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**The impact of capital structure on financial performance of the listed deposit money banks:  
evidence from Nigeria**

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**Abstract**

This paper has empirically assessed the impact of capital structure on financial performance of Deposit Money Banks in Nigeria, seven banks out of twenty one was selected for the study and the selection of these banks was made based on the consistent management policies. The empirical analysis covered the period of ten years from 2007 to 2016. The data for the study were obtained from secondary sources including the annual reports and accounts of the selected banks and linear regression statistical tool was used and the study revealed that only Returns On Equity (ROE) which is one of the components of banks' financial performance has significant positive impact on capital structure, which is an indication that these banks have more equity capital than debt and it's also an indication that banks with more equity capital are perceived to have more safety and such merit can be translated into higher profitability. Based on the findings, it was recommended that there should be a constant review of minimum capital requirement of deposit money banks in Nigeria to the optimal level by the apex bank. The management of the banks should constitute a strong team that would effectively manage their assets and increase it to the optimal level. This will in turn help the public to maintain confidence in the banks and also accommodate the daily needs of customers. The study also recommends that further researchers can study other variables such as working capital management, Customer satisfaction and Corporate Governance and their impact on financial performance of listed deposit money banks on the Nigeria Stock Exchange.

**Keywords:** Capital structure, banks' financial performance, deposit money banks

**Introduction**

Firm as a financial intermediation who engage with business take deposit from surplus unit give it to a deficit unit in form of loan with the aim of making profit (Qadar, 2015)<sup>[23]</sup>. However, a firm basic resource is the stream of cash flows produced by the assets of such firm. When the firm is financed entirely by common stock, all of those cash flows belong to the stockholders. Therefore, if it issues both debt and equity securities, it undertakes to split up the cash flows into two streams, a relatively safe stream that goes to the debt-holders and a more risky one that goes to the stock holders. In finance, capital structure refers to the way in which an organization is financed by a combination of long term capital (ordinary shares and reserves, preference shares, debentures, bank loans) and short term liabilities such as a bank overdraft and trade creditors. (Nirajini and Priya, 2013)<sup>[16]</sup>.

Capital structure is one of the important decisions made by finance managers. Pandey (2010)<sup>[20]</sup> states that capital structure as the various ways of financing a firm, that is, the proportionate relationship between debt and equity. He further stated that capital structure is a significant managerial decision because it influences the shareholder's return and risk since market value of the share may be affected by the capital structure decisions. However, Pandey (2015)<sup>[21]</sup> capital structure is the mix of long term source of fund such as debenture, long term debt, preference share capital and equity share capital including reserve and surpluses and retained earnings. Myers and Stewart (2001)<sup>[15]</sup> stated that capital structure is regarded as one of the financial components which could imply the firms' health conditions. The problem of firms select and adjust their strategic mix of securities has brought a great attention and debate among corporate financial literature. Since, their interest is due to the mix of funds, this affect the cost and availability of capital and also the firm's investment decision. Hence, in making capital structure decisions, as according to Pandey (2010)<sup>[20]</sup>

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corporate managers are expected to seek answers to the following questions: How should the investment project be financed? Does the way in which the investment projects are financed matter and how does financing impact the shareholders' risk, return and value. Thus, among all aspects of capital investment decision, capital structure decision is the vital one, because the financial performance of a firm is directly affected by such decision. Therefore, proper care and attention need to be given by the banks while considering their capital structure. In financial institution sector planning of capital structure according to Salawu (2007)<sup>[24]</sup> involves the consideration of shareholders interest and other group. Therefore, firm at its early stage need to plan its capital structure and subsequently whenever funds need to be raise and finances for investments, a capital structure decision need to maintain. Thus, it is cleared that capital structure is a significant decision taken by the management because it influences the owner's equity return, risk and the market value of shares. Hence, it's of great important for the firm's management to plan and develop an appropriate capital structure that may suite the operations of their firm.

Consequently, for a better understanding of the issues of capital structure on financial performance there is need to look at the concept of capital structure and the profitability. Thus, with little evidence on the impact of capital structure on the financial performance of some selected deposit money banks in Nigeria. This study attempts to examine the impact of capital structure on financial performance (profitability) of selected listed deposit money banks in Nigeria.

### Theoretical framework

Different studies have been conducted in determining the theory of capital structure. But this study was underpinned by the following: Agency theory, traditional theory, Modigliani and Miller theory, and trade-off theory:

#### Agency theory

Njeri and Kagiri (2013)<sup>[17]</sup> stated that Jensen and Meckling in their agency theory asserted that the aims of the firm's managers are not to maximize shareholders' wealth but to promote their own self-interest. This theory stipulated that debt financing normally acts as a control tool in restricting the tendency towards opportunistic behavior for personal gain by the firm's managers. This is to say that, debt finance can reduces the free cash flows within the firm by paying fixed interest payments which in turn forces firm managers to avoid negative investments and work toward achieving the interest of the firm's shareholders.

#### Traditional theory

Ahmad, Abdullah, and Roslan (2012)<sup>[2]</sup> stated that traditional theory strongly believed on the relevance of optimal capital structure. This theory argued that debt capital is cheaper than the equity and therefore, as a result of that company can increase its value by borrowing up to a reasonable limit. Thus, traditional theory assumes the following:

- i. It assumed the cost of debt of firm will remain constant until a significant or reasonable point is reached when it would start to increase.

ii. The weighted average cost of capital (WACC) will fall immediately whenever an external source of finance is introduced and will commence rising thereafter as the level of gearing begins to increases

iii. The firm's market value and the market value per share will be maximized where WACC is at the minimum point

#### Modigliani and miller theory

Modigliani and Miller (1958)<sup>[13]</sup> the M and M theory was based on certain assumptions and these may include; firm's value is unaffected by its capital structure and it assumed market is perfect, that is where insiders and outsiders have free access to information. This theory is also on the assumption that there is no transaction cost, bankruptcy cost and no taxation exist and that equity and debt choice become irrelevant and internal and external funds can be perfectly substituted. The MM theory further argued that the value of a firm should not depend on its capital structure and firm should have the same market value and the same weighted average cost of capital at all the capital structure levels because the value of a firm should depend on the return and risks of its business operation and not on the way it finances such operations. This study argued that if the above assumptions are ignored then capital structure may become relevant to the firm's value. Hence, research has showed that this theory was criticized on the ground that perfect market does not exist in real economy. For example, Olayinka (2011)<sup>[18]</sup> stated that an attempt has been made in ignoring these assumptions particularly the no bankruptcy cost and no taxation and this led to the trade off theory.

#### Trade-off theory

Myers (1984)<sup>[14]</sup> has proposed the trade-off theory which supports the relevance of capital structure. He suggests that firms have optimal capital structure and they move towards achieving certain target. This theory further emphasized that when debt is employed in capital structure, firms are usually encountered with some challenges and these include; tax benefit and bankruptcy cost. Therefore, there is need for trade-off between the two problems. Akinlo (2011)<sup>[3]</sup> assumed under the trade-off theory, firms with high growth opportunities should borrow less since it may likely loss value in an event of financial distress. Thus, this theory predicts those safer firms, that is firms with more tangible (durable) assets and more taxable income to shield should have high debt to total ratios. On the other hand, those riskier firms, firms with more intangible (liquid) assets their value will disappear in case of firm financial liquidation. In terms of financial performance (profitability) of the firm, trade-off theory predicts that more profitable firms are the more debt serving capacity and more taxable income to shield.

This theory posits that safer firms are those with more tangible (durable) assets and optimal capital structure which maximizes the firm's value and minimizes the cost of capital. Therefore, this study considered trade-off theory to be the best theory which underpinned this work.

#### Empirical review

Most of the empirical evidence on capital structure comes from the studies of the determinants of the corporate debt. These studies include; Olayinka, A. (2011)<sup>[18]</sup>, Njeri and

Kagiri (2013)<sup>[17]</sup> Pratheeepkanth (2011)<sup>[22]</sup> and the studies of firm's debt and equity financing for example, Jung, Kin and Stulz (1996)<sup>[12]</sup> and Gicheha (2010)<sup>[8]</sup>. These studies have successfully identified some firm characteristic which may include the following; Research and Development, market-to-book ratio of an asset, stock return, assets tangibility where profitability and marginal tax rate serves as an important determinant of the corporate financing choices.

Ibrahim (2009)<sup>[9]</sup> determined the impact of capital structure choice on firm's performance in Egypt; He used multiple regression analysis in estimating the relationship between leverage level of the firm and firm's performance. His study covered a period of eight years where three measures of financial performance were adopted. These are, (Return on Equity, Return on Assets and Gross Profit Margin). The empirical result showed that capital structure choice decision in general, has a very weak impact on firm's performance. However, Stulz (1990)<sup>[26]</sup> affirmed that debt can have both positive and negative effect on the firm's value (even in the absence of corporate taxes and bankruptcy cost). He built a model which revealed that over investment and under investment can be alleviated by debt financing option. Thus, this model assumes that managers have no equity ownership in the firm but can receive utility when managing a very large firm. Onaolapo and Kajola (2010) asserted that the power of the firm manager may motivate the self-interested managers to undertake negative present value project. In order to solve this problem, the shareholders of certain firm may induce firm to issue debt.

shareholders of certain firms may induce them to issue debt. Chowdhury and Chowdhury (2010)<sup>[6]</sup> they have empirically support the argument of Modigliani and Miller theory that was postulated in 1958. Thus, their work examined the influence of debt-equity structure on the value of firm's shares that are incorporated in the Dhaka Stock exchange (DSE) and Chittagong Stock Exchange (CSE) of Bangladesh. Chiang, Chan and Hui (2002)<sup>[5]</sup> undertake a study and the findings on the relationship between the profitability and capital structure and their study found that such profitability and capital structure are interrelated. Hence, their study sample includes 35 companies listed in the Hong Kong Stock Exchange (HSE). However, Abor (2005)<sup>[1]</sup> investigates the relationship between capital structures and profitability of listed firms on the Ghana Stock Exchange and he found that there is significantly positive relation between the ratio of short-term debt to total assets and return on equity (ROE) and negative relationship between the ratio of short-term debt to total assets and return on assets (ROA). Gill, Nahum and Neil (2011)<sup>[7]</sup> examined the effect of capital structure on profitability of the American service and manufacturing firms. The Empirical results of the study show a positive relationship between short-term debt to total assets and profitability and between total debt to total assets and profitability in the service industry.

Different studies have been conducted on the issue relating to capital structure and its impact on financial performance (profitability) but only few has exploited on the implication of profitability of deposit money banks. Therefore, this study aimed at filling the gap on capital structure and its

implication on financial performance of some selected deposit money banks that are listed on the Nigeria stock exchange. However, it's also aimed at determining how managers of the deposit money banks listed on the Nigeria Stock Exchange (NSE) combined different sources of financing for their businesses.

## Methodology

The trade-off theory which supports the relevance of capital structure, suggests that firms have optimal capital structure and they move towards achieving certain target and that safer firms are those with more tangible (durable) assets and optimal capital structure which maximizes the firm's value and minimizes the cost of capital. Therefore, debt to total assets ratio could be as leverage to proxies the capital structure and return on equity, return on assets and return on capital employed ratios to proxies the banks' financial performance. The study tends to examine whether there is significant impact of leverage on financial performance value in a deposit money banks and this can represent in equation below:

FinPer = f(Lev) .....1

Where ‘lev’ represents leverage and ‘FinPer’ represents banks’ Financial performance. Therefore, from equations 1 above trade-off theory believes that leverage (lev) should be statistically significant in determining the firm financial performance (FinPer).

According to Ihenetu (2008)<sup>[11]</sup> research design is the way of gathering and analyzing the data to a meaningful result. For the purpose of this study the researcher adopted an empirical design, whereby the researcher wants to know the impact made by capital structure on the financial performance of deposit money banks that are quoted on the Nigeria Stock Exchange. This research work used panel data where secondary data was obtained from annual reports and financial statements of sampled deposit money banks for various years.

Twenty one (21) deposit money banks listed on the Nigeria Stock Exchange constituted the population of the study. But seven (7) banks were randomly selected out of the 21 banks that are currently operating in the country. These banks are: Zenith Bank Plc, First Bank Plc., First City Monument Bank Plc., Guaranty Trust Bank Plc., Skye Bank Plc., Union Bank Plc and United Bank for Africa Plc. The choice of these banks was made based on their proven available records on their financial statement and their consistent management policies. The sample size is 10 years that is period from 2007 to 2016.

## Sample selection

The panel data used in the empirical work was obtained from the Nigeria Stock Exchange. The sample of seven out of the twenty one listed banks in Nigeria was selected from the Bankscope database. Thus, the sample represents 33.33% (percent) of the total population of all listed deposit money banks in Nigeria. Therefore, the selected listed banks are shown in the table 1 below:

**Table 1:** List of banks with their status

Banks	Status
Zenith Bank Plc	Listed
FCMB Plc	Listed
First Bank Plc	Listed
GTBank Plc	Listed
Skye Bank Plc	Listed
Union Bank Plc	Listed
UBA Plc	Listed

Source Bankscope database (2017)

**Measurement of the research variables**

The variable for research consists of dependent and independent variables. Hence the dependent variable is leverage (debt to total assets) which represents capital structure. The independent variables consist of; return on equity, return on assets and return on capital employed respectively which represents the firm financial performance.

**Independent Variables**Debt to Total Assets (DTA) = Debt

Total Assets

**Dependent Variables:**Return on Equity (ROE) = Profit after Tax  
EquityReturn on Assets (ROA) = Profit after Tax  
Total AssetsReturn on Capital Employed (ROCE) = Profit before Tax  
Total Assets**Model specification**

The variables under study include; Debt to Assets (DTA), Return on Equity (ROE), Return on Assets (ROA) and Return on Capital Employed (ROCE). Thus, in order to

evaluate the impact of capital structure on financial performance of the banks, ordinary least square method was applied. The formula is given as:

$$\text{Financial Performance} = f(\text{Capital Structure})$$

Where, financial performance proxies by (ROE, ROA and ROCE) and Capital structure is proxies by DTA

$$\text{FinPef} = a + b\text{DTA} + e$$

Where;

a = constant intercept

b = coefficient of independent variable.

e = error term

Even though, using internet to obtained secondary data is time saving but there are some limitations in using this method because data of some firms cannot be found on their website or any database stream, another limitation was that some banks in Nigeria does not have enough data on the available sources used which make the researcher to rely on those banks that have available information and proven records in order to avoid problem of data collection.

**Finding and discussion**

Data from the annual financial statement of the chosen banks were presented and analyzed below using linear regression:

**Table 2:** Coefficients

Model	Unstandardized Coefficients		Beta	t	Sig.
	B	Std. Error			
1	(Constant)	8.575	1.140		.000***
	ROE	2.176	.657	.373	.3.314 .001**
	ROA	6.532	3.764	2.092	.1.735 .087
	ROCE	-5.238	2.880	-2.192	-1.819 .074

Independent Variable: DTA

Table.2 above represents the linear regression coefficient which indicated that return on equity ratio (ROE) has significant positive relationship with capital structure of the Nigerian deposit money banks at p\* of 0.05>0.001. This shows that return on equity ratio could significantly affect the banks' capital structure which is proxies by debt to total asset. This indicates that the banks management is putting more equity than debt and this is also consistent with the findings of Abor (2005)<sup>[1]</sup>, Innocent *et al.* (2013)<sup>[10]</sup>, Sa'ad (2010)<sup>[25]</sup>, Gill, Nahum & Neil (2011)<sup>[7]</sup> and Nirajini and

Priya (2013)<sup>[16]</sup>. However, return on assets (ROA) is another component of the firms' financial performance but in this case it has no significant relations with the capital structure that is proxies by debt to total assets of the Nigeria deposit money banks because p\* of 0.05<0.087 and return on capital employed (ROCE) also has no significant relations with the capital structure of the Nigeria deposit money banks because p\* of 0.05<0.074, all these is an indication that most of the banks' assets are kept idle.

**Table 3:** Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.418	.175	.137	8.30598

Predictors: (Constant), ROCE, ROE, ROA.

Table 3 above shows the coefficient of multiple determination  $R^2 = 0.175$ . That means 17.5% of the variation in the financial performance (ROE) is determined by debt to total assets while other remaining 82.5% is by other factor. This means 82.5% of variation of financial

performance may be caused by other variables. Thus, the value of  $R = 41.8\%$  indicates that there is good correlation between the dependent variable and other independent variables.

**Table 4:** ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3	321.581	4.661	.005**
	Residual	66	68.989		
	Total	69			

Predictors: (Constant), ROCE, ROE, ROA

Analysis of variance (ANOVA) was used to test the impact of independent variables on dependent variable in the study. Thus, the ANOVA tests the model's acceptability and how model fits. Therefore, the regression displayed information about the variation accounted for by the model and the residual information about the variation that is not accounted by the model. In ANOVA, it is assumed that if significance value of  $F > 0.05$  then it means that model is not acceptable and variation presented by the model is by chance, but if significance value of  $F < 0.05$  then it means that model is acceptable and therefore, based on the information the variation showed in the model is by chance.

## Conclusion

The objective of this study was to evaluate the component of capital structure that may implicate financial performance of deposit money banks listed at the Nigeria Stock Exchange (NSE). However, the study revealed that only return on equity (ROE) which is one of the components of banks' financial performance has significant positive impact on capital structure. Therefore, it is an indication that, these banks have more equity capital than debt. But, it is believed that firm with more debt tend to be more risky but more safety and such merit can be translated into higher profitability. Based on the findings, it was recommended that there should be a constant review of minimum capital requirement of deposit money banks in Nigeria to the optimal level by the apex bank. The management of the banks should constitute a strong team that would effectively manage their assets and investing in different ways in order to boost return on assets. Thus, these will in turn help the public to maintain confidence in the banks and also accommodate the daily needs of customers. The study also recommends that further researchers can study other variables such as working capital management, customer satisfaction and Corporate Governance and their impact on financial performance of listed deposit money banks in the Nigeria Stock Exchange.

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