

## EFFECT OF DEBT UTILIZATION ON FINANCIAL PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA

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### Abstract

*This study investigates the effect of debt utilization on financial performance of deposit money banks (DMBs) in Nigeria from 2014 to 2023. Using a quantitative research design and secondary data from eight DMBs, the study examines the relationship between debt-to-equity and debt-to-assets ratios and bank value measured by return on equity (ROE) and return on assets (ROA). The findings reveal that the debt-to-asset ratio positively and significantly affects financial performance, while the debt-to-equity ratio has no significant impact. The study concludes that optimizing the debt-to-equity ratio has no significant impact. The study concludes that optimizing the debt-to-asset ratio is crucial for improving financial performance. The study recommends effective debt management, diversifying funding sources, continuous monitoring of financial leverage and performance, and regulatory oversight to promote a sustainable banking sector.*

**Keywords:** Financial performance, debt-to-equity ratio, debt-to-asset ratio, debt utilization, DMBs, Nigeria

### 1 Introduction

A bank's value serves as a barometer of its financial health over time and takes into account factors including capitalization, profitability, and turnover. Shareholders and stakeholders may make well-informed choices by managing finance, equity, current and non-current assets, revenues, and costs (Moyo & Obadire, 2024). Businesses in the same industry or industries may be compared overall using firm valuation. This is due to the fact that making educated judgements requires accurate data and thorough sector research (Obi & Ebiringa, 2024).

Financial leverage quantifies how a business finances its financial resources using a mix of debt and shares. Businesses may expand operations, boost assets, output, and eventually profits by using debt to leverage capital and earnings. Businesses that fund themselves via debt and equity see an increase in fixed expenses and financial strain as debt levels grow. Globally, the banking industry is renowned for its strong internal controls, strong capital buffers, and prudent risk management procedures (Ozili & Ndah, 2024). Prudent rules that guarantee banks maintain acceptable levels of financial

leverage and successfully manage risks are still being watched over and enforced by regulatory bodies. To absorb losses and keep the financial system stable, banks need to have a certain amount of capital on hand. A bank's capital adequacy ratio (CAR), which compares its capital to its risk-weighted assets, may be weakened by excessive financial leverage. A bank's capacity to sustain operations, expand, and adhere to regulatory standards may be hampered by inadequate capital (Adamu & Hamidah, 2024). The utilisation of borrowed money to finance activities or purchase assets is known as financial leverage (Olulu-Briggs, 2024). It exposes banks to greater risks and perhaps large financial losses, even while it may increase returns on investment in times of favourable market circumstances. Financial leverage in Nigerian banks may lead to a number of troublesome problems, including elevated risk, declining asset quality, liquidity risk, regulatory attention, reputational risk, etc.

As a driver of expansion, stability, and financial intermediation, the banking sector is essential to Nigeria's economic development (Adeyeye et al., 2022). However, the sector's capital structure specifically, its use of debt has a significant impact on its value (Olokoyo, 2019). The COVID-19 pandemic in 2019–2020 and the global financial crisis in 2007–2009, which caused many firms to undergo varying degrees of financial difficulty, brought attention to the dangers of excessive leverage and raised concerns about banks' debt levels (Kwame & Kusi, 2020).

Despite attempts at recapitalisation and the implementation of international financial reporting standards (IFRS), Nigeria's banking industry has faced several difficulties, such as failures and liquidations. The broad objective of the study is to investigate the impact of debt financing on bank valuation in Nigeria. The specific objectives are to examine the impact of debt-to-equity on Return on Equity (ROE) of Nigerian Banks; and investigate the impact of debt-to-assets on Return on Assets (ROA) of Nigerian Banks. Though, existing literature has explored the relationship between financial leverage and bank performance, findings remain inconsistent across countries and contexts. In Nigeria, limited empirical studies have specifically analyzed how debt utilization affects bank valuation metrics such as return on assets (ROA) and return on equity (ROE). Furthermore, past studies often cover narrow timeframes or fail to distinguish among banks with international operational licenses.

This study addresses these gaps by examining the effect of debt-to-equity and debt-to-asset ratios on the financial performance of Nigeria deposit money banks over a 10-year period (2013-2023), offering more robust insights for policy makers, investors, and bank managers.

## **2. Literature Review and Theoretical Framework**

Debt utilization is a critical component of a bank's capital structure, influencing its financial performance and valuation. This literature review examines the existing research on the impact of debt utilization on bank valuation in Nigeria.

### **Concept of Financial Performance**

In this study, financial performance is critiqued from the perspective of market value. According to Damodaran (2012), market value in the banking industry is impacted by external variables including investor confidence and regulations, as well as financial structure and profitability. In order to assess how debt usage affects financial performance, a strong market value is essential as it conveys investor confidence and increases the possibility of acquiring funds. According to Bhunia et al. (2011) and Lawrence et al. (2021), a company's financial success is based on how well it operates

during a certain time period, which may also be a good indicator of the company's overall financial health over the same time period. The organization's long-term financial stability is shown by this metric. Its metrics might provide a more accurate definition of bank value. It is also known as market capitalisation, which is the entire market value of a bank's outstanding shares (Lawrence et al., 2021). It is the Price-to-Book (P/B) Ratio, which compares a bank's market price to its book value; Return on Equity (ROE), which is a measure of a bank's profitability, or Return on Assets (ROA), which is a measure of profitability determined by dividing net income by total assets (Gadzo & Asiamah, 2018; Kwame & Kusi, 2020). The Tobin's Q Ratio, which compares a bank's market value to its replacement cost, may also be used to describe or quantify bank valuation.

Meanwhile, the degree to which a business utilises debt financing to finance its operations, investments, or expansion is known as debt utilisation (Adamu & Hamidah, 2024). Debt Utilisation Ratio, which calculates the percentage of assets financed by debt by dividing the total amount of debt by the total amount of assets; Debt-to-Equity Ratio, which compares the total amount of debt to the total amount of equity, indicating financial leverage; and Debt-to-Asset Ratio, which calculates the percentage of assets financed by debt (Gadzo & Asiamah, 2018; Kwame & Kusi, 2020). According to Onuora (2019) and Andy et al. (2002), financial leverage is achieved by borrowing money and reinvesting the profits to outweigh the expense of interest. An equity-only corporation is unlevered, while a leveraged company has both debt and stock.

Businesses use financial leverage to increase profits on fixed-charge capital, claim Pandey (2010) and Onuora (2019). Depending on the surplus or deficit, owners' return on equity may rise or fall. Financial leverage has benefits and drawbacks, according to Bhunia et al. (2011) and Lawrence et al. (2021). There is a greater chance of financial loss even if it could boost shareholders' earnings. Therefore, if the investment yields respectable returns, using debt to leverage finances may be advantageous for a bank's value. However, as the loan must still be paid back with interest, it may also be harmful if the investment is a loss.

### **Theoretical Framework**

The pecking order theory, which was created by Myers and Majluf in 1984, was used in this investigation. The hypothesis focusses on the connection between a company's financial success and financial leverage. This theory was developed in corporate finance and has been used extensively to comprehend how businesses behave in connection to their capital structure choices. According to the pecking order theory, businesses want to finance their investments in a certain order that is determined by the cost and availability of capital sources. This idea states that businesses first finance their investments using internal resources like retained profits. Companies use debt financing as a last alternative if internal finances are inadequate, and then they issue stock. The basic premise behind this directive is that businesses would rather keep control of their operations than dilute ownership by selling more shares.

## **3. Method**

### **Research Design**

Ex post facto and quantitative research designs were modified for the study. The quantitative research design is appropriate for this study because it reduces researcher bias through objective analysis of numerical data, permits generalisation to a larger

population, yields accurate results, makes comparison and trend identification easier, and permits hypothesis testing, which verifies or disproves relationships between variables. Eight Nigerian deposit money banks with international accreditation or authorisation make up the study population (CBN, 2023) from eight banks from which panel data was gathered for the study over an 11-year period, from 2013-2023. This time frame was chosen since 2013 was the year after Nigeria's acceptance of International Financial Reporting Standards (IFRS), which allowed for the evaluation of yearly financial reports from businesses based on IFRS adoption. The study used census sampling to assess all the Nigerian DMBs with international presence. These banks with international presence utilize a wide range of financial leverage, especially debt financing. This ensures comprehensive coverage, high accuracy, increase generalizability, and elimination of sampling bias. Thus, the variable measurement adapted from various sources highlighted in the Table 1 below

**Table 1: Variable Definition and Measurement**

S/N	Variable Name	Proxy	Measurement	Source
1	Bank Valuation (Dependent Variable)	ROE	A measure of a bank's profitability, calculated by dividing net income by total equity	Gadzo and Asiamah (2018)
		ROA	A measure of profitability, by dividing net income by total assets	Kwame and Kusi (2020)
2.	Debt Utilization (Independent Variable)	Debt-to-Equity Ratio	A ratio comparing a company's total debt to its total equity, reflecting its financial leverage	Gadzo and Asiamah (2018)
		Debt-to-Asset Ratio	A ratio measuring the proportion of a company's assets financed by debt	Kwame and Kusi (2020)

**Source: Author's Compilation, 2024**

Multiple linear regressions were utilized in the study to evaluate its hypotheses. At the 5% level, the regression coefficient is significant. Whether the value of the P is greater than 0.05 and vice versa determines whether the null hypothesis is accepted or rejected. The null hypothesis is that the model has no measurable effect. Onuora (2019), Zelalem (2020), Popoola and Sulaiman (2020), and Popoola and Sulaiman (2019) all used Ordinary Least Square (OLS) regression and correlation analysis to examine the relationship between financial leverage and financial performance. Therefore, this study uses multiple linear regression to analyze the data.

**Model Specification**

The following models adapted from Olokoyo (2019) were used in this study.

Model I       $ROE = \beta_0 + \beta_1 DER + \beta_2 DAR + e$  ----- (eqn.1)

Model II       $ROA = \beta_0 + \beta_1 DER + \beta_2 DAR + \varepsilon$  ----- (eqn. 11)

Where;

ROE = return on equity; ROA = return on asset;  $\beta_1 DER$  = Debt-to-equity ratio coefficient;  $\beta_2 DAR$  = Debt-to-asset ratio coefficient;  $\beta_0$  = constant; and  $\varepsilon$  = error term.

**4. Results and Discussion**

This chapter highlights the data presentation, descriptive statistics, correlation analysis, regression analysis, as well as the discussion of the findings as highlighted in Table 2 below:

### Descriptive Statistics

Table 2 presents an overview of the descriptive statistics for the variable that are the independent and dependent examined. The Financial performance values exhibit a range of values spanning from 0.000 (minimum) to 0.1000 (maximum), with a standard deviation of 0.475 and an average value of 0.337. The standard deviation is a measure that indicates the extent of variation in financial performance ranging from the lowest to the highest values. A higher standard deviation suggests that there is a greater difference from the average.

**Table 2: Descriptive Statistics**

Variable	Obs	Mean	SD	Min	Max
ROA	88	4.960	0.956	-44.16	42.85
ROE	88	3.485	0.845	-31.05	68.10
Debt to Equity Ratio	88	41.06564	6.198691	4.28	305.8
Debt to Asset Ratio	88	6.797364	3.291665	-0.24	0.83

While considering independent variables, the result from Table 2 indicates that Debt to Equity Ratio has a mean of 41.06564, a minimum of 4.28, and a maximum of 305.8, while the standard deviation score stood at 6.198691. Debt to Equity Ratio is considered as an important determining factor of board structure, and also affects performance, hence, used as a control variable in CG studies. For Debt to Asset Ratio, the result from Table 4.2 shows that its mean value is 6.797364, minimum of -0.24, and a maximum of 0.83, while the standard deviation is 3.291665. Debt to Asset Ratio, is considered to have an impact on a company’s cash flow and control. Based on the result obtained, the average value of 0.62 means that some of the listed financial service firms in Nigeria have 62% as debt in their capital structure. Meanwhile, the result from Table 4.2 shows that the Return on Asset (ROA its mean value is 4.960, minimum of -44.16, and a maximum of 42.85, while the standard deviation is 0.956. The Table 4.2 shows that Return on Equity (ROE) have a mean value of 3.485 ranging from a minimum of -31.05 to a maximum of 68.10. The standard deviation is 0.845, indicating that the ROE differ from the mean by 11.745% in both directions. This indicates that there is an important deviation of data from the average due to the high standard deviation. In other words, the average Firm Growth rate of the sampled banks is 73.616%.

### Correlation Analysis

Correlation analysis was used to look into the relationship between the independent variables’ debt to equity and debt to asset and determinants of the dependent variables return on equity and return on asset as indicated in Table 3 below:

**Table 3: Correlation Matrix**

Variable	DER	DAR	ROA	ROE
Debt to Equity Ratio	1			
Debt to Asset Ratio	.817**	1		
ROA	.451	.220	1	
ROE	.823**	.896**	.263	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The matrix illustrates how asset debt and asset return are linearly related. The correlation between debt to asset and return on asset is positive at.817, with a significant level of.002. The Pearson correlation between debt-to-equity and return on assets is positive, with a value of.451 and a significance level of.164. Return on equity and debt to asset have a positive link, as shown by a Pearson correlation value of.823 and a significance level of.002. The Pearson correlation coefficient between debt-to-equity and return on assets is positive (.220), but the level of.517 is not statistically significant. Return on equity and return on assets have a positive Pearson correlation value of.896 at a significance level of.05. Despite being significant at.263, the Pearson correlation coefficient between debt to equity and return on equity is not statistically significant at.435.

**Regression Analysis (Result of Debt Utilization and ROE)**

This sub-section presents the results of the regression on the relationship between debt to equity, debt to asset and financial performance of banking sector quoted on the Nigerian Exchange Group. As a result of that, financial performances were utilized to examine the relationship between debt to equity, debt to asset of Banking sector of Nigerian Exchange Group. As presented in Table 4, the results of the relationship between Bank size, Leverage and Bank growth and financial performance of banking sector quoted on the Nigerian Exchange Group show a cumulative R-Square of 0.692 and F- statistics is significant at 1% (p<0.01), showing that overall model is fit in explaining the level of variability between endogenous construct and exogenous constructs. Thus, the regression model 69% of the total variance in financial performance is influenced by collective impact of exogenous constructs. The R<sup>2</sup> as indicated in Table 4 is higher than the R<sup>2</sup> of 0.252 reported by Amran et al. (2016) using Malaysian listed companies; Adamu et al. (2017) using Nigerian listed firms; and 0.118 reported by Li et al. (2016) from Taiwan listed companies

**Table 4: Regression Output**

Source	SS	df	MS	Number of obs = 11
Model	2.1783801	2	1.08919005	F(2, 8) = 8.97
Residual	.971915535	8	.121489442	Prob>F = 0.0091
0.6915				R-squared =
0.6144				Adj R-squared =
Total	3.15029564	10	.315029564	Root MSE =
.34855				

Return on Equity	Coefficient	Std. err.	t	P> t	[95% conf. interval]
Debt_to_Equity	-.0123242	.0199312	-0.62	0.554	-.0582855 .0336372
Debt_to_Asset	.1507412	.0375224	4.02	0.004	.0642144 .237268
_cons	.7236385	.7467392	0.97	0.361	-.9983452 2.445622

Durbin-Watson d-statistic (3, 11) = 1.871023

Table 4 shows that equity debt has a negligible and negative impact on MDBs' return on equity in Nigeria ( $\beta_1 = -.023$ ;  $t = -0.62$ ;  $p = .554 > = 0.05$ ). This indicates that the

return on asset will not decrease by -0.0123 units for every unit increase in debt to equity. Consequently, the null hypothesis is accepted and the alternative hypothesis is rejected. This outcome is in line with the findings of (Popoola & Suleiman, 2020). However, the outcomes are not the same as those of (Zelalem, 2020).

The return on assets of MDBs in Nigeria is positively and significantly impacted by the debt-to-equity ratio ( $\beta_1 = .150$ ;  $t = 4.02$ ;  $p = .004 = 0.05$ ). This implies that the return on equity will rise by 0.209 units for every unit increase in debt to asset. Consequently, the null hypothesis is refuted and the alternative is accepted. Previous results from (Popoola and Sulaiman, 2020; and Lawrence, David, and Olubukola, 2021) are in line with this outcome. Conversely, the outcomes are different from those of (Zelalem, 2020).

**Regression Analysis (Result of Debt Utilization and ROA)**

This sub-section presents the results of the regression on the relationship between Debt-to-Equity Ratio and Debt to Asset Ratio and financial performance (ROA) of banking sector quoted on the Nigerian Exchange Group. As a result of that, financial performances (ROA) were utilized to examine the relationship between Debt-to-Equity Ratio and Debt to Asset Ratio of Banking sector of Nigerian Exchange Group. As presented in Table 5, the results of the relationship between Debt-to-Equity Ratio and Debt to Asset Ratio and Financial performance of banking sector quoted on the Nigerian Exchange Group show a cumulative R-Square of 0.696 and F- statistics is significant at 1% ( $p < 0.01$ ), showing that overall model is fit in explaining the level of variability between endogenous construct and exogenous constructs. Thus, the regression model 70% of the total variance in financial performance is influenced by collective impact of exogenous constructs. The R2 as indicated in Table 5 is higher than the R2 of 0.136 reported by Amran et al. (2016) using Malaysian listed companies; Adamu et al. (2017) using Nigerian listed firms; and 0.118 reported by Li et al. (2016) from Taiwan listed companies.

**Table 4: Regression Output**

Source	SS	df	MS	Number of obs = 11
Model	4.0451852	2	2.0225926	F(2, 8) = 9.15
Residual	.176811735	8	.221014669	Prob>F = 0.0086
				R-squared = 0.6958
				Adj R-squared = 0.6198
Total	5.81330255	10	.581330255	Root MSE = .47012

Return on Asset	Coefficient	Std. err.	t	P> t	[95% conf. interval]
Debt_to_Equity	-.0230572	.0268828	-0.86	0.416	-.0850489 .0389346
Debt_to_Asset	.2088846	.0506095	4.13	0.003	.0921789 .3255903
_cons	.0233566	1.007187	0.02	0.982	-2.299221 2.345935

Durbin–Watson d-statistic (3, 11) = 1.277358

Table 5 shows that equity debt has a negligible and negative impact on MDBs' return on assets in Nigeria ( $\beta_1 = -.023$ ;  $t = -0.86$ ;  $p = .416 > = 0.05$ ). This indicates that the return on asset will not decrease by -0.023 units for every unit increase in debt to equity. Consequently, the null hypothesis is accepted and the alternative hypothesis is

rejected. This outcome is in line with the findings of (Popoola & Suleiman, 2020). However, the outcomes are not the same as those of (Zelalem, 2020).

The return on assets of MDBs in Nigeria is positively and significantly impacted by the debt-to-equity ratio ( $\beta_1 = .209$ ;  $t = 4.13$ ;  $p = .003 = 0.05$ ). This implies that the return on asset will rise by 0.209 units for every unit increase in debt to asset. Consequently, the null hypothesis is refuted and the alternative is accepted. Previous results from Popoola and Sulaiman (2020) and Lawrence et al. (2021) are in line with this outcome. Conversely, the outcomes are different from those of (Zelalem, 2020).

### **Discussion of Findings**

According to the results of the data analysis, Outside of Nigeria equity debt has a negligible and negative effect on DMBs' return on equity. This illustrates that a 0.12 unit drop in return on equity will not result from a 1 unit increase in debt to equity. As a result, the alternative hypothesis is shown to be incorrect and the null hypothesis is adopted. This result is consistent with Onuora's (2019) findings. However, the results are at odds with those of Lawrence et al. (2002) and Abubakar (2015).

Furthermore, studies have shown that the debt-to-assets ratio significantly and favourably impacted the return on equity for DMBs in Nigeria. This suggests that the return on equity will rise by 0.151 units for every unit increase in debt to assets. Consequently, the alternative is accepted and the null hypothesis is disproved. But the findings don't align with those of (Abubakar, 2015; Onuora, 2019; & Zelalem, 2020).

Equity debt affects returns on assets in other countries but has a negative and insignificant effect on DMBs' return on assets in Nigeria. This demonstrates that a -0.023 unit drop in return on asset won't result from a 1 unit rise in the debt-to-equity ratio. Consequently, the alternative hypothesis is disproved and the null hypothesis is accepted. This finding is consistent with earlier studies by (Popoola, & Suleiman, 2020). The outcomes deviate from Zelalem's expectations. As a result, the debt-to-assets ratio significantly and favourably affects the return on assets for DMBs in Nigeria. This suggests that the return on asset will rise by 0.209 units for every unit increase in debt to asset. Consequently, the alternative is accepted and the null hypothesis is disproved. This finding is in line with other studies conducted by Popoola and Sulaiman (2020) and Lawrence et al. (2021). However, the outcomes vary from those published by (Zelalem, 2020).

## **5. Conclusion and Recommendations**

### **5.1 Summary**

The results of the research showed that the return on equity of DMBS in Nigeria was unaffected by the debt-to-equity ratio. This suggests that changes to the debt-to-equity ratio don't significantly affect banks' profitability and financial performance. On the contrary, the research found that the return on equity of DMBs in the nation was positively and significantly impacted by the debt-to-asset ratio. It suggests that as the debt-to-asset ratio increases, the banks' profitability and financial status improve. Similar conclusions were reached on the apparent absence of influence of Nigerian DMBs' debt-to-equity ratio on return on assets. However, it was shown that the banks' return on assets was positively and significantly impacted by the debt-to-asset ratio. This illustrates how improved asset utilisation and greater return generation are associated with higher debt-to-asset ratios.

## 5.2 Conclusion

Based on the facts summarised above, it can be concluded that the debt-to-asset ratio has a bigger effect on the firm value of DMBs in Nigeria than the debt-to-equity ratio. This suggests that in order to improve their financial performance, banks should optimise their debt and asset mix.

## 5.3 Recommendations

In line with the summary of findings and conclusion, the study recommends the following:

- a. To attain the best possible balance between debt and assets, banks should appropriately manage their debt-to-asset ratio. This will need a comprehensive examination of the trade-off between risk and reward for different types of leverage.
- b. To reduce reliance on debt financing, banks should diversify their funding sources. Alternative funding options that may lower the risks associated with a large debt load include luring long-term investors or equity financing.
- c. For banks, ongoing evaluation and observation of financial leverage and financial performance metrics are crucial. This will force them to recognise any disparity or significant problems in their capital mix and take prompt action to address them.
- d. Policymakers and regulatory bodies have to keep an eye on DMBs' capital composition and financial results. A sustainable and sound financial situation should also be promoted by stating sound rules and regulations.

By implementing these recommendations, DMBs in Nigeria can enhance their financial performance and contribute to the stability and growth of the banking sector

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