CAPITAL STRUCTURE AND FINANCIAL HEALTH OF DEPOSIT MONEY BANKS IN NIGERIA

BY

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BEING A DISSERTATION SUBMITTED AND PRESENTED TO THE DEPARTMENT OF ACCOUNTING AND FINANCE, COLLEGE OF HUMANITIES, MANAGEMENT AND SOCIAL SCIENCES, KWARA STATE UNIVERSITY, MALETE, NIGERIA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE (M.Sc.) DEGREE IN FINANCE

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CERTIFICATION

This is to certify that this dissertation by Temidayo Omowumi DUROSINMI with Matriculation number 16/27/MFI009 titled "Capital Structure and Financial Health of Deposit Money Banks in Nigeria" has been read and approved as meeting the requirements of the Department of Accounting and Finance and Postgraduate School of Kwara University, Malete, Nigeria for the award of Master of Science (M.Sc.) Degree in Finance

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DECLARATION

I, Temidayo Omowumi DUROSINMI declare that this is a record of research work carried out by me at the Department of Accounting and Finance, College of Humanities, Management and Social Science, Kwara State University, Malete, Nigeria. To the best of my knowledge the said report has not been submitted for any degree or examination in any other University. All quotations are distinguished by quotation marks and the sources of information are acknowledged by means of references.

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Temidayo Omowumi DUROSINMI Date

DEDICATION

This project is dedicated to Almighty God for His mercies and wisdom given to me to endure this great task.

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ABSTRACT

Despite years of empirical research, the linkage between capital structure and banks financial health remains controversial among the researchers and scholars. Against this background, this study examines the effect of capital structure on the financial health of deposit money banks in Nigeria. The specific objectives are to: examine the extent to which debt ratios influence financial health of selected deposit money banks in Nigeria; investigate the influence of shareholders fund on financial health, and examine the relationship between financial leverage and financial health of deposit money banks in Nigerian. The financial health of the bank was proxied using capital adequacy, asset quality, earning, liquidity and sensitivity, while ratio of equity to debt, total debt to total capital proxied capital structure. Descriptive research design was used and sample of ten (10) deposit money banks were randomly selected out of twenty four licensed deposit money banks in Nigeria. The study used descriptive statistics, pairwise correlation and panel data regression technique to analyze the secondary data extracted from the audited financial statements of the selected banks over eight (8) years period from 2010 to 2017. The study revealed that (i) debt ratio has a negative impact on the financial health (ii) shareholders fund influenced positive financial health positively while a significant negative relationship was found to exist between leverage and the financial health of deposit money banks in Nigeria all at 1% level of significance. Consequently, the study concludes that capital structure plays a significant role on the financial health of deposit money banks in Nigeria. The negative impacts also suggest that the legislative rules and policies have to be designed in such a way to assist firms in sharply reducing the reliance on too much use of debt. The study therefore recommends that financial managers should try to finance from retained earnings rather than relying heavily on debt capital in their capital structure.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The banking sector is very crucial and plays a major role in the economic growth and development of any nation. Although various monetary policies are implemented in the banking sector due to its importance, efforts are being made by regulatory agencies to ensure its safety and soundness. In order to achieve this, the Central Bank of Nigeria (CBN) usually comes out with various policies to ensure that banks continue to achieve the desired goals of all stakeholders. Among these policies is to ensure that debt to equity ratio (capital structure) of deposit money banks is in consonance with CBN requirements.

One of the primary objectives of most of the quoted companies is to ensure that they satisfy all the stakeholders involved in the business. These often makes managers of firms to develop various strategies that will help them to make the most appropriate financing and investment decisions that will aid the realization of the firm's objectives. In making financing decision, one of the priorities of the manager is to ensure that the firm adopts a healthy financing means or capital structure by all possible means (Ogebe, Joseph & Alewi, 2013).

The Firm capital structure decision is considered as the framework which depicts how equity and debt are employed for financing the firm operations (Dada & Ghazali, 2016). Capital can be derived from two main sources; these sources are internal and external sources. The internal source refers to the funds generated from within an enterprise which is mostly the retained earnings. Firms may in the same vein look outside to source for their needed funds to enhance their activities. Any fund sourced not from within the operation of the organization are termed external financing. The external funding may be

obtained by increasing the number of co-owners of a business or outright borrowing in form of loan (Eniola, Adewunmi & Akinselure, 2017)

According to Saeed (2013), one crucial issue confronting managers today is how to choose the combination of debt and equity to achieve optimum capital structure that would minimize costs and maximize return to the banks shareholders. Capital structure denotes the mode of financing usually a blend of loan and equity capital, through which banks are financed. Capital structure decision is fundamental for any business organization including banks because of its need to maximize returns to the various stakeholders and also because of the fact that such decision has great impact on the bank's ability to deal with competitive environment (Awunyo & Badu, 2012).

Sadiq, Kachollon, Dasuki and Yusuf (2017) posited that capital is essentially the lifeblood of any business activity. In fact, it serves as catalyst in establishing and promoting business firms. It plays a very sensitive role especially in a country like Nigeria. Lessons from banking history reveal that most Deposit Money Banks collapsed as a result of inadequate, mismanagement or lack of capital. Therefore, financing decision is one of the crucial areas as they are concerned with the determination of the best financing mix and combination of debts and equity for deposit money banks. The effective management of capital structure ensures the availability of required fund to finance the future growth and enhance the financial performance of the banks. Gitman (2009) emphasizes that capital structure policy is concerned with the optimal combination of the use of external and internal sources of funds to finance an investment and also to support the banks operations in an effort to increase its profits and achieve a higher value.

It is important to have optimal combination of funds from internal and external sources in banks Capital Structure to avoid excessive leveraged in banks, this is because an

unduly high level of debt with maximum debt finance in Capital Structure profile may result in the bank finding its freedom of action restricted by its creditors and thereby have its profitability affected with the payment of higher interest costs. Furthermore, one of the major objectives of a firm generally is to maximize the wealth of owners or shareholders of the firm. The wealth of shareholders in turn is defined as the current price of the firm's outstanding shares.

According to Goyal (2013), wealth is consistently maximized when profits are realized from operations. In banking industry, profits are realized from loans and advances granted to the customers. This is in line with the financial intermediation role which deposit money banks play in transforming deposits into financial assets; they also channel funds from entities with surplus liquidity to those with deficit liquidity thereby facilitating capital formation and trade.

Bank profitability measurement according to the European Central Bank (2010) can be categorized into three major classes amongst which are traditional, economic and market based measures. The traditional measures are similar to those used by other firms which include Return on Assets (ROA) which is the net income for the year divided by the total assets. The other measure is Return of Equity (ROE) which is the internal performance measure of shareholder's value and this is the most famous measure of financial performance. The Economic measures of performance aim at assessing the economic results generated by the bank from its economic assets.

Kuria (2013) posited the market based measures depend on the way the capital market value the performance of firm as compared to its economic and accounting value. This study however examines the impact of Capital Structure on the financial health of deposit money banks in Nigeria, using Capital Adequacy (C), Asset Quality (A),

Earnings (E), Liquidity (L) and Sensitivity (S) (CAELS) as an abridge form of CAMELS rating to measure financial health of money deposit banks.

1.2 Statement of the Problem

Financial ill Health of Deposit Money Banks has been identified as the outcome of distress, illiquidity, lopsided capital structure and poor management. The most crucial among these challenges is the capital base which has informed the Central Bank of Nigeria to reel out various policies to ensure that adequate capital is maintained by Deposit Money Banks knowing what this has to do with banks' profitability and ultimately banks' value. In complying with the CBN's directives, deposit money banks raise additional capital through issue of shares and borrowing, but the bone of contention is how to choose the combination of debt and equity to achieve optimum Capital Structure that would minimize costs and maximize return of the shareholders.

In Nigeria, investors and stakeholders appear not to have a detailed effect of capital structure in measuring their firm's performance as they may assume that attributions of capital structure are not related to their firms value. Indeed, a well attribution of capital structure will lead to the success of firms. Hence, the issues of capital structure, which may influence the corporate performance of Nigerian firms, have to be resolved.

However, researchers such as Hailu (2015) observed that aside return on asset, return on equity, net interest margin, earning per share, other factors that measure the financial health of a bank includes capital adequacy ratio, asset quality ratio, banks earning, banks liquidity and banks sensitivity. Acknowledging various researchers such as Goyal (2013); Aragraw (2015); Ihenetu, Iwo, and Ebiware (2016) that have written on this crucial topic globally, little have been done in Nigeria, and those research conducted in Nigeria focused more on the manufacturing sector. Against this background, this study

aims at adding to the empirical evidences in Nigeria by examining the impact of capital structure on the financial health of money deposit banks in Nigeria.

1.3 Research Question

Following the problems raised the following research questions were formulated for this study:

i. To what extent does Debt Ratio affect Capital Adequacy of deposit money banks in Nigeria?
ii. What is the relationship between Debt Ratio on Asset Quality of deposit money banks in Nigeria?
iii. What is the effect of Debt Ratio on Earning Power of deposit money banks in Nigeria?
iv. What is the influence of Debt Ratios on Liquidity Sufficiency of deposit money banks in Nigeria?
v. To what extend does Debt Ratio affect Sensitivity of deposit money banks in Nigeria?

1.4 Objectives of the Study

The general objective of this study is to examine the impact of capital structure on the financial health of deposit money bank in Nigeria. While the specific objectives include to:

i. examine the extent to which debt ratio of deposit money banks in Nigeria affects it capital adequacy.
ii. Investigate the influence of debt ratio on asset quality of deposit money banks in Nigeria
iii. Evaluate the effect of debt ratio on earning power of deposit money banks in Nigeria

iv. Determine the influence of debt ratio on liquidity sufficiency of deposit money banks in Nigeria

v. examine the effect of debt ratio on the sensitivity of deposit money banks in Nigeria

1.5 Research Hypotheses

The following research hypotheses are formulated for the study:

H_{O1}: Debt Ratios does not have significant effect on the capital adequacy of deposit money banks in Nigeria

H_{O2}: Debt Ratios does not have significant influence on the asset quality of deposit money banks in Nigeria

H_{o3} Debt Ratios does not have significant effect on the earning power of deposit money banks in Nigeria

H_{o4} Debt Ratios does not have significant influence on the liquidity sufficiency of deposit money banks in Nigeria

H_{o5} Debt Ratio does not have significant effect on the sensitivity of deposit money banks in Nigeria.

1.6 Justification for the Study

The impact of capital structure on the financial performance of deposit money banks has attracted the attention of many researchers both locally and globally. The study, which is largely foreign based, have however revealed conflicting findings. In Nigeria, most of the studies for example Bello and Onyesom (2005), Salawu (2007), Olokoyo (2012), Babalola (2012), Yinusa and Babalola (2012), Sabastian and Rapuluchukwu (2012) and Idode, Adeleke, Ogunlowo and Ashogbon (2014) did not consider financial health of banks as a cognizant yadstic of measuring bank performance. It can also be observed that

most of the studies were done in the developed markets and more studies needed to have been done in the emerging markets like Nigeria.

More so, the study on the relationship between capital structure and deposit money bank financial health in Nigeria context is closed to none perhaps it cannot be overemphasized due to its cognizant representation in both the floor of Nigeria Stock Exchange and in the country financial sector. This research work sought to bridge these gaps as it would contribute to the existing body of knowledge.

It is the hope that the result of this study will also be beneficial to both internal and external parties (i.e managers in maximizing investors returns, owners in making an informed decision, creditors/depositors in ascertaining credit worthiness of banks and how liquid a bank is government in making favorable financing through central bank and other financial sectors regulators policies etc) to improve on the GDP contribution by the financial sector and also improve on employment rate once the sector is viable since the stakeholders are interested in knowing the impact of such decisions on bank performance.

Also, the government and its agencies will somehow benefit from this study because the study will highlight the need from its findings if necessary for the government to formulate more favorable financial and economic guidelines as the sector demands and this will sustain the operations of Nigerian deposit money Banks, especially the potential banks yet to be licensed by central bank and resultantly contributing to GDP of the nation which have been on the decline hitherto.

The results of this study would also be of benefit to managers, shareholders and depositors/creditors of banks in Nigeria. Managers would be placed on a sound footing to understand the effect of various financing mix on the operations of their banks.

Shareholders would be able to make an informed decision with regard to their equity interest in relation to the debt financing options available to their firms, while depositors would be able to identify the banks that are financially liquid enough to settle their withdrawal as and when demanded for. The research will also be of immense benefit to the prospective researcher who are willing to carry out a related research work.

1.7 Scope of the Study

This study examines the impact of capital structure of deposit money banks in Nigeria. This study is however limited to ten (10) Deposit Money Banks in Nigeria based on 2017 Fitch rating of top 10 viable banks in Nigeria, and the data set is limited from 2010 to 2017. This is because in 2010, the Asset Management Corporation of Nigeria (AMCON) was established following the promulgation of its enabling Act by the National Assembly. It is a special purpose vehicle aimed at addressing the problem of non-performing loans in the Nigerian banking industry, among others. In line with its mandate, AMCON recently acquired the non-performing risk assets of some banks worth over N1.7 trillion, which is expected to boost their liquidity as well as enhance their safety and soundness. With the intervention of AMCON, the banking industry ratio of non-performing loans to total credit has significantly reduced from 34.4 per cent in November 2010 to 4.95 per cent as at December 2011. This research will be restricted to investigating the effect of debt financing on financial health of deposit money banks in Nigeria using the CAELS approach.

CHAPTER TWO

LITERATURE REVIEW

This chapter review and evaluate various documents with a view to providing orientation, focused ideas and current account of literature relevant to this research. The chapter thus presents the conceptual clarification, theoretical background, empirical studies and gaps identified in literature.

2.1 Conceptual Review

The conceptual review discuss the Overview of Capital Structure, Determinants of Capital Structure, Measures of bank financial health, and others topics related to the concept of Capital Structure and Financial Health of Deposit Money Banks.

2.1.1 Concept of Capital Structure

Under favorable economic conditions, the financial performance increase with financial leverage. But leverage also increases the financial risk of shareholders. As a result, it cannot be stated definitely whether or not the firm's value will increase with leverage (Mathewos, 2016). According to Shaba, Yaaba, Abubakah (2016), number of Deposit Money Banks (DMBs) that also diversified their capital structure is on the decrease. While the total number of Banks reduced from 89 to 25, shareholders' funds grew from an average of sixty-two billion naira (N62bn) to seventy-three billion naira (N73bn). Conversely, borrowed funds plummeted from an average of sixty-five billion naira (N65bn) in 2004 to forty-seven billion naira (N47bn) in 2005. Consequently, the regulatory capital requirement affected mainly the shareholders' funds and by implication tied down a sizeable component of these funds. (CBN, 2015).

Thus, in most cases, owners of banks resorted to borrowed funds to finance their activities. With the increase in owners' funds, the CBN adjusted the regulatory capital

requirements of banks such that Tier 1 for instance, increased from 8.0 per cent as provided by the Basel II Accord to 10.0 per cent for banks that operate within Nigeria. Whilst Banks that have international presence where required to have Tier 1 capital at 15.0 per cent, the systemically important banks were urged to keep Tier 1 capital at 16.0 per cent (CBN, 2010).

The change in the capital structure as well as prudent regulatory capital requirement notwithstanding, some of the DMBs still experienced liquidity squeeze in 2009 leading to intervention by the CBN. The CBN injected six hundred and twenty billion naira (N620bn) into 3 banks (Platinum Habib Bank Plc, Afribank Bank Plc& Spring Bank Plc) in form of Tier 2 capital and thereafter nationalized them. The intervention was considered as the saving grace for the affected banks. However, it is imperative that the players (DMBs) determine the most optimal financing mix which minimizes the cost of financing as well as maximizes returns for the banks. Shaba *et al* (2016).

Empirical evidence from previous studies seems to be consistent with the pecking order theory. Most studies found a negative relationship between profitability and capital structure Friend and Lang, (1988); Chittenden*,* 1996; Michaelas*,* (1999) and Hall (2004) also suggest negative relationships between profitability and both long-term debt and short-term debt ratios. Also consistent with the pecking order theory, work of Titman and Wessel (1988), Rajan and Zingales (1995), Antoniou, (2002) in developed countries, Booth, (2001), Pandey (2001), and Chen (2004), in developing countries all find a negative relationship between leverage ratios and profitability. We therefore propose based on the pecking order theory that a negative relationship exist between profitability and leverage. Thus it is expected that leverage level of Nigerian commercial banks is significantly negatively related to the profitability

2.1.2 The Determinants of Capital Structure

Empirical studies have identified firm-level characteristics that affect the capital structure of firms. Among these characteristics are age of the firm, size of the firm, asset structure, profitability, growth, firm risk, tax and ownership structure. Age of the firm serves as a standard measure of reputation in capital structure models. As a firm continues longer in business, it establishes itself as an ongoing business and therefore increases its capacity to take on more debt; hence age is positively related to debt. Before granting a loan, banks tend to evaluate the creditworthiness of entrepreneurs as these are generally believed to pin high hopes on very risky projects promising high profitability. Petersen and Rajan (1994) found that older firms should have higher debt ratios since they should be higher quality firms. Hall *et al*. (2004) agreed that age is positively related to long-term debt but negatively related to short-term debt. Esperança*et al*. (2003), however, found that age is negatively related to both long-term and short-term debt. Green, Murinde and Suppakitjarak (2002) also found that age has a negative influence on the probability of incurring debt in the initial capital equation, and no impact in the additional capital equation.

Larger firms are more diversified and hence have lower variance of earnings, making them able to tolerate high debt ratios (Castanias, 1983; Titman and Wessels, 1988; Wald, 1999). Smaller firms, on the other hand, may find it relatively more costly to resolve information asymmetries with lenders. Thus, may present lower debt ratios (Castanias, 1983). Lenders to larger firms are more likely to get repaid than lenders to smaller firms, reducing the agency costs associated with debt. Therefore, larger firms will have higher debts. Empirical evidence on the relationship between size and capital structure supports a positive relationship.

In addition, the degree to which the firm's assets are tangible should result in the firm having greater liquidation value (Titman and Wessels, (1988); Harris and Raviv, (1991). Bradley *et al.* (1984) assert that firms that invest heavily in tangible assets also have higher financial leverage since they borrow at lower interest rates if their debt is secured with such assets. It is believed that debt may be more readily used if there are durable assets to serve as collateral (Wedig*et al.,* 1988). Booth *et al*. (2001) suggest that the relationship between tangible fixed assets and debt financing is related to the maturity structure of the debt. In such a situation, the level of tangible fixed assets may help firms to obtain more long-term debt, but the agency problems may become more severe with the more tangible fixed assets, because the information revealed about future profit is less in these firms. If this is the case, then it is likely to find a negative relationship between tangible fixed assets and debt ratio.

Furthermore, the relationship between firm profitability and capital structure can be explained by the pecking order theory (POT) discussed above, which holds that firms prefer internal sources of finance to external sources. The order of the preference is from the one that is least sensitive (and least risky) to the one that is most sensitive (and most risky) that arise because of asymmetric information between corporate insiders and less well informed market participants (Myers, 1984). By this token, profitable firms with access to retained profits can rely on them as opposed to depending on outside sources (debt). Murinde*et al.* (2004) observe that retentions are the principal source of finance. Titman and Wessels (1988) and Barton *et al.* (1989) agree that firms with high profit rates, all things being equal, would maintain relatively lower debt ratios since they are able to generate such funds from internal sources.

2.1.3 Measures of Bank Financial Health

There are several measures of bank financial health cited by Ndifo and Ubana (2014) among which are Net Interest Margin (NIM), Return On Assets (ROA) and Return on Equity (ROE). The Nigeria deposit insurance corporation (NDIC) adopt the CAMEL rating to promote the safety and soundness of financial institution through on-going evaluation and monitoring, including the assessment of risk management system, financial conditions and compliance with laws and regulations. The supervising agencies cannot effectively deal with systemic banking crisis without an in-depth knowledge of the condition of the bank they supervise.

However, there are divergent views among scholars on the superiority of one indicator over the other as a good measure of profitability in banks. Similarly, anyone or a combination of the indicators can be used to measure profitability in banks depending on the objective of the user or analyst. If the objective is to measure how profitable and efficient the management of a bank is in using the bank's total assets to generate income, Return on Assets (ROA) becomes the most vital indicator to employ.

The study adopted Return On Assets (ROA) as a measure of profitability in banks because ROE measures how profitable and efficient the management of a bank is using the bank's total equities in generating income Profitability ratio as a measure of profitability, which is a company's performance. Profitability is simply the capacity to make a profit, and a profit is what is left over from income earned after you have deducted all cost and expenses related to earning the income.

2.1.4 Definition of Variables

Capital Adequacy (C): Capital adequacy is a measure of the financial strength of a bank, usually express as a ratio of its shareholders‟ fund to total assets. The ratio reflects the ability of a bank to withstand the unanticipated losses. This ratio has a positive

relationship with the financial soundness of the bank. According to Misra and Aspal (2013) Capital adequacy has come forth as one of the prominent indicators of the financial health of a banking system. It is very useful for a bank to conserve & protect stakeholders' confidence and preventing the bank from being bankrupt. It reflects whether the bank has enough capital to bear unexpected losses arising in the future.

Asset Quality (A) Asset quality is an important measure of the strength of banks. The ratio of non-performing loans and advances as a share of total and advances is considered for the purpose of analysis. In addition, the ratio of total loans and advances to total assets is utilized to measure the extent of deployment of assets in earning assets. According to Gupta (2014) Asset quality determines the healthiness of financial institutions against loss of value in the assets as asset impairment risks the solvency of the financial institutions. The weakening value of assets has a spill over effect, as losses are eventually written-off against capital, which eventually expose the earning capacity of the institution. With this framework, the asset quality is assessed with respect to the level and severity of non-performing assets, adequacy of provisions, distribution of assets etc.

Management Quality (M) The capacity/efficiency of the management of a bank can be measured with the help of certain ratios. To capture the possible dynamics of management efficiency, the following ratios are considered: total loans and advances to total deposits, interest expenses to total deposits, and operating expenses to total assets. According to Echekoba, Egbunike and Ezu (2014), Management quality or efficiency plays a big role in determining the future of the bank. The management has an overview of a bank's operations, manages the quality of loans and has to ensure that the bank is profitable. The performance of management capacity is usually qualitative and can be understood through the subjective evaluation of management systems, organization

culture, and control mechanisms and so on. However, the capacity of the management of a bank can also be gauged with the help of certain ratios of off-site evaluation of a bank in the capacity of the management to deploy its resources aggressively to maximize the income, utilize the facilities in the bank productively and reduce costs.

Earnings Ability (E) According to Adeshina (2014) two ratios are used to assess the earnings ability of the banks under study. The first ratio is the net income to total assets or "ROA". The second ratio used is interest income to total assets. The two ratios have positive relationship with the financial performance of the bank and negative relationship to the risk of bank failure. According to Lliana, Mihail and Evangelos (2015) earning ability reflects the profitability of the bank in relation to the total assets, while it also shows how a bank manages its assets to achieve profits. The higher the ratio, the better the efficiency of the bank's assets, therefore the more efficient the management of its assets.

Liquidity (L) Two ratios are employed in this study to assess the liquidity level of the banks. The first one is total liquid assets to total assets. The second ratio is liquid assets to customers‟ deposits. According to Golam (2014) liquidity ratio is the ability of a bank to provide liquidity required for the existence of a highly liquid and readily transferable stock of financial assets. Liquidity and transferability are the key ingredients for such transactions. The liquidity requirement means that financial assets must be available to owners on short notice (a day or less) at par.

Sensitivity

Sensitivity to market risk is defined by regulators as the degree to which changes in interest rates, foreign exchange rates, commodity prices or equity prices can adversely affect a bank's earnings and, in turn, its financial health.

Short term debt ratio

A short-term debt ratio indicates the likelihood that a company will be able to deliver payments on its outstanding short-term liabilities. Short-term debts include liabilities with a repayment time frame of less than one year from initial issue (such as commercial paper) rather than the sum of all debt payments (final and interim) due within a coming 12-month period. Short term debt, also called current liabilities, is a firm's financial obligations that are expected to be paid off within a year. It is listed under the current liabilities portion of the total liabilities section of a company's balance sheet.

Long term debt ratio

The long-term debt ratio is a solvency or coverage ratio that calculates a company's leverage by comparing total debt to assets. In other words, it measures the percentage of assets that a business would need to liquidate to pay off its long-term debt. The long-term debt-to-total-assets ratio is a measurement representing the percentage of a corporation's assets financed with long-term debt, which encompasses loans or other debt obligations lasting more than one year. This ratio provides a general measure of the long-term financial position of a company, including its ability to meet its financial obligations for outstanding loans.

Debt to equity ratio

The debt-to-equity ratio is a measure of the relationship between the capital contributed by creditors and the capital contributed by shareholders. The ratio is used to evaluate a company's financial leverage. It is a measure of the degree to which a company is financing its operations through debt versus wholly-owned funds. More specifically, it reflects the ability of shareholder equity to cover all outstanding debts in the event of a business downturn.

2.2 Theoretical Review

A number of theories have been advanced in explaining the capital structure and profitability/ value of firms. The existing theories of capital structures and profitability/ to be reviewed include:

2.2.1 Static Trade off Theory of Capital Structure

The trade-off theory of capital structure is the idea that a company chooses how much debt finance and how much equity finance to be used by balancing the costs and benefits. The classical version of the hypothesis goes back to Kraus and Litzenberger (1973) who considered a balance between the dead-weight costs of bankruptcy and the tax saving benefits of debt. Often agency costs are also included in the balance.

The trade-off theory says that the firm will borrow up to the point where the marginal value of tax shields on additional debt is just offset by the increase in the present value of possible cost of financial distress. The value of the firm will decrease because of financial distress (Myers, 2001). According to the study, financial distress refers to:" the costs of bankruptcy or reorganization, and also to the agency costs that arise when the firm's creditworthiness is in doubt". The trade-off theory weights the benefits of debt that result from shielding cash flows from taxes against the costs of financial distress associated with leverage. "According to this theory, the total value of a levered firm equals the value of the firm without leverage plus present value tax savings from debt, less the present value of financial distress costs"

The trade-off theory of capital structure states that a firm's choice of its debt – equity ratio is a trade-off between its interest tax shields and the costs of financial distress. The theory further suggests that firms in the same industry should have similar or identical debt ratios in order to maximize tax savings. The tax benefit among other factors makes the after-tax cost of debt lower and hence the weighted average cost of capital will also

be lower. This theory allows bankruptcy cost to exist. It states that there is an advantage to financing with debt (the tax benefits of debt) and that there is a cost of financing with debt (the bankruptcy costs and the financial distress costs of debt). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade -off when choosing how much debt and equity to use for financing (Modigliani and Miller (1963). Furthermore, Brigham and Gapenski (1996) argue that an optimal capital structure can be obtained if there exist tax benefit which is equal to the bankruptcy cost. It can be concluded that, there is an optimal capital structure where the weighted average cost of capital is at its minimum. However, as a firm leverage ratio rises, tax benefits will eventually be offset by increases bankruptcy cost. The trade-off theory sought to establish an optimal capital structure where the weighted average cost of capital will be minimized and the firm value maximized. At the optimal level of capital structure, tax benefit will be equal to bankruptcy costs. Despite the theoretical appeal of debt financing, researchers of capital structure have not found the optimal capital structure (Simerly and Li, 2002).

2.2.2 The Dynamic Trade-off Theory of Capital Structure

Constructing models that recognize the role of time requires specifying a number of aspects that are typically ignored in a single-period model. Of particular importance are the roles of expectations and adjustment costs. In a dynamic model, the correct financing decision typically depends on the financing margin that the firm anticipates in the next period. Some firms expect to pay out funds in the next period, while others expect to raise funds. If funds are to be raised, they may take the form of debt or equity. More generally, a firm undertakes a combination of these actions.

An important precursor to modern dynamic trade-off theories was Stiglitz (1973), who examines the effects of taxation from a public finance perspective. Stiglitz's model is not a trade-off theory since he took the drastic step of assuming away uncertainty. The first dynamic models to consider the tax savings versus bankruptcy cost trade-off are Kane *et al*. (1984) and Brennan and Schwartz (1984). Both analyzed continuous time models with uncertainty, taxes, and bankruptcy costs, but no transaction costs. Since firms react to adverse shocks immediately by rebalancing costless, firms maintain high levels of debt to take advantage of the tax savings.

Dynamic trade-off models can also be used to consider the option values embedded in deferring leverage decisions to the next period. Goldstein *et al*. (2001) observe that a firm with low leverage today has the subsequent option to increase leverage. Under their assumptions, the option to increase leverage in the future serves to reduce the otherwise optimal level of leverage today. Strebulaev (2007) analyzed a model quite similar to that of Fischer *et al*. (1989); Goldstein *et al*. (2001). Again, if firms optimally finance only periodically because of transaction costs, then the debt ratios of most firms will deviate from the optimum most of the time. In the model, the firm's leverage responds less to short-run equity fluctuations and more to long-run value changes.

2.2.3 Net Operating Income Theory of Capital Structure

According to this theory, the value of a company isn't impacted by the alteration of debt in the capital structure. It assumes that the gain which a company gets by infusion of debt is negated by the rise in the required rate of return by the stockholders. With rise in debt, the bankruptcy risk also increases and such a risk perception increases the expectations of the equity holders.

This theory as suggested by Durand (1968) is another extreme of the effect of leverage on the value of the firm. It is diametrically opposite to the net income approach. As

posited by Kareem (2012) net operating income theory showcase that change in the capital structure of a company does not affect the market value of the firm and the overall cost of capital remains constant irrespective of the method of financing. It implies that the overall cost of capital remains the same whether the debt-equity mix is 50: 50 or 20:80 or 0:100. Thus, there is nothing as an optimal capital structure and every capital structure is the optimum capital structure.

The reasons propounded for such assumptions is that the increased use of debt increases the financial risk of the equity shareholders and hence the cost of equity increases. On the other hand, the cost of debt remains constant with the increasing proportion of debt as the financial risk of the lenders is not affected. Thus, the advantage of using the cheaper source of funds, i.e., debt is exactly offset by the increased cost of equity. Salado (2002) to the Net Operating Income (NOI) Approach, the financing mix is irrelevant and it does not affect the value of the firm.

2.2.4 Pecking Order Theory of Capital Structure

Pecking order theory was first suggested by Donaldson in 1961 and it was modified by Stewart Myers and Nicolas Majluf in 1984. It states that companies prioritize their sources of financing (from internal financing to equity) according to the cost of financing, preferring to raise equity as a financing means of last resort. Hence, internal funds are used first, and when that is depleted, debt is issued, and when it is not sensible to issue any more debt, equity is issued.

The pecking order theory is geared towards the signaling effect of the use of debt financing. According to the pecking order theory firms prefer financing their operations from internally generated funds, because the use of such funds does not send any negative signal that may lower the stock price of the firm. If internal finance is required,

firms prefer to issue debt first before considering the issue of equity. The theory tries to capture the costs of asymmetric information. It states that companies prioritize their sources of financing (from internal financing to issuing shares of equity) according to least resistance, preferring to raise equity for financing as a last resort. Internal financing is used first. When that is depleted, debt is issued. When it is no longer sensible to issue any more debt, equity is used.

This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, while debt is preferred over equity if external financing is required. Thus, the form of debt a firm chooses can act as a signal of its need for external finance. This pecking order occurs because issuing debt is less likely to send a negative signal to investors. If a firm should issue equity it sends a negative signal to investors that the firm's share prices are overvalued that is why the managers are issuing equity. This will cause investor to sell their shares leading to a fall in the stock price of the firm. A share issue is thus interpreted by the market as a bad omen but debt is less likely to be interpreted this way. Firms therefore prefer to issue debt rather than equity if internal finance is insufficient. The pecking order theory is therefore a competing theory of capital structure that says firms prefer internal financing.

Empirical evidence from previous studies seems to be consistent with the pecking order theory. Most studies found a negative relationship between profitability and capital structure Friend and Lang, (1988); Chittenden, 1996; Michaelas, (1999) and Hall (2004) also suggest negative relationships between profitability and both long-term debt and short-term debt ratios. Also consistent with the pecking order theory, work of Titman and Wessel (1988), Rajan and Zingales (1995), Antoniou, (2002) in developed countries, Booth, (2001), Pandey (2001), and Chen (2004), in developing countries all find a negative relationship between leverage ratios and profitability. We therefore propose

based on the pecking order theory that a negative relationship exist between profitability and leverage. Thus it is expected that leverage level of Nigerian commercial banks is significantly negatively related to the profitability. The study however underpin the study on pecking other theory

2.3 Empirical Review

In this section, we look at various foreign and local studies which have been carried out by other scholars in this field.

2.3.1 Evidence on Developed Countries

Salim and Yadav (2012) examined the relationship between capital structure and firm performance. The investigation was performed using panel data procedure for a sample of 237 Malaysian listed companies on the Bursa Malaysia Stock exchange during 1995-2011. The study used four performance measures (including Return on Equity (ROE), Return on Asset (ROA), Tobin's Q and Earning Per Share (EPS)) as dependent variable. The five capital structure measure (including Long Term Debt (LTD), Short Term Debt (STD), Total Debt (TD) ratios and growth) as independent variable using firm Size as a control variable. The data are divided into six sectors which are construction, consumer product, industrial product, plantation, property, trading and service. The findings of the study indicates that capital structure (especially TD and STD) negatively impacts performance (ROE). On the other hand capital structure (LTD and TD) has negative significant impact on firm's performance measured by ROA. Furthermore, findings of this study suggest that there is a significantly positive relationship between Tobin's Q (firm performance) and capital structure measured by LTD and STD. Finally, the results show that Tobin Q has a positive and significant relationship with size (as control variable) for all sectors under study except for property sector a negative effect on the Tobin's Q observed.

Also in Malaysia, Muhfuzah and Raj (2012) investigated the relationship between capital structure and firm performance using panel data of 237 Malaysia stock exchange from 1995-2011. The result indicated that firm performance measured by return on Asset, Return on Equity and earning per share have negative relationship with short term debt, long term debt, and total debt. Also, total debt has significant negative relationship with the performance of the firm.

Dilrukshi (2016) investigate the impact of capital structure on firm performance in UK for the period of 1998-2008. The study employ the use of Pearson correlation and multiple regression analysis and findings shows that there is a significant negative relationship between leverage and firm performance, strong negative relationship between liquidity and firm performance and highly significant positive relationship between size and firm performance.

Mouna, Jianmu, Havidz and Ali (2017) investigated the impact of capital structure of firm's performance in Morocco using a panel data obtained from Moroccan authority of capital market and Casablana stock exchange website from the year 2014 to 2016. The result of the study shows that Debt Ratio has a negative significant effect on return on asset and return on equity. The findings also revealed that firm size also has a positive significant impact on return on equity.

2.3.2. Evidence on Developing Counties

Mohammadzadeha *et al*. (2013) in their study scrutinized the relationship between the capital structure and the profitability of pharmaceutical companies in Iran. To meet the purpose of the study, top 30 Iranian pharmaceutical companies defined as study samples and their financial data were gathered for the period of 2001-2010. In their study, the net margin profit and debts to asset ratio were used as indicators of profitability and capital structure, respectively and sales growth was used as a control variable. Results showed

that there was significant negative relationship between the profitability and the capital structure which means that the pharmaceutical companies established a Pecking Order Theory and the internal financing has led to more profitability

Also, Abhtar, Bano, Zia and Jammel (2016) examined the effect of capital structure (debt to equity) on profitability, liquidity, tangibility, interest rate and growth rate to measure performance of banking sector of Pakistan using five banks annual reports between 2005 and 2015. The research work use pooled analysis to summarize the data for correlation and regression. The result shows that there are positive significant relationships between profitability, tangibility, liquidity, interest rate, and growth rate and capital structure.

Furthermore, Madiha and Muhammed (2016) tested the significance of the impact of capital structure on financial Performance of banks listed on Karachi Stock Exchange. The study incorporated financial performance variables as dependent and capital structure (financial structure) as independent. The dependent variables are spread ratio, return on assets and earnings per share and independent variables are total debt to total equity, long-term debt to total equity and short-term debt to total equity. Furthermore, the study incorporated data for five years from 2009 to 2013. The findings showed that capital structure findings are negatively related with banks performance in Pakistan.

Akomeah, Bentil and Musah (2018) examined the effect of firm capital structure decisions on their performance based on a sample of non-financial firms in Ghana over a 7 year period (2010 to 2016). The study employ the use of regression analysis and found that capital structure decisions affect firms' performance significantly. Furthermore, the leverage variables were inversely related to performance, Short-term debt to equity was equally negatively related.

2.3.3. Evidence from Nigeria

Onaolapo and Kojola (2010) examine the impact of capital structure on firms financial performance using sample of thirty non-financial firms listed on the Nigeria stock exchange during 2001 – 2007. The study employed panel data analysis and the findings showed that firms capital structure surrogated by Debt Ratio has a significantly negative impact on the firm's financial measures.

In consistent with the Shubita and Alsawalhah (2012) findings, Chechet and Olayiwola (2014) examined capital structure and profitability of the Nigerian listed firms from the Agency Cost Theory perspective with a sample of seventy (70) out of population of two hundred and forty-five firms listed on the Nigerian Stock Exchange (NSE) for a period of ten (10) years (2000 - 2009) with the aid of the NSE Fact Book covering the period under review. Panel data for the firms are generated and analyzed using fixed-effects, random-effects and Hausman Chi Square estimations. Two independent variables which served as measure of capital structure were used in the study: Debt Ratio (DR) and Equity over the period (EQT) while Profitability (PROF) as the only dependent variable. The result showed that DR is negatively related with PROF, but EQT is directly related with PROF.

Ndifon and Ubana (2014) assess the impact of capital adequacy on Deposit Money Banks' profitability in Nigeria, taking a case study of five selected banks. The empirical analysis covered the period from 1981 to 2011. The study adopted the Engle and Granger two steps procedure in co-integration. The study revealed that capital adequacy plays an important role in explaining banks Returns on Assets (ROA) which is a measure of banks' profitability. The positive and significant relationship between capital adequacy and banks' profitability suggest that banks with more equity capital are perceived to have

more safety and such advantage can be translated into higher profitability. The higher the capital ratio, the more profitable a bank will be.

Also, Onaolapo, Kajola and Nwidobie (2015) examines the determinants of corporate capital structure of thirty-five firms listed on the Nigerian Stock Exchange between 2006 and 2012. Panel data methodology was employed and pooled Ordinary Least Squares was (OLS) used to estimate the coefficients of six firm-specific determinants. Results reveal that the three leverage ratios (Total Leverage Ratio, Long-Term Leverage Ratio and Short-Term Leverage Ratio) are negatively and significantly related with profitability. Firm size and asset tangibility are positively and significantly related with leverage proxies. The study concludes that Nigerian firms rely heavily on the use of retained earnings (internal source) and where funds raised are insufficient, they then seek for external source.

Ihenetu, Iwo and Ebiware (2016) studied the impact of capital structure on the performance of deposit money banks in Nigeria. The focus of the research was to identify the relationship that exist between highly geared capital structure and lowly geared capital structure on performance indices such as return on equity and return on assets. Four (4) banks were used and their audited financial statements analyzed to generate both the dependent and independent variables for twelve years (2002-2013). The statistical tool applied is ordinary least square and the result shows that highly geared capital structure is increases performance of deposit money than lowly geared capital.

Mathewos (2016) also studied the impact of capital structure on financial performance of selected commercial banks in Ethiopia for a five (5) year period from 2011 to 2015 using secondary data collected from financial statements of the commercial banks. Data was analyzed on quantitative approach using multiple regression models. The study used two

accounting-based measures of financial performance (Return on Equity (ROE) and Return on Assets (ROA)) as dependent variable and five capital structure measures (including debt ratio, debt to equity ratio, loan to deposit, bank's size and asset tangibility) as independent variable. The results indicate that financial performance, which is measured by both ROA, is significantly and negatively associated with capital structure proxies such as DER, SIZE and TANG whereas DR have negative impact.

Muritala (2018) examines the optimum level of capital structure through which a firm can increase its financial performance using annual data of ten firms spanning a five-year period. The study employed Panel Least Square (PLS) techniques and found that a negative and significant relationship exist between asset tangibility and ROA as a measure of performance in the model.

2.4 Summary and Gap identified in Literature

In Nigeria, investors and stakeholders appear not to have a detailed effect of capital structure in measuring their firm's performance as they may assume that attributions of capital structure are not related to their firms value. Indeed, a well attribution of capital structure will lead to the success of firms. Hence, the issues of capital structure, which may influence the corporate performance of Nigerian firms, have to be resolved.

The empirical review of the existing literature is a pointer to the fact that numerous researches have been conducted globally in examining the capital structure on the financial health of deposit money banks. In Nigeria, more focus have been on manufacturing sectors and little on financial sector.

However, banking sector due to its major role needs to be further explored. Previously research on banking sector in Nigeria have not examined the effect of debt ratio on financial health using the CAELS approach. It therefore becomes imperative to bridge

the gap observed from previous studies by assessing examining the effect of capital structure on the financial health of deposit money banks using the camel approach.

2.5 Theoretical Framework

The pecking order theory of capital structure shows that if a firm is profitable, then it is more likely that financing would be from internal sources rather than external sources. In other words, firms tend to use internally generated funds first and then resort to external financing. This implies that profitable firms will have less amount of leverage (Myers and Majluf, 1984). By this, profitable firms that have access to retained profits can rely on them as opposed to depending on outside sources (debt). Titman and Wessel (1988) agree that firms with high profit rates would maintain relatively lower debt ratios since they can generate such funds from internal sources.

CHAPTER THREE
METHODOLOGY

In this chapter the methodological approach used to answer the research questions and achieve the objectives of the study is discussed. This chapter covers the research design, the population of study, sample size and sampling techniques, model specification, sources of data and procedure for data collection, research instruments and design and validity of research instrument.

3.1 Research Design

The study employed descriptive research design to explore the relevance of capital structure on the performance of listed deposit money bank in Nigeria. Analysis was based on available annual secondary data collected over the study period (2010-2017). The data related to capital structure and the financial health of listed deposit money bank in Nigeria. Since the study was insight-gaining with emphasis on time patterns and longitudinal performance, the design was deemed appropriate for empirical investigations of the relevance of the capital structure on bank financial health. Thus, the design enhanced detailed analysis of the impact of capital structure on listed deposit money banks in Nigeria and ensured that inferences were drawn from the outcomes of logical sequences.

3.2 Study Population and Samples Size

The population for this study comprises of all the twenty four (24) Deposit Money Banks licensed to operate by the Central Bank of Nigeria (CBN) as at 2018, this study purposely focus on Deposit Money Banks, considering the fact that they hold the largest portion of financial asset in the economy and has the largest number of retail customers (CBN, 2015). The study sampled ten (10) deposit money banks. However, the choice of

selecting ten out of twenty four deposit money banks was because the banks were listed as the top ten (10) most viable banks as rated by the Fitch Rating of 2017.

3.3 Method of Data Collection

The study employed quantitative research technique to carry out its findings, using secondary data. The data that would be collected is mainly quantitative because information concerning capital structure and firms' performance can easily be obtained from the audited financial reports. The data will be sourced from the Nigeria Stock Exchange (NSE) fact book, audited financial reports of selected banks' (Nigeria listed deposit money banks).

The panel data analysis design covers the period between year 2010 and 2017. This category of data was mainly in quantitative form. Access to the data will not be a problem as these were published annually in the print and electronic media for public consumption. The researcher intend to benefit in so many ways from the use of this type of information for the study as it will also afford researcher the opportunity to collect high quality of data which would not have been of the same quality if the researcher were to collect it in the primary form.

3.4 Model Specifications

For the purpose of this study, the study employed a regression model as shown below

FinHealth = f (DR)……………………………….………..…….……………….3.1

Where:

FinHealth = CapAdq,AstQty,BEarnings,BLiq,Sen

DR = TDTA, SDTA, LDTA, DE

Thus; capital structure proxies were run against each of the financial health measures

The functional modelone 1 = *CapAdq = f (DR)*……………………….………….....3.2

Where: $DR = TDTA, SDTA, LDTA, DE$

The Econometric model 1 can thus be written as:

$$CapAdq_{it} = \beta_0 + \beta_1 TDTA_{it} + \beta_2 SDTA_{it} + \beta_3 LDTA_{it} + \beta_4 DE_{it} + \varepsilon_{it}$$

The functional model 2 = $AstQty = f(DR)$ …… *3.3*

Where: $DR = TDTA, SDTA, LDTA, DE$

The Econometric model 2 can thus be written as:

$$AstQlty_{it} = \beta_0 + \beta_1 TDTA_{it} + \beta_2 SDTA_{it} + \beta_3 LDTA_{it} + \beta_4 DE_{it} + \varepsilon_{it}$$

The functional model 3= $BEarnings = f(DR)$ ……..*3.4*

Where: $DR = TDTA, SDTA, LDTA, DE$

The Econometric model 3 can thus be written as:

$$BEarnings_{it} = \beta_0 + \beta_1 TDTA_{it} + \beta_2 SDTA_{it} + \beta_3 LDTA_{it} + \beta_4 DE_{it} + \varepsilon_{it}$$

The functional model 4= $BLiq = f(DR)$ ……..*3.5*

Where: $DR = TDTA, SDTA, LDTA, DE$

The Econometric model 4 can thus be written as:

$$BLiq_{it} = \beta_0 + \beta_1 TDTA_{it} + \beta_2 SDTA_{it} + \beta_3 LDTA_{it} + \beta_4 DE_{it} + \varepsilon_{it}$$

The functional model 5= $SEN = f(DR)$……..*3.6*

Where: $DR = TDTA, SDTA, LDTA, DE$

The Econometric model 5 can thus be written as:

$$SEN_{it} = \beta_0 + \beta_1 TDTA_{it} + \beta_2 SDTA_{it} + \beta_3 LDTA_{it} + \beta_4 DE_{it} + \varepsilon_{it}$$

Where:

$TDTA_{i,t}$	=	total debt ratio of bank i in year t
$SDTA_{i,t}$	=	short term debt ratio of bank i in year t
$LDTA_{i,t}$	=	long term leverage for bank i in year t
$DE_{i,t}$	=	debt to equity ratio for bank i in year t
$CapAdq_{i,t}$	=	capital adequacy ratio of bank i in year t
$AstQty_{i,t}$	=	Assets Quality of bank i in year t
$BEarning_{i,t}$	=	earning of bank i in year t
$BLiq_{i,t}$	=	liquidity ratio of bank i in year t
$SEN_{i,t}$	=	Sensitivity of bank i in year t
FH	=	Financial Health of bank
DR	=	Debt Ratios
u_{it}	=	the error term
β_1, β_2, β_3 and β_4	=	coefficient of estimation

3.4.1 A priori expectation

Theoretically, Total Debt to Total Asset(TDTA), Short-term Debt to Total Asset ratio (SDTA), Long term Debt to Total Asset ratio (LDTA) and Debt to Equity Ratio (DER) are expected to have negative effect on the selected deposit money banks' financial health proxies by capital adequacy ratio, asset quality ratio, bank earning, sensitivity**.** This can be expressed using mathematical notation as: $\beta 1, \beta 2, \beta 3 \ \& \beta 4 < 0$ (for the four models).

3.5 Method of Data Analysis

Tables will be used to present the data. Pairwise Correlation examine the relationship between dependent and independent variables while Panel data regression analysis was use to investigate the extent to which capital structure affect the performance of listed deposit bank in Nigeria in the period between 2010-2016.

Panel data estimation technique was adopted because "it takes care of heterogeneity associated with individual company by allowing for individual specific variables. Also, by combining time series of cross sectional observations, panel data give more informative data, more variability, less co-linearity among variables, more degrees of freedom and more efficiency". Besides, panel data will minimize the bias that can result if individual banks are aggregated. It also enriches empirical analysis in such a way that may not be possible if either only time series data or cross sectional data is used.

3.6. Measurement of Variable

The dependent variable of the study is financial health proxy by Capital Adequacy, Audit Quality, Basic Earning, Liquidity and sensitivity while the independent variables are Ratio of Total Liability to Total Equity, Ratio of Total Debt and Total Asset, Ratio of Short Term Debt to total Asset and Ratio of Long Term Leverage to Total Asset

Table 3.1: Shows the Measurement of Variables

Table 3.1: Measurement of Variables

Parameter	Acronyms	Ratio	Source
Capital Adequacy	CapAdq	• Ratio of Shareholder's Fund to Total Asset	Misra and Aspal (2013)
Asset Quality	AstQty	• Ratio of Non-Performing Loans and Advances to Total Loans and Advances • Ratio of Total Loans and advances to Total Assets	Echekoba, Egbunike and Ezu (2014), Gupta (2014)
Basic Earning	BEarning	• Ratio of Net Income to Total Assets • Ratio of Net Interest Income to Total Assets	Adeshina (2014), Lliana, Mihail and Evangelos (2015)
Liquidity	Liq	• Ratio of Liquid Asset to Total Asset • Ratio of Liquid Asset to Total Customers Deposit	Golam (2014)
Sensitivity	SEN	• Ratio of Provision of loan to total loan and advances	Malihe (2015)
Debt to equity ratio	DE	• Ratio of Total Liability to Total Equity	Zabri (2012), Alshati (2015)
Total debt ratio	TDTA	• Ratio of Total Debt and Total Asset	Akinyomi (2013), Abdl (2010), Khalaf (2013)
Short term	SDTA	• Ratio of Short Term Debt to	Kanalos (2015)

debt ratio		total Asset	
Long term debt ratio	LDTA	• Ratio of Long Term Leverage to Total Asset	Kanalos (2015)

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter covers the presentation as well as analyses of the data collected through secondary source (financial statement) and the discussion of findings by the researcher. In this chapter the data collected during the process of conducting the research work was presented using descriptive table and analyzed using panel data regression analysis.

4.1 Descriptive Statistics

Table 4.1 presents the descriptive statistics for the dependent(s) variable and explanatory variables (total debt to total assets ratio, short term debt to total assets ratio, long term debt to total assets ratio, debt to equity ratio, capital adequacy ratio, asset quality ratio, sensitivity ratio, banks earning and selected deposit money banks liquidity ratio'.

TABLE 4.1 DESCRIPTIVE STATISTICS OF THE VARIABLES

VARIABLES	OBS	MEAN	STD.DEV	MIN	MAX
CapAdp	80	0.0183	0.0249	-0.0164	0.1554
Tdta	80	0.6091	0.2000	0.1213	0.9677
Sdta	80	0.1839	0.2116	0	1.4061
Idta	80	0.1928	0.2159	0.1033	0.8241
Der	80	0.0106	0.0178	-0.0205	0.1034
AstQty	80	0.0319	0.0461	-0.0242	0.0879
SEN	80	0.1024	0.0609	0.0304	0.3286
BEarnings	80	0.0910	0.0751	-0.1151	0.2375
BLiq	80	0.102400	0.0609	0.0304	0.3286

Source: Author's Computation, 2019

From the table, capital adequacy ratio has a minimum and maximum values of -0.0164 and 0.1554 respectively and the mean value of 0.0183 as well as the standard deviation value of 0.0249. The standard deviation of 0.0249 signifies that the data deviate from the mean value from both sides by 0.0249 implying that there is a wide dispersion of the data from the mean because standard deviation is higher than the mean value.

The table also shows that the mean of the Total Debt and Total Assets ratio (TDTA) of the selected firms is 0.6091 with standard deviation of 0.7000, and minimum and maximum values of 0.1213 and 0.9677 respectively. This implies that the performance of the firms in terms of total debt to total assets ratio is on average 0.6091, and the standard deviation value indicates that total debt to total assets ratio of the sampled firms deviates from the mean value from both sides by 0.7000, implying that there is significant dispersion of the data from the mean because the standard deviation is higher.

Short Term Debt to Total Assets ratio (SDTA) of the selected firms is 0.1839 with standard deviation of 0.2116. The minimum and maximum values are 0.0000 and 1.4061 respectively. This implies that Short term debt to total assets ratio of the sampled firms is on average 0.1839, and the standard deviation value indicates that the value deviates from the mean from both sides by 0.2116, implying that there is significant dispersion of the data from the mean because the standard deviation is larger than the mean.

Furthermore, the table shows that the mean of the Long Term Debt to Total Assets ratio (LDTA) of the firms is 1.9285 with standard deviation of 2.1597. The minimum and maximum values are 1.0333 and 8.2411 respectively. This implies that long term leverage of the firms is on average 1.9285. The standard deviation indicates that the value of the firms‟ long term debt to total assets ratio deviates from the mean value from both sides by 2.159786. This implies that there is significant dispersion of the data from

the mean because the standard deviation is higher than the mean. Debt to Equity Ratio (DER) recorded a mean value of 0.0106 with standard deviation of 0.0178. The minimum and maximum values are -0.2053 and 0.1034 respectively. The standard deviation indicates that the value of debt to equity ratio of the firms deviates from the mean value from both sides by 0.0178. This further implies that there is widely dispersed data from the mean because the standard deviation is large.

Asset Quality ratio (AstQlty) of the selected banks reported a mean value of 0.3190 with standard deviation of .0461. The minimum and maximum values are -0.0242 and 0.0879047 respectively. This implies that growth opportunity of the sampled firms is on average 0.03190, and the standard deviation value indicates that the value deviates from the mean from both sides by 0.0461, implying that there is significant dispersion of the data from the mean because the standard deviation is larger than the mean.

The table shows that the selected banks' Sensitivity ratio (SEN) has an average value of 0.1024 with standard deviation of 0.0461. The minimum and maximum values are 0.0304 and 0.3286 respectively. The standard deviation indicates that the value of sensitivity ratio of selected banks' deviates from the mean value from both sides by 0.0609783. Selected deposit money Banks Earning (BEarnings) has a minimum value of -.1151 and maximum value of 0.2375 with an average (mean) value of .0910.

Finally, the table portrays that the selected deposit money Banks Liquidity (Bliq)' has a mean value of 0.1024 with standard deviation of 0.0609. The minimum and maximum values are -0.0304 and 0.3286 respectively. The standard deviation indicates that the value of liquidity of selected banks deviates from the mean value from both sides by 0.0609 implying that there is a significant dispersion of the data from the mean because the standard deviation is larger than the mean.

4.2 Pairwise Correlation

The table below (Table 4.2) summarizes the results of correlation analyses among the variables. This exercise serves two important purposes. First is to determine whether there are bivariate relationship between each pair of the dependent and independent variables. The second is to ensure that the correlations among the explanatory variables are not so high to the extent of posing multi-collinearity problems.

Table 4.2. Pairwise correlation

	CapAdq	tdta	sdta	ldta	Der	AstQlty	Sen	BEarns	BEarns
CapAdq	1.0000								
Tdta	-0.0360	1.0000							
Sdta	0.7793	0.0188	1.0000						
Ldta	-0.1597	-0.0718	-0.0192	1.0000					
Der	-0.1214	-0.1376	-0.0304	0.0432	1.0000				
AstQlty	-0.2885	0.2151	-0.1682	-0.2798	-0.0217	1.0000			
Sen	0.4198	0.1972	0.2671	-0.2189	-0.0455	0.0621	1.0000		
BEarns	-0.4981	-0.1597	-0.2831	0.1152	0.2639	0.3431	-0.4028	1.0000	
Bliq	0.4198	0.1972	0.2671	-0.2189	-0.0455	0.0621	0.2031	-0.4028	1.0000

Source: Author's Computation, 2019

Relationship between Capital Structure and Capital Adequacy Ratio

From table 4.2 below, Total Debt to Total Assets ratio (TDTA) negatively associated with capital adequacy ratio with coefficient -0.036. Another explanatory variable "Short term Debt to Total Asset ratio (SDTA)" has a strong positive relationship with capital adequacy ratio with coefficient 0.779 and significant at 5% level. Long term Debt to

Total Assets (LDTA) negatively correlated with capital adequacy ratio with coefficient of -0.159. Also, also debt to equity ratio has a negative but weak correlation with capital adequacy with coefficient of -0.1214.

Relationship between Capital Structure and Asset Quality Ratio

From table 4.2 below, total debt to total assets ratio positively associated with assets quality ratio with coefficient 0.2151. "short term debt to total asset ratio has a positive but weak relationship with asset quality ratio with coefficient -0.1682 and significant at 5% level. Long term debt to total assets negatively correlated with asset quality ratio with coefficient of -0.2798. Also, debt to equity ratio has a negative but weak correlation with asset quality with coefficient of -0.0217.

Relationship between Capital Structure and Banks Earnings

From table 4.2 below, Total Debt to Total Assets ratio (TDTA) negatively correlated with selected banks earnings with coefficient -0.1597. "Short term Debt to Total Asset ratio (SDTA)" has a negative but weak relationship with Banks earnings with coefficient -0.2831. Long term Debt to Total Assets (LDTA) positively correlated with selected banks earning with coefficient of 0.1152. Also, debt to equity ratio has a negative but weak correlation with bank earnings with coefficient of -0.0455.

Relationship between Capital Structure and selected Banks Liquidity Ratio

From table 4.2 below, Total Debt to Total Assets ratio (TDTA) positively correlated with selected sensitivity ratio with coefficient 0.1972. "Short term Debt to Total Asset ratio (SDTA)" has a positive but weak relationship with Banks liquidity ratio with coefficient 0.2671. Long term Debt to Total Assets (LDTA) negatively correlated with selected

banks liquidity ratio with coefficient of -0.2189. Also, debt to equity ratio has a negative but weak correlation with liquidity ratio with coefficient of -0.0455.

Relationship between Capital Structure and Sensitivity Ratio

From table 4.2 below, total debt to total assets ratio positively associated with Sensitivity ratio with coefficient 0.1972. "Short term Debt to Total Asset ratio (SDTA)" has a positive but weak relationship with sensitivity ratio with coefficient 0.2671 and significant at 5% level. Long term Debt to Total Assets (LDTA) negatively correlated with sensitivity ratio with coefficient of -0.2189. Also, debt to equity ratio has a negative but weak correlation with sensitivity ratio with coefficient of -0.0455.

Generally, the pairwise correlations among independent variables were low, as this confirmed the absence of multicollineary among the variables. To summaries these results, the correlation between total debt ratio and short term debt ratio is 0.0188. The correlation coefficient between total debt ratio and long term debt ratio is -0.0718. Between total debt ratio and debt to equity ratio, the coefficient is -0.1376, and between short term debt ratio and long term debt ratio the coefficient is -0.0192. Between short term debt ratio and debt to equity ratio, the correlation coefficient is -0.0304. Between long term ratio and debt to equity ratio the correlation coefficient is 0.0432

4.3 Regression Analysis

4.3.1 Capital Structure and Capital Adequacy Ratio of Nigerian Deposit Money Banks

The broad objective of this work is to examine the effect capital structure on the Capital Adequacy ratio of deposit money banks in Nigeria where this financial health was depicted into five namely, capital adequacy ratio, assets quality ratio, sensitivity ratio, selected banks earning and the liquidity ratio of selected deposit money bank in Nigeria.

Thus, the below analyses presents the extent to which capital structure influence Nigerian deposit money banks financial health in term of capital adequacy ratio. To achieve this, a panel data regression analysis was conducted and the result is presented in the table below. Perhaps, both random and fixed effect model were analysed and hausman test was conducted to decide on the best estimates from the both model results.

Table 4.3 below presents the result for hausman specification statistics for the model, the result reveals chi2 value of 7.88 with 0.1631probability which is above the 0.0500 significant margin. Accepts the null hypothesis that difference in coefficients are not systematic. From the below result the random effect was accepted and interpreted as the appropriate model.

Table 4.3 Hausman Specification Test

Variables	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
tdta	-0.0962692	-0.1040224	0.0077532	0.0105317
sdta	-0.1549964	-0.2233184	0.068322	0.100897
ldta	0.0889665	0.0797522	0.0092143	0.0048039
der	-0.0552835	-0.0519678	-0.0033157	0.0033241

Test: Ho: difference in coefficients not systematic

chi2(4) = 7.88 Prob>chi2 = 0.1631

Source: Author's Computation, 2019

It can be deduced from the panel data (random effect) output below that the coefficient of determination (R-squared) has a value of 0.7935 implies that explanatory variables (total debt to asset ratio, short term debt to total assets ratio, long term debt to total assets ratio and debt to equity ratio of Nigerian deposit money banks) were able to explain 0.79% of the total variation in Capital adequacy ratio which is a portrayal that the explanatory variables constitute about 79% of the elements that predict the dependent

variable (capital adequacy ratio), implying that the stochastic (unobserved) features in the model constitute about 21% which also showcase a strong goodness of fit of the model. The F-statistics was significant at 1% evidenced by its probability of 0.0000 which implies that all independent variables were jointly significant in explaining capital adequacy ratio.

A consideration of the strength of relationships, using the z-statistic shows that an explanatory variables relates significantly with explained variable (Capital adequacy ratio) at 1% level

The variable "total debt to total asset ratio" shows a negative coefficient of 0.1040224 in Capital adequacy ratio (CaAdq), and significant at 1% level implying that where other predictor variables are held constant, a unit change in the total debt to total assets ratio will precipitate 0.10units decline of capital adequacy ratio.

Another explanatory variable "short term debt to total assets ratio" shows a negative coefficient of 0.2233184 in share price volatility and significant at 1%, implying that where other predictor variables are held constant, a unit change in selected deposit money banks' short term debt to total assets ratio will precipitate a 0.22unit decline of Capital adequacy ratio. Selected Deposit money banks' debt to equity ratio reports a negative coefficient of 0.0519678 implying a unit increase in debt to equity ratio will bring about 0.06 units increase in capital adequacy ratio.

On the other hand, selected banks' long term debt to total assets ratio reveals a positive coefficient of 0.0797522, and significant at 1% implying a unit increase in long term to total assets ratio will result to about 0.079 rise in capital adequacy of selected deposit money banks.

Table 4.4 Panel data Regression Results (Random Effects)

Random-effects GLS regression		Number of obs	= 80
Group variable: countries		Number of groups	= 10
R-sq: within	= 0.7935	Obs per group: min	= 8
Between	= 0.7078	avg	= 8.0
Overall	= 0.7840	max	= 8
		Wald chi2(4)	= 130.70
corr(u_i, X)	= 0 (assumed)	Prob> chi2	= 0.0000

CapAdq	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Tdta	-0.1040224	0.026785	-3.88	0.000	-0.15652	-0.0515248
Sdta	-0.2233184	0.0782078	-2.86	0.004	-0.3766028	-0.070034
Ldta	0.0797522	0.009648	8.27	0.000	0.0608425	0.098662
Der	-0.0519678	0.0151932	-3.42	0.001	-0.081746	-0.0221896
_cons	0.052897	0.0145665	3.63	0.000	0.0243473	0.0814468
sigma_u	0					
sigma_e	0.0121653					
Rho	0	(fraction of variance due to u_i)				

Source: Author's Computation, 2019

4.3.2 Capital Structure and Assets Quality of Selected Nigerian Deposit Money Banks

The broad objective of this work is to examine the effect capital structure on the financial health of deposit money banks in Nigeria where this financial health was depicted into five namely, capital adequacy ratio, assets quality ratio, sensitivity ratio, selected banks earning and the liquidity ratio of selected deposit money bank in Nigeria. Thus, the below analyses presents the extent to which capital structure influence Nigerian deposit money banks financial health in term of Assets Quality. To achieve this, a panel data regression analysis was conducted and the result is presented in the table below. Perhaps,

both random and fixed effect model were analysed and hausman test was conducted to decide on the best estimates from the both model results.

Table 4.5 below presents the result for hausman specification statistics for the model, the result reveals chi2 value of 7.35 with 0.1961probability which is above the 0.0500 significant margin. Accepts the null hypothesis that difference in coefficients are not systematic. From the above result the random effect was accepted and interpreted as the appropriate model.

Table 4.5 Hausman Specification Test

---- Coefficients ----

Variables	(b) fixed2	(B) random2	(b-B) Difference	sqrt(diag(V_b- V_B)) S.E
tdta	-0.109725	-0.1161598	0.0064348	0.0089239
sdta	-0.1055162	-0.2141154	0.1085992	0.1004289
ldta	0.0947543	0.0865906	0.0081638	0.0030574
der	-0.1968959	-0.1965338	-0.0003621	

Test: Ho: difference in coefficients not systematic

chi2(4) = 7.35 **Prob>chi2 = 0.1961**

Source: Author's Computation, 2019

It can be deduced from the panel data (random effect) output below that the coefficient of determination (R-squared) has a value of 0.7851 implies that explanatory variables (total debt to asset ratio, short term debt to total assets ratio, long term debt to total assets ratio and debt to equity ratio of Nigerian deposit money banks) were able to explain about 0.79% of the total variation in Assets Quality of selected of deposit money banks which is a portrayal that the explanatory variables constitute about 79% of the elements that predict the dependent variable (Assets Quality), implying that the stochastic

(unobserved) features in the model constitute about 21% which also showcase a strong goodness of fit of the model. The F-statistics was significant at 1% evidenced by its probability of 0.0000 which implies that all independent variables were jointly significant in explaining Assets quality of selected deposit money banks in Nigeria.

The variable "total debt to asset ratio" shows a negative coefficient of 0.1161598 in Assets Quality (AstQlty), and significant at 1% level implying that where other predictor variables are held constant, a unit change in the total debt to total asset ratio will precipitate 0.12units decline of Assets Quality.

The explanatory variable "short term debt total assets ratio" shows a negative coefficient of 0.2141154 in Asset Quality and significant at 1%, implying that where other predictor variables are held constant, a unit change in selected money deposit banks' shot term to total assets ratio will precipitate a 0.22unit decline of Assets Quality. Selected Banks' debt to equity ratios reports a negative coefficient of -.1965338 implies a unit increase in selected banks debt to equity ratio ratio will bring about 0.20units decline in selected firm Assets Quality.

On the other hand, long term debt to total assets ratio of selected bank reveals a positive coefficient of 0.0865906, and significant at 1% implying a unit increase in long term to total assets ratio will result to about 0.087unit rise in assets quality of selected deposit money banks

Table 4.6 Panel data Regression Results (Random Effects)

Random-effects GLS regression		Number of obs	= 80
Group variable: countries		Number of groups	= 10
R-sq: within	= 0.7851	Obs per group: min	= 8
between	= 0.5539	avg	= 8.0
overall	= 0.7569	max	= 8
Wald chi2(4)	= 112.08		
corr(u_i, X)	= 0 (assumed)	Prob> chi2	= 0.0000

AsstQlty	Coef.	Std. Err.	z	P>|z|	[95% Conf	Interval]
Tdta	-0.1161598	0.0284309	-4.09	0.000	-0.1718834	-0.0604362
Sdta	-0.2141154	0.0828776	-2.58	0.010	-0.3765526	-0.0516782
Ldta	0.0865906	0.0098493	8.79	0.000	0.0672862	0.1058949
Der	0.0669824	0.0155447	4.31	0.000	0.0365153	0.0974494
_cons	0					
sigma_u	0.0123758					
sigma_e	0					
Rho		(fraction of variance due to u_i)				

Source: Author's Computation, 2019

4.3.3 Capital Structure and Earnings of Selected Nigerian Deposit Money Banks

The broad objective of this work is to examine the effect capital structure on the financial health of deposit money banks in Nigeria where this financial health was depicted into five namely, capital adequacy ratio, assets quality ratio, selected banks earning, liquidity ratio and sensitivity of selected deposit money bank in Nigeria. Thus, the below analyses presents the extent to which capital structure influence Nigerian deposit money banks financial health in term of banks earnings. To achieve this, a panel data regression analysis was conducted and the result is presented in the table below. Perhaps, both random and fixed effect model were analysed and hausman test was conducted to decide on the best estimates from the both model results.

Table 4.9 below presents the result for hausman specification statistics for the model, the result reveals chi2 value of 0.09 with 0.9990 probability which is above the 0.0500 significant margin. Accepts the null hypothesis that difference in coefficients are not systematic. From the below result the random effect was accepted and interpreted as the appropriate model.

Table 4.7 Hausman Specification Test

---- Coefficients ----

Variables	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
Tdta	-0.0623446	-0.0612608	-0.0010838	0.0046804
Sdta	0.094466	0.0939753	0.0004908	0.0034604
Ldta	-0.1123741	-0.1111136	-0.0012605	0.0098856
Der	-0.2075498	-0.2054922	-0.0020576	0.0327122

Test: Ho: difference in coefficients not systematic
chi2(4) = 0.09 Prob>chi2 = 0.9990
Source:Author's Computation, 2019

It can be deduced from the panel data (random effect) output below that the coefficient of determination (R-squared) has a value of 0.7914 implies that explanatory variables (total debt to total assets ratio, short term debt to total assets ratio, long term debt to total assets ratio and debt to equity ratio") were able to explain 0.79% of the total variation in Banks earnings which is a portrayal that the explanatory variables constitute about 21% of the elements that predict the dependent variable (BEarnings), implying that the stochastic (unobserved) features in the model constitute about 21% which also showcase a strong goodness of fit of the model. The F-statistics was significant at 1% evidenced by its probability of 0.0000 which implies that all independent variables were jointly significant in explaining basic earning.

With respect to the coefficients, the constant (C) has a value of 0.0619, whose implication is that if all the explanatory variables are held constant or pegged at zero (0), the explained variable – bank earnings will surge by 0.0619974units. This shows that regardless of change on the explanatory variables, firms' profitability will be elevated.

A consideration of the strength of relationships, using the t-statistic shows that only debt to equity ratio whose z-statistics is -1.91 relates insignificantly with bank earnings given its 0.056 probability which is above the 0.0500 significant margin, while other explanatory variables show statistically significant at 1% level with the explained variable (bank earnings).

The variable "Total Debt to Total Assets ratio (TDTA)" shows a negative coefficient of 0.0612608 in Banks Earnings (BEarnngs), and significant at 1% level implying that where other predictor variables are held constant, a unit change in the total leverage will precipitate 0.61units decline of basic earning. Long-term Debt to Total Assets ratio (LDTA) shows a negative coefficient of 0.1111136 in Bank Earnings and significant at 1%, implying that where other predictor variables are held constant, a unit change in the Long-term debt to total assets ratio will precipitate a 0.11unit decline of bank earnings.

Debt to Equity Ratio (DER) shows an insignificant negative direction as it possess a coefficients of 0.2054922 in bank earnings indicating that where other variables are held at zero, a unit increase in quick ratio will result to about 0.21units decline in bank Earnings, On the other hand, the ratio of Short-term Debt to Total Assets (SDTA) reveals a positive coefficient of 0.0939753 in Banks Earnings, and significant at 1% implying a unit increase in short term to total assets ratio will result to about 0.093 rise in Banks Earnings.

Table 4.8 Panel Data Regression Results (Random Effect)

Random-effects GLS regression Number of obs = 80

Group variable: countries Number of groups = 10

R-sq: within = 0.7914 Obs per group: min= 8

Between = 0.1005 avg = 8.0

overall = 0.7112 max = 8.0

Wald chi2(4) = 130.97

corr(u_i, X) = 0 (assumed) Prob> chi2 = 0.0000

BEarnings	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Tdla	-0.0612608	0.0152453	-4.02	0.000	-0.0911411	-0.0313805
sdta	0.0939753	0.0096497	9.74	0.000	0.0750622	0.1128883
Ldta	-0.1111136	0.0277512	-4.00	0.000	-0.165505	-0.0567222
der	-0.2054922	0.1076593	-1.91	0.056	-0.4165004	0.0055161
_cons	0.0619974	0.0152083	4.08	0.000	0.0321897	0.0918052
sigma_u	0.01189734					
sigma_e	0.01230928					
rho	0.4829874	(fraction of variance due to u_i)				

Source: Author's Computation, 2019

4.3.4 Capital Structure and Liquidity of Selected Nigerian Deposit Money Banks

The broad objective of this work is to examine the effect capital structure on the financial health of deposit money banks in Nigeria where this financial health was depicted into five namely, capital adequacy ratio, assets quality ratio, selected banks earning, liquidity ratio and sensitivity of selected deposit money banks in Nigeria. Thus, the below analyses presents the extent to which capital structure influence Nigerian deposit money banks financial health in term of banks liquidity. To achieve this, a panel data regression analysis was conducted and the result is presented in the table below. Perhaps, both random and fixed effect model were analysed and hausman test was conducted to decide on the best estimates from the both model results.

Table 4.11 below presents the result for hausman specification statistics for the model, the result reveals chi2 value of 12.13 with 0.0069 probability which is above the 0.0500 significant margin. Rejects the null hypothesis that difference in coefficients are not systematic. Evidenced Hausman specification test result above, the fixed effect was accepted and interpreted as the appropriate model.

Table 4.9 Hausman Specification Test

---- Coefficients ----

	(b) fixed3	(B) random3	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
tdla	0.0927878	0.0814035	0.0113843	0.0033954
sdla	-0.0997329	-0.1055804	0.0058475	0.0166612
ldta	-0.0239099	-0.0124357	-0.0114742	0.0032501
der	-0.0615238	-0.056307	-0.0052168	0.0035837

Test: Ho: difference in coefficients not systematic

chi2(4) = 12.13 Prob>chi2 = 0.0069

Source: Author's Computation, 2019

Considering the fixed effect result from table 4.5 below, coefficient of determination (R-squared) has a value of 0.7487 implies that explanatory variables (total debt to total assets ratio, short term debt to total assets ratio, long term debt to total assets ratio and debt to equity ratio") were able to explain 0.75% of the total variation in Selected banks liquidity which is a portrayal that the explanatory variables constitute 75% of the elements that predict the dependent variable (Bliq), implying that the stochastic (unobserved) features in the model constitute about 25% which also showcase a strong goodness of fit of the model. The F-statistics was significant at 1% evidenced by its probability of 0.0000 which implies that all independent variables were jointly significant in explaining banks liquidity.

With respect to the coefficients, the constant (C) has a value of .0249353, whose implication is that if all the explanatory variables are held constant or pegged at zero (0), the explained variable – selected banks liquidity will surge by .0249353 units. This shows that regardless of change on the explanatory variables, firm liquidity will be elevated.

A consideration of the strength of relationships, using the t-statistic shows that all independent variables total debt to total assets ratio, short term debt to total assets ratio, long term debt to total assets ratio and debt to equity ratio" relates significantly with banks liquidity given their probability of 0.000, 0.008, 0.04 and 0.000 respectively which were below the 0.0500 significant margin,

Total Debt to Total Assets ratio (TDTA) shows a positive coefficient of .0927878 in bank liquidity and significant at 1%, implying that where other predictor variables are held constant, a unit change in total debt to total assets ratio os selected bank will bring about 0.093units increase in banks liquidity. Short term Debt to Total Assets ratio (SDTA) has a negative coefficient of 0.0997329 and significant at 5% in explaining banks liquidity reporting a unit increase in short term debt ratio will result to about 0.099unit decline in banks liquidity of selected deposit money bank in Nigeria.

Long term Debt Total Assets ratio (LDTA) has a negative coefficient of 0.0239099 in Banks liquidity, implying a unit change in the long term debt ratio will result to about 0.0239099 units decline in selected bank liquidity.

Finally, "debt to equity ratio" shows a negative coefficient of 0.056307in banks liquidity ratio and significant at 1%, implying that where other predictor variables are held constant, a unit change in selected banks' long term debt ratio will result to a 0.056units decline of banks liquidity ratio.

Table 4.10 Panel data regression results (Fixed Effects)

Fixed-effects (within) regression Number of obs = 80
Group variable: countries Number of groups = 10
R-sq: within = 0.7487 Obs per group: min = 8
between = 0.4999 avg = 8.0
overall = 0.6922 max = 8
F(3,33) = 32.77
corr(u_i, Xb) = -0.3186 Prob> F = 0.0000

Bliq	Coef.	Std. Err.	T	P>|t|	[95% Conf. Interval]	
Tdla	0.0927878	0.0114206	8.12	0.000	0.0695525	0.1160231
Sdta	-0.0997329	0.0352739	-2.83	0.008	-0.1714983	-0.0279675
Ldta	-0.0239099	0.0116671	-2.05	0.048	-0.0476469	-0.000173
Der	-0.056307	0.0149541	-3.77	0.000	-0.0856166	-0.0269974
_cons	0.0249353	0.0091902	2.71	0.011	0.0062377	0.0436328
sigma_u	0.00797511					
sigma_e	0.01330581					
Rho	0.26429742	(fraction of variance due to u_i)				

Source: Author's Computation, 2019

4.3.5 Capital Structure and Sensitivity Ratio of Selected Nigerian Deposit Money Banks

The broad objective of this work is to examine the effect capital structure on the financial health of deposit money banks in Nigeria where this financial health was depicted into five namely, capital adequacy ratio, assets quality ratio, selected banks earning, the liquidity ratio and sensitivity ratio of the selected deposit money bank in Nigeria. Thus, the below analyses presents the extent to which capital structure influence Nigerian deposit money banks financial health in term of sensitivity. To achieve this, a panel data

regression analysis was conducted and the result is presented in the table below. Perhaps, both random and fixed effect model were analysed and hausman test was conducted to decide on the best estimates from the both model results.

Table 4.11 below presents the result for hausman specification statistics for the model, the result reveals chi2 value of 11.27with 0.0803probability which is above the 0.0500 significant margin. Accepts the null hypothesis that difference in coefficients are not systematic. From the above result the random effect was accepted and interpreted as the appropriate model.

Table 4.11 Hausman specification test

---- Coefficients ----

Variables	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
Tdta	-0.1063164	-0.108825	0.0025086	0.0107829
Sdta	-0.1289815	-0.2252998	0.0963183	0.0978832
Ldta	-0.0615238	-0.056307	-0.0052168	0.0035837
Der	0.0868755	0.0793506	0.0075249	0.0046311

Test: Ho: difference in coefficients not systematic

chi2(4) = 11.27 **Prob>chi2 = 0.0803**

Source: Author's Computation, 2019

It can be deduced from the panel data (random effect) output below that the coefficient of determination (R-squared) has a value of 0.8135 implies that explanatory variables (total debt to asset ratio, short term debt to total assets ratio, long term debt to total assets ratio and debt to equity ratio of Nigerian deposit money banks) were able to explain about 0.81% of the total variation in sensitivity which is a portrayal that the explanatory variables constitute about 81% of the elements that predict the dependent variable (sensitivity), implying that the stochastic (unobserved) features in the model constitute about 19% which also showcase a strong goodness of fit of the model. The F-statistics was significant at 1% evidenced by its probability of 0.0000 which implies that all

independent variables were jointly significant in explaining sensitivity ratio of the selected deposit money banks.

With respect to the coefficients, the constant (C) has a value of 0.0587, whose implication is that if all the explanatory variables are held constant or pegged at zero (0), the explained variable (sensitivity) will surge by 0.0587 units. This shows that regardless of change on the explanatory variables, selected firms' share price volatility will be elevated.

A consideration of the strength of relationships, using the z-statistic shows that only leverage ratio whose z-statistics is -1.78 relates insignificantly with sensitivity given its 0.075 probability which is above the 0.0500 significant margin, while other explanatory variables show statistically significant at 1% level with the explained variable (sensitivity).

The variable "total debt to asset ratio" shows a negative coefficient of 0.1088 in sensitivity (SEN), and significant at 1% level implying that where other predictor variables are held constant, a unit change in the total debt to total assets ratio will precipitate 0.10units decline of sensitivity.

Short term debt to total assets ratio shows a negative coefficient of 0.2252 in sensitivity and significant at 1%, implying that where other predictor variables are held constant, a unit change in the dividend payout ratio will precipitate a 0.23units decline of sensitivity.

Another explanatory variable "long term debt to assets ratio" shows a negative coefficient of 0.0563 in sensitivity and significant at 1%, implying that where other predictor variables are held constant, a unit change in selected banks' long term debt ratio will result to a 0.056units decline of sensitivity.

On the other hand, selected banks debt to equity ratio reveals a positive coefficient of 0.0865, and significant at 1% implying a unit increase in debt to equity ratio will result to about 0.087unit rise in sensitivity.

Table 4.12 Panel Data Regression Results (Random Effects)

Random-effects GLS regression Number of obs = 80

Group variable: countries Number of groups = 10

R-sq: within = 0.8135 Obs per group: min = 8

between = 0.6942 avg = 8.0

overall = 0.8020 max = 8

Wald chi2(4) = 141.77

corr(u_i, X) = 0 (assumed) Prob> chi2 = 0.0000

SEN	Coef	Std. Err.	Z	P>|z|	[95% Conf	Interval]
Tdta	-0.108825	0.0261507	-4.16	0.000	-0.1600794	-0.0575705
Sdta	-0.2252998	0.0759571	-2.97	0.003	-0.374173	-0.0764266
Ldta	-0.056307	0.0149541	-3.77	0.000	-0.0856166	-0.0269974
Der	0.0793506	0.0093721	8.47	0.000	0.0609817	0.0977195
Cons	0.0587527	0.0145227	4.05	0.000	0.0302888	0.0872166
sigma_u	0					
sigma_e	0.01172899					
Rho	0	(fraction of variance due to u_i)				

Source: Author's Computation, 2019

4.4 Discussion of Findings

From the findings, a capital structure proxy "Total Debt to Total Asset ratio" reported a negative relationship with selected banks financial health proxies (capital adequacy ratio, asset quality ratio, banks earnings, banks liquidity ratio and selected banks sensitivity) except liquidity ratio that recorded a positive relationship with total debt to total asset ratio. This is in tandem with the work of Abdul (2010) and Khalaf (2013) who found a

significance negative relationship between total debts to total assets ratio on the firm performance measured by Return on Assets (ROA) of 36 engineering firms in Pakistani market listed on the Karachi Stock Exchange (KSE) during the period 2003-2009. It contrarily agreed with the findings of Akinyomi (2013), who found a positive significant relationship between total debt to total assets ratio and Nigerian manufacturing firm return on assets. Perhaps the findings is agreed with a-priori Expectation which predicted a bi-directional relationship between total assets to total debt ratio and the financial health of selected deposit money banks in Nigeria

Another capital structure measure "short term debt to total assets ratio" has a significant negative effects on financial health proxies (capital adequacy ratio, asset quality ratio, sensitivity, banks earnings and selected banks liquidity ratio) except selected banks earning that has a positive relationship with selected deposit money banks financial health mearsures. The is in congruence with the studies of This is contrary to the findings of Kosmidou (2004), that reported positive relationship between long term leverage ratio and return on asset, but the finding is consistent with Onaolapo and Kajola (2015) submission who does their own in Nigeria context.

Long-term debt to total assets ratio reported a significant negative effect on selected deposit money banks proxies (capital adequacy ratio, asset quality ratio, sensitivity, banks earnings and selected banks liquidity ratio) but however showed positive effects on capital adequacy ratio and assets quality ratio. of Kanalous (2015) who found a positive relationship firm long term sustainability and Kenyan manufacturing firm profitability and but it is contrary to the results of Wiwattanakantang (1999) and De Schargrodsky (2002) who reported a negative relationship. But consistent with Moore (1986) findings.

Finally, “Debt to Equity Ratio (DER)” showed significant negative effect on the financial health measures of selected deposit money banks in Nigeria, which is partially consistent with theoretical expectation and contrary with the work of Alshati (2015) who found a positive relationship debt to equity ratio and bank profitability but it is consistent with the work of Rasheed (2012), Wiwattanakantang (1999), De Miguel and Pindado (2001), Schargrodsky (2002), Moore (1986) and Zabri (2012) who reported negatives relationship between debt to equity ratio and banks profitability.

Finally, the findings of this study is inline with the peckling order theory of capital structure as the result showed that firms prefer financing their operations from internally generated funds so as not to send negative signals that may lower the stock price of the firms.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

This study was conducted to investigate the impact of capital structure on financial health of listed deposit money banks in Nigeria. The study was divided into five chapters. The first chapter discussed the background issues, which led to developing three objectives, and formulating three hypotheses for the research with a scope covering eight (8) years, from 2010 to 2017. The review of conceptual literature and empirical studies on capital structure and financial health was carried out. Also, the concept and measurement of bank financial health was discussed as well as the review of the relationship between each of the proxies of the independent variables and the dependent variable. The theoretical framework that underpinned the study was also discussed.

Descriptive research design was used in measuring the relationship among the variables of the study. Data was collected from secondary source through the annual reports and accounts of 10 selected listed deposit money banks in Nigeria. Panel Data regression was used to analyzed the collected data.

The researcher used capital adequacy ratio, asset quality ratio, banks earning, liquidity and Sensitivity (CAELS) as the measure of banks financial health, while explanatory variables include total debt to total assets ratio, long term debt to total assets ratio, short-term debt to total assets ratio and debt to equity ratio which measured capital structure. The result of the descriptive statistics, correlation matrix and regression were presented, analyzed and discussed in chapter four.

The result reported a significant negative relationship in total debt to total assets ratio, long term debt and total assets ratio, market size except debt to equity ratio that reported

an insignificant negative relationship with bank financial health. The significant bi-directional relationship found between debt ratios (total debt to total assets ratio and long term debt to assets ratio) and banks financial health proxies this findings joined other numerous researchers like Babalola (2013), in validating the assumption of pecking order theory which argued that the more profitable the banks become, the lesser they borrow because they would have sufficient internal finance to undertake their investment projects.

5.2 Conclusion

Considering the data of 10 banks collated through secondary source this study empirically examined the impacts of capital structure on the financial health of listed deposit money bank in Nigeria. The results indicate that all capital structure variables, viz. TDTA, LTDTA, and DER, have significant inverse impacts on financial health proxies (capital adequacy ratio, asset quality ratio, banks earning, liquidity and the selected banks sensitivity), which concords with the observation made by Hasan *et al.* (2014); Salim and Yadav (2012). Furthermore, in contrary to agreement with Hasan *et al.* (2014); Salim and Yadav (2012), the results of this study suggest that SDTA have significant positive impacts on bank financial health measures "capital adequacy ratio, asset quality ratio, banks earnings, liquidity and selected banks sensitivity". These findings are in tandem with that of others (Chowdhury and Chowdhury 2010; Umar *et al*. 2012; Salteh *et al*. 2012; Arbabiyan and Safari (2009), who observed positive impacts.

We therefore, conclude that there are significant negative impacts of capital structure on the financial health of Nigerian banks. These negative impacts can be explained by the characteristics of an under developed bond and equity market in the developing countries like Nigeria, such as information asymmetry, strong covenants of debt and so on, for which there exists a high cost of debt.

5.3 Recommendations

From the above conclusion, the following recommend are suggested to help improve the capital market:

(i) Capital regulations should be ensured by the CBN to maintain a minimum level of equity per loans and other asset

(ii) Findings showed that asset quality is been affected by capital structure which necessitates the need for accurately estimates of asset quality and its impact on the overall condition of a firm because as asset quality goes up, benefit includes more liquidity, greater risk capacity and lower cost of funds which can lead to higher valuation level.

(iii) Financial managers should try to finance from retained earnings rather than relying heavily on debt capital in their capital structure. However, they can employ debt capital as the last resort.

(iv) With a goal of maximizing the performance of banks, the managers should make an effort to attain an optimal level of capital structure and endeavor to uphold it as much as possible. These negative impacts also suggest that the legislative rules and policies have to be designed in such a way to assist firms in sharply reducing the reliance on too much use of debt.

(v) Although we observed significant negative impacts of capital structure choice on the financial health of the sampled banks, this investigation still suffers from a comprehensive and systematic database for all banks in Nigeria. As more systematic datasets become available, we suggest that further research can be conducted on the same issue by employing data

from a larger sample and more control variables for a longer period to confirm our findings.

5.4. Contributions to Knowledge

The study examined the impact of capital structure on the financial health og deposit money bank in Nigeria. This section presents areas in which the present study contributes to capital structure literature.

From the empirical study, it was seen that various study has been conducted on the concept of capital structures with varying methods and approaches from different countries and sectors of different economies. Within the scope of the researcher, this is the first study to examine the effect of capital structure on financial health using the CAELS which is a bridge in gap in literature. The CAELS approach is the Nigeria deposit insurance corporation rating to promote the safety and soundness of financial institution through on-going evaluation and monitoring, including the assessment of risk management system, financial conditions and compliance with laws and regulations.

5.5 Limitation and Delimitation of the study

The main objective of the study is to examine the impact of capital structure on the financial health of deposit money banks in Nigeria . This study is however limited to 10 deposit money banks from the period of 2010 to 2017. The banks were selected based on 2017 fitch rating of top 10 viable banks in Nigeria. Also, the banks hold the largest portion of financial asset in the economy. Some of the variables employed in the study have alternative ways of measurement which may give rise to different results.

5.6 Suggestions for further studies

The effect of capital structure on banks financial health is extensive. Thus, it is impossible to exhaustively study the subject in a single report. Consequently, even after this effort, there are still numerous areas that are open for study. In addition, the findings of this study imply areas that need further study.

The scope of this study covers the operations of only 10 deposit money banks in Nigeria for the period of ten (10) years. Giving enough time and resources it is possible to attempt to study the entire banks' or other sectors like manufacturing companies in Nigeria over a long period of time and using different statistical methods in order to have a more comprehensive result.

From the findings this study shows that there are other 20% at average, unconsidered variables than the independent variables used for this study that affect bank profitability evidenced by the average R-square value of 80%. Research could be conducted to identify those other factors so as to enhance the profit generating capabilities of the banks'.

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