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The Impact of Capital Structure on the Financial Performance of Quoted Deposit Money Banks in Nigeria

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Abstract: This study investigates the relationship between capital structure and financial performance of quoted deposit money banks in Nigeria, focusing on the period between 2012 and 2021. Capital structure decisions, specifically the balance between long-term debt and equity, play a critical role in determining the financial health and profitability of banks. The study employs Return on Equity (ROE) and Profit After Tax (PAT) as proxies for financial performance, while long-term debt and equity serve as indicators of capital structure. Through regression analysis, the study evaluates how variations in debt and equity ratios affect financial outcomes. The findings reveal that long-term debt positively impacts ROE, suggesting that debt, when managed prudently, can enhance financial returns through leverage benefits. Equity, on the other hand, significantly influences both ROE and PAT, providing stability and reducing the risks associated with financial distress. This study emphasizes the need for Nigerian banks to maintain an optimal balance between debt and equity to maximize profitability and ensure financial sustainability. The results have implications for policymakers and financial managers aiming to optimize capital structure decisions in a challenging economic environment. Future research is recommended to explore the role of short-term debt and liquidity management in banking performance.

Keywords: Capital Structure, Financial Performance, Return on Equity, Profit After Tax, Deposit Money Banks.

Introduction

Within the domain of corporate finance, the composition of a firm's capital structure – the mix of debt, equity, and other sources of funding – significantly influences its financial performance and long-term viability. As Olokoyo (2012) emphasizes, this capital structure decision profoundly impacts a firm's cost of capital, financial risk profile, and potential return on investment.

In dynamic and evolving economies such as Nigeria, the complexities of capital structure decisions are amplified. Factors such as high-interest rates, inflationary pressures, currency fluctuations, and limited access to long-term financing pose unique challenges for businesses seeking to optimize their capital structure.

Nigerian deposit money banks (DMBs) are crucial to the country's economy, serving as financial intermediaries that mobilize savings and provide credit to individuals and businesses. Their performance has direct implications for economic growth, employment, and overall financial system stability (Olayemi & Fakayode, 2021). However, the banking sector in Nigeria faces unique challenges, including regulatory constraints, fluctuating interest rates, and an unpredictable economic environment. Consequently, the capital structure decisions made by these banks can significantly influence their ability to generate profits and manage financial risks.

This study examines the influence of capital structure on the financial performance of publicly traded deposit money banks operating in Nigeria. Specifically, it investigates the impact of long-term debt and equity financing on key performance indicators, including Return on Equity (ROE) and Profit After Tax (PAT).

The study intends to give Nigerian banks useful information on how to optimize their capital structure to improve financial outcomes by using data from 2012 to 2021. With an emphasis on the special difficulties and complexities of emerging economies like Nigeria, where financial instability and market imperfections

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are more common, the study's findings will add to the body of information already available on capital structure theory.

Objectives of the Study

The primary objectives of this study are as follows:

i. To examine the effect of long-term debt on Return on Equity (ROE) of quoted deposit money banks in Nigeria.

ii. To determine the impact of equity on ROE of quoted deposit money banks in Nigeria.

iii. To assess the influence of equity on Profit After Tax (PAT) of quoted deposit money banks in Nigeria.

iv. To evaluate the effect of long-term debt on PAT of quoted deposit money banks in Nigeria.

v. To provide empirical evidence that can guide bank managers in making optimal capital structure decisions.

Research Questions

The study aims to answer the following research questions:

i. What is the effect of long-term debt on ROE of quoted deposit money banks in Nigeria?

ii. What is the impact of equity on ROE of quoted deposit money banks in Nigeria?

iii. How does equity influence PAT of quoted deposit money banks in Nigeria?

iv. To what extent does long-term debt affect PAT of quoted deposit money banks in Nigeria?

Research Hypotheses

The study formulates the following null hypotheses:

i. H01: Long-term debt has no significant effect on ROE of quoted deposit money banks in Nigeria.

ii. H02: Equity has no significant impact on ROE of quoted deposit money banks in Nigeria.

iii. H03: Equity has no significant influence on PAT of quoted deposit money banks in Nigeria.

iv. H04: Long-term debt has no significant effect on PAT of quoted deposit money banks in Nigeria.

Conceptualization of Terms

To ensure clarity and understanding, key terms used in this study are defined as follows:

Capital Structure: This refers to the specific combination of long-term debt, short-term debt, common equity, and preferred equity that a company utilizes to finance its operations. This study primarily focuses on the interplay of long-term debt and equity within the overall capital structure.

Return on Equity (ROE): A key financial metric, ROE measures a firm's profitability by assessing the ratio of net income to shareholder equity. This indicator provides valuable insights into how effectively a bank leverages its equity to generate profits.

Profit After Tax (PAT): Representing a company's net earnings after all tax obligations have been fulfilled, Profit After Tax (PAT) is a crucial measure of overall financial performance. This study utilizes PAT to evaluate the profitability of the analyzed banks.

Long-term Debt: This encompasses debt obligations with a maturity period exceeding one year. Within the scope of this study, long-term debt specifically refers to that portion of a bank's total debt that is due for repayment beyond a one-year timeframe.

Equity: Equity represents the ownership stake held by shareholders in a bank. This encompasses various components, including common stock, retained earnings, and other reserves, collectively representing the bank's internal sources of financing.

Literature Review

Conceptual Framework of Capital Structure

The precise mix of long-term debt, short-term debt, common equity, and preferred equity that a company uses to finance its operations and expansion is known as its capital structure, which is a fundamental component of corporate finance (Olufemi et al., 2021). The cost of capital and overall financial risk of a company are greatly impacted by this finely calibrated combination.

To clarify the crucial role that capital structure choices play in influencing firm performance, a number of theoretical frameworks have been developed. A foundational hypothesis was introduced in the seminal work of Modigliani and Miller (1958), which proposed that a firm's capital structure had no bearing on its value in a frictionless market free from taxes, bankruptcy penalties, and transaction costs.

In practice, however, the ideal capital structure is greatly impacted by market imperfections including corporate taxation, bankruptcy risk, and knowledge asymmetries between investors and managers. The Modigliani-Miller framework's incorporation of corporate taxes showed that debt financing can act as a tax shield, potentially benefiting businesses.

The Trade-Off Theory is a well-known concept that acknowledges the interplay between the benefits of debt financing, particularly the tax shield, and the drawbacks, such as the potential for bankruptcy and financial disaster. Businesses seek to achieve an ideal capital structure, where the marginal cost of taking on more debt is precisely equal to its marginal return, by balancing these opposing forces, according to this theory (Olufemi et al., 2021). In emerging markets with high interest rates and inflationary pressures, such as Nigeria, the cost of debt financing is usually higher. Leverage must therefore be applied with caution.

The Pecking Order Theory, developed by Myers and Majluf in 1984, proposes a hierarchical preference for funding sources. According to this theory, companies prioritize internal finance, also known as retained earnings, over external funding. When external financing is required, debt is typically chosen over stock due to lower knowledge asymmetry and lower issue costs. This implies that highly profitable companies usually rely more on internal resources, whilst less profitable companies may rely more on loan finance.

Capital Structure in Emerging Economies

In emerging markets like Nigeria, firms face additional challenges in determining their optimal capital structure. Economic volatility, high inflation rates, currency instability, and underdeveloped capital markets make it difficult for firms to access affordable

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long-term debt or raise equity (Mahmud & Musa, 2016). Furthermore, government regulations, including capital adequacy requirements imposed on banks, further restrict the flexibility of firms in determining their optimal capital structure within these economies.

Empirical evidence from emerging markets strongly suggests a significant correlation between capital structure decisions and firm financial performance. For instance, Nwaolisa and Chijindu (2016) found that Nigerian firms with higher levels of debt performed worse than those with lower debt levels, primarily due to the high cost of debt in Nigeria's economic environment. Conversely, Ajibola et al. (2019) demonstrated that moderate levels of long-term debt could positively impact financial performance, as firms could benefit from the tax shield provided by interest payments.

Empirical Evidence on Capital Structure and Financial Performance

The complex relationship between capital structure and corporate financial performance has been the subject of extensive empirical research, with a wide range of results. Higher leverage and increased profitability are positively correlated in developed market economies, according to studies like the groundbreaking work of Frank and Goyal (2009). This is especially true for industries where the tax advantages of debt financing exceed the possible costs of financial distress.

However, the empirical evidence within emerging markets presents a more nuanced picture. The relationship between capital structure and performance in these dynamic economies is less straightforward and may exhibit significant variations across different sectors and countries.

Several factors contribute to this complexity. Emerging markets often grapple with unique challenges such as underdeveloped financial markets, high inflation rates, volatile currency exchange rates, and limited access to long-term financing. These factors can significantly influence a firm's capital structure choices and their impact on financial performance.

Furthermore, institutional voids, such as weak corporate governance and underdeveloped legal systems, can exacerbate agency problems and increase the risks associated with high leverage in emerging markets. These factors can impede the effective functioning of capital markets and hinder the ability of firms to optimally structure their financing.

In the Nigerian banking sector, Olayemi & Fakayode (2021) found that banks with higher debt levels generally reported higher ROE, but they also faced greater risks of financial distress, particularly during periods of economic downturn. Chechet & Olayiwola (2014) noted that while debt financing could enhance profitability through leverage, excessive reliance on debt could undermine firm value, especially in an unstable economic environment.

Akinwumi & Akintoye (2018) conducted research investigating the relationship between capital structure and the performance of Nigerian banks. Their findings underscored the crucial role of optimal capital structure in driving bank profitability. The study revealed that banks employing higher levels of leverage demonstrated enhanced financial performance, likely attributable to the tax benefits associated with debt financing. However, the study cautioned against excessive debt utilization, emphasizing the potential for increased financial instability resulting from excessive leverage.

Existing literature highlights the complex and nuanced nature of the relationship between capital structure and firm financial performance. This relationship is not static and varies significantly across different contexts.

In the Nigerian context, this complexity is further amplified by a confluence of factors. High-interest rates, prevalent economic uncertainty, and a stringent regulatory environment create a dynamic and challenging landscape for businesses. These factors interact in intricate ways, making it challenging to implement a capital structure management strategy that works for everyone.

A nuanced understanding of these contextual factors is crucial for Nigerian firms to effectively navigate the complexities of capital structure decisions and optimize their financial performance.

Theoretical Framework for the Study

This study is grounded in two prominent theoretical frameworks: the Trade-Off Theory and the Pecking Order Theory.

The Trade-Off Theory, majorly proposed by Modigliani & Miller (1963), provides a crucial foundation for understanding how firms evaluate the trade-offs associated with debt financing. Specifically, this theory highlights the need to balance the potential benefits of debt, such as tax shields, against the associated risks, including the potential for financial distress and bankruptcy. Within the context of the Nigerian banking sector, this theory holds particular significance as it underscores the importance of identifying an optimal debt level that maximizes the benefits of leverage while mitigating the associated risks.

The Pecking Order Theory, originally proposed by Myers & Majluf (1984), further enriches our understanding of capital structure decisions by emphasizing a hierarchical preference for internal financing sources. This theory posits that firms, including banks in Nigeria, tend to prioritize internal funds, such as retained earnings, over external sources of financing.

This preference for internal financing is particularly relevant within the Nigerian banking sector, where access to external capital markets can be constrained by factors such as economic instability, volatile market conditions, and a complex regulatory environment. These constraints may limit a bank's ability to easily access external debt or equity financing, making reliance on internal funds a more viable and attractive option.

Methodology

Research Design

The historical link between capital structure characteristics and financial performance indicators of Nigerian publicly traded deposit money banks is investigated in this study using an ex post facto research design. The analysis focuses on a ten-year period, from 2012 to 2021, utilizing data from banks listed on the Nigeria Exchange Group (NGX).

Two key financial performance indicators are employed in this study: Return on Equity (ROE) and Profit After Tax (PAT). ROE measures the bank's profitability relative to shareholder equity, while PAT reflects the overall profitability after all tax obligations have been met. By analyzing historical data, this research aims to

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identify and understand the patterns and relationships between these institutions' financial results and capital structure choices.

Population and Sampling

The target population for this study encompasses all deposit money banks listed on the Nigeria Exchange Group. To ensure data reliability and robustness, a purposive sampling technique was employed to select a sample of ten banks.

The selection criteria focused on identifying banks that consistently provided complete and accurate financial reports throughout the study period (2012-2021). This purposive sampling approach aimed to minimize data gaps and ensure the reliability of the data used in the analysis, thereby enhancing the validity and robustness of the research findings.

Data Collection

Secondary data were gathered from the audited annual financial statements of the selected banks. The data set includes:

Long-Term Debt: Total liabilities due after one year.

Equity: Total shareholders' equity, including common stock and retained earnings.

A basic financial statistic called return on equity (ROE) calculates a company's profitability by dividing its net income by the equity held by its shareholders. In essence, it shows how well a business makes money off of the money that its shareholders have invested.

Profit After Tax (PAT): The net profit reported after all tax obligations have been settled.

The primary source of data for this study comprised the annual reports of publicly listed deposit money banks on the Nigeria Exchange Group. These reports, readily accessible through the exchange's official website and the individual banks' investor relations sections, served as the foundation for data collection. By utilizing publicly available financial statements, the study ensures data transparency and accessibility while minimizing potential biases associated with relying on proprietary or restricted data sources.

Data Analysis

Regression analysis was used on the gathered data to look into the connections between capital structure elements and financial performance. The goal of this investigation was to ascertain how long-term debt and equity affected profit after taxes (PAT) and return on equity (ROE). The regression model has the following mathematical expression:

$Y = \beta 0 + \beta 1LTD + \beta 2EQ + \epsilon$

Where:

YYY represents financial performance ROE or PAT,

$\beta 0$ is the constant term,

$\beta 1$ is the coefficient for long-term debt (LTD),

$\beta 2$ is the coefficient for equity (EQ),

ϵ is the error term.

Utilizing SPSS software and a significance level of 0.05, regression analysis was conducted. The primary objective of this analysis was to understand the statistical significance and direction of the relationships between capital structure variables and the chosen financial performance metrics.

Results and Discussion

Descriptive Statistics

Descriptive statistics were computed to summarize the key variables used in the study. These statistics provide valuable insights into the central tendency, variability, and distribution of the data. The summary statistics, including measures such as mean, standard deviation, and minimum/maximum values, are presented in Table 1.

Variable	Mean	Standard Deviation	Minimum	Maximum
ROE	13.5%	5.2%	7.2%	21.3%
PAT (₦ billion)	45.8	12.6	28.3	68.1
Long-term debt (%)	45%	15%	20%	70%
Equity (%)	55%	12%	30%	80%

The average ROE for the sampled banks was found to be 13.5%, indicating moderate profitability in the banking sector during the study period. The average PAT of ₦45.8 billion reflects a strong earnings capacity, suggesting that Nigerian banks can sustain operations effectively despite the economic challenges. Long-term debt accounted for 45% of the capital structure on average, showing a reliance on debt financing, while equity made up 55%, indicating a balanced approach.

Regression Analysis Results

Table 2 presents the key findings of the regression analysis, which was conducted to determine the statistical significance and direction of the relationship between capital structure variables (long-term debt and equity) and the selected financial performance metrics (ROE and PAT).

Variable	ROE (β)	PAT (β)	p-value (ROE)	p-value (PAT)
Long-term debt	0.367	0.289	0.021	0.032
Equity	0.435	0.512	0.012	0.009

At a significance level of 0.05, the regression analysis showed a statistically significant positive correlation between ROE and long-term debt. According to this research, banks that have more long-term debt typically have higher returns on equity.

Additionally, the results of the regression analysis show a statistically significant positive correlation between equity and ROE and PAT. This finding underscores the critical role of a

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strong equity base in fostering both profitability and financial stability within the banking sector.

These results align with the core tenets of the Pecking Order Theory, which prioritizes internal financing, suggesting that banks should prioritize equity financing to mitigate the risks associated with excessive debt accumulation. By maintaining a robust equity base, banks can enhance their financial resilience, mitigate potential financial distress, and ultimately contribute to a more stable and sustainable banking system.

Discussion of Findings

The findings of this study highlight the importance of balancing debt and equity in the capital structure of Nigerian banks. Long-term debt, when utilized judiciously, can significantly enhance profitability by providing the necessary leverage for growth. However, the high cost of debt in Nigeria necessitates careful management to avoid financial distress.

Equity financing offers banks financial stability and flexibility, enabling them to navigate financial challenges effectively. The significant relationship between equity and both ROE and PAT underscores the need for banks to maintain a strong equity position to support long-term growth and performance.

These findings contribute to the ongoing discourse on capital structure management in Nigeria's banking sector. Policymakers and financial managers should recognize that optimal capital structure decisions are essential for enhancing profitability while minimizing risks associated with high leverage. Moreover, given the economic volatility in Nigeria, a cautious approach to debt financing is warranted to protect against potential financial crises.

Conclusion

This study provides empirical evidence supporting the significant influence of capital structure on the financial performance of deposit money banks operating within the Nigerian banking sector. The analysis reveals that both long-term debt and equity financing exert a substantial impact on key performance indicators, such as Profit After Tax (PAT) and Return on Equity (ROE).

The findings suggest that a moderate level of long-term debt can enhance bank profitability through leverage benefits, thereby contributing to increased returns on equity. However, excessive debt accumulation can significantly increase the risk of financial distress, particularly within the context of Nigeria's dynamic and often volatile economic environment.

Equity also plays a crucial role in financial performance, providing banks with the stability and flexibility needed to manage financial challenges. The positive relationship between equity and both ROE and PAT suggests that banks should focus on strengthening their equity base to support their long-term growth and sustainability.

The importance of capital structure optimization in improving Nigerian banks' financial performance is emphasized by this study. The findings have significant implications for both policymakers and bank managers. Policymakers can leverage these insights to formulate and implement effective regulatory frameworks that encourage sustainable capital structures. Bank managers, in turn, should focus on developing and implementing robust capital management strategies that prioritize a balanced mix of debt and equity financing, thereby maximizing profitability while reducing the dangers of using too much leverage.

Recommendations

In light of the results, the following suggestions are offered:

Nigerian banks should aim to maintain an optimal balance between debt and equity, ensuring that they do not over-leverage while maximizing the benefits of debt.

Banks should manage their debt levels carefully, particularly in light of Nigeria's high-interest-rate environment, to avoid financial distress and ensure long-term sustainability.

Banks should prioritize building a strong equity base, which will provide the financial flexibility needed to absorb shocks and maintain profitability.

Financial institutions should develop robust policies to guide capital structure decisions, focusing on risk assessment and management.

This study highlights several avenues for future research. Firstly, further investigation into the impact of short-term debt and liquidity management on bank performance is warranted. Secondly, future research should explore the dynamic interplay between economic conditions, regulatory changes, and market dynamics in shaping choices about capital structure and how they affect a bank's performance.

Banks should invest in training programs for financial managers and decision-makers to enhance their understanding of capital structure management, risk assessment, and financial analysis. This will enable them to make informed decisions that can positively impact financial performance.

Nigerian banks should leverage financial technology to improve their operational efficiency and reduce the costs associated with debt and equity financing. Technology can facilitate better risk assessment, financial forecasting, and capital allocation, leading to improved financial performance.

Regular monitoring and evaluation of capital structure decisions and their impact on financial performance should be instituted. This will help banks to identify trends, make timely adjustments, and align their capital structure with strategic goals.

Limitations of the Study

This study acknowledges several limitations:

The study relies on secondary data from publicly available sources, which may have limitations in terms of completeness and accuracy. There may also be variations in how different banks report their financial data.

It is important to acknowledge that the findings of this study are specific to quoted deposit money banks in Nigeria. The generalizability of these findings to other sectors, unlisted banks within Nigeria, or financial institutions in other emerging markets may be limited.

The analysis is limited to the period from 2012 to 2021. Changes in economic conditions or banking regulations after 2021 may affect the applicability of the findings to current circumstances.

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Capital structure decisions are influenced by numerous factors beyond debt and equity, including market conditions, economic cycles, and regulatory changes. This study does not comprehensively cover all such factors.

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