Journal of Economics, Finance and Management Studies

ISSN(print): 2644-0490, ISSN(online): 2644-0504

Volume 4 Issue 04 April 2021

Article DOI: 10.47191/jefms/v4-i4-01, Impact Factor: 6.228

Page No.- 214-223

Determinable Factors Affecting Commercial Banks Deposit: The Case of Nigeria (2000-2019)

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ABSTRACT: This study examined the determinable factors affecting commercial banks deposits in Nigeria for the period of 2000 to 2019 using panel data of listed banks. The study adopted secondary data obtained from the listed Deposit Money Banks annual reports and were analyzed. Explanatory variables of the study were proxied as Branch Network, Financial intermediation ratio, Bank size, Money Supply and Economic Growth. while Dependent variable was proxied by Deposit value of banks. The study adopted ex-post facto research design to examine the effects of bank-specific and macro-economic factors on deposit in Nigerian Deposit Money Banks. Series of diagnostic tests was carried out by the study. Panel data technique specified random effect model by Hausman test. The study found that branch network and bank size have positive and significant effects with deposit while financial intermediation ratio and economic growth have positive but insignificant effects with deposit during the study period. Also, money supply has negative but significant effect on deposit. The study therefore recommended among others that the regulatory agencies of financial institutions should continue to stimulate competition in the banking industry as increase in branch network still hold key positions in strengthening deposits and activities of the institutions to be able to compete internationally. Also, at the bank level, the improvement of the deposit of Nigerian Deposits Money Banks need to be conducted by a reinforcement of the intermediation activities of banks through central banking regulation programs that will propels financial institutions to adhere to increase in loan-to-deposit portfolio.

KEYWORDS: Commercial banks, Deposits, Economy, Intermediation, Regression.

1.1 INTRODUCTION

A healthy banking system is the backbone of the development and stability of any economy of the world. This has made regulators all over the world to be firm in decision makings of financial institutions. Savings and investment play a key role in promoting economic growth. The people's savings are the basis of investment resources of the country and are essential for economic development and growth. Increase of the savings will lead to the capital accumulation which will ultimately lead to the economic growth.

Accordingly, Mistry, Savani & Vidyanagar (2015) opined that banks are the backbone of the economy of the country because they play significant role in the effort to attain stable prices, high level of employment and sound economic growth. A critical instrument of deposit money banks activities is deposit mobilisation. Bank deposit is the cornerstone of a bank's financial strength. It supports its operations by providing means for its financial intermediation functions, serves as a buffer to absorb unanticipated losses from its activities and in the event of problems enabling the bank to continue to operate in a sound and viable manner (Gebre, 2019). Bank deposits are the main form of the population's savings in a number of emerging market climes, such as Asia, sub-Saharan Africa. This is due to the underdevelopment of stock markets, their increased volatility, insufficient financial knowledge of the population, low risk appetite, and lack of confidence in the financial system. People with low and medium incomes prefer conservative forms of savings, including bank deposits.

Deposits are the heart of banking institutions and financial systems (such as banking, insurance, pension, equity market) have been recognized to play a necessitating role in economic growth because a number of empirical works have established that mobilization of deposits for financial institutions is as essential as oxygen for human being (Ukinamemen, 2010., McCadd, 2015., Halefom, 2015., Ketema, 2017., Islam, Ali & Wafik, 2019., Gavurona, Kocisova, Rozsa & Halaskova, 2019).

Deposits may be considered as the most important resource of deposit money banks because deposits meet up the needs of financial resources of banking systems. Therefore, the amount of deposit of banks should be mobilized and accumulated enough

so that it can satisfy the financial needs of its customers. Deposit mobilization means encouraging customers to deposit cash with the bank or inducing new clients to come and open accounts with the bank (Kaba, 2019). Mobilization of deposits plays an important role in improving economic efficiency through the channeling of funds from resource surplus unit to those with better opportunities for productive investment. But deposit mobilization is not an easy task. In this case, various bank-specific factors such as people's confidence in the banking system, people's banking habit, the volume of business transaction, location, type of building, window dressing, policies on branch network, the general economic environment and the saving potential of the region as well as and macro-economic factors such as regulatory policies on interest rate, lending rate, money supply, per capita income of the populace, cash reserve requirement among others.

While researchers have established several theoretical explanations to justify why adequate deposits mobilization affect the financial institutions activities and the economy in general, the commonly cited justification is that mobilization of deposit plays an important role in providing satisfactory service to different sectors of the economy such as agriculture, real, manufacturing, construction (Ongetti, 2016., Alemu, 2016., Awole, 2016., Tun, Alrajawy & Bhaumik, 2020 and Unvan & Yakubu, 2020). Furthermore, it has been established that financial institutions activities are dependable on the mobilization of deposit and concluded that the higher the deposits amount, the bigger the lending (in form of loan and advances) and investments portfolio can be maintained by banks to sustain its expansion and future growth.

More so, previous literature from relevant studies on the factors affecting deposits of deposit money banks suggests either positive effect, negative effect or non-negativity effect. Studies such as Ukinamemen (2010).; Wubitu (2012).; Ngula (2012)., Zhang & Daly (2013).; Tizita (2014); Nwanko, Ewuim & Asoya (2013)., Tareq (2015); Nguyen, Tripe & Ngo (2018), Malkina (2019) among others had divided factors affecting deposit money banks deposit into two, namely exogenous and endogenous factors. Exogenous factors further sub-divided into two such as country-specific factors and bank-specific factors. Country-specific factors are fundamentals that are peculiar to a clime and these fundamentals have the potency to affect how deposits of financial institutions are harnessed. These factors include inflation, real interest rate, population growth of the country, GDP growth rate, per capita income of the populace, money supply, lending rate among others. Bank- specific factors on the other hand are factors within the control of the banking industry and are likely to have effect on deposits. These include liquidity of the bank, profitability of the bank, and number of banks branches, bank management policies, and bank size. The endogenous factors are qualitative indices (strategies) adopted by financial institutions to improve on their services to the citizenry. These include awareness of the society, convenience of bank's office and services in the bank among others. Consequently, this study aims at empirically analyzing the determinable factors affecting commercial banks deposits in Nigeria. The specific objectives include to:

1. Establish the significance of branch network on the deposit of Nigerian commercial banks
2. Establish the significance of financial intermediation ratio on the deposit of Nigerian commercial banks
3. Establish the significance of bank size on the deposit of Nigerian commercial banks
4. Establish the significance of money supply on the deposit of Nigerian commercial banks
5. Establish the significance of economic growth on the deposit of Nigerian commercial banks

The remainder of this paper is structured as follows: section two provides a review of literature, section three discusses the methodology, section four presents the results and discusses the findings; and section five concludes, draws policy implications, and recommends the appropriate course of action.

2.1 LITERATURE REVIEW

A growing body of literature has examined the determinable factors affecting deposit of banks. This section provides empirical review on the subject matter so that practical gap in literature can be sifted.

Bernard (2019) examined macroeconomic dynamics, bank-specific factors and deposit mobilization of the Nigerian banking sector. Macroeconomic dynamics was proxied by inflation rate, lending rate, exchange rate, government expenditure, unemployment rate and Gross domestic product (GDP) while bank-specific factors was proxied by deposit interest rate, branch network expansion and bank's liquidity. The study which is ex-post facto, relied mostly on secondary data which were collected through the Central Bank of Nigeria (CBN) and National Bureau of Statistics (NBS) statistical bulletin from 1985-2018. Multiple regression Ordinary Least Square (OLS) statistical tool was applied to establish the like fit to the observed data and the degree of relationship that exist between variables. The granger causality test was employed to establish the causal relationship between the variables. Findings revealed among others that inflation rate measured by the consumer price index and deposit interest rate have negative and significant relationship with deposit mobilization in Nigeria. Exchange rate, unemployment rate and loan-to deposit ratio have negative and insignificant relationship. Lending rate and Government expenditure have insignificant positive relationship while it

was only Gross domestic product and number of bank branches that have positive and significant relationship with deposit mobilization in Nigeria.

Arikewuyo and Akingunola (2019) conducted a study on the impact of interest rate deregulation on fund mobilization of deposit money banks in Nigeria between 1986 to 2016. Autoregressive Distributed Lag (ARDL) Bound Test technique was used to determine short and long run impacts of interest rate deregulation on fund mobilisation of DMBs. The result showed that interest rate had insignificant impact, in the short run but significant impact in the long run. Also, money supply and inflation rate were the key drivers of fund mobilisation of DMBs in both short and long run situation. The non-significance of government expenditure affirmed that fund mobilisation of DMBs is of monetary and not fiscal policy phenomenon in Nigeria. It is, therefore, concluded that interest rate impacted on fund mobilisation in the long run.

Akaninyene, Innocent and Aniekpeno (2018) critically examined inflation rate in Nigeria with the view of ascertaining its effect on the deposit mobilization in Banks. The population for the study included selected numbers of banks i.e. deposit money bank in Nigeria from 1994 – 2014. Multiple regression Ordinary Least Square (OLS) statistical tool was applied to establish the like fit to the observed data and the degree of relationship that exist between variables. Findings reveals among others that there exist a significant and negative relationship amongst demand, savings and time deposit with inflation in Nigeria, and that interest rate impacted significantly and positively on saving and time deposit.

The study by Hassan (2016) was on the effect of interest rate on commercial bank deposits in Nigeria. Hence, this study was examined how interest rates affects commercial bank deposits between 2000 and 2013 in Nigeria. The study made use of secondary data sourced from the Central Bank of Nigeria statistical bulletin and the National Bureau of Statistics between 2000 and 2013. The model for the study has as its dependent variable the Commercial Bank Deposits (CBD) while its explanatory variables were the interest rates and the Gross Domestic Product (GDP). Using the Ordinary Least Square (OLS) multiple regression techniques; the study revealed that there was a negative relationship between the interest rates and the commercial bank deposits suggesting that interest rates has not been responsible for customers deposits in commercial banks in Nigeria while the GDP has a positive relationship with commercial bank deposits.

In a study by Eke (2019) on poisson regression analysis on economic determinants of commercial bank branches expansion in Nigeria from 1988 to 2016 covering 29 years. The study used secondary data. Poisson regression analysis was adopted. Based on the analysis, it was discovered that there was a strong relationship existing between commercial banks branches expansion, population growth rate, bank assets, savings deposit and gross domestic product growth rate. Therefore, this study concludes that population growth rate, bank assets, savings deposit and gross domestic product growth rate influence commercial banks branches expansion in Nigeria.

Unvan and Yakubu (2020) investigated a study on do bank-specific factors drive bank deposits in Ghana for the period 2008 to 2017 using the random effects technique. The results show that profitability, bank size and liquidity are significant determinants of bank deposits. Macro- economic instability proxied by inflation also exerts a negative significant impact on bank deposit. The findings further reveal that an increase in bank's capital adequacy level does not essentially translate into deposit.

Yakubu and Abokor (2020) examined the factors determining bank deposit growth in Turkey: an empirical analysis for the period spanning 2000Q1 to 2016Q4. The study employs the autoregressive distributed lag approach to examine the effect of bank-level and macroeconomic factors on deposit growth. The results reveal that bank stability, banking sector efficiency, broad money supply, economic growth and inflation are significant determinants of deposit growth in the long-run. The findings further show that in the short run, only branch expansion and broad money supply are relevant for bank deposit mobilization.

Kanyugi, Gudda, Ombok and Kibabi (2019) investigated a study on agency banking adoption and its effect on banks deposits of commercial banks in Kenya. The study adopted an exploratory non-experimental research design. The study used secondary data and the nature of the data collected was quantitative. The data targeted 15 commercial banks that were licensed by Central Bank of Kenya to carry out agency banking as of December 2014, however one commercial bank (Chase bank) was put under receivership during the period of study and therefore it was excluded from the study. The data was collected from CBK banks supervision annual reports and from financial reports of the 14 commercial banks using a data collection worksheet and analyzed using descriptive and inferential statistics. The empirical model of the study was based on Event study. The results indicate that there was a statistically significant change in the mean of change in deposits before and after adoption of agency banking.

Chen, Goldstein, Huang and Vasishtha (2020) examined a study on bank transparency and deposit flows for US commercial banks from 1994-2013. Dependent variable was proxied as deposit flows measured as the changes in bank deposit balances while independent variables are net income during the period, information quality and interest rate. Multiple regression technique was

adopted. The study documents that uninsured deposit flows are more sensitive to information about bank performance when the quality of the information provided by the bank is higher. Furthermore, the study provides evidence linking this information quality to deposit rates, banks' investments, and profitability.

Gebre (2019) examined determinants of private commercial banks deposit growth in Ethiopia. The panel data set for the study used secondary source spanning from 2008 to 2017. The dependent variable used to this study is deposit growth; explanatory variables used in this study were number of bank branch, loan to deposit ratio, economic growth (GDP), deposit interest rate, net interest margin, and age of company. Different diagnostic tests were conducted to check the appropriateness of the model. Fixed effects technique has been applied to find out the results of explanatory variables. According to the final results achieved by applying panel data techniques, number of bank branches, economic growth (GDP) and age of company had positively and statistically significant influence on private bank deposit growth; whereas, deposit interest rate and net interest margin are negative and statistically significant influence on deposit growth.

Lemma (2019) examined the determinants of deposit mobilization: the case of commercial bank of Ethiopia for the sample year 1995 to 2016. Explanatory type of research design, descriptive statistics, correlation matrix and multiple regression technique were used on time series secondary data. Five independent variables, which are saving interest rate, inflation rate, exchange rate, branch expansion and gross domestic product are regressed with the dependent variable: saving deposit. The result indicates that saving deposit rate and branch expansion have statistically positive and significant effects, saving interest rate, exchange rate and inflation rate have contrary to the theoretical assumption before research, and exchange rate has inverse relation with Commercial Bank of Ethiopia deposit mobilization (private saving deposit).

Abebe (2019) examined the factors affecting deposit mobilization: the case of commercial bank of Ethiopia for the periods 1995 to 2017. The study adopted quantitative research approach. Bank specific and macroeconomic variables were analyzed by using the time series fixed effect regression model. Different diagnostic tests (test for assumption of Homoscedasticity, Autocorrelation, Normality, average value of the error is zero and independent variables are non-stochastic) were conducted to check the appropriateness of the model. The results reveal that Bank's Liquidity (statistically significant), exchange rate, and Bank Profitability are positively and statistically insignificant on bank deposit growth; whereas, Money Supply influence is negatively and statistically significant on bank deposit growth. Deposit Interest Rate and Inflation had insignificant positive influence on bank deposit growth, whereas credit risk and Government Expenditure had insignificant negative influence on bank deposit growth. Suggestions have been made to decrease the broad Money Supply to the economy since it had a negative significant effect on deposit mobilization.

In a study by Corovei & Socol (2019) on the macroeconomic drivers for Household deposit growth in the Eurozone area during January 2003 to June 2019. The study used OLS methodology. Series of diagnostic tests such as multicollinearity, heteroskedasticity and stationarity tests were conducted. The macroeconomic variables used are GDP annual growth rate, inflation rate, harmonized unemployment rate, interest deposit rate, short-term debt securities, long-term debt securities and listed shares. Findings reveal that apart from the unemployment rate, all the other variables have a positive impact on the household deposits growth rate.

Islam, Ali and Wafik (2019) conducted a study on determinants of deposit mobilization of private commercial banks: evidence from Bangladesh using panel data regression methodology. In the study, 14 conventional private commercial banks have been observed over ten years (2007-2016). The results of this study provide evidence that total deposit (as measured by company size) has significant negative impact on the deposit mobilization (as measured by banks deposit growth rate) and broad money supply growth rate has significant positive impact on the banks deposit growth rate whereas the rest of the selected variables i.e. number of banks branches, deposit interest rate, loan-to-deposit ratio, Gross Domestic Products (GDP) growth rate, inflation rate have no significant impact on the banks deposit growth rate of the private commercial banks in Bangladesh.

Malkina (2019) investigated the determinants of private savings in the form of bank deposits: A case study on regions of the Russian Federation. The study adopted Cobb- Douglas type of regressions with fixed time effects and logistic type regressions based on panel data of 80 Russian regions from 2014 to 2016. Their estimations allowed us to reveal the dependence of private deposits in Russian regions at the level of real personal income and its structure, the personal income inequality, the demographic structure of the population, the state of the labor market, the level of accumulated wealth, the rate of urbanization, and the level of development of the financial system in the regions. Findings reveal that mandatory payments, labour market, ratio of pensioners and unemployment rate have positive relationship with bank deposits while income inequality and family structure exhibit negative impact on bank deposits.

Furthermore, Lin (2019) conducted a study on bank deposits and the stock market. Variables considerations include growth of domestic deposits, GDP growth, change in federal fund rates and residential house price growth. Time series data was utilized. Finding shows that stock market booms are associated with slower bank deposit growth due to households' reduced demand for deposits. Aggregate deposit growth is slower when stock returns are high. The effect is stronger in areas with high stock market participation. Deposits outflow causes banks to cut back lending during stock market booms. The reduced credit supply appears to negatively affect local economic activities.

More so, Ali, Eldaw, Alsmadi and Almarashdeh (2019) examined the determinants of deposit of commercial banks in Sudan: an empirical investigation for the period 1970 to 2012. Factors under scrutiny are inflation rate, total credit as a percentage of GDP, interest rate (profit margin), money supply as the GDP percentage and per capita GDP. This study utilises the approach of autoregressive distributed lag (ARDL) to co-integration and the related error correction model (ECM) for the examination of the factors. The main results obtained suggest that within the long-run, inflation and money supply show negative impacts on total deposits. Conversely, credit, interest rate (profit margin) and real per capita GDP have positive impact on total deposits. Within the short-run, using OLS method, although nearly variables demonstrate that they are statistically significant, they are exhibiting the wrong signs. Nevertheless, the coefficient of the lagged residual (*ECt*–1) within the ECM model has the correct sign and is highly significant which implies that in the long-run equilibrium, the dependent variable has the inclination for adapting to any deviations.

Also, Al-Harbi (2019) examined the determinants of rate of return deposits in Islamic banks for a 20 –year period (1989-2008). The data were analyzed using a two-way fixed-effect model. The empirical results demonstrate that capital adequacy (default risk), credit risk, age, economic growth, and concentration significantly and negatively influenced the return on deposits in Islamic banks. The results also suggest that foreign ownership, size, inflation, and oil prices had significant and positive effects on the rate of return. Moreover, the results indicated that deposit insurance (positive), interest rates (positive), and deposit growth (negative) are not determinants of the rate of return in Islamic banks.

Lastly, Kaba (2019) investigated factors affecting deposit growth of commercial banks in Ethiopia. The panel dataset for the study consisted annual data spanning from 2001 to 2017. The dependent variable was proxied as commercial banks' deposit growth while explanatory variables include advertising and publicity, bank branches, exchange rate, inflation rate, loan and advances, money supply and nominal gross domestic product. Different diagnostic tests namely test for zero mean of error terms, homoscedasticity, no autocorrelation, no multicollinearity and normality were conducted to check the appropriateness of the model. The Fixed-effect model results show that bank branch, exchange rate, loan and advances and nominal gross domestic product have significant positive effect on commercial banks' deposit growth. However, inflation and money supply found to have significant negative effect on bank deposit growth. The effect of advertising and publicity was found to be positive and insignificant.

From the studies reviewed, it has shown that the evidence on the direction of relationship between deposit and its determinants is inconclusive as the coefficient has exhibited mixed results. It can also be deduced that the review shows that there are relatively scanty studies on factors affecting deposit of commercial banks in Nigeria and that studies documented within the sphere of Nigeria. It was also seen that some of the studies reviewed had methodological challenges such as the absence of normality test, model specification test, serial autocorrelation test among others.

2.2 THEORETICAL FRAMEWORK

This study adopted the financial intermediation theory as the bedrock upon which the analysis rests. This theory was postulated by Douglas (1984). According to the theory, commercial banks and other financial intermediaries are the main sources of external funds to firms. Financial intermediaries exist not only because of the divergence of requirements of lenders and borrowers, but for specialized services they provided such as insurance services for insurance companies, retirement fund products for retirement funds, investment products for unit trusts and overdraft and deposit facilities for banks. Financial intermediation theory also argues that information asymmetry arises in the financial system and markets between borrowers and lenders because borrowers generally know more about their investment projects than lenders do.

3.1 METHODOLOGY

The research design adopted for this paper is ex-post facto. According to Kothari and Garg (2014), ex-post facto research design seeks to find out the factors of past event or already existing condition in other to predict future outcome. The choice of this research approach is based on the advantages and reliability of results associated with it. Sekaran and Roger (2013) justify that an

ex-post facto research design is of empirical nature because of the nature of data collected. An empirical research method bridges the gap between the theoretical foundations of models and its practical application. This is therefore consistent with the objective of the study.

3.2 SAMPLE AND DATA

There are 21 DMBs in Nigeria as at December 2019, but the sample of banks to be included in this paper depends on the availability of data. For this reason, three filters were used to conveniently select the sample size. The filters are that the bank must be listed, not delisted and should have full length of data for the period. Furthermore, a listed company is expected to comply with the NSE's requirement of financial disclosure. Hence, their financial reports are expected to be easily accessible and readily available. The result of this process displayed in Table 1, has produced 14 commercial banks that accounts for 71.4 percent of listed banks population in Nigeria. Also, the bank's annual financial reports for 20 years covering 2000 to 2019 was used. In all the study has 300 observations or data points making it a balanced panel study.

Table 1: Sample Size of the study

S/N	Names of Bank	Categorization	Remark
1	Access	International	Quoted
2	Diamond	International	Quoted
3	UBA	International	Quoted
4	Fidelity	International	Quoted
5	Stanbic	National	Quoted
6	First Bank	International	Quoted
7	Guaranty Trust Bank	International	Quoted
8	Eco Bank	International	Quoted
9	FCMB	International	Quoted
10	Unity Bank	National	Quoted
11	Union Bank	International	Quoted
12	Wema Bank	National	Quoted
13	Skye Bank	National	Quoted
14	Sterling Bank	National	Quoted
15	Zenith Bank	International	Quoted

Source: Adapted from NSE Factsheet, 2021.

3.3 METHOD OF DATA ANALYSIS

Hausman- specification test was conducted in order to choose the most appropriate panel estimation between fixed effect and random effect (Hausman, 1978). The test provides two estimates and compares the slope of their coefficients. The threshold is based on 5% level of significance, therefore if the P-value is greater than 5% , then the random effect model prevails otherwise fixed effect. The Hausman test result indicates P>X2=0.540, the P-value is greater than the 5% level of significance indicating that random effect model is the appropriate estimator than fixed effect. Similarly, the result of Breusch and Pagan Lagrangian multiplier test further validates the choice for random effects estimator with P-value of 0.0300 which is less than 5 % level of significance, implying the presence of significant differences among the sampled listed commercial banks.

To enhance the meaningfulness of this study and to better understand the context of factors affecting deposits of Nigerian commercial banks, we conducted series of post estimation regression diagnostic tests were conducted to ascertain the validity of the statistical inferences for the study - multicollinearity, correlation matrix and descriptive statistics.

3.4 MODEL SPECIFICATION

To estimate the relationship between deposit and its determinants, variables such as branch network, financial intermediation ratio, bank size, money supply and economic growth were used as proxies for explanatory factors while deposit value of banks were used as proxy for response variable.

Hence, the mathematical expression of random effect estimation model for this paper is presented below:

$$DEP_{it}=\beta_0 + \beta_1 BRN_{it} + \beta_2 FIR_{it} + \beta_3 BAS_{it} + \beta_4 MOS_{it} + \beta_4 ECG_{it} + \varepsilon_{it} \quad - \quad - \quad i$$

Where:

DEP_{it} = Deposits value of banks i at time t

BRNit = Branch Network of banks i at time t

FIR_{it} = Financial intermediation ratio of banks i at time t

BAS= Bank size of banks i at time t

MOS= total value of money in circulation i at time t

ECG= economic growth of Nigeria measured as gross national income i at time t

β_0 = Constant term (intercept)

β_1, β_2, β_3, $\beta_4$and β_5, denote regression parameters and slope of the variables.

ε = The Error Term

In view of the above, this paper has proposed the following hypotheses in null forms:

- **H_{01}:** Branch network does not have any significant effect on deposit in Nigerian commercial banks
- **H_{02}:** Financial intermediation ratio does not have any significant effect on deposit in Nigerian commercial banks
- **H_{03}:** Bank size does not have any significant effect on deposit in Nigerian commercial banks
- **H_{04}:** Money supply does not have any significant effect on deposit in Nigerian commercial banks
- **H_{05}:** Economic growth does not have any significant effect on deposit in Nigerian commercial banks

4. RESULTS AND DISCUSSION

The objective of this paper is to examine the relationship between deposits and its determinants of listed commercial banks in Nigeria. Thus, results of the analysis with the help of STATA (13) statistical software package are presented as follows:

4.1 Descriptive Statistics of the data

Descriptive statistics enable transformation of raw data into more meaningful information (Sekaran & Roger, 2013). To describe data in this paper, the mean, standard deviation, maximum and minimum values of the dependent and independent variables was used accordingly. This is reported in Table 2 below:

Table 2. Summary Statistics

Variable	OBS	Mean	Std. Dev.	Min	Max
DEP	300	8.136721	4.82641	1.238238	7.065473
BRN	300	9.06427	2.92907	1.33621	7.41090
FIR	300	.846355	.319119	.079442	.7612
BAS	300	.4746716	.279648	.385812	.498028
MOS	300	5.015587	1.15178	.572463	.783153
ECG	300	7.273415	.3704782	.632309	.740487

Source: STATA Output, 2021.

As shown in the Table 2 above, the mean value of bank deposit (DEP) is 8.13 percent for the period of 2000-2019. This means, Deposit Money banks achieved 8.85 percent average deposit within the given period of time. It is also noticed that the bank deposit was fluctuating between 1.238 and 7.065 percent. The standard deviation for the banks deposit is 4.826 percent; this confirms that there exist significant variations of deposit among Deposit Money banks during the study period.

Regarding the explanatory variables, branch network (BRN) which shows the average of 9.064 percent, minimum value of 1.336 percent and maximum value of 7.401 percent with corresponding standard deviation of 2.929 which explains the level of variability in branch network by Deposit Money banks and the rate of dispersion of branch network from its mean value.

Also, the mean value of financial intermediation ratio (FIR) was 0.846 percent. It implies that lower amount of volatile liabilities/deposits were tied up with illiquid loans which are not performing as expected by the Deposit Money Banks. There was low dispersion of FIR towards its mean value among banks that is shown by the standard deviation of 0.319% on the bank to financial intermediation ratio on average. The maximum value of FIR was 0.7612 percent which is far above the standard. Also, the minimum value was 0.079 percent which is far above the standard deviation. This indicates that there were some Deposit Money banks in Nigeria having extra intermediation (banks around 68% DFI) and others were going to face bank intermediation risk. Therefore, it can be concluded that intermediation was not moderate among Deposit Money banks in Nigeria.

The mean value of the bank size (BAS) over the period under study was 0.475 percent with the maximum and minimum values of 0.498 and 0.385 percent for the period 2000 to 2019 respectively. There was little variation of bank size towards its mean value over the periods under study with the value of standard deviation 0.279 percent. This implies that the stability of bank size in terms of total assets for subsequent years under the study periods in a sense there was a control of minimum and maximum bank size by the Deposit Money banks. So there was no competition between Deposit Money banks to attract more assets which invariably will affect deposit under the study period.

The mean value of the Money Supply (MOS) is 5.015 percent, with standard deviation value of 1.15 percent which is not close from the average value and very significant. Also, the value of minimum to maximum of Money supply range from 0.572 percent to 0.783 percent in Nigeria.

Economic growth (ECG) measures the economic prosperity of the country to its citizen. The annual ECG of the country ranges from a minimum of 0.632 percent to a maximum of 0.740 percent. The mean value of ECG was 7.273 percent indicating that the average real growth of the country i.e Nigeria. Also the standard deviation was 0.370 percent; this implies that economic prosperity in Nigeria measured by Gross National Income during the period of 2000 to 2019 remains stable.

4.2 Multicollinearity Test

To establish the association between the explanatory variables of the study, variance inflation factor (VIF) and tolerance level (TL) was obtained as presented in Table 3 below:

Table 3: Variance Inflation Factor and Tolerance Level

Variables	VIF	1/VIF
BRN	2.56	0.39
FIR	1.28	0.78
BAS	1.17	0.85
MOS	2.26	0.44
ECG	1.58	0.63
Mean VIF	**1.77**	

Source: STATA Output, 2021.

From Table 3, the VIF and TV are found to be consistently smaller than 5 and above 0.10 respectively indicating the absence of multicollinearity as suggested by Tobachnick & Fidell (2013) and Kothari & Garg (2014). The low mean VIF is also a pointer to the mild correlation among the regressors. This shows the appropriateness and fitness of the explanatory variables as used in the model.

4.3 Regression Result

As shown in the methodology, the model was analysed using random effect technique. The result presents R-Squared value of 0.7871. Thus, indicating that deposit determinable factors explained 78.71% of the variability of listed commercial banks deposits. Also, the Wald test show a value of 108.38 for the model and is significant at 5% and this provides an indication that the model is statistically fit. This is reported in Table 4 below:

Table 4. Random Effect Regression Result

Variables	Coefficient	Z- value	P>(Z)
BRN	0.206	6.21	0.000
FIR	0.103	1.00	0.317
BAS	0.623	4.43	0.000
MOS	-6.610	-3.06	0.000
ECG	0.019	0.170	0.861
Constant	34.014	13.28	0.000
R-Squared	0.7871		
Modified Wald Test:	108.38		
Prob>Chi2.:	0.0000		

Source: STATA Output, 2021

First and foremost, this study established that branch network has positive (0.20) and significant (0.000) effect on deposit in Nigerian Deposit Money banks. This suggests that opening of bank branches in Nigeria do improve deposit. The positive coefficient of branch network is consistent with the a priori expectation of this study. Also, the finding of positive and significant effect of branch network on deposit corresponds with the findings of Gabre (2019), Lemma (2019), Yannet (2016), Andinet (2016), Giragn (2015) and Shemsu (2015).

Also, the study established financial intermediation ratio has positive (0.10) but insignificant (0.317) effect on deposit in Nigerian Deposit Money banks. The finding of negative coefficient of degree of intermediation is not in line with the expectation of this study. However, the finding of positive effect on deposit by this study is inconsistent with those of Bernard (2019), Islam, Ali & Walik (2019) and Turhani & Hoda (2016) who found negative and insignificant effect. Also, the finding is not in line with the work of Kaba (2019) who found a positive and significant effect of financial intermediation ratio on deposit of banks.

The study further examined the effect of bank size on deposit in Nigerian Deposit Money banks. The findings established that bank size has positive and significant effect on the deposit in Nigerian Deposit Money banks. The finding that bank size plays a positive (0.62) role and significant (0.000) in determining deposit is consistent with the a priori expectation of this study. The finding do not confirm the findings of previous empirical work such as Baehaqie, Fahmi & Beik (2017) who found negative and significant effect of bank size on deposit. Also, the finding is consistent with studies of Unvan & Yakubu (2020), Al-Harbi (2019) and Ferrouhi (2017) who found positive and significant effect of bank size and deposit.

Furthermore, the study found that money supply which was employed as measure of macro-economic factor affecting deposit in Nigerian Deposit Money banks was negative (-0.61) but significant (0.000) effect on deposit. The finding is in contrast with the a priori expectation of this study. Also, the finding of negative and significant effect on deposit in Nigerian Deposit Money banks is consistent with work such as Kaba (2019) while researchers such as Abebe (2019) and Awole (2016) establishes a negative and insignificant relationship. Also, studies like Yakubu & Abokor (2020) and Islam, Ali & Wafik (2019) established a positive and significant relationship between money supply and deposit of banks.

Lastly, the study found that economic growth has positive (0.01) but insignificant (0.861) effect on deposit in Nigerian Deposit Money banks. Furthermore, this positive effect of economic growth is not contrary to the expectation of this study. This finding is not consistent with studies of Gebre (2019), Bernard (2019), Corovei & Socol (2019), Tun (2019), Ferrouhi (2017) who found positive and significant effect on deposit. However, the finding is in support of Giragn (2015) who established a positive but insignificant relationship.

5. CONCLUSION AND RECOMMENDATIONS

The study examined the determinable factors affecting deposit in Nigerian Commercial banks. Based on the findings of the study, the following conclusions are drawn. The study reveals that Branch network has positive and significant effect on deposit in Nigerian Deposit Money banks. Based on the above finding, the study therefore concludes that Branch Network (BRN) as a proxy for bank-specific factor does play significant effect in determining deposit in Nigerian Commercial banks. Also, the study also found that financial intermediation ratio (FIR) has positive but insignificant effect on deposit in Nigerian Deposit Money banks. Hence, this study concludes that financial intermediation ratio is not bank-specific factor affecting deposit in Nigerian Commercial banks. Further, it was found that Bank size has positive and significant effect on deposit in Nigerian Deposit Money banks. This implies that Bank size (BAS) does have capacity to influence the deposit in Nigerian Commercial banks. Furthermore, the study confirms that Money supply (MOS) has a significant effect on deposit in Nigerian Commercial banks. This implies that money supply does significantly effect on deposit in Nigerian Deposit Money banks. It was therefore, concluded that money supply is a major macro-economic factors affecting deposit in Nigerian Commercial banks. Also, the study found that Economic Growth (ECG) has an insignificant effect on deposit in Nigerian Commercial banks. Thus, it is concluded that as economic growth increases in the economy, it does not have effect on deposit in Nigerian Commercial banks.

Based on the findings obtained, the following recommendations are hereby offered,

1. The regulatory agencies of financial institutions should continue to stimulate competition in the banking industry as increase in branch network still hold key positions in strengthening deposits and activities of the institutions to be able to compete internationally.
2. At the bank level, the improvement of the deposit of Nigerian Deposits Money Banks need to be conducted by a reinforcement of the intermediation activities of banks through central banking regulation programs that will propels financial institutions to adhere to increase in loan-to-deposit portfolio.
3. The significant and positive effect of bank size should be taken as a good signal for Deposit Money Banks to merge and to have scale advantage.

4. The central bank of Nigeria should from time to time review the quantity of money in circulation of the economy as this is paramount in strengthening the deposit growth of banks.
5. The Government through the regulatory authorities i.e CBN and NDIC should formulate policies that are designed to provide sustainable output growth as these are good for banking sector stability.

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