



Determinants of Deposit Money Banks' Profitability in Nigeria

¹ Sani Abdulrahman Bala
(sonyaxle9@gmail.com)

¹ Nurudeen Mohammed Moshud
(moshud2010@gmail.com)

² Oladele Jamiu Olanrewaju
(oladelejamiuolanrewaju@gmail.com)

³ Abu Isaac Friday
(abu.isaac2020@gmail.com)

¹Department of Accounting, Faculty of Management Sciences, UDUS, Sokoto

²Department of Accounting, Umaru Ali Shinkafi Polytechnic Sokoto

³Department of Business Administration, Faculty of Management Sciences, UDUS, Sokoto

Abstract

This study examined the determinants of Deposit Money Banks' (DMBs) Profitability in Nigeria. The study specifically analysed the relationship between Bank size, Customer Deposits, Loan and advances and tax on Profitability. The population of the study is made up of all the 24 DMBs quoted on the Nigeria Stock Exchange as at 31st December, 2020. The study adopted a cross-sectional research design. The study used a sample of 3 DMBs for a period of 11 years ranging from 2010 to 2020. The sources of data collection was secondary data in nature and was extracted from the annual account and reports of the sampled DMBs. The study employed a Panel Regression techniques as the method of data analysis. The dependent variable is Profitability and the independent variables are Bank size, Customer Deposits, Loan and advances and tax. The findings of the study indicates that a significant relationship exist between Bank size and profitability which is revealed by the p-value of 0.000. Also, customers' deposit revealed a significant relationship with profitability which is evident from the p-value of 0.002. The results also shows that loans and advances has a significant relationship with profitability. This indicates that these three variables are determinants of DMBs profitability. While tax revealed a no significant relationship with profitability with a p-value of 0.824, indicating that taxation does not determine the profitability of DMBs profitability and this is evident from the fact that tax is always computed after profit must have been realized. The study recommends that DMBs should continually strive to increase or improve on it asset capacity which increases the size of the DMBs and also ensure that they encourage customers' to seek for loans and advances, possibly by reducing the stringent policies or conditions associated with issuing of loans.

Keywords: Customer deposit, loans and advances, tax, profitability, return on assets

1. Introduction

All over the world, Banks are known to play major role of directing the economic operations of a nation. The banking sector plays a critical role in moving funds from the excess units to the deficit units. When a sound financial system is in place, it is expected that it will show improvements in profitability, it will also increase the volume of funds



flowing from excess to deficit, and will provide a better quality services for consumers. In Nigeria, banks as financial intermediaries, where all other sectors have to relate with banks to carry out their operations effectively either as a debtor or creditor, they play an important role in the operation of an economy, Furthermore, banks are the only dealer of funds in an economy, therefore, it is very important that they are stable. As such, an in depth understanding of determinants of their profitability is necessary and vital to the ability of an economy to resist crisis.

In literature, the determinants of profitability are empirically well explored based on certain determinants which can be the size of the bank's equity, customer deposits, total assets, inflation, taxes and other determining factors. The proxy of profitability varies among studies, some employed, Return on Asset, Return on Equity, Net Interest Margin, Return on Average Asset and so on. Most of the studies conducted in relation to this study have used many variables as determinants of banks' profitability with few no studies has been conducted using tax as a possible determinants of banks' profitability. Hence this study would fill the existing literature gap by conducting a research using tax as a variable. Also, most studies conducted in relation to this field have been conducted using data relating to 2018 (Ige and Adewumi 2020) with no study conducted that utilized data in relation to 2020 financial year, this study will also fill the time gap.

It is against this back drop that this study examines the determinants of Deposit Money Banks Profitability in Nigeria which covered eleven year period ranging from 2010-2020. The study specifically has four objectives and these include: to examine the relationship between bank size, customer deposits, loan and advances and tax on return on assets. The research hypotheses drawn for the study are: there is no relationship between bank size, customer deposits, loans and advances, tax and banks' profitability.

2. Literature Review

Conceptual Framework

The determinants of banks performance or profitability are discussed below:

Size: As it is applicable with many variables, the impact of size on bank performance has been seriously argued amongst various researchers. This division amongst researchers can be divided into three groups: there are those who believe that the size of a bank has a positive impact on performance, those who find a negative impact, and those for whom the impact is not significant. Pasiouras and Kosimidou, (2007).

Capitalization: Capitalization is usually measured by the ratio of equity to assets ratio (CAR capital to asset ratio). Rapid approach to the question might suggest a higher CAR ratio reduces the ROE due to two mechanisms: A high ratio indicates a lower risk, and the theory of markets to balance advocating a strong relationship at risk and profitability would lead to a lower profitability, An increase in this ratio may indicate that the share of the debt decreases and thus implies a lower earnings from the tax exemption of the debt burden. (Berger 1995),



Liquidity: Liquidity can be measured by the ratio of loans to assets. The higher the ratio, the lower the bank has liquidity. Loan agreements have various maturities, and thus, in case of urgent need of capital, the bank cannot rely on these loans, since they will only be reimbursed later. The vast majority of authors found a positive relationship between this ratio and performance, and therefore a negative relationship between liquidity and performance (Berger and Bouwman (2009),

Credit quality: Credit quality is close to the concept of credit risk, is usually measured by two ratios: the ratio of provisions for credit losses to total loans and the ratio of provisions for doubtful debts on total loans. Liu H. et al. (2010) find that a deterioration of the credit quality reduces the ROA and ROE.

Control: It is believed that public banks / nationalized are less efficient than private banks (Million & Cornett 2010). They believe that nationalized banks: Grant riskier loans, which means a higher credit risk and poor asset quality, Know solvency ratios worse than private banks, and have a ratio of "core capital" plus low.

Degree of diversification: Degree of diversification is usually and mostly measured by the ratio of non-interest income related to loans on operating income (Dietrich & Wanzenried, 2011)

Amount of bank deposits: It is not easy to estimate a priori for the impact of the level of bank deposits on bank performance. Indeed, two arguments can be opposed on the one hand, a high level of deposits can increase performance, because they are more stable funding and less expensive than borrowed funds, but on the other hand, such deposits require large teams and specialist departments to manage, causing many expenses (Kunt and Demirgüç & Huizinga 1999)

The inflation: Inflation was first addressed by Revel (1979). In his study, he showed that the impact on performance is dependent on the rate of growth in operating impact. Elaborating the model developed by Revel (1979), Perry (1992) refines the analysis by introducing the notion of anticipation: if inflation is fully anticipated, then it can be passed on to prices ex-ante, and this improves the Performance. If, however, it is not anticipated, the costs will rise faster than prices and the impact on performance is negative.

The tax: Few authors have attempted to measure the impact of taxation on the performance of banks, and it is certainly something that could be the subject of further research. We can easily understand why: the tax is deducted from the result; it automatically assigns the ROA and ROE.

However, a study by Albertazzi and Gambacorta (2009) finds a very low impact of taxation on performance. Authors consider that it is always very easy for banks' to transfer the burden of their taxes on other actors (depositors, borrowers, customers paying commissions).



Empirical Literature on Determinants of Deposits Money Banks' Profitability

Hamid, Noor and Noor (2020) examined internal determinants (bank-specific characteristics) and external determinants (macroeconomic factors and government variables) of bank profitability in Iraq. Their study used an unbalanced panel data which were collected from 18 banks in Iraq for thirteen years, covering a period from 2005 to 2017. The study selected 18 conventional banks considering their data availability in the period from 2005 to 2017. The result of the study showed that bank size, the equity to total assets and total loans to total assets ratios, GDP growth, and government effectiveness have a significant and positive impact on the profitability of Iraqi banks. Meanwhile, credit risk, inflation, interest rate, unemployment, and political instability have a significant negative influence on bank profitability.

Buzayehu, Matewos and Million (2020) examined the impacts of the macroeconomic and bank-specific variables on profitability of commercial banks in Ethiopia. The data used for this study was secondary in nature which was collected from seven banks over the period 2000-2017 and other sources were analysed using a panel ordinary least squares regression model for the fact fixed and random effect model found inappropriate after the Hausman tests and Breusch-Pagan Lagrange multiplier (LM). The results of the study showed statistically significant negative impacts of broad money supply and credit risk. Inflation and GDP on the other hand was found with significant positive impact. The result of the study suggested the need for enhancing credit risk management practice, optimizing the leverage ratio in increasing bank size.

Tonprebofa and Peter (2020) conducted an investigation on how banking reforms have enhanced or affected Deposit Money Banks (DMB's) profitability or performance in Nigeria. The data set comprising 12 of the 22 banks that have national and international authorization and data was gathered from the annual reports and accounts that covered the period 2006 to 2018 and were analysed by adopting a dynamic GMM econometric methodology . The conclusions from the study was that bank credit risk exposure, the inflation rate, and the exchange rate were significant indicators of profitability of DMB'S in Nigeria. The results showed that when bank credit risk exposure rise by 10%, the return on equity will drop by about 9%. It further shows that when inflation rises by 10%, return on equity will decrease by about 1.4% and that when the exchange rate appreciates by 10%, return on equity will rise by 0.06%.

Ige and Adewumi (2020) in their study examined the determinants of profitability of commercial and microfinance banks in Nigeria, in order to be able to highlight the possible effect of Central Bank of Nigeria policy actions in influencing the internal factors and subsequently the profitability of the banks in Nigeria. The study adopted the panel data research design. They sampled 4 commercial banks and 4 microfinance banks using random sampling technique, and based on the availability of data. Data were collected from the annual accounts and report of banks from 2010 to 2018 and analysed using the Random Effect Panel Estimation Technique. The findings from the study showed that liquidity ratio is not a strong determinant of banks profitability whether commercial or microfinance



banks while capital adequacy is a significant determinants of the profit level in both banks with positive effect for microfinance and negative effect for commercial banks. The study also found that real GDP is a significant determinant of only commercial banks profitability.

Segun, Olufemi and Clement (2018) re-examined the determinants of bank profitability in Nigeria. Specifically, the study investigated the effect of managerial cost efficiency on bank profitability. This study employed the standard measure of efficiency and the study employed system generalized method of moments. The findings showed that cost efficiency is a strong determinant of bank profitability in developing countries. In addition, the profitability of banks in Nigeria persists over time; hence, the industry is fairly competitive.

Olaoye and Olarewaju (2015) examined the determinants of bank profitability in Nigeria. It related internal bank specific and macroeconomic indicators to the overall profitability of Nigerian banks based on Return on Asset as the measure of profitability. The study used a panel of individual banks' financial statements from 2004 to 2012. According to the empirical results, Nigerian banks suffered from low quality of loans and do not monitor the repayment of the loans disbursed and more so, their assets cannot cover the amount of loan disbursed. This study also finds that macro-economic variables do not have a major effect on bank profitability and inflation posed adverse effect on profitability.

Stephen, Funsho and Adewale (2014) examined the factors that influence the profitability level of commercial banks in Nigeria. Panel data method was employed to analyse time series and cross-sectional data gathered from 2000 to 2013 on a sample of fourteen banks. For the purpose of measuring Profitability, return on assets was used since it is a function of some internal and external determinants, which includes; capital adequacy ratio, asset quality, management efficiency, liquidity ratio, inflation, and economic growth. The findings revealed that asset quality, management efficiency, and economic growth are the determinants of commercial banks' profitability. They were found to be statistically significant on profitability in both the fixed effect and random effect models. Also, asset quality was found to be significant in all the models; thus concluding that credit risk is a major determinant of commercial banks' profitability.

Theoretical Framework

The relationship between the determinants of banks' profitability can best be explained using the Market Power (MP) and Efficiency Structure (ES) theories. These theories explain the relationship between the bank size, customer deposit, loans and advances, tax and profitability.

Olweny and Shipho (2011) observed that the market power posits that performance of banks is influenced by the market structure of the industry and that the Efficiency Structure hypothesis maintains that banks earn high profits because banks are more efficient than each other. Olweny and Shipho (2011) argue that MP theory assumes that the profitability of a bank is a function of external market factors, while ES assume that profitability is



influenced by internal efficiencies. This study is therefore adopting the Market Power and Efficiency Structure Theories.

3. Methodology

The Data used for this study are secondary in nature and were gathered from the annual account and reports of Deposit Money Banks’ published on the Nigerian Stock Exchange (NSE) NSE fact book and the site of the DMBs. The total population of DMBs in Nigeria stood at 24 as at 31st December 2020. The study used a sample of 3 DMBs which are: Zenith Bank, Guaranty Trust Bank and First Bank of Nigeria Plc. The study employed the purposive sampling technique to arrive at the selected sample size and owing to the fact these banks are considered amongst the top 5 DMBs in the Nigeria. The data used was panel in nature which totaled three (3) quoted DMBs and covers a period of five (11) years ranging from 2010- 2020. The dependent variable of this study is profitability and proxied with Return on Asset (ROA) and the independent variables include: bank size, customer deposits, loan and advances and tax. The Panel Data Regression model was employed in the analysis of the data collected. This is considered suitable based on the fact data cuts across 3 DMBs and over 11 years.

Estimation Technique and Model Specification

The Panel Data Regression model was preferred given its superiority over pure cross section or pure time series. The selection of variables for the estimated model was guided by relevant theories and existing empirical studies on the subject. The model was adapted from Zawadi (2014) and specified thus:

$$ROA_{it} = \alpha + \beta_1 BS_{it} + \beta_2 CUSDP_{it} + \beta_3 LOAD_{it} + \beta_4 TAX_{it} + U_{it} \dots \dots \dots 1$$

The dependent variable ROA is defined as: $\frac{\text{Profit after tax}}{\text{Total asset}}$

The independent variables include: bank size, customer deposits, loan and advances and tax which are defined as stated below:

Customer Deposit (CUSDP) defined as $\frac{\text{Total customer's deposit}}{\text{Total asset}}$

Bank size (BS) defined as the natural logarithm of total asset

Loan and Advances (LOAD) defined as $\frac{\text{Total loan and advances}}{\text{Total asset}}$

Tax defined as $\frac{\text{Income tax expenses}}{\text{Net profit after tax}}$

Where i = 1, 2 3, t = 1, 2 10, BS = Bank Size, CUSDP = Customers’ Deposits, LOAD = Loan and Advances, TAX = TAX, U = Stochastic error term.



4. Results

This section presents the results and discussion deduced after subjecting the data collected to statistical test by specifically using panel regression technique through the use of Stata 16 version. The results are presented below.

Table 1 presents the Descriptive Statistics of the Dependent and Independent Variables of the study.

Table 1: Descriptive Statistics of the Dependent and Independent Variables

Variables	Mean	Std Deviation	Variance	Skewness	Kurtosis
ROA	8.0354	19.4235	377.2736	2.0252	5.2331
BS	11.7813	1.1002	1.2104	-1.3647	3.5163
CUSBP	2.9603	4.7085	22.1701	1.7274	4.4308
LOAD	0.8305	1.4504	2.1036	2.8957	9.8234
TAX	2.3979	13.0531	170.3834	5.4796	31.0298

Source: Author's Computation 2021

Table 1 shows the descriptive statistics of the dependent and the independent variables of the 3 DMBs in Nigeria. From the results therein, the results of the Performance represented with ROA reveals a mean of 800% for the profitability of the DMBs, which indicate that the average of all the 3 DMBs is centered on N8.0354 Million. The mean of the Bank size is within the range of N11.7813 Million and a standard deviation of N1.1002 Million. The mean of the customer deposits (CUSDP) is N2.9603million and a standard deviation of N4.7085million. The mean of loan and advances (LOAD) and Tax (TAX) are N0.8305million and N2.3979million respectively with a standard deviation of N1.4504million and N13.0531million respectively. From the results of the standard deviation, it shows that the variables are evenly spread out over a wider range of values and are not closed or clustered to the mean with the exception of the Bank size (BS) which has a low standard deviation in relation to the mean.

From the results of the descriptive statistics, the Kurtosis was employed to test the normality of the data. If the Kurtosis is greater than 0.30 (Koop, 2009), data is accepted to be normally distributed. From the results therefore, with is represented by the lowest and the highest value 3.5163 and 31.029 respectively in respect of Kurtosis values displayed on the descriptive statistics as shown on Table. It therefore and obviously shows that the data is normally distributed.

From the results of Skewness, it revealed that bank size (BS) is moderately skewed indicating that it is skewed to the left with a value of -1.3647. While the remaining independent variable is skewed to the right and is highly skewed and these include: Customers' deposit (CUSDP), Loan and advances (LOAD) and Tax (TAX) with a value of 1.7274, 2.8957 and 5.4796 respectively.



Correlation Matrix of Dependent and Independent Variables

Table 2 shows the relationship between the dependent and the independent variables of the study and this is shown below:

Table 2: Correlation Matrix of Dependent and Independent Variables

Variables	ROA	BS	CUSDP	LOAD	TAX
ROA	1.0000				
BS	-0.9061	1.0000			
CUSDP	-0.2080	-0.1514	1.0000		
LOAD	-0.1069	-0.0888	0.2734	1.0000	
TAX	-0.0729	0.1210	-0.0901	-0.0513	1.0000

Source: Author's Computation 2021

From the correlation matrix, it shows that negative relationship exists between the dependent variable ROA and the independent variables: BS, CUSDP, LOAD and TAX with a coefficient value of -0.9061, -0.2080, -0.1069 and -0.0729. The results shows that the variables are not in any way correlated as evidenced from the result. It is expected that a correlation between each pair of variable should be less than 0.80, it therefore means that any value greater than 0.80, then pairs of independent variables are highly correlated (Hinkle et al., 2003). The result of the correlation matrix shows therefore that the independent variables are not highly correlated because the values ranges between 0.1 and 0.2.

Multicollinearity Test of Independent Variables

Table 3 shows the results of multicollinearity test of the independent variables of the study.

Table 3: Multicollinearity Test of Independent Variables

Variables	VIF	1/VIF
CUSBP	1.10	0.905187
LOAD	1.08	0.922210
BS	1.04	0.963322
TAX	1.02	0.979590
Mean VIF	1.06	

Source: Author's computation 2021

From Table 3, it can be seen that from the distribution of the values in the table that the correlation coefficient of the independent variables are indeed is in line with the variance inflation factors (VIF). If the VIF is less than 10, it therefore means that data is normally distributed (Gujarati, 2003)

Regression results of the Dependent and Independent Variables

Table 4.4 presents the regression results of the dependent and the independent variables of the study which reveals the coefficients and the p-values of the variables.



Table 4: Regression results of the Dependent and Independent Variables

Variable	Coefficient	P-value
Constant	213.9702	0.000
BS	-17.0482	0.000
CUSBP	-1.3412	0.002
LOAD	-1.3825	0.022
TAX	0.0139	0.824
R-Square	0.9529	
Adj. R- Square	0.9462	
Wild Chi 2	4.5042	
P>chi 2	0.0000	

Source: Authors Computation 2021

Discussion of Results and Findings

From the regression results of the independent variable, it is obvious that bank size has negative relationship with profitability with a coefficient of -17.0482 but has a significant relationship with profitability with p-value of 0.000 which was statistically significant at 5%. It means that the bigger a bank is the more it is likely to make more profits. This therefore provides a basis for rejecting the null hypothesis which assumes that there is no relationship between Bank size and profitability. This result is therefore supported with the findings of Olaoye & Adewumi (2015), Jadah and Mohammed (2016) and Jadah, Murugiah, Adzis (2016) and Hamid, Noor and Noor (2020).who also found out that bank size is statistically significant to profitability.

Also, customer Deposit also has a negative relationship with profitability with a coefficient of -1.3412 though was statistically significant at 5% with a p-value of 0.002. This means that the deposit of customers with the sampled banks is a determinant of banks profitability. When the deposit increases the possibility of banks making more profits is very high. This result therefore provides a basis for rejecting the null hypothesis which assumes that there is no relationship between customers' deposit and profitability of DMBs in Nigeria. This results finds the support of the findings of Olaoye & Adewumi (2015) who also found out that customers' deposit is statistically significant to profitability.

Furthermore, Loan and advances has a negative relationship with profitability with a coefficient of -1.3825, though the relationship was statistically significant at 5% with a p-value 0.022. This means that as the loan and advances of DMBs issued out to customers' increases, the profitability of DMBs also increases. This therefore provides a basis for rejecting the null hypothesis which assumes that there is no relationship between loan and advances with the profitability of DMBs in Nigeria. This result is in support with the findings of Olaoye and Adewumi (2015) who also found out that loan and advances is statistically significant to profitability.

Tax shows a positive relationship with profitability with a coefficient of 0.0139, though the relationship was not significant at neither 5% nor at 10%. It therefore revealed that tax is



not a determinant of the profitability of DMBs in Nigeria. This provides a basis of accepting the null hypotheses hypothesis which assumed that there is no relationship between tax and profitability of DMBs in Nigeria. The result of this study has the support of other studies which includes: Albertazzi&Gambacorta (2009) who also find a very low impact of tax on the profitability of DMBs.

5. Conclusions and recommendations

From the findings of the study it is evident that the size of the bank, customer deposit and loans and advances determines the profitability of banks' profitability in Nigeria based on the results arrived therein. By implication therefore, it means as the size of banks, the customers deposit and loan and advances increases, the profitability of the DMBs also increases. The study recommends that management should increase their efforts to ensure that they maintain or strive to increase the size of the bank, ensure continual marketing strategies that will lead to increase in customers' deposit and also encourage their customers' to keep seeking for loans and advances in order to ensure continual profit level.

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