicates that causality runs from volume of deposit to private sector credit without corresponding causality running from private sector credit to volume of deposit.

Table 6. Summary of Pairwise Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.	Decision	Causality
DLVD does not Granger Cause DLPSC	29	4.76772	0.0181	Reject Ho	Uni-Causality
DLPSC does not Granger Cause DLVD		0.83572	0.4458	Accept Ho	Independent
DLDR does not Granger Cause DLPSC	29	0.79356	0.4637	Accept Ho	Independent
DLPSC does not Granger Cause DLDR		0.06108	0.9409	Accept Ho	Independent
DRSR does not Granger Cause DLPSC	23	1.73882	0.204	Accept Ho	Independent
DLPSC does not Granger Cause DRSR		1.35661	0.2826	Accept Ho	Independent
DLM2G does not Granger Cause DLPSC	29	0.81395	0.455	Accept Ho	Independent
DLPSC does not Granger Cause DLM2G		2.37859	0.1142	Accept Ho	Independent
DINF does not Granger Cause DLPSC	29	0.11445	0.8923	Accept Ho	Independent

Source: Author's Computation using Eviews, 9

4.1. Discussion of findings

Having examined the determinants of deposit money lending behaviour to the private sector of the economy using annual time series data running from 1986 to 2017 and estimating the model using Autoregressive Distributed Lag, it was found that, there is a significant relationship of the identified determinants on the banking lending behaviours to the private sector. It was further revealed that there is a long-run relationship and causality that runs from the volume of deposits to private sector credit. However, in the short and long run, the volume of deposit and financial deepening variable, that is M_2G were found to have a positive effect. While M_2G was found to be significant both in the short and long-run form, the volume of deposit was found to be insignificant. Furthermore, the error correction mechanism revealed that about 95% of discrepancies in the short run are adjusted annually and it is significant.

From the theoretical expectation, the volume of deposit and financial deepening was found to support the a priori expectation and it confirms that the volume of deposit money banks determine the lending behaviour of banks together with financial deepening which explains that, the financial development or liquidity of the economy is important for the growth of other economic sectors as they would have access to funds for their business operations. On the other hand, reserve requirement, lending rate and inflation supported the a priori expectation, as an increase in reserve

requirement would affect the liquidity position of banks and consequently, affect their lending behaviour, as a result, an increase in lending rate would follow and this will further discourage borrowers. Although the increase in lending rate may favour banks in the short run, in the long run, information asymmetry may set in putting banks in a very tight corner. In addition, an increase in inflation would automatically affect borrowers from repaying their loans as expected and at the same time affect the inputs and outputs of the private sector, this may affect the profit of these sectors and their loan repayment to banks.

However, the findings of this study revealed that, in the long run, the volume of deposits and ratios of the money supply to GDP determine deposit money bank lending behaviour to the private sector. This submission was in line with the theoretical framework of this study which was on financial intermediation, that is, intermediation function of banks, which is centred on sourcing of funds from surplus sector to the deficit sector of the economy of which the private sector is among. Apparently, submission of this study was in line with other existing studies like Olokoyo (2011), Imran and Nishat (2012), Olusanya (2012), Million (2014), Ayieyo (2016) as they all found a positive effect of volume of deposit on the private sector growth, indicating that volume of the deposit is a determinant of bank lending behaviour. It was also supported by Imran and Nishat (2012) and Million (2014) as they used financial deepening variables, it was revealed that the ratio of the money supply to GDP is also a good determinant of bank lending behaviour. Furthermore, it supported the findings of Million (2014), Enisan and Oluwafemi (2015) and Ayieyo (2016) as they found that the lending rate reduces the amount of credit to the private sector of the economy. On the long-run relationship, the findings of this study supported Olusanya (2012) as the study found a significant long-run relationship among the variables of interest.

5. Conclusion

The study concluded that there is a significant relationship between bank lending behaviour and private sector credit, however, the volume of deposit and ratio of the money supply to GDP were the two determinants found influencing the lending behaviour of deposit money banks to the private sector. The study, therefore, recommended that, first, bank lending rate should be brought down or flexible to meet up the categories of borrowers, since there is common knowledge that high-interest rate discourages borrowers and influences banks from selecting bad loan offer which may affect bank returns in the long run. Secondly, the reserve

requirement dictated by CBN on deposit money banks should be reduced so as to enable banks to be more liquid for the private sector to access funds for their productive purpose and lastly, inflation should be made below 2 digits, as inflation above a digit may be unfriendly to economy activities thereby affecting the private sector output which is germane to the economic growth.

References

Adzis, A. A., Sheng, L.E., & Abu Bakar, J. (2018). Bank lending determinants: Evidence from Malaysia Commercial Banks. *Journal of Banking and Finance Management*, *1*(3), 36-48.

Ajibola, J.O. (2015). Commercial bank loans, inflation, exchange rate and political instability as key determinants of economic growth: Empirical evidence from Nigeria (1970-2013). *International Journal of Innovation and Research in Educational Sciences*, 2(3), 182-187.

Alkhazaleh, A.Y.M. (2017). Factors may drive the commercial banks' lending: evidence from Jordan. *Banks and Bank Systems*, 12(2), 31-38. https://doi.org/10.21511/bbs.12(2).2017.03

Ayieyo, J. O. (2016). Determinants of lending behavior in selected commercial banks in Kenya. *International Journal of Economics, Commerce and Management, 2*(9), 767-782.

Ayodeji, E.A., Ajala, R.B. (2018). Capital market performance and economic growth in Nigeria (1984-2016). *Journal of Advances in Social Science and Humanities*. *4* (11), 362-378.

Ayodeji, E.A., & Ajala, R. B. (2018). Market based monetary policy instruments and industrial growth in Nigeria (1993-2016. *International Journal of Innovative Research & Development,7*(8), 387-396.

Benston, G. & Smith, C. W. (1976). Transaction cost approach to the theory of financial intermediation. *Journal of Finance*, *31*(2), 215–31.

Central Bank of Nigeria. (2017). Statistical bulletins, Annual reports.

Diamond, D.W., & Dybvig, P. (1983). Bank runs, deposit insurance and liquidity. *Journal of Political Economy*, *91*(3),401–19. https://doi.org/10.1086/261155

Diamond, D. W., & Rajan, R. (2002). A theory of bank capital, *The Journal of the America Finance, 55*(6), 2431-2465. https://doi.org/10.1111/0022-1082.00296

Enisan, A.A., & Oluwafemi, O. O. (2015). Determinants of bank credit growth in Nigeria 1980-2010. *European Journal of Sustainable Development,4*(1), 23-30.

Gambacorta, Z. & Iannoti, T. (2005). Velocity and asymmetry in response of bank to monetary policy instruments in Italy. *Journal of Development Economics*, *6*(1), 755-770.

Gambacorta, L., & Mistrull, P. E. (2003). *Bank capital and lending behavior: empirical evidence for Italy*, Temi di discussione (Economic working papers) 486, Bank of Italy, Economic Research and International Relations Area.

Ganiyu, B. A., Eboreime, M. I., Adam, Y., & Belonwu, M.C. (2017). The impact of private sector credit on economic growth in Nigeria. *CBN Journal of Applied Statistics, 8*(21), 1-22.

Gurley, J. G., & Shaw, E.S. (1960). Money in a theory of finance. *The Economic Journal*, *70* (279), 568–569, https://doi.org/10.2307/2228813

Imran, K., & Nishat, M. (2012). Determinants of bank credit in Pakistan: A supply-side approach. *Proceedings of 2nd International Conference on Business Management*.

King, R.G., & Levine, R. (1993). Finance and growth: Schumpeter Might Be Right. *Quarter Journal of Economics,18*(6), 586-608.

Leland, H. E., & Pyle, D. H. (1977). Informational asymmetries, financial structure and financial intermediation. *Journal of Finance*, 32(2), 371–87. https://doi.org/10.2307/2326770

Makali, M. J. (2014). The effect of commercial bank loans on the economic growth of Kenya. (M.Sc. Dissertation, University of Nairobi, Kenya).

Mamman, Y., & Hashim, Y. A. (2014). Impact of bank lending on economic growth in Nigeria. *Research Journal of Finance and Accounting*, *5*(18), 174-182

Melanie, F. (2004). Commercial bank lending to SMEs in Poland. *Small Business Economics23*, 51–70. https://doi.org/10.1023/B:SBEJ.0000026025.04815.bc

Million, A. (2014). Determinants of growth in bank credit to the private sector in Ethiopia: A Supply-Side Approach. *Research Journal of Finance and Accounting*, *5*(17), 90-102.

Obamuyi, T. M. (2007). An exploratory study of loan delinquency among small and medium enterprises (SMEs) in Ondo State of Nigeria. *Journal of Labor and Management in Development. 8*(2), 75-92.

Obasan, K. A., & Arikewuyo, K. (2012). The effect of pre-post bank consolidation on the accessibility of finance to SMEs in Nigeria. *Journal of Business and Management Research, 1*(3), 75-87. https://doi.org/10.5430/bmr.v1n3p108

Okuneye, B., & Ogunmuyiwa, M. (2016). Determinants of the development of small and medium scale enterprises in Nigeria. *European Journal of Business and Management*, *8*(29), 72-76.

Olokoyo, F. O. (2011). Determinants of deposit money banks' lending behaviour in Nigeria. *International Journal of Financial Research*,*2*(2), 13-18.https://doi.org/10.9790/0837-0557180

Olusanya, S. O., Oyebo, A.O., & Ohadebere, E.C. (2012). Determinants of lending behaviour of commercial banks: evidence from Nigeria, A Co-Integration Analysis (1975-2010). *Journal of Humanities and Social Science, 5*(5), 71-80. https://doi.org/10.9790/0837-0557180

Sacerdoti, E. (2005). *Access to Bank Credit in Sub-Saharan Africa: Key Issues and Reform Strategies*. IMF Working Papers, *5*(166), 1. https://doi.org/10.5089/9781451861853.001

Timsina, N. (2017). Determinants of bank lending in Nepal. *NRB Economic Review*, *20*, 22-42. https://www.nrb.org.np/contents/uploads/2019/12/3-1.pdf