



CAPITAL STRUCTURE, ASSET LIQUIDITY AND FINANCIAL PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

Adebowale Ogunsola (Ph.D, ACA)* and Amabo Daniel Ogheneoparobo

Department of Accounting, Afe Babalola University, Ado-Ekiti

*Corresponding author; E-mail: ogunsola.adebowale@gmail.com; Telephone: 08060087960

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ABSTRACT: *This study examined capital structure, liquidity and financial performance of listed deposit money banks in Nigeria. The study specifically investigated the relationship between debt-to-equity ratio and financial performance of listed deposit money banks in Nigeria, the effect of total debt ratio on the financial performance of listed deposit money banks in Nigeria and how asset liquidity influences financial performance of listed deposit money banks in Nigeria. The study adopted the ex-post facto research design. The data for this study were obtained from secondary source that was derived from financial statements of selected deposit money banks listed on the Nigerian Exchange. The data covered the period 2011–2020. Descriptive and inferential statistical methods were employed in analyzing the data gathered. The findings of the OLS regression analysis revealed that debt equity ratio (DER) has significant negative impact on financial performance. However, findings revealed that total debt to total asset ratio (TTR) has a significant and positive impact on the financial performance, while asset liquidity (ASL) has a negative and significant impact on financial performance of the sampled banks in Nigeria. It is concluded that the variables of capital structure as used in the study, such as debt to equity ratio, total debt to total asset ratio, and asset liquidity, have mixed results of positive and negative effects on financial performance of deposit money banks in Nigeria.*

KEYWORDS: Capital Structure, Asset Liquidity, Financial Performance.



INTRODUCTION

Capital is principally the lifeblood of any business activity. It serves as an engine in establishing and promoting business firms. It plays a very vital role especially in a country like Nigeria (Alfred, 2017). Lessons from history reveal that most Deposit Money Banks collapsed as a result of inadequacy, mismanagement or lack of capital (Alfred, 2017). Therefore, financing is one of the crucial areas in a firm. Capital structure in financial terms means the way firms finance their assets through the mixture of equity, debt, or hybrid securities (Saad, 2010). Therefore, capital structure here reveals the fusion of debts (long term and short term), common equity, and preferred equity (Akintoye, 2018). Capital structure is fundamentally how a firm finances its overall operations and growth by using different sources of funds (Tsuji, 2015). There are two components of capital structure which include internal fund and external fund (Myles & Majluf, 2014). However, there are various alternatives of debt-equity ratio; these include 100% equity: 0% debt, 0% equity: 100% debt and X% equity: Y% debt (Onaolapo & Kajola, 2010).

Liquidity is very critical for the survival of any organization especially the financial institution whose primary assignment entails keeping the deposit (Agbada & Osuji, 2013). As uncertainty makes funding sources to evaporate, many banks quickly find themselves short of cash and unable to cover their obligations as they become due. In extreme cases, banks in some countries failed and were forced into mergers. As a result, in the interest of broader financial stability, substantial amounts of liquidity were provided by authorities in many countries (Agbada & Osuji, 2013).

The mix of debt and equity decision represents a fundamental issue faced by financial managers in many firms. Studies on capital structure have been carried out by finance researchers, and at best there have been mixed results. The actual impact of capital structure on deposit money banks' performance in Nigeria has been a major problem among researchers (Adesina, Nwidobie & Adesina, 2015). Yet, there is still no conclusive empirical evidence in the literature about how capital structure influences deposit money banks' performance in Nigeria. According to Kochar (2014), poor capital structure decisions may lead to a possible reduction/loss in the value derived from strategic assets.

More so, the issue of liquidity for organizations is very vital to the existence of any organization especially the deposit money banks. However, illiquidity of banks can lead to loss of businesses, thereby reducing the potentials for earnings and profitability. The studies of Emami, Ahmadi and Tabari (2015) have it that lack of adequate liquidity in a bank is often characterized by the inability to meet daily financial obligations. Based on these contending views and the resultant conspicuous gap in empirical research on capital structure, liquidity and deposit money banks' performance in Nigeria, this study attempted to bridge the gap by examining the effect of capital structure and liquidity on financial performance of deposit money banks in Nigeria.



LITERATURE REVIEW

CONCEPTUAL REVIEW

Concept of Capital Structure and Financial Performance

A firm's capital structure refers to the mix of its financial liabilities. As financial capital is an uncertain but critical resource for all firms, suppliers of finance are able to exert control over firms (Boodhoo, 2019). There are two different ways of financing the assets of an organization: through internal equity or external debt. Capital structure refers to the way a corporation finances its assets through some combination of equity and debt. However, there are several kinds of equity and debt according to McMenamin (2019) and Ross (2015). These are common stock, preferred stock and retained earnings (untaxed reserves) as well as bank loans, bonds, accounts payable and line of credit. Capital structure, according to Song (2015), refers to the mix of different types of securities (long-term debt and common stock) which are issued by a company to finance its assets. Chen (2014) sees capital structure as a mixture of debt and equity financing of a firm.

The ability of companies to carry out their stakeholders' needs is tightly related to capital structure. Therefore, this derivation is an important fact that we cannot omit. Capital structure in financial terms means the way a firm finances its assets through the combination of equity, debt, or hybrid securities (Saeedi & Mahmoodi, 2018). In short, capital structure is a mixture of a company's debts (long-term and short-term), common equity and preferred equity. Capital structure is essentially how a firm finances its overall operations and growth by using different sources of funds. Modigliani-Miller (MM) theorem is the broadly accepted capital structure theory because it is the origin of capital structure theory which had been used by many researchers. Capital structure is one of the finance topics among the studies of researchers and scholars. Its importance is derived from the fact that capital structure is tightly related to the ability of firms to fulfill the needs of various stakeholders. Capital structure represents the major claims to a corporation's assets. This includes the different types of both equities and liabilities (Nyor & Tunusa, 2016).

Khan (2017) found that there is an insignificant relationship between long-term debt and return on asset and equity, whereas the results reported a significant positive relationship between long-term debt and gross margin. Nour (2019) in his study found that long-term debt has no significant impact on performance, as measured by return on equity, return on asset and earnings per-share. This finding is contrary to theoretical belief; however, the technique of data analysis used in the study might have resulted in the findings. Umar (2017) concluded that long-term creditworthiness has a positive impact on performance. Long-term creditworthiness is not defined and wrong findings might have been reported due to wrong measures of capital structure. An empirical study by Abdullah and Tursoy (2021) on nonfinancial firms in Germany for over 25 years found a significant positive relationship between capital structure and financial performance. They found that the lower cost of issuing debt and tax shield from the interest of the debt was the main cause of the positive relationship. Olusola, Mengze, Chimezie and Chinedum (2022) examined the impact of capital structure on firms' performance in Hong Kong. Eventually, for both capital structure and performance, a panel data model was adopted and results showed a small effect in the negative direction. In line with the objective of the study, the following hypotheses were formulated in null form and tested:



H₀₁: There is no significant relationship between debt-to-equity ratio and financial performance of listed deposit money banks in Nigeria.

H₀₂: There is no significant effect of total debt ratio on the financial performance of listed deposit money banks in Nigeria.

Asset Liquidity and Financial Performance

“Liquidity is the ability to settle obligations with immediacy. The management of liquidity is essential for financial and non-financial firms” (Drehmann, Elliot & Kapadia, 2017). This is a responsibility of the bank to pay the financial obligations; the financial obligations contain long and short-term debts and other financial expenses. Liquid assets are those assets that can be converted into cash, with little or no transaction costs, within a very short period of time. Makori and Jagongo (2013) opined that it is a responsibility of all banks to convert their current assets into the shape of cash to pay the due obligations. The banks having less amount in current assets will face difficulties in undergoing its processes and if the amount of current assets is too high, this displays that the return on investment for the bank is not in the unspoiled state (Ibe, 2013).

Nwaezeaku (2013) termed liquidity as the degree of convertibility to cash or in other words, the ease with which any assets can be en-cashed or converted to cash. He also added that assets must be sold at a fair market price. In line with Sanghani (2014), by employing financial ratio analysis, the firm’s liquidity can be judged. These ratios include current ratio, liquid ratio extracted from statement of financial position analysis and operating cash flow ratio extracted from cash flow analysis.

Bolek and Wolski (2017) saw liquidity as the capacity of an organization to meet its current liabilities, as measured by different financial ratios. Raheman and Nasr (2007) revealed a negative relationship between liquidity and financial performance. Saleem and Rehman (2011) sought to reveal the relationship between liquidity and financial performance. The main results of the study demonstrated that each ratio (variable) has a significant effect on the financial positions of a business organization. Obim, Takon, and Mgbado (2020) examined the impact of liquidity on banks’ profitability. Ordinary least square multiple regression technique was adopted to establish the impact of independent variables on dependent variables. Based on the results, there was a positive but insignificant relationship between bank deposit and return on asset, there was a negative and insignificant relationship between liquid asset and return on asset, and there was a positive and insignificant relationship between treasury bills and return on asset. Ajose and Balogun (2021) investigated the impact of liquidity management on the financial performance of deposit money banks in Nigeria for a period of 10 years (2011–2020). The study adopted the ex-post facto research design. The findings showed that liquidity management has a positive and significant effect on the financial performance of deposit money banks in Nigeria. In line with the objective of the study, the following hypothesis was formulated in null form and tested:

H₀₃: Asset liquidity does not significantly influence the financial performance of listed deposit money banks in Nigeria.

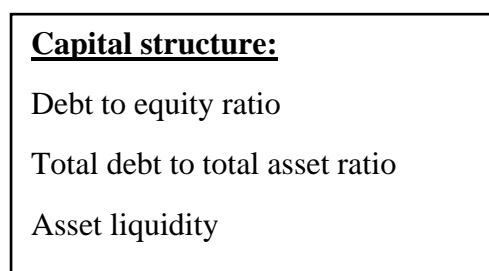
Gaps in Literature

From the conceptual and empirical studies above, it can be observed that not many studies have been carried out on capital structure, liquidity and financial performance of deposit money banks in Nigeria. This study attempted to fill the gap in existing literature by employing the ex-post facto research design in examining the effect of capital structure and liquidity on financial performance of deposit money banks in Nigeria.

Conceptual Framework

Based on the conceptual review, theoretical review and empirical review, the study adopted and used the conceptual model below to illustrate the relationship between capital structure, asset liquidity, and financial performance. The model depicts diagrammatically the relationship between the independent and dependent variables.

Independent Variables



Dependent Variable

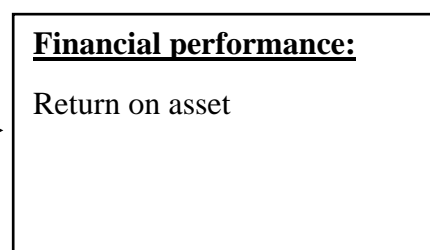


Fig 2.1: A Conceptual Framework

METHODOLOGY

The Research Design

Research design is considered a blueprint for research, dealing with at least four problems: which question to study, which data are relevant, what data to collect and how to analyze the result. The best design depends on the orientation of the researcher because every design has its own positive and negative side. The research design adopted is the ex-post facto research design, which enables the researcher to ascertain the impact of the independent variable on the dependent variable.

Population and Sampling

The population of a study is the group of elements, people, items, data or other variables with the same characteristics and interest that the researcher studied (Obazee & Abraham, 2003). The population of this study consisted of all deposit money banks listed on the Nigerian Exchange as at 2021 (NSE, 2021). However, the sample size of this study is made up of 10 selected deposit money banks on the Nigerian Exchange. The sample size of the banks was



selected using convenience sampling technique. This technique is a non-probability sampling technique that allows the researcher to subjectively select a sample size.

Sources of Data and Data Collection

The data for this study were obtained from a secondary source, and they were derived from audited financial statements of selected deposit money banks available on the Nigerian Exchange, covering the period 2011–2020.

Method of Data Analysis

Data collected were analyzed statistically. The ordinary least square method of regression analysis was used to examine the relationship between the dependent and independent variables.

Model Specification

A multivariate econometric model were formulated for the purpose of the study. The model basically specifies how Debt to Equity Ratio, Total Debt to Total Asset Ratio and Asset Liquidity are related to the Financial Performance of listed deposit money banks in Nigeria. Consequently, the study specifies the econometric models stated below:

$$ROA = \beta_0 + \beta_1 DER + \beta_2 TTR + \beta_3 ASL + \mu \quad \dots\dots\dots i$$

where:

DER = Debt Equity Ratio

TTR = Total Debt to Total Asset Ratio

ASL = Asset Liquidity

ROA = Return on Asset

$\beta_0, \beta_1, \beta_2, \beta_3$ are parameters

μ = Stochastic disturbance term or error term

Measurement of Variables

This study shows that Debt to Equity Ratio (DER) and Total Debt to Total Asset Ratio (TTR) are independent variables that proxy Capital Structure, and Asset Liquidity is an independent variable that proxies Liquidity, while Return on Asset is the dependent variable that proxies Financial Performance.



Table 3.1 below shows the operationalization of the variables.

Table 3.1: Operational Variables

S.N	VARIABLE	CODE	MEASUREMENT	PRIOR STUDIES
	Independent Variables			
1.	Debt Equity Ratio	DER	Measured using firm's total liabilities and total shareholder's equity	Rafique (2011)
2.	Total Debt to Total Asset Ratio	TTR	Measured using firm's debt obligations (both short-term and long-term debt) and total asset	Rafique (2011)
3.	Asset Liquidity	ASL	Measured using current ratio (also known as working capital ratio)	Alli, Akhtar and Sadaqat (2016), Rafique (2011), and Ahmad (2012)
	Dependent Variable			
1.	Return on Asset	ROA	Measured using firm's net income and its total assets	Azhagaiah and Gavoury (2016), Gleason, Mathur, and Mathur (2000), Jermias (2008), and Saeedi and Mahmoodi (2018).

Source: Researcher's Computation (2022)

The A-Priori Expectation

The positive (+) and negative (-) signs, which represent the signs and magnitude of the parameters of economic interactions, are the a-priori condition set by economic theories. They must meet the following a-priori requirements. According to economic theory, parameters in a model should have positive (+) or negative (-) indications. These are the effects that the author anticipates the model's independent variables to have on the model's dependent variable at the end of the data analysis. In the table below, the predicted signs and sizes corresponding to the variables are listed:

Estimation Techniques

This study analysed time-series data from 2011 to 2020. This quantitative research provides explanations based on prior research, methodology, and procedures. The estimation process began by ensuring that the variables' behaviour conformed to the model's assumptions. The estimation procedure started with a unit root test to ensure that the variables are stationary. The study tested stationarity at the unit root level using the Augmented Dickey-Fuller (ADF), Dickey-Fuller GLS (ERS), Phillips-Perron and Kwiatkowski-Phillips-Schmidt-Shin tests.



Descriptive Statistics

This summary statistic quantifies or summarises a set of data's features. This test's overall purpose is to provide a clear summary of the samples and measurements used in this inquiry. It informs us of the inherent characteristics of the variables. This is done in the unlogged form rather than the logged one. This data evaluation technique gives an overview of core tendencies like the mean, median, and the observation's minimum and maximum values, and dispersion measurements like range and standard deviation. Normalcy measurements include kurtosis (a measure of sharpness) and skewness (a measure of the degree of symmetry). Jarque-Bera compares the skewness and kurtosis of the series to a normal distribution. Descriptive statistics help determine whether or not the data set has significant variance and whether or not the variables are positively or negatively skewed.

Model Evaluation Techniques

These are the tests used to prove the theoretical and statistical validity of the estimated parameters derived from the regression result. The models used in evaluating this study include Coefficient of Determination (R^2), F-statistic test, and t-statistic, which were used to test the statistical significance of the effect of independent variables on the dependent variables in the model as well as the validity of the model. The results of the study were evaluated to test the hypothesis for theoretical credibility and the statistical significance using:

DATA ANALYSIS AND PRESENTATION OF RESULTS

Unit Root Test

Unit Root Test for Variables

Variable	ADF Test		Phillip-Perron Test		Integration
	<i>Levels</i>	<i>First Difference</i>	<i>Levels</i>	<i>First Difference</i>	
DER	1.954	-45.14	1.137	-37.67	I[1]
TTR	-2.329	-6.155	-2.298	-6.157	I[1]
ASL	-2.612	-4.119	-2.329	-8.781	I[1]
ROA	0.388	-3.948	0.279	-3.824	I[1]

Note: * significant at 5 percent

Source: E-view 8 Estimation (2022)



In the result, the ADF test statistic for each of the variables is shown in the second column set, while the PP test is shown in the third column set. The results indicate that each of the variables possesses both ADF and PP values that are less than the 95 percent critical values for the levels series and greater than the critical value for the differenced series. The implication of this is that the time series are non-stationary in their levels but stationary after first differencing. In other words, the variables are time-dependent and would not guarantee a long-run relationship unless tested. Thus, we would accept the hypothesis that the variables possess unit roots. Indeed, the variables are integrated of order one (i.e., I[1]).

Descriptive Statistics

The annualized descriptive summary statistics for the mean variable for the sampled deposit money banks in Nigeria are analyzed in Table 4.3.

Table 4.3: Descriptive Statistics

	Mean	Max.	Min.	Std. Dev.	Skew.	Kurt.	J-B	Prob.
DE	0.09574	0.54200	0.00420	0.09427	1.61021	6.58439	106.420	0.000000
R	6	0	0	9	1	3	4	
TT	0.05012	0.17380	0.00090	0.04556	1.08718	3.14768	21.7694	0.000019
R	6	0	0	7	6	3	7	
AS	1.02252	11.3792	0.15450	1.99704	3.87762	17.5451	1245.31	0.000000
L	5	0	0	4	9	3	3	
RO	1.80166	2.31548	1.52040	0.11679	0.39573	5.46643	30.7530	0.000000
A	7	2	0	7	6	8	1	

Source: Author's Computation (2022)

The descriptive statistics indicates that the mean performance values (ROA) for banking sector in Nigeria is 0.029882. The maximum values of 0.649142 is higher than their mean values and it suggests that more banks performed better than others in the sample. The variables are heterogeneous in terms of performance. This dissimilarity is further understood by the wide gap between the maximum value 0.649142 and that of the minimum value of -0.09274. The standard deviation value of 5.789734 is higher than the mean value. This is an indication of high variability in terms of performance among the sampled deposit money banks in Nigeria. The data set for the ROA is positively skewed to the right. Meanwhile, the mean ROA clearly passed the significance test at the 1 percent level as shown in the probability value; this shows that the pattern of performance is not normally distributed among deposit money banks in Nigeria.

The mean value of the descriptive statistics for debt-to-equity ratio (DER) is 0.095746, while the maximum value is 0.542000 and the minimum value is 0.004200. The maximum value being higher than the mean value suggests that incidence of debt equity ratio (DER) seems to be high for the sampled deposit money banks. The degree of variability as measured by the standard deviation value of 0.094279 is low, and the data is also skewed to the right, with the J-B statistic value of 106.4204 being significant at the 1 percent level.



The mean values for total debt to total asset ratio (TTR) is 0.050126, with the corresponding maximum value of 0.173800 higher than their mean values. Their standard deviation is very high compared with their respective mean value. Their summary statistics for skewness is positively skewed, indicating that more of the variables performed higher than their reported mean values for the period, although those of size are negatively skewed. Their Jaque-Bera (J-B) statistics are significant at the 1 percent levels and this implies that the probability distribution of the sample for the variable is not normally distributed. This invariably confirmed the heterogeneous nature of the data set in this study.

The mean values for the independent variable (asset liquidity, ASL) also present interesting outcomes. The respective corresponding maximum value is higher than the mean value. Even the respective standard deviation is higher than their means values. This is indicative of wide dissimilarities among the variables across the sampled period. The data appears to be positively skewed to the right, with their Jaque-Bera (J-B) statistic values significant at the 1 percent levels. It implies that the probability distributions of the data set are normally distributed.

Regression Analysis

In the results of the estimated OLS regression for the effect of capital structure, liquidity and financial performance of deposit money banks in Nigeria, presented in Table 4.4 below, the diagnostic indicators are very impressive. The model is shown to have a very strong predictive ability as is shown in the high R-squared value of 0.54. This shows that over 54 percent of the systematic variations in banks' performance is captured by changes in the hypothesized independent variables. The adjusted R-squared value of 0.49 percent is also very high and it implies that the model has a high predictive ability. The overall relevance of the model is observed by considering the F-statistic in the model. The F-value of 9.794060 is high and the model therefore passes the overall significance test at a very high level. Thus, we cannot reject the hypothesis of a significant linear relationship between capital structure, liquidity and financial performance of deposit money banks in Nigeria.

Table 4.4: Capital Structure, Liquidity and Performance of Deposit Money Banks in Nigeria

Variable	Coefficient	T-Ratio	Prob.
Constant	0.136746	1.258221	0.2111
DER	-0.299298	-2.257899	0.0260*
TTR	0.611267	1.989852	0.0492*
ASL	-0.016001	-2.176534	0.0318*
$R^2 = 0.54$	$\underline{R}^2 = 0.49$	F = 9.794060	DW Statistic = 1.50

Source: Author's Computation (2022)

** : sig. at 1% level, * : sig. at 5%



Now, considering the individual coefficients in the above Table 4.4, it is observed that the coefficient of debt equity ratio is negatively signed and also passed the 5 percent significance level. This clearly shows that incidences of debt equity ratio is a strong factor in the determination of deposit money banks' financial performance in Nigeria. The result also indicates that as debt equity ratio increases, deposit money banks' performance reduces by -0.299298. If a bank is facing a problem of debt equity, then it adversely affects its credit rating and would limit its opportunities of co-financing and syndication with other banks. Thus, a huge amount of debt equity ratio may affect the profitability and can threaten the survival of deposit money banks.

The coefficient of total debt to total asset ratio (TTR) passed the 5 percent significance level, meaning that total debt to total asset ratio (TTR) is a significant determinant of deposit money banks' performance in the country. It is seen that a unit change in the value of TTR brings about approximately 1.989852 percent increase in the overall performance of deposit money banks in Nigeria. The ratio of (TTR) is a credit risk indicator and is a non-cash charge against operating income made to account for expected or unexpected loan losses. This can be general provision or specific provision.

The coefficient of asset liquidity (ASL) has a significant negative relationship with deposit money banks' performance, it was significant at the 5 percent level. The negative sign however suggests that as the volume of banks' liquidity rises, deposit money banks financial performance reduces by -0.016001 percent. These results demonstrate management inefficiency in the management of the banks' liquid assets to enhance banks' performance.

The overall results obtained from the model estimation are effectively acceptable because the Durbin-Watson statistic value of 1.50 is appropriate and it indicates the absence of multicollinearity in the model. Thus, the results are applicable for structural analysis as well as policy directions.

CONCLUSION

This study investigated the effect of capital structure and liquidity on financial performance of deposit money banks in Nigeria. The study found that the optimal capital structure is the combination of debt and equity that minimizes the firm's overall cost of capital. The study noted that understanding of the trade-off between equity and debt and the various determinants of capital structure as used in the study are very important in the sustenance of business organizations. The management plays a significant role in the debt/equity handling in the firm. How the management handles the combination of debt and equity might form the basis of conflicts between creditors and shareholders and generate agency costs. The study therefore concludes that the variables of capital structure as used in the study such as debt equity ratio and total debt to total asset ratio, as well as asset liquidity have yielded mixed results of positive and negative effects on the financial performance of deposit money banks in Nigeria. Hence, the management of deposit money banks will play a significant role in choosing the best capital mix of debt and equity which will maximize profit and enhance the performance of the deposit money banks.



Policy Recommendations

Based on the findings from the study, the following policy recommendations are made:

1. The management of deposit money banks should be able to determine the appropriate level of debt-to-equity mixture that will enhance their financial performance.
2. The management of deposit money banks in Nigeria should consider the use of more debt in their capital structure mix as this will reduce the overall cost of capital as a result of its tax advantage.
3. The management of deposit money banks in Nigeria should increase the use of equity capital in financing to improve earnings of their banks.
4. Investors and shareholders of deposit money banks in Nigeria should also consider the capital structure of any bank before investing in them as the strength of a bank's capital mix determines the level of returns.
5. Since liquidity ratio has a significant inverse relationship with banks' performance, it therefore suggests that banks should always maintain adequate cash levels. Besides, the Central Bank of Nigeria and the NDIC should step up their oversight functions to ensure that banks are constantly liquid to be able to service customers' needs on a daily basis.

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