World Journal of Management and Business Studies *(ISSN: 2795-2525)*
Vol. 3, No 1., July., 2024

CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE OF QUOTED DEPOSIT MONEY BANKS IN NIGERIA

BY

ZINA EMMACULATE
DEPARTMENT OF ACCOUNTING
PRIME UNIVERSITY, ABUJA

DR. SAMUEL ATTA AKU
DEPARTMENT OF BUSINESS ADMINISTRATION
PRIME UNIVERSITY, ABUJA

DR. GABRIEL UBOLO ONUCHE
DEPARTMENT OF BUSINESS ADMINISTRATION
NILE UNIVERSITY OF NIGERIA, ABUJA

Abstract

Capital structure is an important decision for the survival and financial performance of banks because it affects the firm's value. It is one of the core decision areas in the field of finance, as it determines the existing amount of debt and equity of a bank. The general objective of this study is to assess the impact of capital structure on the financial performance of deposit money banks (DMBs) in Nigeria with specific reference to how debt ratio and equity ratio affect return on equity and net interest margin of banks in Nigeria. The study covers 12 licensed DMBs in Nigeria. The sample size of 12 banks was determined using convenience sampling technique for the period 2013- 2022. The study utilizes panel design to analyze the data based on random effect estimation. The study found a positive relationship with financial performance measured by Net Interest Margin (NIM). The study recommends that government should consider formulating policies that will fast track the development of a more vibrant capital market where DMBs and other firms will have access to equity and bond at global competitive rates as this will

go a long way in discouraging Nigerian firms from going offshore to seek financing opportunities and at the same time woos foreign investors to Nigerian capital market.

1. INTRODUCTION

Businesses run on the heels of financial resources available to them. Therefore, finance is the lifeblood of all business ventures, whether private, public or joint stock companies. In the realm and sphere of business, the financial resources are collectively referred to as capital. Investment decisions are weighed and opted on the basis of capital access possibilities and availabilities. For quoted companies, there are basically three main sources of capital available to them. These are equity capital, debt capital and retained earnings. These sources are usually categorized into short-term and long-term sources of capital.

The way a company accesses, holds and utilizes these various sources of capital in their books is referred to as capital structure (CS). That is, the utilization of a combination of these different sources of capital to finance its business activities is what scholars term as capital structure of that firm. Several factors are considered when managers of a company decide to hold a combination of these funding sources because there are costs and benefits attached to each of the options. Any decision on the capital structure per time that, for instance, emphasizes long-term objectives as against short-term would necessarily require a different capital structure to achieve the business objectives. Consequently, any out-of-step capital structure may have dire consequences on the continued existence of the company.

The corollary therefore is that, financial performance in terms of cash flow, profit margins, dividends per share and other parameters, weigh significantly on the capital structure of the company. In other words, the indicators of financial performance are weakened, impaired and vitiated when an unsuitable capital structure is maintained because of the charge the capital mix would have on the liquid assets, or they are heightened and accentuated with a proper and mutually compensating capital structure.

The study therefore seeks to investigate the effect of capital structure on the performance on quoted deposit money banks (DMBs) in Nigeria.

1.1 Statement of the Problem

The main goal or objective of any business organization according to Khan, (2000) is to make and maximize profit. Though other objectives are also considered very important, profit maximization is usually the ultimate because it maximizes the shareholder's wealth which is the

ultimate aim of investing in a business. People will naturally prefer to invest in a highly profitable business (Zengin, & Ada, 2010). Therefore, in the long run, only the profit objective guarantees survive in the business environment. In other words, profitability is the major measure of performance before other ancillary objectives are birthed because they would never have been contemplated, pursued and achieved if profitability was absent from the beginning.

Deposit money banks (DMBs), by virtue of their nature of business (financial intermediation) cannot operate without debt funds. They mobilize and pool funds from surplus economic units and apply same into deficit economic units at a profit. Continuous debt funds mobilization is peculiar to banking business. In addition to other regulations from the Central Bank of Nigeria (CBN), the cash reserve ratio (CRR) necessitates banks to continuously mobilize debt funds in the forms of demand deposits, fixed deposits, savings deposits and other contingent liabilities that hypothecate customers' funds like advance payment guarantee (APG) and advance payment bonds (APB).It seemed that pooling together debt funds from different sources is one of the mainstay of deposit money banks.

Although, deposit money banks are private sector companies, they have an identity different from others because they constitute the medium through which the government transmits its monetary policies in the economy. Thus, they play a very vital role in determining the vibrancy or otherwise of an economy. Since their continued stay in business is guaranteed by effective performance in terms of profitability, it goes to say that how they manage these debts so that their profitability is not tampered with significantly, is a veritable area of research interest. This study seeks to examine and espouse that issue of significant interest to both government and shareholders alike.

1.2 Research Questions

In this study, the following research questions were adopted and answered which logically directed the purposeful flow of this study in order to achieve the research objectives earlier stated:

i. What is the relationship between Short term debt (STD) and Net Interest Margin (NIM)?
ii. What is the relationship between Long term debt (LTD) and NIM?
iii. Is there any significant relationship between Total debt to total assets (DR) and Net Interest Margin (NIM)?
iv. What is the relationship between Total Equity to total assets (ER) and Net Interest Margin (NIM)?

1.3 Objectives of the Study

The general objective of this study is to empirically evaluate and determine the relationship between capital structure and the financial performance of quoted deposit money banks in Nigeria. This would be achieved through the following specific objectives enlisted hereunder:

i. To evaluate the relationship between Short term debt (STD) and Net Interest Margin (NIM).
ii. To examine the relationship between Long term debt (LTD) and Net Interest Margin (NIM).
iii. To assess the relationship between Total debt to total assets (DR) and Net Interest Margin (NIM).
iv. To determine the relationship between Total Equity to total assets (ER) and Net Interest Margin (NIM).

1.4 Statement of Hypotheses

Research hypotheses are considered as postulation that tentatively answer research questions posed until they are subjected to appropriate hypotheses testing techniques to ascertain their veracity. Therefore, following research hypotheses are stated here:

H_{01}: There is no relationship between Short term debt (STD and Net Interest Margin (NIM).

H_{02}: There is no relationship between Long term debt (LTD) and Net Interest Margin (NIM).

H_{03}: There is no relationship between Total debt to total assets (DR) and Net Interest Margin (NIM).

H_{04}: There is no relationship between ER and Net Interest Margin (NIM).

2. LITERATURE REVIEW

2.1 Concept of Capital Structure

Capital structure is the mix of financial resources of a company which are used and deployed to acquire its revenue generating assets. In other words, it is the combination of different sources of finance used by a company to fund its business activities to achieve set goals and objectives. The various sources of funds pooled together by a company represent that company's financial structure. According to Brealey, Myers and Allen (2011), capital structure is a combination of debt and equity results in a given capital structure. Other scholars (Narajini and Priya (2013) see capital structure as representing the funds attributed to the firm through different sources, which may comprise of internal and external financiers.

Bauer (2004) on the other hand explained that financial structure indicates the ratio between the corporate structure and the various sources of financing and their mutual combinations, noting that, this explained the owners' right and interests of creditors' proportional relationship.

Bala and Babangida (2022) quote Uwalomwa and Uadiale (2020) as saying that capital structure is a 'combination of the company's long-term debts, specific short-term debts, common stock, and preferred equity', stating that 'the capital mix of a corporation fundamentally reflects how it funds its overall functions and growth by utilizing a variety of funding sources.'

Based on the peculiar business of deposit money bank, which is financial intermediation, and the control over them by the regulatory authority in terms of cash reserve ratio, Mostafa et al., (2011) opined that for banks to extend credit lines, they must mobilize more cash through new deposit acceptance, borrowing from other banks, or equity issues. This position was supported by Allen and Carletti (2013) and emphasized that banks differ from other businesses in deposit mobilization frontiers.

2.2 Concept of Financial Performance

Financial performance is the concept used in describing the overall health and results of a company's business activities within a reporting timeline, usually a calendar year. That is, the financial measurements or indicators used to investigate a company's overall health are referred to as financial performance.

According to Bhunia, et al., (2011), financial performance can simply be defined as a company's overall financial health over time. Performance ratios are used to assess a company's viability, stability, and fertility, according to the study. This means that firms' performance is the monetary result of their operations over time. Financial managers used different ratios to assess a company's financial performance.

Also, Ross, et al., (2002) viewed profitability as the extent to which a corporation can create profit from its operations, as one of the primary elements used in evaluating financial success. Profitability is the main objective of undertaking any business venture, as their long-term viability is dependent on their capacity to generate profits. Profitability therefore is the most reliable and all-encompassing measure of a company's performance. Return on assets (ROA), return on equity (ROE), and return on uncontrolled investment accounts (ROUIA) were used to quantify financial performance.

The CBN underlined the importance of the net interest margin (NIM) as a metric of bank performance in 2013. Because capital structure has an impact on a company's worth, it is a crucial decision for a bank's existence and financial performance. Debt and equity have been used as essential components in previous research (Sadiq at el (2017), Ronoh and Ntoiti (2015) to measure the capital structure of businesses. An empirical review would unearth the relationship between capital structure and financial performance, which forms the intent of the review below.

2.3 Theoretical Framework

The Perking Order Theory and the traditional capital structure theory have been discussed here to show how business managers think while making decisions relating to financing their companies. Financing decisions could either consider the total debt to cost of capital relationship or the perking order considerations. Using the traditional standard technique, we understand that, while it describes the debt-to-cost-of-capital relationship, as company's debt grows, its gearing

grows as well. The cost of capital will decrease in lockstep with the cost of borrowing. Thus, the company's market value will improve.

However, if debt levels continue to rise, the low-debt advantage may become a disadvantage as financial risk rises, and regular shareholders expect bigger returns as a result. Consequently, executives and decision-makers should consider how to balance the capital structure, the firm's value, and the dividend policy of the organization according to Lumby and Jones (2015). Pecking Order school of thought suggested that when a company needs money to fund a new project (Mayer and Majluf (1984), it is preferable to use the company's resources (internal financing), and if the retained profit is inadequate to finance, it is preferable to issue debt (bonds) rather than additional stock shares. The cost of capital structure is the most important component because internal sources of funding are prioritized; the second most important factor is the lowest cost (debt); and the final alternative is to issue extraordinary shares, which has a high cost (Muritala (2012). The two theories (traditional and pecking theory) are used in this study because they better describe the notion of capital structure by focusing on internal sources of capital structure and the consideration given to debt as a source of financing and the benefits that come with it.

2.4 Empirical Review

Hasan, Ahsan, Rahaman and Alam (2014) studied the influence of capital structure on performance of 36 Bangladeshi firms listed on the Dhaka Stock Exchange from the period 2007 to 2012. The study which excludes financial services firms owing to their different capital structures and operations uses four performance measures; earnings per share (EPS), return on equity (ROE), return on assets (ROA) and Tobin's Q as measures of firm performance and three capital structure ratios; short-term debt, long-term debt and total debt as independent variables. Using panel data regression method, the authors find that whereas EPS is significantly positively related to short-term debt, same is also significantly negatively related to long-term debt. The results also reveal a significant negative influence of capital structure on ROA. However, the results did not provide evidence of a significant influence of capital structure on firm performance as measured by ROE and Tobin's Q. Thus, the study concludes that capital structure has negative impact on firm performance, a finding that is consistent with the pecking order hypothesis.

In Nigeria, for instance, several studies on the relationship between capital structure and financial performance for both financial and non-financial. Some of the studies carried out in the financial sector include those of Idode, Adeleke, Ogunlowore, and Ashogbon (2014) on influence of capital structure on profitability of listed Nigerian banks, Adesina, Nwidobie and Adesina (2015) on the impact of post-consolidation capital structure on the financial performance of quoted Nigerian banks, Uchechukwu and Kinsley (2016) regarding the effect of

capital structure on firm performance of selected quoted banks in Nigeria, Shaba, Yaaba and Abubakar (2016) and Sadiq, Kachollom, Dasuki, and Yusuf, (2017).

Chechet and Olayiwola (2014) examined capital structure and profitability of Nigerian listed firms from the agency cost theory perspective on a sample of 70 out of 245 firms listed on the NSE for a period of 10 years, 2000 to 2009. The study adopted panel data methodology approach and used debt and equity as proxies for capital structure and profitability as the only dependent variable. The findings reveal that debt ratio is negatively related to profitability and equity has significant and positive impact on firm profitability. Accordingly, the study recommended among others that firms experiencing financing problem and wishing to raise funds for operations or expansion should go for equity and if insufficient, should employ as little debt as possible. Chechet and Olayiwola (2014) study used just one proxy for financial performance which is inadequate a representation for performance of a firm. Moreover, the study is not based on the banking industry.

Arikekpar, Obaima, and Ateibueri (2020) looked at the impact of capital structure on the performance of diverse Nigerian manufacturing enterprises from 2014 to 2018 using the annual financial statements of five listed manufacturing businesses in Nigeria. Three performance indices of return on asset (ROA), return on equity (ROE), and earnings per share (EPS) were used to assess firm performance, while equity and debt ratios were used to assess the capital structure. The study found that, capital structure has a major healthy impact on the financial performance of the selected businesses. The study recommended that, manufacturing companies should adopt policies that encourage higher profit after tax, dividends, and turnover because these factors can considerably boost the company's performance and market capitalization value. This research however based its study on the manufacturing sector so its findings cannot be generalized into the banking sector.

Adeniyi, Marsidi, and Babatunji, (2020) studied capital structure and commercial banks' performance in Nigeria, using profit after tax (PAT) and earnings per share (EPS) as measures of performance and employed panel regression technique to analyze data collected from a sample of fourteen quoted commercial banks between 2009 and 2016. The result showed a significant relationship between debt and profitability of commercial banks in Nigeria and concluded that debt significantly influenced liquidity and shareholders' wealth. Thus, the study recommended that commercial bank managers should not depend on debt capital as a source of financing banks' capital structure. Rather they should use retained earnings of the business and consider debt as a last resort. However, the 2020 study of the trio used only two indicators of financial performance at a period when banks were just coming out of the consolidation and recapitalization shocks that saw the fizzling out of many legacy banks because of inability to raise funds to recapitalize. The study period was when many banks were working assiduously to

repay the debt element in their post consolidation capital structure. Therefore, the findings could have been natural coincidences.

Adeoye and Olojede (2019) examined the effect of capital structure on the performance of some selected banks in Nigeria. The objectives were to examine the relationship that exists between capital structure and financial performance and to investigate the effect of capital structure on the financial performance of quoted deposit money banks in Nigeria. To achieve these, a cross-sectional time series secondary data covering the period of seven years (2012-2018) was extracted from the audited financial statement of ten (10) banks listed on the floor of Stock Exchange. The descriptive statistics, Pearson Product Moment correlation and multiple linear regressions were used. The correlation results showed that capital structure is negatively correlated with financial performance (ROA and ROE). Result from panel regression revealed that debt to equity though significant, impacted negatively on return on assets and return on equity, asset tangibility significantly impacted return on asset but insignificantly impacted return on shareholder's assets. Also, age was found to have had a significant impact on return on asset and insignificant effect on return on equity. They therefore concluded that capital structure has a negative effect on the financial performance of deposit money banks in Nigeria and recommended that appropriate proportion of capital should be tailored towards viable investment opportunities for maximum return of shareholders wealth and increase in value of the firm. More so, while finance manager is alert to the movement in the stock market, banks should take precautionary measures aimed at mitigating credit risk associated with lending and borrowing. This study is a bit vague in that the capital structure mix that is considered as 'appropriate proportion' was not stated. Since every blend of capital structure has its consequences based on the inherent costs associated with its peculiarity, the situational investment opportunities that the so-called appropriate proportion of capital structure would maximize return on shareholders' wealth cannot be determined.

Another study by Sanusi, Stephen, and Vivi (2020) investigated the influence of capital structure on Nigerian deposit money banks (DMBs). The research used ex-post-facto to study capital structure variables such as long-term debt to total asset (LTD/TA), short-term debt to a total asset (STD/TA), total debt to total asset (TD/TA), and financial performance measured by Return on Asset (ROA). The study used a convenient sampling approach to collect secondary data, which was based on the availability of data at the time of the investigation from the yearly financial reports of five Nigerian DMBs that were sampled between 2009 and 2018. The data was analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (i.e. Pearson correlation and regression analysis). It was observed that STDTA (= 0.936554, p0.05) and TDTA (= 0.310692, p0.05) have a considerable beneficial impact on return on assets (ROA), while LTDTA has a moderate impact on ROA (= 0.08686, p> 0.05). However, the period of study still falls into the time bracket when banks were barely gaining use of cutting edge technology in their operations after the post consolidation era and the introduction of the pilot

stages of cashless policy. The use of convenient sampling approach suggests a larger than normal proportion of researcher manipulation sample size for predetermined purposes.

Nwude and Anyalechi, (2018), examined the impact of capital structure on performance of commercial banks in Nigeria. The study evaluated the influence of financing mix on the performance of commercial banks, and the causal link between debt-to-equity ratios. Data collated were analyzed using correlation analysis, pooled OLS regression analysis, fixed effect panel analysis, random effect panel analysis, granger causality analysis, as well as post estimation test such as restricted f-test of heterogeneity and Hausman test. The findings show that while debt finance exerts negative and significant impact on return on asset, the debt-equity ratio has positive and significant influence on return on equity. There was neither unidirectional nor bidirectional relationship between capital structure and performance of commercial banks in Nigeria. It is instructive to note that, this study did not recognize nor contemplate that commercial banking had become separated into national, regional and international banks with appropriate licenses and that this equally saw some commercial banks not quoted in the Nigeria Stock Exchange. By implication, studying the books of quoted deposit money banks would be more beneficial in terms of research data validity and completeness.

3. Methodology

The research design adopted for this paper is panel design. The reason for this choice was that panel research strategy allows for repeated observations of some quantities about the same entities of study over time (Brooks, 2008). Similarly, according to Gujarati (2004) “panel design has advantage of more degrees of freedom, more efficiency and less collinearity”.

The objective of this paper is to examine the relationship between capital structure and financial performance of listed deposit money banks (DMBs in Nigeria. Thus, results of the analysis with the help of STATA (14) statistical software package are presented as follows:

3.1 Sample and Data

There are 21 DMBs in Nigeria as at December 2022, 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 12 DMBs that accounts for 80 percent of listed banks population in Nigeria, 8 of these banks are from international stratum and 4 are from national stratum, as such their annual financial reports for 10 years covering 2013 to 2022 was used. In all the study has 120 observations or data points making it a balanced panel study. Evidence from prior empirical studies showed that data was analysed using different approaches ranging from Spearman’s

correlation, Ordinary Least Squares Regression (OLS), Panel Corrected Standard Error (PCSE) to establish the relationship between capital structure and financial performance (Abubakar, 2015; Amara and Aziz, 2014; Sadikk et al, 2017).

3.2 Model Specification

To estimate the relationship between each of capital structure indicator (STD, LTD, DR, ER) , with the listed banks' financial performance (NIM) control variables i.e. (GR and BZ) were included in the model to isolate the effect of banks specific factors on financial performance indicator during the period. Hence, the mathematical expression of random effect estimation model for this paper is presented below:

$$Y_{it} = \beta X_{it} + \alpha + U_{it} + \varepsilon_{it} \quad \text{.....(1)}$$

Where Y denotes the dependent variable, β is the coefficient of independent variable X, α symbolizes an intercept, U represents between entity errors, ε represents within entity error, i represents the cross-sectional units and t is the time period.

Thus the equation (1) becomes

$$NIM = \beta_1 STD_{it} + \beta_2 LTD_{it} + \beta_3 DR_{it} + \beta_4 ER_{it} + \beta_5 LIQ_{it} + \beta_6 BSZit + \beta_7 GR_{it} + \alpha + U_{it} + \varepsilon_{it} \quad \text{.....(ii)}$$

Where:

β_1-β_7 denote the coefficients,
i represents the Nigerian banks,
t is the time period of the paper (2013-2022).
NIM: Interest earned on assets minus interest paid on borrowed funds divided by the interest earning asset.
STD: Short term debt to total assets.
LTD: Long term debt to total assets.
DR: Total debt to total assets.
ER: Total Equity to total assets.
BSZ: Natural logarithm of total assets.
GR: Assets of current year minus assets of previous year by the assets of current year

Table 1: Sample Size of the study

S/N	Name	Category	NSE Status
1	Access Bank Plc	International	Listed
2	Ecobank Nigeria Plc.	International	Listed
3	Fidelity Bank Plc	National	Listed
4	First Bank of Nigeria Plc	International	Listed
5	First City Monument Bank Plc	International	Listed
6	Guaranty Trust Bank Plc	International	Listed

7	Keystone Bank Plc.	National	Listed
8	Stanbic IBTC Bank Plc.	National	Listed
9	Sterling Bank Plc	National	Listed
10	United Bank for Africa Plc	International	Listed
11	Unity Bank Plc	National	Listed
12	Zenith Bank Plc	International	Listed

Adapted and modified (CBN and NSE, 2022)

4. Data Analysis

Hausman 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 $X^2 = 1.87$; $P>X^2=0.9316$, 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 0.000 which is less than 5 % level of significance, implying the presence of significant differences among the sampled listed DMBs.

Similarly, post estimation regression diagnostic tests were conducted to ascertain the validity of the statistical inferences for the study and the results of normality and model specification tests are found to be favourable. However, the results of heteroskedasticity test and autocorrelation test are unfavourable. To remedy these problems an option of robust standard error was adopted in the estimation (Hoechle, 2007; Wooldridge, 2002,). Efficiency of estimator is generally improved by robust standard error (Green, 2008).

4.1 Descriptive statistics of the data

Descriptive statistics enable transformation of raw data into more meaningful information (Sekaran, 2003). To describe data in this paper, descriptive statistics such as, mean, standard deviation, minimum and maximum were presented in Table 2.

Table 2: Descriptive Table (N=120)

Variable	Obs	Mean	Std. Dev	Min	Max
NIM					0.112
STD	120	0.675	0.117	0.073	0.879
LTD	120	0.171	0.107	0.033	0.815
DR	120	0.845	0.053	0.678	0.972
ER	120	0.153	0.051	0.028	0.298
GR	120	0.090	0.114	-0.184	0.497
BSZ	120	5.975	0.339	5.164	6.632

Source: STATA (14) output, 2024

The descriptive statistics table shows the mean score of NIM is 0.054 for the sampled listed DMBs during the study period. This implies that, for every one naira invested in interest earning assets, listed DMBs earned about five (5) kobo out of it. The minimum NIM value recorded during this period was of 0.014 whereas 0.112 was its corresponding maximum value. Similarly, the standard deviation from the mean of NIM was 0.016. This shows that although some listed DMBs earned below average, there were some that earned about 12 kobo for every one naira invested in interest earning assets.

Looking at the independent variable the listed DMBs capital structure measured by STD, LTD, DR and ER, they have mean values of 0.675, 0.171, 0.845 and 0.153 respectively. The maximum values of 0.879, 0.815, 0.972, 0.298 and minimum values of 0.073, 0.033, 0.678 and 0.028 respectively were also found. Implying about 85 percent of the listed DMBs' capital structure was made of debt. Similarly, STD, LTD, DR and ER, deviate from their means on both sides by 0.117, 0.107, 0.053 and 0.051 respectively. From the side of control variables, the mean score of GR for the study period was 0.090, a maximum value of 0.497 and the minimum value was -0.184. Likewise, the value of GR can deviate from its mean by 0.114. Finally, bank size (BSZ) has an average value of 5. 975, while 5.164 and 6.632 values are for minimum and maximum respectively. BSZ can also deviate by 0.339.

4.2 Correlation matrix

To determine the association between the entire variables of the study, correlation matrix was obtained as presented in Table 2. Similarly, correlation can be used to determine the presence of multicollinearity among the independent variables.

Table 3: Correlation matrix(N=120)

	NIM	STD	LTD	DR	ER	GR	BSZ
NIM	1.0000						
STD	0.0519	1.0000					
LTD	-0.0440	-0.894*	1.0000				
DR	-0.0772	0.2527*	0.0489	1.0000			
ER	0.1047	-0.247*	-0.0294	-0.935*	1.0000		
GR	-0.441*	-0.316*	0.2851*	0.0288	-0.0559	1.0000	
BSZ	0.0647	0.1910*	-0.1157	0.1066	-0.0721	-0.217*	1.0000

Correlation at 5%*, significance level Source: STATA (14) output, 2024

To determine the association among the variables of the study, correlation coefficients are obtained as presented in the correlation matrix table. The coefficients values revealed different levels of associations among the variables. For instance, net interest margin (NIM) exhibits a weak positive but insignificant association of 0.0519 with short term debt ratio (STD), negative insignificant correlation of -0.0440 with long term debt ratio (LTD), a significant negative association of -0.0772 with debt ratio (DR). In contrast, the correlation between NIM and equity ratio (ER) is 0.1047, suggesting a significant positive association. Similarly, the correlation matrix reveals that NIM has weak positive insignificant association of 0.0647 with bank size (BZ). Finally, a negative significant association of -0.4409 at 5 percent was found between growth prospects (GR) and NIM.

Similarly, the extent of correlation among the independent variables was measured by the coefficient values. When the correlation between two independent variables is very strong, it is known as multicollinearity. And the implication of multicollinearity is that the multiple regression analysis cannot be relied upon. Conventionally, a correlation of more than 0.8 or less than -0.8 between two independent variables is a sign of multicollinearity (Garson, 2012). Most of the coefficient values were less than 0.8 and more than -0.8, with the exception of highest negative significant coefficient value of -0.9346 between debt ratio (DR) and equity ratio (ER). Similarly, the negative significant coefficient value of -0.8936 between STD and LTD was less than the required threshold value of -0.8. Hence, the need to further ascertain the extent of multicollinearity as signaled by the high correlation values with more robust technique. For this reason, variance inflation factor (VIF) was used in the context of this paper to examine the multicollinearity between the independent variables. According to Pallant, (2011) only VIF values that are greater than 10 and 1/VIF (Tolerance value) below 0.1 should be a cause for concern.

Table 4: Variance Inflation Factor (VIF) Result

VARIABLE	VIF	1/VIF
STD2	9.35	0.1069
DR	8.92	0.1121
LTD	8.43	0.1186
ER	8.03	0.1345
GR	1.18	0.8502
BSZ	1.09	0.9171
MEAN VIF	6.17	

Source: STATA (14) output, 2024

The initial diagnostic test as indicated in the appendix has shown the presence of multicollinearity between STD, LTD and DR. To remedy the multicollinearity problem among the independent variables, one or more of the highly correlated variables must be transformed as suggested by Hairs, et al. (2010). Table 4 above, shows the VIF and 1/VIF values of the study variables, long term debt ratio (LTD), short term debt ratio (STD), debt ratio (DR), equity ratio (ER), bank growth (GR) and bank size (BSZ) are all within the recommended caveat after the transformation. This implies the absence of multicollinearity among these variables. Hence, the regression estimation can be relied upon.

4.3 Regression Result

As indicated in the methodology, the model was analyzed using random effect techniques with an option of robust standard error. The result presents R- squared value of 0.1907 for model, this indicates that capital structure indicators combined together with the control variables explained 19.07 % of the variability of listed DMBs' financial performance (NIM). The Wald test value of 19682.04 for the model is significant at 5% and this provides an indication that this model is statistically fit to explain the listed Deposit Money banks (DMs)' financial performance (NIM) in Nigeria. The result is consistent with the findings of prior studies in Nigeria (for example Sadiq, Kachollom, Dasuki and Yusuf, 2017; Shaba, Yaaba and Ibrahim, 2016) and inconsistent with the findings of Anarfo (2015).

Table 4: Random Effect Estimation Results

NIM	**Coeff.**	**Std. Err.**	**p>z |z|**	**Significance**	
STD	-0.0063	0.0155	-0.41	0.684	
LTD	-0.0126	0.0525	-0.24	0.811	
DR	0.1002	0.0364	2.76	0.006	*
ER	0.1336	0.0268	4.99	0.000	*
GR	-0.0587	0.0102	-5.78	0.000	*

BSZ	0.0007	0.0042	0.18	0.854
CONS	-0.0507	0.0298	-1.70	0.089
Observations:				
R^2	**0.1907**			
Wald X^2	**19682.04**	**0.000**		*****
Hausman (X^2>5%)	**1.87**	**0.9316**		
Number of DMBs	**12**			

Source: STATA (14) Output, 2018 Note: * Significant at 5% level of Significance

Concerning the influence of each of the capital structure indicator with the NIM, the result found both STD and LTD have negative non significant relationship of (Coeff= -0.0063; P<z=0.684) and (Coeff= -0.0126; P<z=0.811) respectively. Going by the findings, the null hypotheses (H1 and H2) are accepted. This implies that an increase in STD or LTD has no significant relationship with a decrease in NIM and vice versa. The findings are consistent with Anarfo (2015). The remaining metrics DR and ER were however found to have positive and significant relationship of (Coeff= 0.1002; P<z=0.006) and (Coeff= 0.1336; P<z=0.000) with NIM respectively. With these results null hypotheses (H3 and H4) are rejected. Meaning, DR and ER are statistically determinants of NIM in this period. This finding is in line with the result of prior studies in Nigeria (for example Sadiq et al., 2017 and Shaba et al, 2016). Looking at the bank specific control variables, GR has a negative significant relationship (Coeff= -0.0587; P<z=0.000). Growth in assets should have exhibit a positive relationship with financial performance. However, the negative result could be as a result of accumulated nonperforming or idle assets that these DMBs have, hence any increase in the GR could possibly erode their financial performance. BSZ posts a non-significant positive relationship (Coeff= 0.0007; P<z=0. 0.854). The finding suggests economies of scale do not play an important role in enhancing the NIM of listed DMBs in Nigeria in this period.

5. Conclusion and Recommendations

The study assessed the relationship of capital structure on the Nigerian bank's financial performance. In view of this, the study observed that about 85% of the total capital of banks in Nigeria during the period of this study was made up of debt. This is reaffirmation of the fact that banks are highly levered financial institutions. The study found that capital structure indicators are good predictors of listed deposit money banks (DMBs)' financial performance in Nigeria as evidence by the significant Wald test value of less than 5 percent. Based on the findings obtained, the following recommendations are hereby offered.

i. The result implies that profitable DMBs do not rely solely on STD to finance their assets nor LTD. Therefore, bank management should consider a tradeoff between STD and LTD in making decision about capital structure in order to optimize their financial performance.

ii. Similarly, bank management should give more incentives to STD suppliers especially the depositors; this will motivate them to allow their deposits to stay with DMBs for a longer period than the present practice. The adjustment in maturity structure of STDs will provide DMBs with additional assets financing vehicle that could possibly enhance their performance. In addition, DMBs should desist from employing LTD only since it has a negative implication to their performance.

iii. Total debt (DR) is a significant determinant of listed banks' financial performance and thus due diligence needs to be undertaken whenever bank decides to borrow funds for investment. This will ensure that managerial discipline enforced by debt on managers' performance may not be outweighed by financial distress envisaged from excessive leverage.

iv. Equity contribution to net interest margin of the sampled listed DMBs is higher than debt contribution. This may not be unconnected with the high fixed interest obligation rooted with debt financing. Instead of over relying on debt financing as observed in descriptive matrix, banks managements should place emphasis on equity to finance their planned growth due to absence of fixed interest obligation.

v. There is need for the government to formulate policies that will fast track the development of a more vibrant capital market where DMBs and other firms will have access to equity and bond at global competitive rates. This will go a long way in discouraging Nigerian firms from going offshore to seek financing opportunities and at the same time woos foreign investors to Nigerian capital market.

REFERENCES

Adesina, J. B., Nwidobie, B. M. & Adesina, O. O. (2015). Capital Structure and Financial Performance in Nigeria. International Journal of Business and Social Research, 5(2), 21-31

Akeem, L. B., Edwin, T. K., Kiyanjui, W. K., & Adisa, M. K. (2014). Effects of Capital Structure on Firm's Performance: Empirical Study of Manufacturing Companies in Nigeria. Journal of Finance and Investment Analysis, 3 (6), 39-57.

Akintoye, I.R. (2018). Sensitivity of performance to capital structure. European Journal of Social Science, 7(1), 163-144

Anarfo, E. B. (2015), Capital Structure and bank Performance - Evidence from SubSahara Africa. European Journal of Accounting, Auditing and Finance Research, 3(3), pp.1-20.

Aremu, M. A., Ekpo, I. C., Mustapha, A. M., & Adedoyin, S. I. (2013). Determinants of Capital Structure in Nigerian Banking Sector, International Journal of Academic Research in Economics and Management Sciences. 2, (4), 27-43.

Bauer, P (2004). Determinants of Capital Structure: Empirical Evidence from the Czech Republic, Czech Journal of Economics and Finance (Finance a uver) Charles University Prague, Faculty of Social Sciences, 54 (1-2), 2-21.

Central Bank of Nigeria, CBN (2005). Banking Sector Consolidation: Special Incentives to Encourage Weaker Banks. Press Release, April 11.

Central Bank of Nigeria, CBN (2010). Guidance Notes on the Calculation of Regulatory Capital. Press Release, July 1

Chechet, I. L. & Olayiwola, A. B. (2014). Capital Structure and Profitability of Nigerian Quoted Firms: The Agency Cost Theory Perspective. American International Journal of Social Science, 3(1), 139-158.

Frank, M., and Goyal, H. (2003). "Testing the Pecking Order Theory of Capital Structure "Journal of Financial Economics, vol. 67, pp.217-248

Harris, M., and Raviv, A. (1991). "The Theory of Capital Structure", Journal of Finance, vol. 46, No.2. pp. 297-355

Hasan, B., Ahsan, M., Rahaman, A. & Alam, N. (2014). Influence of Capital Structure on Firm Performance: Evidence from Bangladesh. International Journal of Business and Management, 9(5), 184-194.

Idode, P. E., Adeleke, T. M., Ogunlowore, A. J. & Ashogbon, O. S. (2014). Influence of capital structure on profitability: Empirical Evidence from listed Nigerian banks. IOSR Journal of Business and Management, 16(11), 22-28

Khan, A.G. (2017). The relationship of capital structure decision with firm performance: a study of the engineering sector of Pakistan. International Journal of Accounting and Financial Reporting, 2(10), 245-262.

Kipeshi, I. E., & Moshi, J. C. (2014). Diversification strategy and capital structure of multinational corporations. Journal of Multinational Financial Management, 1 (3) 17-37

Myers, S. C., & Majluf, N. S. (1984). Corporate Financing and Investment Decisions when Firms have Information that Investors do not have. Journal of financial economics, 13 (2)187-221. https://doi.org/10.1016/0304-405X(84)90023-0

Myers, S. (1984). The capital structure puzzle. Journal of Finance, 39, 575-592

Modigliani, F. & Miller, M. H. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. The American Economic Review, 48 (3), 261-297.

Modigliani, F. & Miller, M. H. (1963). Corporate Income Taxes and the Cost of Capital: A Correction. The American Economic Review, 53, 433-443.

Shaba, Y., Yaaba, N. B., & Abubakar, I. (2016). Capital structure and profitability of deposit money banks: Empirical evidence from Nigeria. European Journal of Business and Management, 8(23), 110–121.