



Effect of Financial Leverage on Financial Performance: A Comparative Study of Deposit Money Banks and Manufacturing Companies in Nigeria

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Abstract

The study assessed effect of financial leverage on financial performance of companies. A comparative study of Nigerian Deposit Money Banks and Manufacturing Companies. The population of the study consists of 24 Deposit Money Banks and 54 Manufacturing Companies quoted on the floor of the Nigerian Stock Exchange as at 31st December 2019. A sample of ten Deposit Money Banks and ten manufacturing companies were selected from the population using convenience sampling techniques based on data availability. Secondary data from the financial results of sampled sectors between 2009-2019 was used. Financial performance (dependent variable) was determined using return on assets (ROA) as a metric, total debt ratio (TDR), total debt to equity ratio (TDER) and interest cover ratio (ICR) was used as proxy for leverage. Firm size was also included as control variable since leverage is not the only determinant of performance. Descriptive, correlation matrix and Pooled Ordinary Least square regression were used to analyse the data obtained. The study revealed that the coefficient of TDR for DMB and manufacturing companies were (-0.30 and 0.01) respectively with p-values of (0.00 and 0.76) and TDER were (-0.00 and -0.30) respectively with p-values of (0.00 and 0.00). ICR has coefficient of 1.99 and probability-value of 0.62 for Deposit Money Banks while manufacturing companies have coefficient of -1.73 with probability-value of 0.00. Firm size has coefficient of 0.02 with a p-value of 0.00 for Deposit Money Banks and manufacturing companies have coefficient of -0.12 with probability value of 0.00. The study discovered that total debt ratio and total debt-equity ratio have a strong negative effect on financial performance of selected Deposit Money Banks. Total Debt ratio has insignificant positive effect on financial performance and Total debt to equity ratio is negatively significant on financial performance of selected manufacturing companies in Nigeria. The results of the descriptive analysis indicates that 76% of the overall assets of Deposit Money Banks are financed by debts implying that selected financial institutions are highly geared while 48% of the total assets of Manufacturing Companies are financed by debts. The study concluded that leverage is a determinant of performance and therefore recommended that Deposit Money Banks should be conscious of excessive use of debt in order to improve financial performance while manufacturing companies should use debt optimally to finance their assets in order to gain the advantage of debt as stated in the trade-off theory.

Key words: Financial leverage, financial performance, optimal structure

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1. Introduction

Financial managers have been worried about capital structure after 1958 theory of Modigliani and Milers which states that combination of debt and equity has no relevance to an organization. The globalisation of economic policies has caused investment to rise leading to widened financing option (Singh & Bagga, 2019). The challenge facing most entities in Nigeria lies in funding through equity or debt. Capital structure serves as one of those variables considered by firms when considering financial performance. (Ajibola, Okere & Qudus, 2018). The decision to finance either with equity or debt is known as financing policy. A business can use both internal and external fund to finance its operations. Although a firm can employ the use of only internal fund (equity) or only external fund (debt) or both sources of fund. Debt is an external way of financing and it is very important in determining the profitability of a firm (Murikwa, 2017).

Financial Leverage is employed to improve the return on equity. The mix of corporate loan and equity is a strategic decision of corporate manager (Ahmadu, 2015). There are some advantages a company can gain from raising fund from external source such as tax shield, because interest is a non-taxable expense, this will reduce profit and when profit is reduced, the amount to be paid as tax will also decrease. Another benefit is that it can be used to finance the company's project.

Banks through their operations reflect their specific function as the motor of growth in an economy (Imeokparia, 2015). Looking at Deposit Money Banks, it is a known fact that Deposit money banks play an essential function in the resource distribution of the economy of countries (Okere, Isiaka & Ogunlowore, 2018). In recent years, the banking sector has faced series of financial crisis which has been of great concern to shareholders and other interested parties. For instance, the U.S. Financial Stability Board, (FSB), (2016) and the U.K Financial Service Authority FSA (2017) have traced the global financial crisis that occurred between 2007-2016 to banks' excessive leverage (Gadzo & Asiamah, 2018). The manufacturing sector also play an important role in the economy. They act as engine of growth in developing country like Nigeria but have been facing some setbacks and therefore there is need to ensure continuity of their operations.

Statement of the Problem

The Nigerian banking sector is highly regulated and has faced a lot of reforms among which the twenty-five-billion-naira re-capitalisation in 2005 was one of it. The essence of re-capitalisation is to ensure financial stability, embrace globalisation, raise performance in the sector and mitigate against financial crisis (Adegbaju & Olokoyo, 2008) but yet there still exists financial crisis in this sector. Therefore, it is pertinent to investigate the significance of leverage on the performance of this sector because the role the banking sector play in the economy. Manufacturing companies have a great contribution to economic growth and more so, they cover the larger proportion of the industry in Nigeria. The manufacturing companies have also suffered series of failure in Nigeria despite the reform of this sector. For instance, Structural Adjustment Programme (SAP), Trade liberalization, Indigenization policy(decrees) of 1972 and 1977, yet, this sector faces a lot of downturns. From 4.850 in the early 80' to 2,000 in 2010, the number of companies registered with the Manufacturers Association of Nigeria decreased (Mike, 2010). Statistics evidenced that a lot of companies have failed. Some manufacturing companies such as Dunlop Nigeria Plc, Michelin are unable to meet the objective of establishing them due to some challenges faced by them which some have been attributed to inappropriate capital structure. Based on the fact that there are crises in these two sectors, there is a need to assess the significance of financing method of these sectors on their financial performance because despite the fact that government regulates these sectors of the economy to stabilize their operations, a lot of organisations in these sectors fail.

More so, it is observed that most studies in Nigeria on this topic examined one single industry. For instance, Deposit Money Banks, manufacturing companies, consumer goods sector, hospitality industry while some studies use small sample size such as Akinyomi, Omokehinde and Olurin (2018) who studied three listed hospitality industry in Nigeria, Ajayi and Araoye (2017) examined listed manufacturing firms in Nigeria, Jeel and Olayiwola (2017) explored chemical and paints industries. It is noted that small sample size might lead to generalization of only the



selected sector measured by the researchers but, this study seeks to do a comparative analysis between manufacturing companies and Deposit Money Banks. The main objective of the study is to assess the influence of financial leverage on the performance of Deposit Money Banks and manufacturing companies in Nigeria.

The remaining part of this study is as follows: section two includes the review of relevant existing literature on the impact of financial leverage on performance, section three highlights the research methodology used in the study, model specification and method used in analysing the data used, section four contains the results presentation and findings while the study's conclusion and recommendations are contained in section five.

2. Literature and Theoretical Review

The degree to which a company makes use of borrowed capital is financial leverage. It is the use of fixed long term loan in a company's capital structure. It is a crucial part of decision making in financial and strategic management that focuses on capital structure as it relates to corporation's capability to satisfy numerous demands of interested parties (Ajibola et al, 2018). The company's capital structure shows all the funding options a company uses to finance its operations which can be equity, preference shares or debt. Financial leverage is the strategy which involves the use of loan in the purchase of investment with the aim that the asset's after-tax profit and asset price appreciation will outweigh the borrowing cost (Aza, 2018). Before deciding on the combination of the sources of finance, a financial manager will consider whether this mix would have impact on the value of the company or not. In the same vein, Pandey, 2010, claimed that the financial leverage used by any organization is aimed at earning a higher return on the fixed charge funds than its expenses.

Financial performance is the result of a firm over a specific time frame. (Bhunia, Mukhuti & Roy, 2011) described it as the firm's overall financial health over a specified time. It is a term used as indices for the overall financial health of an organization for a given period of time. It is calculated in ratios. Financial leverage can positively impact on the financial result of a company if the investment made earns adequate returns but can adversely affect the performance of a firm if the investment made does not yield adequate returns.

For the purpose of this study, the trade-off theory of capital structure shall be assessed.

Trade-off Theory: The trade-off is a result of Modigliani and Miller (1963) capital structure principle which states that the decision of a company on the mix of debt and equity to be used in the financing of assets should take into account the balance between costs and benefits. According to trade-off theory, there are several benefits of using leverage. The trade-off principle refers to the idea that by balancing costs and benefits, a business decides how many loans and how much equity capital to use. The theory states that a firm identifies its optimal financial structure by maintaining a balance between the cost of taking additional debt (bankruptcy) and the benefits derived (Kajola, Alao, Sanyaolu & Ojurongbe, 2019). The trade-off theory assumed that companies balance the tax advantages with potential bankruptcy costs to achieve optimal level of debt. It focuses on how much loan and how much equity financing to use by offsetting the cost and benefits. The theory implies that the optimal structure of capital is obtained through trade-offs between tax shield and cost of debts. Bankruptcy costs arises when an organisation has a large amount of debt in its capital structure and the marginal benefit of additional debt decreases as debt increases while the marginal cost increases (Okegbe, Eneh & Ndubuisi, 2019).

Empirical Review

The theoretical literature review indicates different views on the impact of leverage on financial result of Deposit Money Banks and manufacturing companies. Many Researchers are of the opinion that financial leverage impacts the value of a firm positively while some are of the view that it impacts negatively.

Therefore, there is need to carry out empirical review in order to know the view of other researchers on the effect of leverage on performance.

Taqi, Khan, and Anwar (2020) examined the effect of leverage on profitability of India oil and gas sector between 2008-2017. The study measured financial leverage using debt to equity ratio and debt to total assets ratio and profitability using Return on Assets, Margin Ratio and Return on Equity. The study used descriptive, correlation and regression to analyse the data obtained through E-views and SPSS software. The study revealed that leverage has positive association with sampled Indian oil and gas companies. Similarly, Anifowose, Soyebó and Tanimójo, (2020) studied the significance of financial leverage on firm's profitability in Nigeria by focusing on listed pharmaceutical firms between 2003-2018 and also found out Debt-equity has a strong positive significance on results of pharmaceutical companies selected and therefore advice that financial managers should employ leverage optimally so that value of the organization can be enhanced to the benefit of stakeholders.

In another dimension, Kithandi, (2020) investigated the significance of financial leverage on profitability of five energy and petroleum sector companies quoted on the Securities Exchange of Nairobi. The research was based on secondary data derived from the financial reports of the selected energy and petroleum sectors. Debt ratio, debt-equity ratio and interest cover were used to measure leverage while ROA was used as metric for financial performance. The study used descriptive and regression analysis to ascertain the association and effect on leverage on performance. The study found a negative significant impact of leverage on performance of sampled companies.

Uzokwe, (2019) found a positive significance of leverage on corporate profitability. This is evidenced by examining the debt financing and corporate finance performance in Nigeria. Using Multiple regression analysis and correlation matrix, the study concluded that leverage will lead to better performance and recommends that management should optimize capital structure in order to increase return. In contrast, Okoye (2019) found a negative strong relationship between Debt equity ratio and ROE, and also debt ratio proxy by total assets has a negative insignificant relationship on profitability of Nigerian Deposit Money Banks between 2005-2017. The dependent variable proxy by ROE and the independent variables proxy by Debt ratio, Debt-Equity ratio and Firm size were investigated using Correlation and OLS regression analysis. The study recommended that proper debt to equity ratio should be used by Deposit Money Banks in Nigeria.

Usman, (2019) conducted a research on capital structure and Profitability of Consumer Goods Industry in Nigeria. The study used sample size of 6 companies between 2012 and 2016. Descriptive, Regression and Correlation methods were used to analyse the data. The variables used includes; return on assets, short-term debt, return on equity and long-term debt and debt to equity ratio. Results revealed that short-term debt and Long-term debt have no significance on performance and therefore recommended that companies should weigh the costs of accessing a specific source of fund and the benefits when making financing decision in order to have gain at the end.

In another vein, Gadzo and Asiamah. (2018) assessed the impact of leverage on performance of unquoted banks in Ghana and discovered that there is a significant positive relationship between leverage and performance. The data that was derived from the results of sampled unquoted banks was analyzed using descriptive and regression analysis. Ajayi and Araoye (2017) examined capital structure and profitability of Nigerian manufacturing companies. The study sampled 10 Nigerian manufacturing companies from 2008-2014 using Return on Assets, Debt Equity ratio, Asset Turnover, Return on Equity, and age of firm as variables. The study discovered that debt to equity ratio is negatively significant on profitability and therefore recommended that managers should be careful when choosing debt to finance their operations.

Also, Marandu and Sibindi, (2016) did an empirical study on capital structure and profitability of Banks in South Africa for the period of 2002 and 2013 using capital adequacy, deposits, bank size, and credit risk as proxies for capital structure and return on assets (ROA) as proxy for profitability. The study established a significant relationship exists between ROA and all the variables of capital structure. Mule and Mukras, (2015) conducted an investigation on leverage and profitability of quoted companies in a frontier market in Kenya between 2007-2011. Variables used includes; ROA, ROE, Tobin-q, leverage, and ownership concentration. The descriptive, correlation and panel regression analysis found that leverage has a negative

strong effect on performance of sampled companies in Kenya. The study concluded that leverage is a negative determinant of profitability.

3. Methodology

The research population consists of 24 Deposit Money Banks and 54 quoted manufacturing firms in Nigeria as of 31st December 2019. A sample of 10 banks and 10 manufacturing companies was taken from the population using the convenience sampling technique. The study used ex-post facto research design because the data was readily accessible and taken from the published annual report between the period of 2010-2019. The considered variables includes financial leverage (explanatory variable) and financial performance (explained variables). The study used return on asset as metric for financial performance and debt to equity ratio, debt to total assets ratio and interest cover ratio was used as proxy for financial leverage while firm size was the control variable.

Model Specification

This section shows the relationship between explained variables (financial performance) and explanatory variables (total debt ratio, total debt equity ratio, interest cover ratio and firm size). The study adapted the model specified by Okoye, (2019) to fit into the framework of the study. The functional and mathematical expressions are as follows:

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

The interconnection between the explained and explanatory variables is mathematically expressed as:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu_{it} \dots\dots\dots(2)$$

Y=Dependent variable

X=Independent variable

β_0 = intercept of X

β_1, β_3 =Coefficient of independent variable X

μ = error term.

With relation to this study, the model 1 is modified as follows:

$$ROA = f(TDR, TDER, ICR, FSZ) \dots\dots\dots(3)$$

This can be expressed using linear equation as:

$$ROA_{it} = \beta_0 + \beta_1 TDR_{it} + \beta_2 TDER_{it} + \beta_3 ICR_{it} + \beta_4 FSZ_{it} + \mu_{it} \dots\dots\dots(4)$$

ROA is the explained variable while total debt ratio, total debt-equity ratio, interest cover ratio are the explanatory variables which are proxies for financial leverage and firm size being the control variable.

Where:

ROA=Return on Assets,

TDR= Total Debt Ratio,

TDER=Total Debt-Equity Ratio,

ICR=Interest cover ratio

FSZ= Firm size

β_0 = constant

$\beta_1, \beta_2, \beta_3, \beta_4$ = co. efficient of associated variables.

μ_{it} is the error term.

i = cross –sectional dimension and ranges from 1 to N/Number of Companies.

t = Time series dimension and ranges from 1 to T/Number of Periods.

Table 1: Measurement of variables

Variables	Measurement of variables
Return on Assets	$\frac{\text{profit after tax}}{\text{total assets}} \times 100\%$
Total Debt Ratio	Total debt/total assets
Total Debt-Equity Ratio	Total debt/ equity
Interest Cover Ratio	Earnings before interest and tax/interest expenses
Firm size	Natural logarithm of firm's total assets

Source: Author's compilation 2021

Apriori Expectation

Based on empirical studies by past financial analysis, it was expected that financial leverage has strong positive correlation with performance. This can further be expressed as follows: $\beta_1, \beta_2, \beta_3, \beta_4 \geq 0$

4. Results and Discussion of Findings

This section presents the detailed results obtained from analysis of data as well as the interpretation of the results obtained from analysing the data. To achieve the objective of the research work, descriptive analysis, correlation and Pooled Ordinary Least Square regression analysis was used in analysing the data obtained. This was done using E-views software.

Table 2: Descriptive Analysis of Sampled Deposit Money Banks and Manufacturing Companies in Nigeria

	ROA		TDR		TDER		ICR		FSZ	
	DMB	MFG	DMB	MFG	DMB	MFG	DMB	MFG	DMB	MFG
Mean	0.020	0.101	0.764	0.482	6.020	1.278	8.940	459.21	12.040	7.836
Median	0.018	0.080	0.852	0.512	5.792	1.052	4.411	7.996	12.101	7.929
skewness	0.176	0.677	-2.295	-0.45	3.116	1.834	3.261	9.001	-0.560	-0.849
kurtosis	14.552	3.027	6.725	3.147	22.09	6.723	15.85	85.455	2.468	3.445
Jarque-Bera	556.58	7.651	145.61	3.469	1681.5	113.8	865.80	29679	6.414	12.853
Probability	0.000	0.0218	0.000	0.176	0.000	0.000	0.000	0.000	0.000	0.001
No of Obs.	100	100	100	100	100	100	100	100	100	100

The study also used Hausman test to determine the effects. The Hausman test for each of the two sectors is below:

Table 3: Hausman Test Result for Deposit Money Banks

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.471626	4	0.8317

Source: Author's computation 2021

The Hausman test result presented above in table 3 shows a probability of 0.83 which is more than the significance level of 0.05, that is, not significant at 5% level, this signifies that random effect model was appropriate and was used for analysis of the regression.

Table 4: Hausman Test Result for Manufacturing companies

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	4	1.0000

Source: Author's computation 2021

The Hausman Test result for manufacturing companies in table 4.6 above reveals a probability of 1 which is above the significant level of 0.05. This means that the random effect was appropriate and adopted for the data analysis.

Regression Analysis

The study made use of Pooled Ordinary Least Square regression analysis using panel data to assess the significance of financial leverage on the financial results of sampled Deposit Money Banks and Manufacturing companies.

Table 5: Comparison of Deposit Money Banks and Manufacturing Companies

Variables	Banks		Companies		Remarks
	coefficient	p-value	coefficient	p-value	
Total debt ratio	-0.30	0.003	0.01	0.768	Significant for banks, insignificant for companies
Total debt-equity ratio	-0.00	0.008	-0.03	0.000	Significant for both sectors
Interest cover ratio	1.99	0.621	-1.73	0.000	Insignificant for banks, significant for companies
Firm size	-0.21	0.000	-0.21	0.000	Significant for both sectors
Adjusted R ²	0.715		0.734		Indicates goodness of fit for both sectors,
Prob F stat	0.000		0.000		Statistically significant
Durbin Watson	1.757		1.777		No auto correlation

Source: Author's computation 2021

Discussion of Panel Result

The panel regression shows adjusted R-square of 71% and 73% for Deposit Money banks and Manufacturing companies respectively. This shows that the independent variables can account for 71% variance in the dependent variables of banks while for manufacturing companies, the independent variables can explain 73% of the variations in the dependent variables. The probability of F-Statistics of 0.00 means that the null hypothesis should be rejected while the alternate hypothesis should be accepted.

The study showed that Deposit Money Banks' total debt ratio is negatively and significantly affected by performance. This means that there is excessive use of debt by the Deposit Money Banks which negatively significantly affected performance. The total debt ratio of manufacturing companies is positively insignificant on performance. This means that the manufacturing companies are lowly-g geared and are not making optimal use of debt. The insignificant level can be improved upon in order to take advantage of the tax benefits according to trade-off theory. The total debt-equity ratio of both Deposit Money Banks and Manufacturing companies is negatively significant. This means that both sectors are not adopting appropriate mix of debt and equity Also, interest cover ratio for Deposit Money Banks is positively insignificant while for manufacturing companies is negatively significant on performance. The study also showed that firm size has a positive significance on profitability of selected Deposit Money Banks and negative significance on profitability of sampled Nigerian manufacturing companies.

5. Concluding Remarks and Recommendation

The study carried out a comparative study between Deposit Money Banks and Manufacturing companies in Nigeria on significance of financial leverage on financial performance for the period of 2010-2019. From the findings of the study and looking at the major predictors of financial leverage (debt ratio and debt-equity ratio), the study concluded that financial leverage has a strong but negative significance on profitability proxy by return on assets (ROA). This conclusion is in consonance with the results of Efuntade and Akinola (2020), Kithandi, (2020), Afolabi, Kajola, Olabisi and Asaolu (2019), Jeleel and Olayiwola (2017), Anifowose, Soyeb o and Tanimoyo (2020), Singh and Bagga, (2019), Akintola (2019), and also in other countries such as Sadiq and Sher, (2016), Mule and Mukras, (2015).

The negative impact of leverage on performance could be as a result of excessive use of debt as a source of finance for banks and inappropriate mix of debt and equity in a company's capital structure. The insignificant effect on performance of manufacturing companies could be as a result of inefficient use of debt. If proportion of debt and equity is properly and efficiently managed, this could lead to better performance. The study recommended that:

1. Banks should be careful in their use of debt as revealed in the findings that banks are highly geared.
2. Manufacturing companies should increase their commitment to debt as a source of finance and ensure it is used optimally to finance the assets in order to enhance their performance
3. Management of both manufacturing companies and Deposit Money banks should reduce their Debt-Equity in order to improve their performance.

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