

**FINANCIAL LEVERAGE AND PROFITABILITY PERFORMANCE OF  
FINANCIAL INSTITUTIONS IN NIGERIA**

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**Abstract**

*In recent times, the financial institutions in Nigeria have been experiencing failures and liquidation and this has been implicitly attributed to improper management decision on capital structure. The study therefore sets out to examine the nexus between financial leverage and financial performance of financial institutions in Nigeria with specific reference to selected Deposit Money Banks in Nigeria, spanning for the period 2005 to 2017, using debt- equity ratio (DER), debt ratio (DR) as indicators for financial leverage and return on equity (ROE) as proxy for profitability performance, and size of the institution (proxies by total assets) are used as control variable Data is sourced from annual financial statement of accounts of the selected banks, The result from the correlation analysis and OLS regression reveal that there is significant negative relationship between ROE and debt- equity ratio.. The findings also indicate that the relationship between ROE and debt ratio, is also negative but insignificant while that of size, proxies by total assets of the selected banks, is significantly positive. . Furthermore, findings from the descriptive analysis show that about 84% of total assets of deposit money banks in Nigeria are financed by debt. Overall, the findings confirm that DMB in Nigeria are highly levered.. The study recommends among others that an appropriate debt- equity mix should be adopted by DMBs in addition to increasing their asset position to enable them improve their financial performance, survive failures and remain competitive within the industry.*

**Keywords:** *Financial Leverage, Financial Performance, Debt equity ratio, Debt ratio, Return on equity and Deposit Money Banks..*

## **Introduction**

Financing decision is one of the fundamental functions of corporate decision making and capital structure is one of this most puzzling issues in corporate finance literature. The concept of capital structure is generally described as the proportion of long-term debt and equity that make up the total capital of a firm which is described as financial leverage. The proportion of debt and equity is a strategic choice of corporate managers (Velnampy & Niresh, 2012). Similarly, the capital structure decision is a significant managerial decision because it influences the shareholder's wealth and risk (Pandey, 2010). Consequently, the market value of a firm may be affected by the capital structure decision, and the company will have to plan its capital structure effectively at the time of its inception. Subsequently, whenever funds have to be raised to finance investments, a capital structure decision is involved (Pandey, 2010).

A company can finance its investments by debt and equity, and a company may also use preference shares. The ratio of the fixed-charge sources of funds, such as debt and preference shares to owners' equity in the capital structure is described as financial leverage or gearing (Pandey, 2010). The other alternative term 'trading on equity' is derived from the fact that it is the owners' equity that is used as a basis to raise debt. The supplier of debt (lender) has limited participation in the sharing of company's profits and therefore, may impose certain restrictions (protective covenants) on the firm (Waterman, 1953). Such restrictions include provision relating to collateral, sinking funds, dividend policy and further borrowing. The issuing firm agrees to these so-called protective covenants in order to market its bonds to investors (Bodie, Kane & Marcus, 2004). Financial leverage decision is a vital one since the performance of a firm is directly affected by such decision; hence, financial managers should trade with caution when taking debt-equity mix decision.

The theory of financial leverage and its relationship with firms' performance has been an issue of great concern in corporate finance and accounting literature since the seminal work of Modigliani and Miller in 1958 ( Al-Taani, (2013); It has been argued that their managerial financing decision has not been properly taken with caution. Mohammed, (2010); and Ogebe & Alewi, (2013) are of the view that the debt- to-equity ratio irrelevance for firm value theory of the Modigliani and Miller (1958) is hardly realistic since they considered the assumptions of perfect markets, with no taxes, absence of transaction and bankruptcy costs. Even though Modigliani and Miller (1963) later relaxed a no-tax assumption and developed a theory about tax benefits of debt, the theory still gave rise to a serious academic discussion on the theory of capital structure (Iavorskyi, 2013). There are two main benefits of debt for a company. The first one is tax shield, interest payments usually are not taxable; hence the debt can increase the value of a firm. Second benefit is that debt disciplines managers (Jensen, 1986). Managers use free cash flows of the company to invest in projects to pay dividends, or to hold-on cash balance. But if the firm is not committed to some fixed payments such as interest expenses, managers could have incentives to "waste" excess free cash flows. That is why in order to discipline managers, shareholders attract debt. It has been argued that profitable

firms were less likely to depend on debt in their capital structure than less profitable ones, and that firms with high growth rates have high debt to equity ratios (Akintoye, 2008; Harris & Raviv, 1991; Krishnan & Moyer, 1997; Tian & Zeitun, 2007). Does it then mean that a firm should go on increasing the debt proportion in its capital structure? If every increase in debt financing were going to increase the earnings for the shareholders, then every firm would have been 100% debt financed. However, there are certain costs associated with debt financing. So, between the two extremes of whole equity financing and whole debt financing, a particular debt-equity mix (financial leverage) is to be decided. Therefore, a financial leverage decision should be designed in such a way that it maximizes shareholders return and minimizes risk.

Similarly, since the value of a firm is directly related to its performance, financial experts study the relationship between leverage and firm performance in order to validate Jensen's (1986) theory. However, empirical studies have not reached a consensus about the relationship between leverage and firms' performance. This study is therefore, an attempt to contribute to the empirical studies by investigating the relationship between financial leverage and financial performance using selected Deposit Money Banks in Nigeria.

### **Statement of the Research Problem**

Recently DMBs in Nigeria have been experiencing failures and liquidations despite their recapitalization from two billion Naira to twenty-five billion Naira in 2005 and subsequent introduction of the international reporting financial accounting standard. in 2012. There are some implicit belief that the management might have not been taking proper finance decision concerning their capital structure. This belief has necessitated this study to empirically confirm the effect of leverage on the financial performance of the DMBs in Nigeria

In addition, many studies have been carried out on financial leverage and its effect on firms' performance. However, these studies have failed to reach an agreement that is applicable to firms in all circumstance. (Al-Tally, 2013). Myers (2001) argued that that there is no complete theory of the debt-equity choice and no reason to expect one. Additionally, Brealey and Myers (1991) identified financial leverage as one of the major unresolved problems in corporate finance.

Furthermore, some findings in empirical studies have revealed that consensus have not been reached on the relationship between financial leverage and financial performance. Many researchers like Al-Taani, 2013; Al-tally, 2014; Arowoshegbe & Emeni, 2014; Chinaemerem & Anthony, 2012; Majumdar & Chhibber, 1999; Ogebe et al., 2013; Onaolapo & Kajola, (2010) are of the view that there exist negative relationships, while others like Akhtar, Maryam & Sadia, 2012; Berger & Bonaccorsi di Patti, 2006; Fosu, 2013; Gweji & Karanja, 2014; Ojo, 2012; Rehman, 2013) found a significant positive relationship between financial leverage and financial performance.

Consequently, it could be deduced from the above reviews of empirical literature that the findings from the investigations on relationship between financial leverage and financial

performance are inconclusive and requires more empirical studies. Firm aspiring to grow and also wishes to sustain its survival should take a proper decision of the proportion of debt and equity that will constitute their capital structure in order to maximize shareholders' wealth, hence the need for this study.

In addition, most of the researches on financial leverage have been conducted in the advanced countries' using non-financial quoted companies. This study is an attempt to fill this gap in knowledge; and as such, the main objective of this research is to examine the relationship between financial leverage and financial performance of financial institutions in Nigeria with specific reference to selected Deposit Money Banks in Nigeria.

### **Objectives of the Study**

The general objective of this study is to investigate the impact of financial leverage on financial performance of financial institutions in Nigeria with specific reference to selected deposit money banks in Nigeria.

The specific objectives are:

- i. To examine the relationship between financial performance and financial leverage proxies by debt-equity ratio of selected Deposit Money Banks in Nigeria using ROE as proxy for financial performance.
- ii. To examine the relationship between financial performance (ROE) and financial leverage proxies by debt ratio of selected deposit money banks in Nigeria.
- iii. To examine the relationship between the Size of the selected banks proxies by total assets of the selected banks (control variable) and the financial performance (ROE) of the selected DMBs in Nigeria

### **Research Hypotheses**

The following hypotheses were tested in order to achieve the above objectives

H01: There is no significant relationship between financial leverage (proxies by debt-equity ratio) and financial performance (proxies by Return on Equity (ROE) of selected DMBs in Nigeria.

H02: There is no significant relationship between financial leverage (proxies by debt ratio) and financial performance proxies by ROE of selected DMBs in Nigeria.

H03 There is no significant relationship between the size of the bank proxies by total asset of the selected DMBs in Nigeria. and financial performance proxies by ROE of selected DMBs in Nigeria.

## **2.00 REVIEW OF RELATED LITERATURE**

This section covers the related conceptual, theoretical and empirical studies on the study of the nexus between financial leverage and financial performance of financial institutions with specific reference to Deposit Money Banks and other firms.

### **Concept of Financial Leverage**

Financial leverage is a measure of how much firm uses equity and debt to finance its assets. As debt increases, financial leverage increases. Management tends to prefer equity financing over debt since it carries less risk (Matt, 2000). Financial leverage takes the form of a loan or other borrowing (debt), the proceeds of which are re-invested with the intent to earn a greater rate of return than cost of interest. An unlevered firm is an all-equity firm, whereas a levered firm is made up of ownership equity and debt (Andy, Chuck & Alison, 2002). Leverage allows a greater potential returns to the investor than otherwise would have been available, but the potential loss is also greater if the investment becomes worthless, the loan principal and all accrued interest on the loan still need to be repaid (Andy et. al., 2002).

Similarly, Pandey (2010) assert that the financial leverage employed by a company is intended to earn more return on the fixed-charge funds than their costs. The surplus (or deficit) will increase (or decrease) the return on the owners' equity. The rate of return on the owners' equity is levered above or below the rate of return on total assets. Thus, financial leverage is considered as a double-edged sword because it provides the potentials of increasing the shareholders' earnings as well as creating the risks of loss to them.

### **Financial Leverage Propositions**

There are broadly two schools of thought that gave birth to capital structure theory. The first school believes that the cost of capital is determined by the composition of the capital structure of a firm. The suggestion is that an optimal capital structure will occur at a level where the overall cost of capital is lowest; hence the overall capital structure in a firm would contribute to its market value. This is known as the relevance of capital structure which comprises the net income approach and the traditional view. According to the net income approach, a firm can increase its value or lower the overall cost of capital by increasing the proportion of debt in the capital structure. The net income (NI) approach is based on the assumptions that (i) the equity capitalization rate and debt capitalization rate remain constant with changes in leverage, and (ii) the equity capitalization rate is greater than debt capitalization (Kurfi, 2003). Since equity capitalization rate and debt capitalization rate are constant and debt capitalization rate is lower than equity capitalization rate, increased use of debt will increase the shareholders' earnings, and that will result in higher value of the firm because of the higher value of equity. The resultant effect will lower the overall, or the weighted average cost of capital. Similarly, the traditional view has emerged as a compromise to the extreme position taken by the NI approach (Solomon, 1963). Like the NI approach, it does not assume constant cost of equity with financial leverage and continuously declining weighted average cost of capital (WACC). According to this view, a judicious mix of debt and

equity capital can increase the value of the firm by reducing the WACC up to certain level of debt. This suggests clearly that WACC decreases only within reasonable limit of financial leverage and after reaching the minimum level, it starts increasing with financial leverage. Hence a firm has an optimum capital structure that occur when WACC is minimum, and thereby maximizing the value of the firm. The traditional theory assumed that at moderate level of leverage, the increase in the cost of equity is more than offset by the lower cost of debt. The assertion that debt funds are cheaper than equity funds carries the clear implication that the cost of debt plus the increased cost of equity, together on a weighted basis, will be less than the cost of equity that existed on the equity before debt financing (Barges, 1963).

Additionally, Solomon (1963) maintain that the traditional theory on the relationship between capital structure and the firm value has three stages. In the first stage, the cost of equity, the rate at which the shareholders capitalize their net income, either remains constant or rises slightly with debt. The cost of equity does not increase fast enough to offset the advantages of low-cost debt. During this stage, the cost of debt remains constant since the market views the use of debt as a reasonable policy. As a result the overall cost decreases with increasing leverage, and thus, the total value of the firm, also increases. In the second stage, once the firm has reached a certain degree of leverage, any subsequent increases in leverage have a negligible effect on WACC and hence, on the value of the firm. This is so because the increase in the cost of equity due to the added financial risk just offsets the advantage of low-cost debt. Within that range or at the specific point, WACC will be at minimum, and the maximum value of the firm will be achieved. In the third and final stage, beyond the acceptable limit of leverage, the value of the firm decreases with leverage as WACC increases with leverage. This is so because investors perceive a high degree of financial risk and demand a higher equity-capitalization rate, which exceeds the advantage of lower-cost of debt. The overall effect of these three stages is to suggest that the cost of capital (WACC) is a function of leverage. It first declines with leverage and after reaching a minimum point or range, starts rising.

However, the traditional view suffered from the following criticisms: the traditional theory implies that investors valued levered firms more than unlevered firms. This means that they pay a premium for the shares of levered firms. The claim of the traditional theory, that moderate amount of debt in 'sound' firms does not really add very much to the 'riskiness' of the shares, is an easy one to challenge. There is no existence of sufficient justification for the assumption that investors' perception about of risk of leverage is different at different levels of leverage (Pandey, 2010).

The second school, acting on the assumptions of a perfect market 'ideal world', believes that the composition of firms' financing mix does not affect the cost of their capital. Hence, the costs of capital are the same irrespective of the composition, so capital structure would be irrelevant in the valuation of a company. The major actors of this school are Modigliani and Miller (1958) who argued that the composition of the capital structure is an irrelevant factor in the market valuation of a firm. They introduce a

behavioural dimension into the capital structure debate which is based on seven assumptions. These are first, there are no corporate or personal taxes; hence the impact of tax shields associated with debt is the same; second, there are no bankruptcy cost, therefore the assets of a bankrupt company can be sold at their economic value without incurring any liquidating and legal expenses; this statement eliminates any bias in favour of an unlevered (firm with zero debt) firm due to the existence of bankruptcy

costs; third, the firm is allowed to issue and repurchase any amount of debt or equity and these transactions can be executed instantly without any time lag, thus implying that securities are infinitely divisible; fourth, the composition of capital structure can be changed without any transaction costs like issue expenses and underpricing; fifth, the firm consistently follows the policy of 100 percent dividend pay-out, therefore the possible impact of dividend policy on the valuation of the firm is eliminated; sixth, that all investors in the market have the same expectations (homogenous) of the expected future earnings of all the firms, consequently, the expected value of the subjective probability distributions of the anticipated future earnings (operating income) is identical for all the investors and seventh, the operating earnings of the firm are expected to remain constant for all future periods. Hence there is neither any growth nor decline in expected future earnings. However, these assumptions were later modified and relaxed (Mohammed, 2010).

### **Firm Size**

The size of the organization affects both the profitability and liquidity of firms. Broader market share and likely higher profitability is acquired by larger firms which makes them possess more competitive power in contrast to small firms. Moreover, larger firms have better opportunities to work in the fields, that seek high capital requirements as they have huge resources. This scenario provides the chance for them to work in higher profit environments with less competition (Nawaiseh, 2015). Smaller organizations have high liquid assets and are thought more profitable than larger organizations in the short term. Equally, bigger organizations are more profitable especially those with illiquid assets than smaller firms assumed longer durations (Al-Tally, 2014). Smaller organizations have a higher probability of bankruptcy since they are more diversified as compared to smaller firms. Thus, larger firms take up more debt due to a lower level of bankruptcy costs. Bigger organizations can minimize information asymmetry in the market and acquire financial resources efficiently. They can also access debt easily when good risk profiles are maintained as opposed to small organizations due to stability (Padron et al., 2005).

### **Trade-off theory**

The Trade off 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)

### **Pecking Order Theory**

The pecking order theory as developed by Myers(1984) stated that firms prefer internal sources of finance; they adapt their target dividend payout ratios to their investment opportunities although dividends and payout ratios are gradually adjusted to shifts in the extent of valuable investment opportunities. In addition, Myers(1984) stated that in the event that external finance is required, firms are most likely to issue the safest security first that is to say ,they start with debt then possibly convertible debt then equity comes as last resort. In summary, Myers' argument was such that businesses adhere to a hierarchy of financing sources and prefer internal financing when available. Should external financing be required,debt would be preferred over equity. Pandey(2005),also concurred with Myers' argument when he noted that managers always preferred to use internal finance and would only resort to issuing shares as a last resort. He went on to add that the pecking order theory was able to explain the negative inverse relationship between profitability and debt ratio within an industry .However; the theory did not fully explain the capital structure differences between industries. Scherr et al (1993); Holmes et al(1991) and Quan (2002) considered the pecking order theory as an appropriate description of Medium Sized Enterprises' financing practices because debt is by far the largest source of financing and that small and medium enterprise managers tend to be owners of the business who do not normally want to dilute their ownership. In addition, they concurred that firms consequently tend to prefer internal financing to external financing of any sort and if they must obtain external funding, they have a preference of debt over equity.

### **Review of Empirical Studies**

There have been many scholarly empirical researches on this topic with varied results; but few are going to be discussed. The reviews of theoretical literatures on financial leverage provide different views on the relationship between financial leverage and financial performance. While some theories predict positive relationship between leverage and firm's performance, others predict negative relationship and MM proposition predicts the irrelevance of debt-equity choice on the value of a firm. This section is therefore reviews empirical studies on financial leverage and firms' performance conducted worldwide in order to validate theoretical predictions.

Matemilola, Bany-Ariffin and Azman-Saini (2013) examined the effect of leverage and managerial skills on returns for shareholders. The study used the fixed effects model and multiple linear regression to analyze data collected. Regression analysis results established that leverage had a positive relationship with shareholders' return. Moreover, it was established that managerial skills had a positive relationship with shareholders' return. The study concluded that leverage and managerial skills may be priced in equity valuation.

Enekwe, Agu & Eziedo (2014) explored effect of financial leverage on financial performance of Nigeria pharmaceutical companies. The study used secondary data for the year 2001 to 2012 a sample of three companies. The study employed Pearson correlation and regressions models to analyze data collected. It was established that both debt ratio



and debt-equity ratio had a negative relation with profitability when measured using ROA. The study also found that the ratio on interest coverage had a positive relation with profitability of pharmaceutical companies in Nigeria. However, the study revealed that debt to equity ratio, debt ratio and interest coverage ratio had insignificant impact on profitability of the pharmaceutical industry in Nigeria.

Mathew (2016) conducted a study on the impact of capital structure on financial performance of selected commercial banks in Ethiopia over the past five (5) year period from 2011 to 2015 using secondary data collected from financial statements of the commercial banks. Data was then analyzed on quantitative approach using multiple regression models. The study used two accounting-based measures of financial performance (i.e. 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 whereas DR have negative impact.

Ubesie (2016) did a study on effect of Nigerian banks' capital structure on the performance of conglomerates quoted on the floor of the Nigerian stock exchange from 2011 to 2015. The paper identified four levels of dependent variables such as return on assets, ratio (ROA), return on equity ratio (ROE), assets turnover ratio (AT) and earnings per share whereas the independent variable is financial leverage. Essentially the paper sets out to determine the effect of capital structure on the above dependable variables hence return on assets of quoted conglomerates, return on equity of quoted conglomerates, asset turnover of the quoted conglomerates and on the earnings per share of quoted conglomerates. Descriptive statistics and the pooled ordinary least square (OLS) regression analytical method were used for data analysis. The study finds that capital structure has effect on both return on assets and asset turnover of the conglomerates but no effect on return on equity and earnings per share of the conglomerate. It is then concluded that an in-depth analysis of business factors which affect a particular industry should be considered so as to obtain the benefits of the debt-equity mix. The result of the study is in agreement with most previous studies on other sectors that discovered mixed results on the effect of capital structure on financial performance.

Mwangi, Makau and Kosimbei (2014) studied the relationship between capital structure and performance of 42 non-financial companies listed in the Nairobi Securities Exchange, Kenya. The study used secondary panel data from the annual reports and financial statements of the sampled listed firms, and employs panel data models (random effects) and feasible generalized least square (FGLS). The results show that financial leverage is statistically negatively related to performance measured by return on assets and return on equity.

Innocent, Ikechukwu and Nnagbogu (2014) conduct a research on the effect of financial leverage on financial performance: evidence from quoted pharmaceutical companies in Nigeria for the period 2001- 2012. They used debt ratio (DR), debt-equity ratio (DER), and interest coverage ratio (ICR) proxies for financial leverage (independent variable) while ROA was used as proxy for financial performance (dependent variable). The study used secondary data sourced from financial statements of 3 pharmaceutical companies quoted on the Nigerian Stock Exchange. Descriptive statistics, Pearson correlation and multiple regressions were applied in the study to establish the relationship between financial leverage indicators and financial performance measure ROA. The results showed that debt ratio and debt-equity ratio have negative but insignificant relationship with ROA, while interest coverage ratio has a positive relationship with ROA.

Berger and Bonaccorsi di Patti (2006) tested the agency theory of capital structure on the United States banking industry using parametric measure of profit efficiency as indicator to measure agency costs. The study employs the use of two-equation: simultaneous equations and econometric technique to show that bilateral causality exist between financial performance and capital structure, using annual data from United States commercial banks to test for agency theory for the period 1990 – 1995. The study established that there is bilateral causality runs from performance to capital structure and that data on the United States banking industry are consistent with the agency theory of capital structure. , The study confirmed that higher leverage positively relates to firm financial performance.

Maina and Kondongo (2013) in an attempt to validate Modigliani and Miller (1963) theory in Kenya, examined the effects of debt-equity ratio on performance of firms listed at the Nairobi Securities Exchange for the period 2002- 2011. The study finds that firms listed at Nairobi Securities Exchange rely more on short term debt. The result also reveals that significant negative relationship exists between debt-equity ratio and all measures of performance. The result also supports MM theory that capital structure is relevant in determining the performance of a firm.

Ebaid (2009) studied the effect of choice of capital structure on the performance of firms in Egypt. using ROE, ROA, and gross profit margin as proxies for financial performance while financial leverage was measured using short-term debt to asset ratio, long-term debt to asset ratio, and total debt to total assets. Multiple regression technique was applied to determine the relationship between the leverage and performance. The findings show thaleverage has no effect on a firm's performance.

Maroko (2014) examined the influence of capital structure on organizational financial performance of firms listed in Nairobi Securities Exchange. The study employs secondary data sourced from financial statements of sampled listed firms', which were selected using stratified random sampling technique. Multiple regression technique was used to explain the relationship between financial leverage, cost of equity, debt interest service and organization financial performance. The findings showed that positive

relationship exist between financial leverage, indicators proxies by cost of equity, debt interest and organization financial performance.

Gweji and Karanja (2014) examined the effect of financial leverage on firm performance of deposit taking savings and credit co-operative in Kenya, using secondary data sourced from financial statements of 40 savings and credit co-operative societies (SCCOS) sampled for the study from 2000 to 2012. Descriptive and analytical designs were both adopted. The result show perfect positive correlation between financial leverage proxies by debt-equity ratio with ROE and profit after tax at 99% confidence interval, and a weak positive correlation between debt-equity ratio with ROA and income growth.

Thaddeus and Chigbu (2012) studied the effect of financial leverage on bank performance using 6 banks from Nigeria. The study utilized secondary data from Nigerian Stock Exchange fact book and the financial statements of the sampled banks. Debt-equity and coverage ratios were taken as proxies for financial leverage, while earning per share (EPS) was proxy for performance indicator. Multiple regression technique was used to establish whether relationship exist between financial leverage and performance of sampled banks. The findings show mixed results. While some banks report positive relationship between leverage and performance, others revealed negative relationship between leverage and performance.

Laurent (2002) studied the relationship between leverage and corporate performance in France, Germany and Italy. The multiple regression technique was adopted on the study variables (leverage, tangibility, short-term liabilities, inventory and size). The study found mixed evidence depending on the country; while negative relationship was reported in Italy, the relationship between leverage and corporate performance is significantly positive in France and Germany.

Akhtar et al. (2012) examined the relationship between financial leverage and financial performance using the Fuel and Energy Sector of Pakistan. The findings showed a positive relationship between financial leverage and financial performance of the companies . This confirms that may improve their financial performance by having high levels of financial leverage. if a vital decision on capital mix is used.

Akande (2013) apply the Ordinary Least Square (OLS) regression analysis on panel data collected from financial statements of 10 Nigerian firms over 20 years from 1991- 2010. ROA, ROE, EPS and DPS on one hand and DC (total debts to capital employed) on the other hand, were surrogated for firm's performance and debt financing respectively. The findings show that positive relationships exist between DC and ROE, EPS and DPS, while negative relationship exists between DC and ROA. The study therefore, concluded that financial leverage will considerably impact on firm performance.

Chinaemerem and Anthony (2012) studied the impact of capital structure on financial performance of Nigerian firms using a sample of 30 non-financial quoted companies on the Nigerian Stock Exchange (NSE) for a period of 7 years from 2004- 2010. Panel data

for the selected companies were generated and analyzed using ordinary least squares (OLS) method of estimation. The results show that a firm's capital structure surrogated by debt ratio has a significantly negative relationship with the firm's financial performance surrogated by ROA and ROE. This finding provides evidence in support of agency cost theory.

Leon (2013) investigate the impact of capital structure on financial performance of 30 listed manufacturing firms in Sri Lanka for a period of 5 years from 2008- 2012. The study used correlation and regression techniques in the analysis of data using statistical package for social sciences (SPSS). The results show on one hand, that there was a significant negative relationship between leverage and return on equity, and on the other hand, there was no significant relationship between leverage and return on assets.

Rehman (2013) investigate the relationship between financial leverage and financial performance of 35 listed sugar companies in Pakistan for a period of 6 years from 2006-2011. Correlation technique was used by taking financial leverage proxy by debt-equity ratio as independent variable and financial performance surrogated by EPS, NPM, ROA, ROE and sales growth as dependent variables. The results show that financial leverage has a positive relationship with ROA and sales growth, and negative relationship with EPS, NPM and ROE.

Yoon and Jang (2005) examined the relationship between return on equity (ROE), and financial leverage and size of 62 restaurant firms in US for the period 1998 to 2003 using ordinary least squares (OLS) regressions. Results show that high leveraged firms were less risky in both market and accounting-based performance measures. The findings also show positive relationship between financial leverage and both measures of performance. Additionally, the results further indicate that firm size had a more dominant effect on ROE than debt, and regardless of the level of leverage, smaller firms were relatively more risky than larger firms.

Evidence from the review of above empirical studies show that most of the studies have been carried out on non-financial companies and there is no consensus on the relationship between financial leverage and financial performance. The motive for further research is needed to establish more authentic relationship. This study therefore examines empirical evidence for existing financial leverage theories and contribute to existing body of knowledge by investigating the relationship between financial leverage and financial performance of selected DMBs in Nigeria.

### **3. METHOD**

This section describes the empirical methods used for the study which includes descriptive, correlation analysis and Ordinary Least Square multiple regression. The population, sample technique and sample size, and the analytical frameworks are also discussed in this section

### **Population, Sample Technique and Sample Size**

The population of this study consists of all the twenty one (21) Deposit money banks in Nigeria as at 31<sup>st</sup> December, 2017, with Tier 1, Tier 2 and Tier 3 representing international, national and regional authorized banks respectively. The sampling technique was restricted to only selected DMBs in Nigeria as at 31<sup>st</sup> December 2017 with international authorization.

This study covers the period of 13 years from 2005 to 2017 which covers the period in which banks in Nigeria were mandated to recapitalize from ₦2 billion to ₦25 billion in 2005 and also incorporating the year 2012 when Nigeria adopted International Financial Reporting Standards (IFRS). The reason for choosing this time horizon is to assess the post consolidation era and IFRS achievement since it was believed that capital inadequacy was responsible for banks failures.. The following selected DMBs in Nigeria that have been in existence as at 31<sup>st</sup> December 2017 as listed below were used for the study.

1. First bank of Nigeria Limited.
2. First City Monument Bank Plc
3. United Bank for Africa Plc.
4. Guaranty Trust Bank Plc.
5. Zenith Bank Plc.
6. Access Bank Plc
7. Fidelity Bank Plc
8. Union Bank of Nigeria Plc

### **Data Sources**

This study used secondary data obtained from annual reports and financial statements of sampled Deposit Money Banks in Nigeria.. Data on debt-equity ratio, debt ratio, size and return on equity were computed for the period 2005- 2017 using the annual reports and financial Statements of the selected banks.

### **Variables Measurement**

This study adopted financial ratios - debt-equity ratio and debt ratio as proxies for financial leverage while return on equity (ROE) which is accounting measure is used as proxy for financial performance. The control variable is size of the bank ( proxies by total assets of the selected banks) These variables were also applied by some of the selected previous empirical studies like Akande, 2013; Chinaemerem & Anthony, 2012; Gweji & Karanja, 2014; Innocent et al., 2013, Leon, 2013; Maina & Kondongo, 2013; Muritala, 2012; Onaolapo & Kajola, 2010;). The Table 1 below presents the computation of the proxies for variables used for the study and their measurements.

**Table 1. Summary of Measurement of Variables used for the Study**

Variables	Measurements and Description
Return on Equity (ROE)	Profit after tax divided by Total Shareholders' Equity
Debt - Equity ratio (DER)	Total Liabilities divided by total shareholders' Equity
Debt ratio (DR)	Total Liabilities divided by Total Assets
Bank Size (BS)	Total Bank Assets (Control variable)

**Method of Data Analysis**

Descriptive, Correlation analysis and Ordinary Least Square multiple regression were applied to describe and assess the relationship between financial leverage and financial performance of selected Deposit Money Banks in Nigeria respectively. Financial performance proxies by Return on Equity (ROE) is the dependent variable and financial leverage proxies by Debt equity ratio and debt ratio, in addition to size of the banks, are the independent variables

**Analytical Framework**

The functional and mathematical relationship between the dependent variable ( Return on Equity) and independent variables ( debt to equity ratio, debt ratio, and size of the selected banks ) are expressed as follows, and Incorporating the control variables and the specific proxies:

$$\text{Functionally, ROE} = f(\text{DER, DR, SB,}) \dots\dots\dots (1)$$

where:

ROE = Return on Equity,

DER = Debt Equity Ratio,

DR = Debt Ratio and

SB = Size of the selected DMBs proxies by total assets of the selected banks.

The ROE is the dependent variable while SB, DER, DR are the explanatory or the independent variables which are the leverage indicators

From the above equation, it is clear that the relationship between the output (dependent variable) and the inputs (explanatory variables) can be expressed in a linear and estimable form as.

mathematically:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots \beta_i X_i + u_i \dots\dots\dots (2)$$

$$\text{ROE}_i = \beta_0 + \beta_1 \text{DER}_{1i} + \beta_2 \text{DR}_{2i} + \beta_i \text{SB}_i + u_i \dots\dots\dots (3)$$

representing the coefficients of the independent variables - DER,, DR and SB) while Y represents the dependent variable ROE,  $u_i$  is the error term, The sum of the parameters gives information about the to scale, that is, the response of output to a proportionate change in the inputs. Therefore, the coefficient of each of the inputs X or the explanatory variables, measures the (partial) elasticity of the dependent variable or Y output,(ROE) with respect to that variable. Each of the (partial) regression coefficient,  $\beta_1$  through  $\beta_i$ , is the (partial) elasticity of the dependent variable Y or ROE with respect to explanatory variables  $X_1$  through  $X_i$ , (Gujarati and Porters, 2009).

**4. EMPIRICAL RESULTS AND ANALYSIS**

This section presents the data and analysis of the findings based on the descriptive statistics, correlation matrix and regression analysis

**4.1 Descriptive Statistics**

Table 2: Summary of the Descriptive Statistics

	No. of Observations	Minimum	Maximum	Mean	Std Deviation
Debt Equity Ratio	13	3.886217	23.518641	7.96879121	6.027682431
Return on Equity	13	-0.213588	0.225355	0.3634578	0,130167302
Debt Ratio	13	0.793818	0.868228	0.84114564	0.0288424
Size of Bank	13	12.1613	21.8794	16.002871	1.8716411

Source: Computer Software Package E-view Version 6

Table 2 shows the description of Nigerian deposit money banks data set for the period 2005 - 2013, in terms of minimum value, maximum value, mean and standard deviation. The descriptive statistics show that during the period under review, debt-equity ratio and debt-ratio as measures of financial leverage are averaged 796.87% and 84% respectively.

This indicates that few banks are lowly levered while majority of the banks are highly levered. The debt-ratio reveals that in an average, 84% of Nigerian deposit money banks’ total assets are financed by debt. This further portrayed that banks are highly leveraged financial institutions. The minimum and maximum values for debt-equity ratio are 388.6% and 2351.86% respectively. This indicates a very highly significant variation in debt-equity composition of DMBs sampled for this study.

In addition, the descriptive analysis also show that the return on equity (ROE) as measure of financial performance is averaged 3.63%. This very low percentage signifies that shareholders are receiving very low value for their investments in terms of equity. The minimum and maximum values for ROE are -21.35% and 22.53% respectively. This shows that while some banks are recording a negative return on equity, others are generating about 23% on equity which is still low. This result should not be surprising, considering the composition of the banks that make up the sample. have different asset base which varies significantly in terms of their volume of transactions, staff strength,, branch network and coverage among others.

**Table 3 Correlation Analysis**

	Debt-Equity Ratio	Debt Ratio	Size of Bank	Return on Equity	No. of observations
Debt Equity Ratio	1	0.501	0.187	-0.720	13
Debt Ratio	0.501	1	0.177	-0.424	13
Size of Bank	0.187	0.177	1	0.221	13
Return on Equity	0.720	0.424	0.221	1	12

Correlation is significant at the 0.05 level (2-tailed).

**4.2 Correlation Results and Analysis**

Table 3 shows the degree of relationship between financial leverage proxies by debt-equity ratio and debt ratio, and financial performance proxy by return on equity (ROE). The results revealed that a negative relationship exists between financial performance, and leverage ratios (debt-equity ratio, debt ratio) but that of debt ratio is not significant at 0.05 level of significance. The relationship between size proxies by total assets of the



banks and financial performance (ROE) is positive but negative with leverage ratios indicating that increase in debt reduces assets value. ROE, DER, DR and SB has 1 each indicating perfect correlation with itself each.

### **OLS Regression Result**

**Table 4.5**

Dependent Variable: ROE  
 Method: Panel Least Squares  
 Date: 06/30/19 Time: 11:25  
 Sample: 2005 2017  
 Periods included: 13  
 Cross-sections included: 7  
 Total panel (unbalanced) observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.282564	0.676527	1.895805	0.0542
DR	-0.036021	0.035541	-1.013519	0.3242
SB	0.043462	0.015282	2.843999	0.0034
DER	-0.218925	0.073762	-2.967989	0.0082
R-squared	0.534708	Mean dependent var		0.183011
Adjusted R-squared	0.433572	S.D. dependent var		0.130350
S.E. of regression	0.098103	Akaike info criterion		-1.593277
Sum squared resid	0.173236	Schwarz criterion		-1.298764
Log likelihood	25.11933	Hannan-Quinn criter.		-1.515143
F-statistic	4.521061	Durbin-Watson stat		1.758029
Prob(F-statistic)	0.007610			

Source: E-view Software package version 6

### **Analysis of the OLS Result**

Table 4.5 shows that the coefficient of determination (R-squared) implies that 53.4 per cent of the variations in Return on Equity (ROE) are explained by collective variations in explanatory variables. This is a low explanatory power and therefore implies that about

47% of some other factors are responsible for the variations in ROE.. The F-statistic value of 4.52 with probability (0.007) show that this relationship of the independent variables with ROE collectively is significant at more than 5 per cent level. The D.W statistics of 1.75 indicates inconclusive absence or presence of autocorrelation in relation to the number of parameters used. Overall, the relationship between ROE and DER is negatively and significantly related while the Size proxies by total assets is positively and significantly related. However debt ratio is positively related to ROE but it is not significant. Overall, the implication is that financial leverage has negative influence on financial performance of DMBs in Nigeria while size influences their performance positively. This goes further to confirm that Deposit Money Banks inn Nigeria are highly levered. This result is in tandem with Mathew (2016) reviewed in the related literature.

### **Summary of Findings**

This study examined the relationship between financial leverage and financial performance of selected deposit money banks in Nigeria. The study covered the period 2005- 2017 using eleven (11) Deposit money banks selected from international authorized banks that have been in existence between 2005 and 2017.. The findings are summarized below:

The mean value of debt- equity ratio is approximately 7.968 while that of debt ratio stood at 0.841 (see Table 2). The mean value of debt- equity ratio suggests that the value of debt is about 8 times higher than the value of equity. A debt- equity value of 2, according to Velnampy and Niresh (2012) is considered normal and safe. This results show that deposit money banks in Nigeria have more preference for debt over equity. It was found also that the mean value of return on equity is 3.6%. This is very low and may be attributed to high interest paid on debt.

Furthermore, the mean value of debt ratio suggests that about 84% of the total assets of deposit money banks in Nigeria is financed by debt. This further confirmed that banks are highly levered financial institutions.

In addition, the Correlation Coefficient between debt- equity ratio and return on equity (ROE) a proxy for financial performance is significantly and inversely related. This indicates that an increase in debt will lead to increase in fixed interest charges, and decline in financial performance. The same result is also applicable to the regression analysis result. , The correlation between debt ratio and return on equity is not significant, meaning that the high debt ratio in the banks' capital structure does not have a significant

impact on financial performance as measured by ROE. The regression result shows that about 53 percent of the variations in ROE is caused by a collective variations of the leverage indicators (DER and DR) and the control variable (Size). Overall, the increased usage of debt in the capital structure of the DMBs will result to increase in financial risk, and consequently, high probability of financial distress and bank failures.

## **5. SUMMARY, CONCLUSION AND RECOMMENDATION**

### **5.1 Summary and Conclusion**

Based on the major findings and the analysis summarized above, the following conclusions are drawn: Nigerian deposit money banks are highly leveraged financial institutions. This is confirmed by both high debt- equity and debt ratios. Banks in Nigeria used less equity in their capital structure composition. In addition, Nigerian deposit money banks are generating very low return on equity for their shareholders.

It was also concluded that a significant negative relationship exists between debt- equity ratio and return on equity, and no significant relationship between debt ratio and ROE during the period of study. This implies that DER has a more significant inverse impact on return on equity than debt ratio while size has a significant positive impact on ROE but is reduced by excessive increase in debt as shown by its negative relationship with leverage ratios in correlation matrix analysis.

### **Recommendations**

Based on the major findings of this study, the following recommendations are made for consideration by management of Deposit Money Banks in Nigeria:

1. Financial leverage decision should be taken very serious as it is very critical to the survival and performance of banks. Therefore, an appropriate debt- equity capital structure should be adopted by banks to enhance their financial performance and survive the contemporary competition within the banking industry in Nigeria. Since the findings from the study implies that an increase in debt in the capital structure will result in decline in financial performance as measured by ROE as result of increase in interest charges, Banks should therefore use an appropriate proportion of debt with equity in its capital structure to increase its financial performance.
2. The management should seek a more prudent means of improving return on equity. A very low return on equity of 3.6% as revealed by this study is very low and cannot maximize the shareholders wealth ' and this may not attract a potential investor. This trend will have to be reversed if further investment in equity is to be attracted.
3. Banks should identify ways of increasing the net interest income on loans and advances and, should also set competitive interest rates that will attract customers' to request for loans in order to avoid keeping excess cash.

4. Overall, Deposit Money Banks should avoid excessive debt in their capital structure which among other factors, often increases financial risk, the risk of financial distress and bank failures. This ultimately leads to run on banks which is the worst scenario that results from bank distress.

#### **LIMITATIONS AND SCOPE FOR FURTHER STUDIES**

This study is restricted to only deposit money banks of financial institutions in Nigeria that have international authorization. Therefore, the findings of this study could not be generalized to include other key players in the financial sector and non- financial companies. Eleven (11) out of twenty one (21) deposit money banks in Nigeria as at December 2017 were sampled for this study using the period of 13 years (2005- 2017). Other leverage indicators like interest charges on debt can be added to the two financial leverage variables (debt- equity ratio and debt ratio) and other financial performance variables like Earnings per Share (EPS), Return on Asset (ROA) can also be tried. Researches on non bank institutions could also be carried out.

Given the limitations and scope of this study as mentioned above, further research involving more samples and additional variables should be conducted to establish the relationship or their impact on DMBs to enhance their performance in Nigeria.

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