Ife Social Sciences Review
Faculty of Social Sciences,
Obafemi Awolowo University Ile Ife, Nigeria
Journal homepage: www.issr.oauife.edu.ng/journal
ISSN:0331-3115 eISSN:2635-375X

Moderating Effect of Liquidity on the Relationship Between Capital Structure and Profitability: Evidence from Listed Deposit Money Banks in Nigeria

Rufai M. Abdulrahman
Department of Business Administration
Faculty of Management and Social Sciences
Federal University Gusau
Gusau, Nigeria
E-mail: marrufai@fugusau.edu.ng

Abstract

Over the last ten years, banks profitability were not favorable as banks' financial reports indicated declined profitability, negative retained earnings, net loss and fluctuating net profit which led to the acquisition of some banks by others. The study covered fifteen listed banks as its sample size from 2010-2019. Secondary data were used, sourced from Nigeria Stock Exchange facts book for the period. The methodology used was descriptive research design and random effects estimate was adopted to test the hypotheses. The results revealed that, customers' savings had a positive and statistically significant effect on return on assets. Loans advances had a negative relationship and insignificant effect on return on assets. Capital investment was positively and insignificant with return on assets and retained earnings showed a negative relationship and statistically significant with return on assets. The overall model results confirmed that, moderating effect of liquidity had significant effect on firms' profitability of listed deposit money banks in Nigeria. The study recommended that, banks should depend more on customers' deposits as a means of borrowing on short term basis to finance their businesses and encourage higher rate of undistributed earnings out of profits to serve as internal source of funds of listed deposit money banks in Nigeria as it bears no costs on the firms.

Keywords: Customers' savings, Loans advances, Capital investments, Retained earnings, Liquidity, Profitability.

Introduction

In today's competitive and dynamic business world, the influences of profitability and capital structure have drawn a significant attention. It is believed that a business cannot survive without enough funds for working capital, fixed asset investment, skilled employee, market development and new products. When a firm has financial needs, internal and external sources can be used to meet them. An internal source refers to funds generated by an entity within the business. External financing may be due to an increase in the number of business co-owners or loans obtained in form of borrowing (Uremadu & Onyekachi, 2019). The sole aim of manager of any business organization is to maximize the shareholders wealth. This can only be done by combining and using the financial resources of both debt and equity when it comes to financing the organization to generate profit. Based on banks annual financial reports reviewed, banks in Nigeria declared average net loss of N196, 613, 828b within 2010-2019 as well as negative

retained earnings (Nigeria Stock Exchange, 2019). However, some banks recorded profit fluctuation namely; UBA, 2014 N20.486b, 2016 N15.885b and 2017 N12.839b and negative retained earnings recorded, GTB N85b in 2011 to N51b in 2012, Fidelity bank N17b, N7b, N13b to N9b in 2012, 2013, 2015 to 2016 and FCMB's figures were N15b, N6b, N5b and N3b from 2012, 2013, 2014 and 2018 respectively (NSE, 2019). Thus, Oceanic, Intercontinental, Afri and Fin banks' poor performance led to their being taken over by other banks (CBN Bulletin, 2010). Furthermore, Skye bank poor performance led to its being taken over and had its name changed to Polaris bank (CBN Bulletin, 2008). In more recent time, Access bank was changed to Diamond bank as a result of their poor performance (CBN Bulletin, 2019). Profitability is the outcome of a given business transaction that earn a return from its operation, this is measured by earnings after tax divided by total assets. To maximize profit is the main goal of all firms in business. Profitability which is the dependent variable that measures the profitability is proxy by return on assets. Erasmus (2008) noted that financial performance measures like profitability and liquidity among others provide a valuable tool to stake holders which aids in evaluating the past financial performance and current position of a firm. Liquidity management means how a firm can quickly turn its assets into cash within a very shortest period of time by handling the firm's current assets and current liabilities. Generally, current assets include those assets that can be converted into cash within one accounting year period by firm such as inventories, trade receivables, bank deposits, customer deposits, cash and cash equivalent. Also, current liabilities include those liabilities that can be settled down within the next 12 months by the firm such as trade payable, current tax, customer savings and other payable. Firm's liquidity position expresses its capability to meet its current obligations and the firm's liquidity health. Liquidity position of a firm is measured by current ratio which is current assets by current liabilities.

More importantly, the capital structure of companies is based on a combination of debt and equity in financing the company's assets, which is why it is considered the most important decision taken by financial managers. It was clearly established that the choice of a company's capital structure can lead to bankruptcy and have a negative effect on the company's profitability if it is not used correctly (Anarfo, 2015). A company that is fully financed with equity is considered as levered, while a company with 100% debt is considered as very leverage. In practice, most companies strive to combine debt and equity to achieve efficiency in their activities (Ganiyu, 2015). Given the banks' poor performance highlighted coupled with the decision making of financial choices outlined, the issues of capital structure that affect the profitability of Nigerian banks needed to be addressed. The study examined whether customer savings and loans and advances have the same impact on the overall profitability of banks in Nigeria. Also, examine the impact of retained earnings on profitability, the effect of capital investments to the overall profitability and majorly, the influence of liquidity as moderating role on the profitability of deposit money banks in Nigeria. However, the results were contradictory with the results of previous studies on the capital structure, the literatures reviewed were full of inconsistencies in the findings: Nurlaela, Mursito, Kustiyah and Hartono (2019), Alex and Ngaba (2018) opined that, customers' savings is positively significant with profitability. Conversely, scholars such as Yakubu, Alhassan, Mikhail and Alhassan (2017), Ironkwe and Emefe (2019) are of the opinion that, customers' savings has a negative coefficient and insignificant impact on firm profitability. Also, Ironkwe and Emefe (2019), Muchiri, Muturi and Ngumi (2016) opined that, loans advances is negatively insignificant with profitability while Musah (2017) and Birru (2016) are of the opinion that, loans advances is negatively significant with profitability. Zafar, Zeeshan and Ahmed (2016) opined that, equity ratio had a positive and insignificant effect on profitability. However, Ironkwe and Emefe (2019), Muchiri, Muturi and Ngumi (2016) are of the opinion that, equity ratio had a negative and significant relationship with ROA. Edet, Uma and Udo (2017) opined that, retained earnings were negative and significant to profitability when Muchiri, Muturi and Ngumi (2016) were of the opinion that, retained earnings were negative and insignificant relationship with profitability. The inconsistencies in the findings

of these studies warrant the use of moderating variable to strengthen the relationship and add value to this study. Therefore, this study attempts to examine the effect of liquidity as moderating variable between capital structure and profitability of listed deposit money banks in Nigeria,

Research Hypotheses

The research hypotheses formulated to to guide this study are as follows:

i. There is no significant relationship between customers' savings and profitability of listed deposit money banks in Nigeria.
ii. Loans advances have no significant relationship with the profitability of listed deposit money banks in Nigeria.
iii. Capital investments have no significant effect on the profitability of listed deposit money banks in Nigeria.
iv. There is no significant relationship between retained earnings and profitability of listed deposit money banks in Nigeria.
v. There is no statistically significant moderating effect of liquidity on the relationship between capital structure and profitability of listed deposit money banks in Nigeria.

Literature Review

Concept of Profitability

Profitability refers to the reference parameter used in determining the general well-being of a given entity. Bhunia et al. (2011) defined profitability as the company's overall financial health over a specified period of time. They added that the analysis of financial performance is aimed at assessing the feasibility, solidity and fertility of a company. Similarly, Nyor and Yunusa (2016) view performance as the level of performance of an enterprise over a given period of time, expressed in terms of overall profits or losses during that period.

Profitability, which demonstrates the maximization of shareholders wealth, can be measured by looking at the company's profitability. Financial performance is calculated using profitability ratios such as return on assets, return on equity, return on investment, earnings per share, market value, etc. For the purpose of measurement, many researchers measure financial performance differently. Demstz and Lehn (2011) measured financial performance as a ratio of book profit, Uadiale (2010) measured return on equity in relation to after-tax share capital and return on capital employed (ROCE) on earnings after tax and ROCE on earnings after tax plus bookings.

Concept of Capital Structure

The capital structure is simply the financial framework of companies, which includes profit retaining of the companies, debt and equity financing to keep the business entity financing its activities. The capital structure is a means of making decisions by business companies and facilitates maximization of return on investment, as well as increases the efficiency of financing and dividend decisions (Chandrasekharan, 2012). Is the managers' responsibility to determine the optimal capital structure; the one that maximizes goodwill while minimizing the cost of capital, thus ensuring a balance between risk and return. The capital structure is necessary to determine how the company finances its overall operations and growth by using various sources of funds. The capital structure of companies is based on a combination of debt and equity in financing the company's assets, which is why it is considered the most important decision taken by financial managers. The research on the structure of capital was inspired by the pioneering work of Modigliani and Miller (1958), followed by a litany of theories such as agency theory, pecking order theory, static trade-off theory etc.

Equity Financing

Capital investments are another form for banks to finance their businesses by way of floating new shares to both existing and new shareholders to raise funds to expand the business. The shareholders became part of the owners of the business, they take the crucial decision for the company and they can vote and be voted for. Shareholders' wealth has to be maximized by way of firm performance and profit generation. Equity can be defined as ownership that gives the owner the right to ownership, decision-making,

responsibility, benefit or sharing of benefit. Equity finance is the contribution from the owner and usually includes common stock capital, preferred capital, internal reserves and reserves. Like bond providers, equity providers receive returns on dividends from profits generated by companies (Titman, Keown & Martin, 2011). Preferred shareholders receive dividends at a rate agreed prior to regular shareholders, and retain unappropriated earnings due to the company's expansion program (Titman et al., 2011). Shareholders' equity represents the company's capital split into individual shareholders of common or preferred stock (Kurfi, 2003). For the purpose of this study, the researcher limited the scope of his equity financing on capital investments and retained earnings only and discard other components of equity due to the fact that, both are adequate enough to serve the purpose of this study.

Debt Financing

Customer' savings are the monies deposited by banks' customers on a daily basis. Banks make use of these deposits from the surplus users and give it out to the deficit users who borrow from the banks. Banks can give out these monies in short period known as overdraft or in a longer period to generate income to the banks. Banks need to maintain adequate funds in their possession in order to meet their customers' demand at a very shortest demand. This is referred to as liquidity position of the banks. Debt refers to both short-term and long-term borrowing to finance a business. Firms prefer debt financing because the interest paid on the debt is not taxable, thereby improving the value of a firm (Iavorskyi, 2013). According to the hierarchy theory, the option to consider debt financing is the last option after exhaustion of internal financing and equity options (Afrasiabishani, Ahmadinia & Hesami, 2012).

Concept of Liquidity

Liquidity position is a prime factor in every firm to determine a firm's health. Liquidity position of a firm can be established from the firm's liquidity management. Liquidity management means how a firm can quickly turn its assets into cash within a very shortest period of time by handling the firm's current assets and current liabilities. Generally, current assets include those assets that can be converted into cash within one accounting year period by firm such as inventories, trade receivables, bank deposits, customer deposits, cash and cash equivalent. Also, current liabilities include those liabilities that can be settled down within the next 12 months by the firm such as trade payables, current tax, customer savings and other payables.

Firm's liquidity position expresses its capability to meet its current obligations to its owners and creditors. Liquidity position of a firm is measured by current ratio which is current assets by current liabilities. Padron, Apolinario and Santana (2005) state that, firms with highly liquid assets are possibly to perform better in business as they are fit to utilize cash at any shortest time to meet their obligations and are less involve in liquidity risks. Liquidity was introduced as a moderator to strengthen the relationship between the independent variables and dependent variable to add value to the profitability.

Empirical Review

Empirical studies related to this study of capital structure and profitability conducted by various researchers across the universe at a different period was reviewed to show how their findings and results related to this research work. To determine the capital structure, liquidity, asset structure and turnover on financial performance of Indonesian consumer market companies, Nurlaela, Mursito, Kustiyah and Hartono (2019) concluded that, the t-test of the hypotheses showed that the capital structure variable debt ratio (DER), the current liquidity ratio (CR) and the turnover of assets (TATO) have a significant effect on the financial performance (return on assets). The study covered a period of three years, in the period 2016-2018. The analytical method in this research is the multiple linear regression analysis. The researcher observed that, no any theory was stated in this study to explain the relationship between the independent and dependent variables used. Alex and Ngaba (2018) found that, there is strong positive relationship between capital structures and ROA. In the study effect of firm size on financial performance of banks: case of commercial banks in Kenya. The

study covered all the 42 commercial banks in Kenya for the period from 2012-2016. Descriptive statistics and multiple regression technique were adopted for the study. The independent variables represented the firm size were number of branches, number of customers, capital base and loan and advances while ROA represented the profitability. Jacob, Adeniran and Philip (2017) found out that, there is significant relationship between capital structure and profitability. In their study investigated the impact of capital structure on the profitability of selected quoted banks in Nigeria. The study used secondary data extracted from annual report of the selected financial firms from Nigeria Stock Exchange found from 2004 -2015. The study applied an ex-post facto research design. Shareholders' equity and loan advanced served as proxy for capital structure and profit after tax was used for bank performance. The data were analysed using descriptive and inferential statistic. In a similar study, Yakubu, Alhassan, Mikhail and Alhassan (2017) findings revealed that, there is significant positive relationship between capital structures and banks performance. The study to examine the impact of capital structures on performance. 'Commercial Banks Performance in Ghana: Does Capital Structure Matter? The study covered from 2010-2015 and used panel data, OLS regression models, correlation coefficient and descriptive statistics to analyse the data. Total debts, long and short-term debts proxy's capital structure with size and liquidity were used as control variables and return on equity stood for performance. Muchiri, Muturi and Ngumi (2016) found that, in isolation, short-term debt, long-term debt, retained earnings and foreign equity had an insignificant negative relationship with return on assets, but an insignificant positive relationship with return on equity. When combined, the financial structure had a significant positive and negative relationship with return on equity and return on assets respectively. On moderation of the relationship between financial structure and financial performance, it was found out that gross domestic product growth rate had a significant moderating effect. The study employed an explanatory research project with secondary data from the financial statement dashboard of 61 companies retrieved from stock exchange manuals for the period, December 2006 to 2014. Dependent variables are return on assets (ROA) and return on Equity (ROE) and proxy independent variables were total debt (TB), long term debt (LTD), short term debt (STB), retained earnings (R / E) and GDP as the control variable. Viable generalized least squares, random effects and fixed effects were used for models with and without moderator for models based on the Hausman specification test.

Zafar, Zeeshan and Ahmed (2016) in their study found that, there is positive relationship between capital structures and profitability. They investigated impact of capital structure on banking profitability. The study covered 25 banks listed on the Karashi Stock Exchange. Multiple regression models were used for the analysis. The study variables proxy's capital structures were total debts, long and short-term debts and equity while EPS, ROA and ROE proxy's profitability. In a contrary view, Ironkwe and Emefe (2019) findings revealed that, there was no significant relationship between the ownership concentration and ROE. The study examines the relationship between corporate ownership structures on financial performance of quoted companies in Nigeria. The study covered from 2008-2017 using ownership concentration and ROE as their variables. OLS regression analysis was adopted with the aid of Eviews software package. Musah (2017) in his study, the effect of capital structure on the profitability of commercial banks in Ghana found out that, short-term debt and long-term debt ratios are negatively linked to bank profitability in Ghana. However, the overall debt ratio was positively linked to the profitability of the banks in Ghana. The size of the company, foreign ownership and the age of the bank were positively related to the profitability of the banks, as the growth in customer deposits was negative in relation to the profitability of the banks. The study showed 23 banking activities over a six-year period from 2010 to 2015 and data from the annual banks' records were extracted. Data were analysed using descriptive statistics, correlation analysis as well as panel regression analysis. The financial structure measures as a short-term debt ratio, long-term debt ratio and total debt ratio and the financial results of the companies measured as return on assets and return on equity. In the

study carried out by Birru (2016) the findings showed that, there is negative significant relationship between the capital structures variables and banks financial performance. The study investigated impact of capital structure on financial performance of commercial banks in Ethiopia. The study covered the period from 2011-2015. Annual reports from the banks were used to obtain the secondary data needed. Data were analysed using correlation analysis and multiple regressions models. Debts, equity, loan to deposit, size and tangibility were the capital structures proxies and ROA and ROE served as profitability. There were contradictions in the results of the studies reviewed above. Some findings reported positive customers' savings, loans advances, capital investments and retained earnings while other studies' results recorded negative findings in these independent variables. This study introduced liquidity as a moderating variable to bridge the gap created in those studies.

Theoretical Framework

Many scholars have developed several theories of capital structure to study the financing of capital structure. For the purposes of this study, the theory underpinning this study is Pecking Order Theory and Static Trade-off Theory serves as supporting theory to examine the relationship between capital structures and profitability.

Pecking Order Theory

Pecking order theory of financial structure was postulated by Myers and Majluf (1984). This assumption holds that, firms have a preferred hierarchy for financial decision making. What's most interesting is to use the cash flow that is, retained earnings before falling back to any form of external funds in making any kind of investment. Tascón and Tapia (2011) argue that this policy is necessary to reduce the cost of nominal deductions for security compliance due to the existence of sensitive information. In other word, the theory further suggested that money is first entered into it only when all of the internal finances are spent, and companies will opt for external funding. When following the order, retained earnings are preferred to debt and debt is preferred to new equity, short term debt is preferred to long-term debt if debt is to be used and preferred issuing preferred stocks to ordinary shares if to select equity financing. This order is aimed at minimizing the possible costs attributable to external financing. By implications and extant literature reviewed, this theory is relevant to short term debts (independent variable) measured by customers' savings and retained earnings following hierarchical financing that, internal source should be considered before external source of financing.

Static-Trade- Off theory

Kraus and Litzenberger, (1973), who developed this theory, argue that companies trade in the benefits and costs of debt and equity financing and find an optimal capital structure. Static trade-off theory of capital structure implies that an optimal capital structure is obtained when a reasonable number of debts are combined with a reasonable number of equity in financing a business to strike the balance between the two capital structure components to give the company an optimal capital structure that will bring good profitability. It claims that, although investment decisions and fixed assets are kept constant, an optimal capital structure is achieved when the tax benefit of debts equals the levying of associated costs, including financial need, bankruptcy and agency (Myers, 2001). By implications and extant literature reviewed, this theory is relevant to all the capital structure variables namely; customers' savings loans advances, capital investment and retained earnings. Hence, debts are expected to have a positive relation with profitability and the theory predicts a negative relationship between short term debts measured by customers' savings with profitability.

Method

Data Sources

The study used secondary sources of data. The descriptive research design was used for this study. Data were collected from the Nigeria stock exchange (NSE) financial facts book for a 10 years period covering 2010 – 2019. Specifically, a decade to date is enough to measure banking sector's profitability. Also, various deposit money banks audited annual reports and accounts books through their websites were collected for

the analysis and presentation. The population of this study was the entire 15 listed deposit money banks in Nigeria with NSE as at year ended, 2019. The sample method for this study was census sampling techniques and the sample size therefore was all the 15 banks listed in Nigeria stock exchange. The 15 listed banks were selected as our sample size from the cluster of financial sectors in Nigeria. The decision was taken to give equal representation and to generalize the result across the banking sector in Nigeria. This is done to undermine the notion of error and good judgement as well as the conclusions of the study (Hair et al, 2010). A panel data of 15 samples of listed commercial banks in Nigeria with the ten years period was used to form our one hundred and fifty (150) observations.

Table 1: Variables Measurement

Variables	**Measurements**	**Source**
Returns on assets	Profit after tax/ total asset	Muchiri, Muturi and Ngumi (2016), Yakubu, Alhassan, Mikhail and Alhassan (2017)
Customers' savings	Short term debt/total asset	Nurlaela, Mursito, Kustiyah and Hartono (2019), Alex and Ngaba (2018)
Loans advances	Long term debt/total asset	Ironkwe and Emefe (2019), Muchiri, Muturi and Ngumi (2016)
Capital investments	Shareholders' fund/total asset	Zafar, Zeeshan and Ahmed (2016)
Retained earnings	Retained earnings/total asset	Edet, Uma and Udo (2017), Muchiri, Muturi and Ngumi (2016)
Liquidity	Current assets / current liabilities	Bhattarai, Y. R. (2016)

Source: Generated by the researcher, 2020

Model Specification

The regression models that were used for this study to test the hypotheses formulated are stated below.

$$\text{ROA}_{it} = \beta_1 + \text{CSTA}_{it} + \beta_2 + \text{LATA}_{it} + \beta_3 + \text{CITA}_{it} + \beta_4 + \text{RETA}_{it} + \beta_5 \text{LIQ}_{it} + \text{LIQ}_{it}(\beta 6\ \text{CSTA}_{it} + \beta 7\text{LATA}_{it} + \beta 8\text{CITA}_{it} + \beta 9\text{RETA}_{it}) + \varepsilon_{it}$$

Where:

Y = Return on assets for each firm.
CUSAV = Customers' savings to total assets
LOADV = Loans and advances to total assets
CAPINV = Capital investments to total assets
RE = Retained earnings to total assets
LIQ = Liquidity, current assets to current liabilities
ε_{it} = Error term of uncovered variables
i t = Firm i at time t
$\beta_1 \ldots \beta_7$ = regression coefficient.

Results and Discussion

This section has empirically and theoretically dealt with the data presentation, analysis and interpretation.

Model Estimation Techniques

Panel regression model was employed to test the variables in this study. Panel data entails both cross-sectional and time series dimensions. The technique presents the researcher with adequate data points to eliminate the likelihood of biasness in the parameter estimators. Also, fixed effect estimation method and random effect estimation method using the Hausman test to select the best model were employed. Multiple regressions were used to determine the relationship between the ROA (dependent variable) and debts, equity (independent variables). Ordinary least square techniques were also adopted to test the regression correlation coefficient through the use of STATA 13 version software package. The following diagnostic tests were analysed: Normality test, Heteroskedasticity test, Multicolinearity test and Variance inflation factor and Tolerance test were used in this study.

Table 2: Descriptive Statistics

Variable	.Obs	Mean	Std. Dev.	Min	Max
Roa	150	2.4736	4.889245	-9.87	41.46
Cusav	150	68.19667	68.71715	0	673.26
Capinv	150	.2104173	.4014405	-1.30103	1.617629
Re	150	1.31683	1.036496	-1.69897	2.828183
Liq	150	11.73683	3.131338	0	19.505

Table 2 present the summary of the descriptive statistics of the dependent and independent variables of the sample study. Total number of the observations is 150 from the listed deposit money banks in Nigeria. Returns on assets which is the dependant variable showed a mean of 2.47, minimum value was -9.87, maximum value of 41.46. The standard deviation shows how far the observation from mean is 4.90 this indicates that banks profits were profitable enough to justify the shareholders investments on assets. Customers' savings showed a mean of 68.20%, minimum and maximum values of 0.00%, 673.26% indicating that the banks' assets are largely financed with customers' savings (short term debt). This was also reflected in the summary that maximum borrowings of the banks were done at short term and standard deviation of 68.72%. Loan advances showed a mean of 14.50%, minimum value, 0.04%, maximum, 148.65% and standard deviation of 15.98% respectively. This indicates that, listed banks preferred financing assets with customers' savings than using loans advances as this generates more rewards to the investors.

The mean of capital investments for the period was 0.21%, minimum value of -1.30%, maximum value of 1.62% and standard deviation of 0.40% showed how far the observation from mean. This implies that, is favourable to the banks to invest more on equity financing. The table revealed that retained earnings had a mean of 1.32%, minimum of -1.70%, maximum 2.83% and standard deviation 1.03%. By indication, banks maintain undistributed profits to finance more of their assets. Finally, the mean of liquidity, the moderating variable for the study was 11.74%, with minimum value of -0.00%, maximum of 19.51% and standard deviation of 3.13%. This indicates that, liquidity has moderating effect on firm profitability.

Table 3: Correlation Matrix

	Roa	Cusav	Loadv	Capinv	Re	Liq
Roa	1.0000					
Cusav	0.3262	1.0000				
	0.0000					
Loadv	0.3160	0.6683	1.0000			
	0.0001	0.0000				
Capinv	0.6857	0.0462	0.0327	1.0000		
	0.0000	0.5745	0.6916			
Re	-0.1661	0.4687	0.2401	-0.2690	1.0000	
	0.0423	0.0000	0.0031	0.0009		
Liq	0.1991	-0.2203	-0.2100	0.2677	-0.3343	1.0000
	0.0146	0.0067	0.0099	0.0009	0.0000	

Note: ROA: RETURN ON ASSETS, CUSAV, LOADV,....

Table 3 is the correlation matrix reveals that, the variables have both positive and negative correlations among one another. The correlation was determined to ascertain the pairwise relationship between explanatory variables and confirmatory variables identify those could have been significantly related but their significant is reduced by relationship with the others. Although, some of the variables showed weak, moderate and strong association, the overall relationship among the independent variables may not significant, this may not be enough reason to conclude that, multicollinearity exists among the variables used for the study until the variance inflation factor and tolerance values are compared above the established rule. Variance inflation factor and tolerance values must lesser than ten (10) and one (1) respectively to indicate the absent of multicollinearity (Table 4).

Table 4: VIF and Tolerance Values

Variable	VIF	1/VIF
Cusav	4.55	0.219938
Re	3.27	0.305603
Loadv	3.26	0.306872
Liq	2.84	0.352616
Capinv	1.50	0.664694
Mean VIF	3.08	

Table 5: OLS Robust Regression Analysis Results of ROA.

Prob > F – 0.0000 R-squired - 7009

Roa	Coef.	Robust Std. Err.	t	p>/t/	[95% conf. Interval]	
Cusav	-.164992	.0707547	-2.33	0.021	-.3048778	-.0251061
Loadv	.1949999`	.1594621	1.22	0.223	-.1202652	.5102651
Capinv	-2.072656	4.831118	-0.43	0.669	-11.62404	7.478723
Re	3.977194	1.566074	2.54	0.012	.8809821	7.073405
Liq	-.3621589	.244837	-1.48	0.141	-.8462148	.121897
Cusav_liq	.0149985	.0058161	2.58	0.011	.0034997	.0264972
Loadv_liq	-.0088481	.0138589	-0.64	0.524	-.0362479	.0185517
Capinv_liq	.7285553	.4099345	1.78	0.078	-.0819073	1.539018
Re_liq	-.3821723	.1256895	-3.04	0.003	-.6306671	-.1336775
_cons	3.914539	3.01419	1.30	0.196	-2.044677	9.873755

Table 5 is the result of OLS robust regression model considering moderating effect of liquidity on banks financial profitability. The coefficient of customers' savings customers' savings was 0.0150 positive relationships with return on assets and the p-value of 0.0110 had significant effect on return on assets. This indicates that, banks in Nigeria financed their businesses with funds deposited by their customers on a short notice basis. It shows profitability is positively related to the increase in deposit through liquidity. In other words, liquidity has a positive moderating effect on profitability. The findings were consistent with Nurlaela, Mursito, Kustiyah and Hartono (2019), Alex and Ngaba (2018), Adeniran and Philip (2017) found that, short term debt is positive and had significant relationships with return on assets. The results support pecking order theory of hierarchical decision making in financing. The findings were inconsistent with those of Yakubu, Alhassan, Mikhail and Alhassan (2017), Ironkwe and Emefe (2019), Musah (2017), Muchiri, Muturi and Ngumi (2016) and Birru (2016) that found short term debt to be negative and insignificant related with return on assets. Loans advances coefficient was negatively related with return on assets. This implied that loan advances had a negative of -0.0084 and insignificant p-value of 0.5240 effect on return on assets. It shows profitability is negatively related to the increase in loans advances through liquidity. In other words, liquidity has a negative moderating effect on profitability. The results agree with the findings of Ironkwe and Emefe (2019), Muchiri, Muturi and Ngumi (2016), Velnampy and Anojan, 2014) that, long term debt was negatively and insignificant related with return on assets. However, the results contradict that of Musah (2017) and Birru (2016) findings that indicated long term debt to be negative but significant related with return on assets. The study finding reveals that, banks in Nigeria financed their businesses with less funding at a long-term basis to avert costs involve in borrowing over a year period. The result support trade-off theory that states that, there is an advantage in debt financing. Capital investments had a positive relationship with return on assets. The results showed 0.7286 coefficient and 0.0780 p-value statistically insignificant effect on return on assets. It shows profitability is positively related to the increase in capital investments through liquidity. In other words, liquidity has a positive moderating effect on profitability. The results agree with the findings of Zafar, Zeeshan and Ahmed (2016) that, equity ratio had a positive and insignificant effect on return on assets. These findings contradict the outcome of Ironkwe and Emefe (2019), Muchiri, Muturi and Ngumi (2016) that, equity ratio had a negative and significant relationship with return on assets. The findings indicated that, equity has direct relationship but has no effect on the return on assets. The coefficient of retained earnings retained earnings was negative in relationship with return on assets. The negative indicates -0.3322 and p-value of 0.0030 statistically significant with return on assets. The results showed that, business financing based on the retained earnings had inverse relationship and statistically significant effect on banks financial profitability. In other words, liquidity has a significant moderating effect on profitability. The results were consistent with the findings of Edet, Uma and Udo (2017) and were inconsistent with that of Muchiri, Muturi and Ngumi (2016) where they found that, retained earnings were negative and insignificant relationship with return on assets. The study findings are in line with pecking order theory that, internal sources of funding should be exhausted before sourcing for external funding. The overall model results of moderating effect of liquidity on explanatory variables in relation to return on assets was prob > chi2 = 0.0000 which is highly significant with return on assets. The R^2 within = 0.6425, R^2 between = 0.8495 and overall R^2 of 0.8994 with Wald chi2 of 286.13 clearly showed that, introduction of moderating variable justified a positive effect on relationship between capital structure and profitability of listed deposit money banks in Nigeria.

Table 6: Panel Effects

.xttest0

Breusch and Pagan lagrangian multiplier test for random effects

Roa[company,t] = xb +u [company] + e[company,t]

Estimated results:	Var	Sd=sqrt(var)
Roa	23.90471	4.889245
e	7.148812	2.673726
U	.9516365	.9755186

Test: Var(u) = 0

chibar2 (01)	=	1.10
Prob > Chibar2	=	0.1466

Table 6 above showed a statistically significant panel effects result that supported the selection of random effects model adoption for this study.

Table 7: Heteroskadacity Test

Breusch – pagan / cook – Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of roa

Chi2(1) =	36.66	
Prob > chi2	=	0.0000

As shown in table 7, Breusch-Pagan/Cook-Weisberg test was conducted to ascertain the fitness of the model against heteroskadacity. The result of the test indicated that, OLS robust regression is required for the study.

Summary and Conclusion

The study investigates influence of capital structure on financial profitability of listed deposit money banks in Nigeria: a moderating effect of liquidity. Fifteen banks were selected as our sample size out of twenty-five for the study over a period of ten years from 2010 – 2019 using secondary sources of data obtained from Nigerian stock exchange. The findings showed that, customers' savings had a positive and significant relationship with returns on assets, this support short debt financing that; borrowing at short term have less cost implications on firm performance and this result supported the pecking order theory used for the study. Loans and advances showed a negative and insignificant relationship with returns on assets of the banks. Capital investments had a positive and insignificant relationship with banks financial profitability. Lastly, retained earnings' findings also supported the pecking order theory in hierarchical debt financing. The results showed a negative and significant relationship with returns on assets. The inverse relationship between the liquidity and profitability is critical to any business organization. The more the liquid assets are, the lower the rate of returns. The overall model's findings showed a significant relationship of all the capital structure components with return on assets that proxy financial profitability. The study hence concluded that, liquidity introduced as moderating variable has a positive effect on financial profitability of the listed deposit money banks in Nigeria.

Recommendations

In line with the findings of the study, some key policy recommendations were suggested to the

decision makers of deposit money banks in Nigeria.

- Banks in Nigeria should depend heavily on customers' deposits as a means of borrowing in short term basis to finance their businesses as is the major source of funding to achieve bank profitability with less cost.
- Listed deposit money banks in Nigeria should minimize their loans and advances borrowing to finance their businesses in order to reduce cost on long-term borrowing to pave way for best financial profitability.
- Deposit money banks are advised to adhere strictly to the rule of pecking order to exhaust their internal source and debt of financing before embarking on equity financing externally to generate more funds as equity financing has no effect on the firms' financial profitability.
- Higher rate of undistributed earnings out of profits should be encouraged to serve as internal source of fund generation for business financing in order to have same direction with the firms' financial profitability of listed deposit money banks in Nigeria.
- Deposit money banks in Nigeria should be maintaining adequate liquidity always to carter for short and medium immediate demand of funds to safe guide the institutions against unwarranted costs.

References

Afrasiabishani, J., Ahmadinia, H. & Hesami, E. (2012). A comprehensive review on capital structure theories, *International Journal of Finance and Accounting*, 5(11), 35–45.

Alex, M. K. & Ngaba, D. (2018). Effect of Firm Size on Financial Performance on Banks: Case of Commercial Banks in Kenya. International Academic Journal of Economics and Finance | Volume 3, Issue 1, pp. 175-190.

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

Bhunia, A., Mukhuti, S. & Roy, S. (2011). Financial Performance Analysis: A Case Study. *Current Research Journal of Social Sciences, 3*(3), 269-275.

Birru, M. W. (2016). The Impact of Capital Structure on Financial Performance of Commercial Banks in Ethiopia. Global Journal of Management and Business Research: C Finance. ISSN: 0975-5853. Volume 16 Issue 8 Version 1.0 Year 2016

Chandrasekharan, C.V. (2012). Determinants of Capital Structure in the Nigerian Listed Firms. *International Journal of Advanced Research in Management and Social Sciences,* 1(2), 2278-2280.

Dare, F. O. & Sola, O. (2010) Capital structure and Corporate Performance in Nigeria Petroleum Industry: Panel Data analysis. *Journal of Mathematics and Statistics 6(2): 168-173.*

Demsetz, H. & Lehn, K. (2011), Ownership structure and corporate performance, *Journal of Corporate Finance* 209–233.

Edet, B. N., Uma, U. O. & Udo, S. U. (2017). The Effect of Capital Structure Choice on the Performance of Corporate Organizations: A Case of Quoted Agro-Based Firms in Nigeria. Bulletin of Business and Economics, 6(2), 58-67. ISSN – 2409 – 9368. 2017.

Erasmus, P. D. (2008). Evaluating Value Based Financial Performance Measures, Journal of Finance and Accounting, 5, 56-63.

Ganiyu, Y. O. (2015). Dynamic Analysis of the Impact of Capital Structure on Firm Performance in Nigeria. (PhD), *De Montfort,* United Kingdom.

Hair, J. F., Black, B., Babin, B. & Anderson, R. E. (2013). Multivariate Data Analysis (7th ed). Harlow: Pearson.

Iavorskyi, M. (2013). The Impact of Capital Structure on Firm Performance: Evidence from Ukraine. *Master of Finance Economics Thesis, Kyviv School of Economics,* 3–43.

Ironkwe, U. I. & Emefe, P. (2019). Corporate Ownership Structure on Financial Performance of Quoted Companies in Nigeria. *International Journal of Advanced Academic Research | Social and Management Sciences*| ISSN: 2488-9849 Vol. 5, Issue 4 (April 2019).

Jacob, E. O., Adeniran, A. A. and Philip, A. O. (2017), Impact of Capital Structure on the Profitability of Selected Quoted Banks in Nigeria. *International Journal of Economics,*

Commerce and Management, United Kingdom. Vol. V, Issue 1, Page 543. ISSN 2348 0386. January, 2017.

Kraus, A. & Litzenberger, R. (1973). A State-Preference Model of Optimal Financial Leverage. *Journal of Finance*, 911-922.

Kurfi, A. K. (2003). Principles of Financial Management. Benchmark Publishers Ltd, Kano.

Mercilina, E. C. & Gina, A. O. (2018), Capital Structure and Firms Financial Performance in Nigeria Quoted Insurance Companies. *Account and Financial Management Journal* e-ISSN: 2456-3374 Volume 3 Issue 05. (Page No.-1530-1542), May- 2018.

Muchiri, M. J., Muturi, W. M. & Ngumi, P. M. (2016). Relationship between retained earnings and capital structure in their study, relationship between financial structure and financial performance of listed firms at the East Africa Securities Exchanges. *Journal of Emerging Issues in Economics, Finance and Banking (JEIEFB) An Online International Research Journal* (ISSN: 2306-367X), 2016. Vol.: 5 Issue: 1.

Musah, A. (2017).The Impact of Capital Structure on Profitability of Commercial Banks in Ghana. *Asian Journal of Economic Modelling*. ISSN: 2313-2884. Vol. 6, No 1, 21-36

Myers, S. C. (2001). Capital structure. *Journal of Economic Perspectives,* 81-102. Nairobi Securities Handbook (2007-2013). Retrieved from http://www.nse.co.ke.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information those investors do not have. *Journal of Financial Economics, 13*(2), 187–221. http://dx.doi.org/10.1016/0304-405X(84)90023-0

Ningi, S. I. & Usman, H. A. (2017). A Review on the Effect of Capital Structure on Financial Performance of Deposit Money Banks in Nigeria. *Nigerian Journal of Management Technology & Development.* ISSN: 2006-1676 Volume 8, Number 1. June, 2017.

Nurlaela, S., Mursito, B., Kustiyah, E. & Hartono, S. (2019). Capital structure, liquidity, asset structure and asset turnover on the financial performance of consumption industry companies in the Indonesia Stock Exchange. *International Journal of Economics and Financial Issues*, Vol. 9(3), 297-301. ISSN: 2146-4138 2019.

Nyor, T. & Yunusa, A. (2016). Capital Structure and Operating Performance of Listed Conglomerate Firms in Nigeria. *International Journal of Finance and Accounting*. 5(2). 126-133.

Ogebe, O. P., Ogebe, J. O. & Alewi, K. (2013).The Impact of Capital Structure on Firms' Performance in Nigeria. *Journal of Risk Finance, 6* (5): 438-445.

Padron, Y.G., Apolinario, M.C., & Santana, O. (2005). Determinant factors of leverage: An empirical analysis of Spanish corporations, *Journal of Risk Management*, 6, 60-68.

Titman, S., Keown, A. J. & Martin, J. D. (2011). Financial Management: Principles and Applications (11th Ed). New Delhi: Pearson Education, Inc.

Uadiale, O.M. (2010). The Impact of Board Structure on Corporate Financial Performance in Nigeria, *International Journal of Business and Management* 5(10).12-34

Uremadu, S. O. & Onyekachi, O. (2019). Impact of Capital Structure on Corporate Performance in Nigeria: A Quantitative Study of Consumer Goods Firm Sector. *Agricultural Research and Technology Open Access Journal.* ISSN: 2471-6774.

Velnampy, T. & Anojan, V. (2014). Capital Structure, Liquidity Position and Their Impact on Profitability: A Study of Listed Telecommunication Firms in Colombo Stock Exchange (CSE), *Sri Lanka. Research Journal of Finance and Accounting,* ISSN 2222-1697 (Paper) ISSN 2222-2847 (Online) Vol.5, No.9, 2014.

Yakubu, I. N., Alhassan, M. M., Mikhail, A. A. & Alhassan, A. I. (2017). Commercial Banks Performance in Ghana: Does Capital Structure Matter? *International Journal of Accounting and Financial Reporting*. ISSN 2162-3082 Vol. 7, No. 1, 2017,

Zafar, M. R., Zeeshan, F. & Ahmed, R. (2016). Impact of Capital Structure on Banking Profitability. *International Journal of Scientific and Research Publications,* Volume 6, Issue 3, March 2016 186 ISSN 2250-3153.