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GEARING RATIO AND PROFITABILITY OF LISTED CONSTRUCTION FIRMS IN NIGERIA

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ABSTRACT

The study examined the effect of gearing ratio on the profitability of listed construction firms in Nigeria. Specifically, the study determine the extent to which debt to equity ratio, debt to asset ratio, interest coverage ratio and debt to market capitalization ratio affect the return on assets of listed construction firms in Nigeria. The study is anchored on Pecking Order theory Ex-post facto research design was adopted in the study. The population of the study included all the eight construction companies that are listed on the floor of the Nigerian Exchange Group, from which a sample size of six was purposively selected. Secondary data were sourced from the annual reports of the firms over a span of ten years which covered 2014 to 2023 accounting periods. Descriptive analysis, Pearson correlation and multicollinearity diagnostics were conducted prior to hypotheses testing. The result of the Panel Estimated Generalised Least Square used in testing the hypotheses revealed that: debt to equity ratio has a positive but non-significant effect on the return on assets of listed construction firms in Nigeria (β = 0.000316; p-value = 0.2297); debt to asset ratio has a negative and significant effect on the return on assets of listed construction firms in Nigeria (β = -0.178356; p-value = 0.0000); interest coverage ratio has a positive and significant effect on the return on assets of listed construction firms in Nigeria (β = 0.049435; p-value = 0.0000); debt to market capitalization ratio has a positive and significant effect on the return on assets of listed construction firms in Nigeria (β = 0.000431; p-value = 0.0023). In conclusion, while high levels of debt relative to assets can be detrimental to profitability, other measures, such as interest coverage and the debt to market capitalization ratio, can have positive effects on firm profitability. The study recommends that finance directors and strategic planners of listed construction firms should reduce the level of debt relative to total assets by paying down high-interest debt or seeking alternative financing options in order to mitigate the negative effects of excessive debt while potentially improving the firms' ability to generate returns from their assets.

Key words: *Debt to Asset Ratio, Debt to Equity Ratio, Debt to Market Capitalization Ratio, Gearing Ratio, Profitability*

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1. INTRODUCTION

The gearing ratio, also known as the leverage ratio or capital structure ratio, is a fundamental metric in financial analysis that holds significant importance for a variety of stakeholders, including investors, creditors, management, and even policymakers. Its significance lies in its

ability to provide hints about a company's financial risk, operational efficiency, and overall financial health (Oranefo & Egbunike, 2023; Imeokparia, Adesanmi & Fadipe, 2021). Adeleke (2021) submitted that gearing ratio is a crucial tool for assessing a company's financial risk since it indicates the extent to which a company relies on debt to finance its operations and investments. High gearing ratios suggest a higher level of financial risk because a company with a significant debt burden may struggle to meet its obligations, especially in challenging economic conditions (Yusuf, 2022; Gikama, 2019). On the other hand, low gearing ratios may indicate lower financial risk but could also suggest underutilization of debt for potential growth (Bui, Nguyen & Pham, 2023; Musa & Ibrahim, 2022). In essence, gearing ratios such as debt equity ratio, debt asset ratio, interest coverage ratio and debt to market capitalization ratio are a crucial factor in determining how a firm balances the advantages and risks of using debt (Harris & Mawardi, 2023). Firms must strike a delicate balance between leveraging debt for potential growth opportunities and maintaining financial stability to ensure they can meet their obligations (Ikwuo, Nwite, Nworie & Nworie, 2025). This balance directly affects their profitability – too much debt can increase risk and costs, potentially compromising profitability (Jayiddin, Jamil & Roni, 2017), while a more conservative approach with lower debt levels can enhance stability and flexibility, often leading to more consistent and sustainable profitability (Kofoworola, 2022).

Firm profitability refers to a company's ability to generate earnings in relation to its overall financial structure and operations. However, firms with high gearing ratios tend to experience several notable effects on their profitability. According to Muhammed (2023), they face heightened financial risk, especially during economic downturns or adverse market conditions. The substantial interest payments and debt servicing obligations associated with high debt levels can erode profitability as a substantial portion of earnings may be allocated to servicing debt rather than reinvestment or profit distribution to shareholders (Hidayat & Kurniasih, 2022). In addition, high gearing ratios often result in elevated fixed interest costs. These fixed expenses can weigh on profitability, particularly when revenue and earnings exhibit volatility or decline. Moreover, the pressure to maintain high profitability to meet debt obligations and sustain investor confidence can lead companies to make riskier business decisions or engage in cost-cutting measures. While these actions may temporarily boost profitability, they may not always be conducive to long-term sustainable growth, according to John (2022). High gearing ratios can have repercussions on a firm's creditworthiness. This can translate to higher borrowing costs, which can strain profitability as interest expenses rise, further compounding the challenges associated with high gearing (Musa & Ibrahim, 2022).

In contrast, firms with low gearing ratios often enjoy greater stability and financial flexibility. They are less burdened by debt servicing obligations, allowing them to allocate a higher proportion of earnings toward reinvestment in the business, research and development, or dividend payments to shareholders (Gikama, 2019). Low gearing ratios also serve to reduce financial risk, making the firm less susceptible to economic downturns or adverse market conditions (Muhammed, 2023). As a result, profitability tends to be more consistent and less subject to the volatility often associated with high gearing. Moreover, low gearing ratios can enhance investor confidence. They signify a conservative approach to capital structure, which can attract long-term investors seeking stable returns. This, in turn, can positively impact profitability as investors are more likely to remain committed to the company (Kofoworola, 2022). Firms with low gearing ratios often have more resources at their disposal for strategic investments, such as mergers and acquisitions. These strategic moves can enhance profitability in the long run, further highlighting the advantages of a balanced capital structure. Furthermore, investors, both individual and institutional, closely examine a company's gearing ratio when making investment decisions. A high debt equity ratio or debt asset ratio may offer the potential for higher returns due to the leverage effect, but it also comes with increased risk (Olaniyi, Abiloro & Olaniyan, 2022). Conversely, a low gearing ratio may provide stability but may not offer the same growth potential. Creditors and lending institutions use the gearing ratio to assess a company's creditworthiness. A high gearing ratio can raise concerns about a company's ability to repay loans, impacting its ability to secure favorable lending terms and interest rates. A low gearing ratio may make a company a more attractive borrower but might not provide the same financial flexibility as leveraging debt for growth opportunities (Aishwarya, 2022).

For company management, the debt to market capitalization ratio influences strategic decision-making regarding capital structure. A company's optimal capital structure depends on various factors, including industry norms, market conditions, and growth objectives. A well-balanced gearing ratio can optimize the cost of capital and maximize shareholder value (Liviani & Rachman, 2021). In general, gearing ratios are valuable for assessing a company's financial performance over time since such ratios reveal how effectively a company utilizes debt to drive profitability. The challenge of maintaining an optimal gearing ratio lies in the difficulty of balancing debt and equity financing. Striking this balance is crucial for firms to leverage financial resources effectively for growth while avoiding excessive financial risk. However, achieving this equilibrium is complex, as firms must navigate the trade-offs

between leveraging debt to fuel expansion and ensuring financial stability. If not properly managed, an imbalanced gearing ratio can lead to higher financial costs and increased vulnerability, ultimately hindering profitability and limiting shareholder returns (Essel, 2023; Adeleke, 2021). It is disturbing problem that many construction companies in Nigeria tend to exhibit either excessively high levels of debt, leading to a precarious financial position (Muhammad & Zango, 2021), or an inadequate reliance on external financing, potentially limiting their capacity for expansion and investment. Consequently, those firms with an imbalanced gearing ratio often experience increased financial risks (Kaweekwa, 2021), including higher interest expenses and potential insolvency threats, which can erode profitability (Abubakar, 2020). Worst of all, firms with underutilized debt financing also miss out on opportunities for growth and improved profitability (Zainudin, Ibrahim, Hussain & Hadi, 2017).

It is in view of addressing the problem above that this study elects to examine the effect of gearing ratios on the profitability of listed construction firms in Nigeria. Few of the previous scholars which examined similar problem include: Harris and Mawardi (2023); Oranefo and Egbunike (2023); Bui et al. (2023); Muhammed (2023); Kofoworola (2022); Hidayat and Kurniasih (2022); Yusuf (2022); John (2022); Musa and Ibrahim (2022); Essel (2023); Aishwarya (2022); Olaniyi et al. (2022); et cetera. However, to the best knowledge of the researcher, existing studies have neglected including debt to market capitalization ratio as one of the proxies of gearing ratios. It is necessary to include this ratio in order to relate the company's debt to its market perception and then ascertain whether such variable substantially influences firm profit levels. It is in view of addressing this gap in knowledge that the present study is carried out.

1.1 Objectives

The main objective of the study is to examine the effect of gearing ratio on the profitability of listed construction firms in Nigeria. Specifically, the study determines:

1. the effect of debt to equity ratio on the return on assets of listed construction firms in Nigeria.
2. the effect of debt to asset ratio on the return on assets of listed construction firms in Nigeria.
3. the effect of interest coverage ratio on the return on assets of listed construction firms in Nigeria.

4. the effect of debt to market capitalization ratio on the return on assets of listed construction firms in Nigeria.

1.2 Hypotheses

The study tested the following null hypotheses:

H_{01}: Debt to equity ratio has no significant effect on the return on assets of listed construction firms in Nigeria.

H_{02}: Debt to asset ratio does not significantly affect the return on assets of listed construction firms in Nigeria.

H_{03}: Interest coverage ratio does not significantly affect the return on assets of listed construction firms in Nigeria.

H_{04}: Debt to market capitalization ratio has no significant effect on the return on assets of listed construction firms in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Gearing Ratio

Gearing ratio is defined as a measure of how a company utilizes debt to finance its operations and investments in comparison to its equity or ownership capital (Meteke, Ehiedu, Ndah & Onuorah, 2022). As organizations aim to expand their goals, objectives, and ambitions, their responsibilities invariably increase, exerting significant pressure on their available resources. According to Oranefo and Egbunike (2023), gearing constitutes an essential component of an entity's capital structure and plays a crucial role in establishing financial stability, a cornerstone of the going concern concept for organizations. Gearing is widely recognized as a potent avenue for realizing ambitious aspirations and ensuring comprehensive financial stability (Adeleke, 2021). Organizations frequently formulate goals and objectives aimed at propelling them to new heights of development, and the state of solvency plays a pivotal role in the pursuit of these objectives. Gearing serves is a pivotal tool to navigate these financial challenges, ensuring that organizations can effectively secure the resources required to propel their mission and aspirations forward (Harris & Mawardi, 2023).

The management of debt levels within an organization represents a significant driver in assessing financial risk (Meteke et al., 2022). Financial risk pertains to the heightened exposure of equity holders stemming from financial gearing. Introducing fixed interest debt into the capital structure amplifies this financial risk, primarily because interest payments

must be honored irrespective of fluctuations in earnings. This underscores the intricate relationship between financial leverage, financial stability, and the attainment of organizational objectives. A company's gearing ratio serves several crucial purposes in financial analysis and decision-making. Gearing ratio is a pivotal indicator of a company's financial risk because a higher ratio implies a greater reliance on borrowed funds, increasing the risk associated with servicing that debt (Adeleke, 2021). In contrast, a lower ratio suggests a more conservative approach, with a decreased financial risk. Investors and shareholders often scrutinize the gearing ratio when evaluating a company's attractiveness as an investment. A high ratio may indicate potential for increased profitability, as leveraging can amplify returns, but it also heightens the risk. Conversely, a lower gearing ratio can be appealing to conservative investors seeking stability (Oranefo & Egbunike, 2023).

In addition, lenders and creditors utilize the gearing ratio to assess a company's creditworthiness. A lower ratio may indicate a better ability to repay debt, leading to more favorable borrowing terms and lower interest rates. In contrast, a higher gearing ratio may lead to more stringent lending conditions. Gearing ratio plays a significant role in corporate financial strategy because it helps management decide on the optimal mix of debt and equity to fund the company's operations and expansion (Hidayat & Kurniasih, 2022). Different industries and economic conditions may necessitate varying levels of leverage. Companies within the same industry often compare their gearing ratios to understand how they stack up against their competitors. This benchmarking can help identify opportunities for improvement or areas where the company excels. By evaluating the gearing ratio over time, stakeholders can gain insights into a company's long-term financial health. Consistently high gearing ratios may raise concerns about sustainability, while a steady, well-balanced ratio indicates stability.

2.1.1.1 Debt to Equity Ratio

Debt-to-equity ratio is defined as a ratio that assesses the relationship between a company's total debt and shareholders' equity (Heikal, Khaddafi & Ummah, 2014). This ratio not only indicates company's capital structure, but also its financial health, and risk profile. Debt-to-equity ratio reflects the proportion of a company's financing derived from external debt compared to the investment made by its shareholders (Meteke et al., 2022). It essentially measures the extent to which a company relies on borrowed funds versus its owners' equity (Utari, 2023). Debt, in this context, includes all forms of financial obligations a company must meet, such as bank loans, bonds, or any other form of debt financing. It encompasses both short-term and long-term debt (Ubeh & Nwoye, 2024), making it a comprehensive indicator

of financial liabilities. On the other side of the equation is shareholders' equity, which represents the residual interest in the company's assets after deducting all its liabilities. Shareholders' equity includes common stock, preferred stock, retained earnings, and additional paid-in capital.

Debt to equity ratio helps investors, analysts, and creditors gauge the financial risk associated with a company. According to Hasanudin, (2023) and Ubeh and Nwoye (2024), a higher Debt to Equity (D.E) ratio indicates a greater reliance on debt, which can elevate financial risk due to interest payments and debt obligations. A prudent balance between debt and equity often implies a healthier financial position. Companies with substantial equity tend to weather financial downturns more effectively. The ratio is a key indicator of the leverage employed by a company. A high D/E ratio can amplify both returns and risks, as interest payments can enhance profitability during prosperous times but magnify losses during downturns. Investors and analysts use the D/E ratio as part of their due diligence when considering investment opportunities. Ubeh, Okoye, Nwoye and Amahalu (2024) opined that a debt to equity ratio of 1 would mean that investors and creditors have an equal stake in the business assets. Creditors view a higher debt to equity ratio as risky because it shows that the investors have not funded the operations as much as creditors have. Creditors also evaluate this ratio to determine a borrower's creditworthiness. Companies themselves use this ratio when formulating their financial strategies. They may adjust their capital structure to optimize financial stability or leverage.

2.1.1.2 Debt to Asset Ratio

Debt-to-asset ratio is defined as a ratio which quantifies the proportion of a company's total debt relative to its total assets, indicating how assets are financed (Meteke et al., 2022). Debt-to-asset ratio reveals the extent to which a company relies on debt financing to support its asset base and operations. Debt-to-asset ratio helps assess the level of financial risk a company carries (Utari, 2023). A higher D/A ratio indicates a greater reliance on debt, which can amplify financial risk due to interest payments and debt obligations. A prudent balance between debt and assets implies a healthier financial position. Companies with a substantial asset base funded by equity tend to be more resilient in times of financial stress.

Debt-to-asset ratio is a key indicator of a company's capital structure because it determines the mix between debt and equity used to finance a company's assets (Siagian, Wijoyo & Cahyono, 2021). However, appropriate D/A ratios vary across industries. Capital-intensive

industries, such as utilities or real estate, may naturally have higher D/A ratios, while technology companies might aim for lower ratios. Analysts often compare a company's D/A ratio with industry averages or competitors to assess its relative financial health and risk profile. Investors, analysts, and creditors use the D/A ratio when evaluating investment opportunities or assessing a company's creditworthiness. It is a critical factor in their decision-making process. Companies themselves use the D/A ratio to guide their financial strategies. They may adjust their capital structure to achieve specific financial goals or to optimize their risk profile. Thus, the debt-to-asset ratio is an essential financial metric that provides hints about a company's financial structure, risk exposure, and asset financing.

2.1.1.3 Interest Coverage Ratio

Interest Coverage Ratio is a ratio that evaluates a company's ability to meet its interest payment obligations by comparing its earnings before interest and taxes (EBIT) to its interest expenses (Setiany, 2021). It provides a comprehensive view of a company's financial health by comparing its earnings before interest and taxes (EBIT) to its interest expenses. EBIT, often known as operating profit, is a fundamental component of the Interest Coverage Ratio. It represents a company's profitability before accounting for interest expenses and income taxes. EBIT is a crucial indicator of a company's operating performance and its ability to generate income from its core business operations. Interest expenses encompass all the costs associated with servicing a company's debt. This includes interest payments on loans, bonds, and any other borrowings. Interest expenses are a significant financial obligation that a company must meet regularly to avoid default. The Interest Coverage Ratio is calculated by dividing a company's EBIT by its interest expenses (Meteke et al., 2022). Interest Coverage Ratio is a critical measure of a company's financial health since it helps determine whether a company is generating sufficient earnings to comfortably meet its interest payments (Ji, 2019). A high ratio indicates that the company has a substantial buffer to cover interest expenses, while a low ratio suggests that it may be at risk of default. Lenders and creditors use the ICR to evaluate the risk associated with lending to a company. A high ratio implies a lower risk of default, making it more attractive to lenders. Conversely, a low ratio may raise concerns about the company's ability to service its debt.

For investors, the ICR plays a pivotal role in assessing the financial stability of a company. Companies with a strong interest coverage ratio are generally considered safer investments, as they are better equipped to weather financial challenges. In contrast, a weak ICR may be a red flag for potential investors. ICR is an essential tool for a company's management when

making strategic decisions regarding its capital structure and debt management. It guides decisions on the amount and type of debt a company can reasonably take on without compromising its financial stability (Palomino, Paolillo, Perez & Sanz-Maldonado, 2019). When a company seeks additional financing, the Interest Coverage Ratio influences the terms it can secure. A strong ICR can lead to more favorable borrowing terms, such as lower interest rates, longer loan tenures, and larger credit lines. A declining ICR can serve as an early warning sign of financial distress. If the ratio deteriorates over time, it may indicate that a company's financial position is weakening, prompting stakeholders to take corrective action. Thus, Interest Coverage Ratio is a key financial index that assesses a company's ability to meet its interest payment obligations (Kurnia, 2022). A strong ICR is indicative of a company's financial stability and creditworthiness, while a weak ICR raises concerns about its ability to service its debt and manage financial risks.

2.1.1.4 Debt to Market Capitalization Ratio

Debt to Market Capitalization Ratio is defined as a ratio which compares a company's total debt to its market capitalization (market value of equity) (Srivastav, 2023). It relates the company's debt to its market perception. Debt to Market Capitalization Ratio gauges the proportion of a company's financing that comes from borrowed funds in relation to the value of its equity as perceived by the market (Kenton & Kindness, 2020). Market capitalization, often known as market cap, is the product of a company's stock price and the total number of outstanding shares. It is a reflection of the collective market perception of the company's value and future prospects. In essence, it is the market's valuation of the company's equity.

Debt to Market Capitalization Ratio is computed by dividing the company's total debt by its market capitalization and multiplying the result by 100 to express it as a percentage. This ratio serves as a risk assessment tool. A higher Debt to Market Capitalization Ratio suggests that a significant portion of a company's capital structure is reliant on borrowed funds. This heightened leverage can amplify financial risks during economic downturns or periods of high interest rates. For investors and creditors, this ratio helps gauge a company's solvency, i.e., its ability to meet its debt obligations. A lower ratio indicates a stronger financial position, while a higher ratio could raise concerns about the company's ability to service its debt (Kenton & Kindness, 2020). Comparing a company's Debt to Market Capitalization Ratio with industry peers or sector averages can provide valuable insights. Different industries have varying levels of debt tolerance, and this comparison helps assess whether a company is in line with its competitors. Summarily, Debt to Market Capitalization Ratio is a vital financial index that

encapsulates a company's financial leverage, risk exposure, and solvency because it plays a pivotal role in the assessment of a company's financial stability, making it an indispensable tool for investors, analysts, and corporate decision-makers alike (Srivastav, 2023).

2.1.2 Profitability

Firm profitability is defined as a measure of a company's ability to generate profits from its operations and is often quantified through metrics like net income or operating profit (Muhammed, 2023). Firm profitability reflects the effectiveness and efficiency of a company in utilizing its resources, managing costs, and ultimately delivering value to its stakeholders. Profitability is a fundamental indicator of a company's financial health. Profitability directly affects shareholder value since companies that are consistently profitable can reinvest in their business, distribute dividends to shareholders, and potentially see an increase in their stock prices (Kodongo, Mokoaleli-Mokoteli & Maina, 2015). Firm profitability for Nworie and Nwoye (2023) represents the measure of the surplus generated when a company's revenue surpasses its incurred expenses. It stands as the ultimate outcome of a company's operations, reflecting its ability to effectively manage its assets (Musa & Ibrahim, 2022). The concept of profitability holds a central position in the minds of business professionals across diverse organizations, as the financial performance of a company holds profound implications for its overall well-being and, ultimately, its survival (Zainudin et al., 2017). Robust financial performance is an indicator of the efficiency and effectiveness with which a company deploys its resources (Aishwarya, 2022).

A company that consistently performs well is typically one that demonstrates effectiveness and efficiency in pursuing long-term success, adhering to standards, and judiciously leveraging its resources to achieve high levels of performance. For managers of firms, the pursuit of high operational performance is a paramount concern, given its far-reaching impact on their corporate endeavors. This impact encompasses facets such as the efficient utilization of limited resources, aligning with the objectives of investors (aimed at wealth maximization), and meeting the obligations to lenders by ensuring timely repayment of debts and associated interest charges. Every profit-oriented organization, including construction firms, is dedicated to achieving enhanced financial performance with the aim of maximizing shareholders' wealth and enhancing the value of the company. The pursuit of profitability is not solely the concern of management; it also extends to shareholders and stakeholders. Consequently, it is reasonable to anticipate that managers of highly profitable firms would be incentivized to provide more comprehensive information, differentiating themselves from less profitable

counterparts. Firm profitability serves as a measure of the extent to which a business successfully generates profit (Nworie & Aniefuna, 2024) by efficiently utilizing the factors of production, including labor, management, and capital. It centers on the correlation between revenue and expenses while also assessing the level of profits in relation to the magnitude of the investment in the business. This interplay between revenues, costs, and returns plays a fundamental role in shaping the financial health and reputation of the firm.

Profitable firms are generally more attractive to investors since strong profitability is often seen as a sign of a well-managed and competitive business, which can lead to increased investor interest and a higher market valuation (Kodongo et al., 2015). Profitability can act as a buffer against economic downturns and unexpected expenses. Companies with healthy profit margins are better equipped to withstand financial shocks and adapt to changing market conditions. Profitability metrics, especially return on asset, assesses a company's operational efficiency. A high return on asset signifies that the company is generating substantial profits from its asset utilisation. For businesses, profitability is not only a measure of past performance but also a strategic goal for the future. Maintaining and enhancing profitability is crucial for long-term sustainability and achieving growth objectives. It can attract investors, provide resources for innovation and expansion, and allow for rewarding shareholders. Thus, firm profitability is a central concept in the world of finance and business because it encompasses various metrics and ratios that measure a company's financial health, operational efficiency, and overall competitive strength (Kodongo et al., 2015; Moedu, Amahalu & Nworie, 2023).

2.1.2.1 Return on Asset

Return on Assets (ROA) is an indicator of how profitable a company is in relation to its total assets (Hasanudin, 2023). It gives an idea as to how efficient the management uses assets to generate earnings. ROA represents the profitability of the firm with respect to the total set of resources, or assets, under its control (Heikal et al., 2014). Profitability shows the degree to which a firm’s revenues exceed its cost. Meaning that, return on assets (ROA) is one of profitability ratios. In the analysis of financial statements, this ratio is most often highlighted, because it is able to indicate company success to create profits. ROA is able to measure the company ability to generate profits in the past to then be projected in the future.

Assets in question are overall company properties, obtained from the capital itself or from foreign capital that has been converted into company assets used for corporate sustainability.

Return on asset (ROA) is calculated by comparing available net profit after tax to total assets (Nworie & Mba, 2022). Available net profit for common shareholders ROA = Total assets, whereas the ROA measures not only profit aspect but also that related to assets employed to generate the profit. (ROA is calculated by Net profit /Total Assets. Higher ROA value indicates better company performance, because of higher return on investment rate. It is calculated thus:

$$Return\ on\ Assets\ (ROA) = \frac{Net\ Profit\ After\ Tax}{Total\ Assets}$$

This value reflects the company's return on all assets (or funding) provided to the company. It is expected that increase in reasonable returns ae generated based on the additions to asset put to use by the organization on a yearly basis as this asset are intended to improve firm performance.

2.2 Theoretical Review

2.2.1 Pecking Order Theory

The Pecking Order theory, initially proposed by Myers and Majluf in 1984, has become a renowned concept in financial theory. This theory revolves around the idea that equity issuance is generally the least favored method for raising capital (Frank & Goyal, 2008). The rationale behind this preference stems from the assumption that managers, who possess a more comprehensive understanding of the firm's true financial condition compared to external investors, would only resort to issuing new equity if they believed that the firm was overvalued (Chen & Chen, 2011). In essence, the issuance of new equity suggests that managers are capitalizing on this perceived overvaluation.

According to the Pecking Order theory, firms tend not to adopt a precise or optimal mix of capital but rather adhere to a hierarchical "pecking order" when making financial decisions. This pecking order begins with internally generated funds at the pinnacle, followed by debt issuances (Serrasqueiro & Caetano, 2015). Only when a company reaches its predefined "debt financing" limits will it consider resorting to new equity financing. A fundamental element to consider within this theory is the cost of equity. This cost encompasses not only the expenses associated with issuing new shares but also the cost associated with retained earnings. The Pecking Order theory essentially operates on the premise that firms prefer to utilize internal funds as their primary source of financing, followed by less costly debt issuances (Sheikh, Ahmed, Iqbal & Masood, 2012). The utilization of new equity financing is typically the last

resort and is primarily triggered by the firm's financial constraints, such as hitting predetermined debt limits.

This theory has significant implications for understanding how companies make financial decisions. It underscores the aversion to equity issuance, particularly when it may signal overvaluation to investors. By prioritizing internal funds and debt financing, firms aim to maintain financial stability while minimizing the signaling effect that issuing new equity might have on market perceptions (Cotei & Farhat, 2009). Thus, the Pecking Order theory explains the relationship between capital structure decisions, investor perceptions, and the overall financial strategy of companies. It recognizes that firms tend to navigate a financial hierarchy rather than meticulously optimizing their capital mix, providing valuable insights into corporate financial behavior and strategic choices. Moreover, the Pecking Order theory places a fundamental emphasis on the primary objective of a firm, which is to maximize the wealth of its shareholders. Within this theory, a structured hierarchy governs the selection of financing sources, reflecting the preference of firms for specific methods of raising capital. In line with this theory, every firm's initial choice leans toward utilizing internal sources of financing as opposed to external ones (Dada & Ukaegbu, 2015).

The core premise of the Pecking Order theory revolves around the significant challenge in determining the optimal capital structure for a firm. This challenge arises from the existence of asymmetric information between the firm's managers and its investors. The theory posits that as the level of asymmetric information increases, so does the cost of financing. Therefore, minimizing information asymmetry becomes a central concern when making financing decisions. Companies have three primary categories for financing: internal financing, which encompasses retained earnings; debt financing, which involves funds borrowed from external sources; and equity financing, where capital is raised by issuing new shares. Companies, according to the Pecking Order theory, prioritize these sources based on a hierarchical framework. The preferred sequence begins with internal financing, followed by debt financing, with equity issuance being the final resort. Hence, the theory underscores the notion that businesses adhere to a well-defined hierarchy when selecting their sources of financing. Internal financing is the first choice, given its relatively lower cost and the absence of information asymmetry, which makes it the preferred option. As a company depletes its internal funds or when they are insufficient to meet capital requirements, it then turns to debt issuances. The use of debt is favored over equity because external financing options that entail issuing shares may introduce external ownership into the firm, which is considered less

desirable. In sum, the Pecking Order theory postulates a structured approach to financing decisions, based on a firm's preference for minimizing information asymmetry and the associated costs. This theory emphasises the prioritization of funding sources by companies and highlights their quest to maintain financial stability and wealth maximization for shareholders.

2.3 Empirical Review

Oranefo and Egbunike (2023) examined the effect of gearing ratios on the operating cash flow performance of 36 manufacturing firms listed on the Nigeria Stock Exchange from 2011 to 2018 financial years. The study evaluated the effect of capital gearing, income and the operating gearing ratios on the operating cash flow of quoted manufacturing firms. The study adopted an ex post facto research design utilizing a final sample of thirty-six (36) purposively selected manufacturing firms quoted on the Nigerian Stock Exchange (NSE). The study utilized financial statement data compiled by MachameRATIOS®. The data were analyzed using multiple regression techniques. There is a negative effect of capital and income gearing ratio on operating cash flows with the former not significant, and a positive non-significant effect of operating gearing ratio on operating cash flow.

Harris and Mawardi (2023) examined the effect of gearing ratio on profitability performance of firms in Indonesia. This type of research is quantitative research using time series data with the period before the spread of COVID-19 was for the period September 2018 to February 2020 and the period during the spread of COVID-19 was March 2020 to August 2021. The data source used is based on monthly reports submitted by financing company in Indonesia to the Financial Services Authority. The analysis used in this research is multiple linear regression and the Chow test. The classical assumption test on the data used has been carried out including the normality test, multicollinearity test, autocorrelation test, and heteroscedasticity test before carrying out the multiple linear regression test. The research results obtained were that gearing Ratio had a positive and significant effect on ROA. The results of the Chow test showed that there were differences in the effect of Gearing Ratio on the ROA of financing companies in Indonesia before COVID-19 and during the COVID-19 period.

Muhammed (2023) examined the effect of capital structure (CS) on the profitability of a sample comprising 27 financial firms listed on the Iraq Stock Exchange (ISE) over the period from 2012 to 2020. To estimate the parameters of the regression model, Muhammed

employed the Square Fully Modified Ordinary Least Squares model (FMOLS) and the Auto Regressive Distributed Lag Model (ARDL). The findings from this research indicate that during the period of the financial crisis, there exists an adverse relationship between the current period's capital structure (CS) and profitability.

Bui et al. (2023) investigated the relationship between debt ratio and firm value for companies listed on the Vietnamese stock market. The study utilizes data from audited financial statements of 769 companies spanning from 2012 to 2022, amounting to 8459 observations. Employing various estimation methods, such as ordinary least squares (OLS), fixed effects model (FEM), random effects model (REM), and generalized least squares (GLS), the impact of debt ratio on key financial indicators, namely, return on assets (ROA), return on equity (ROE), and Tobin's Q, is assessed. The findings indicate that the debt ratio exhibits a positive influence on ROA, ROE, and Tobin's Q, with Tobin's Q displaying the most pronounced impact (0.450) and ROA showing the weakest impact (0.011). However, the long-term debt ratio does not significantly affect firm value. Interestingly, both short-term and long-term debt ratios have negative effects on ROA, ROE, and Tobin's Q, with the most substantial impact on Tobin's Q reduction.

Essel (2023) investigated the impact of capital structure (CS) on firm performance (FP), from an emerging capital market perspective, Ghana Stock Exchange (GSE). Using financial data from 36 listed-firms on the GSE, spanning 2010–2020, and employing a robust dynamic panel System of Generalized Method of Moment (GMM), this inquiry examined CS-FP-nexuses. Results revealed that whilst total-debt-to-total-equity-ratio, total-debt-to-total-assets-ratio, long-term-debt-ratio, and financial risk exhibited negative associations with FP; total-equity-to-total-assets-ratio, short-term-debt-ratio, cash conversion cycle, total assets turnover, tangibility, sales-growth, firm size, and firm age revealed positive associations with FP, suggesting that highly leveraged-firms are susceptible to insolvency due to high debt-financing cost with worsened macroeconomic instability effect via increased sensitivity of the economy to shocks.

Meteke et al. (2022) examined the effect of gearing options on operating performance of banks in Nigeria from 2012 to 2021. Data were gotten from 13 quoted banks in the periods covered. Since the study variables exhibited both time series and cross sectional data characteristics, the study adopted the panel data methodology. The Breusch Pagan Test was used to determine whether the Pooled OLS are most appropriate model for the study or the

Fixed Effect Model. The paper reported that, debt asset ratio and interest coverage ratio exerted positive/direct yet high effect on the ROA of banks in Nigeria. More so, debt equity ratio reduced the operating performance of Nigerian banks within the periods covered significantly.

Hidayat and Kurniasih (2022) determined the effect of gearing ratio on the financial performance of multi-finance companies in Indonesia. The research population is all finance companies (multi) listed on the Indonesia Stock Exchange in 2021. The sample that meets the criteria is 16 companies. Data were analyzed using panel data regression. The results showed that the Random Effect was the best model. Partially found that the Gearing ratio does not affect Return on Assets (ROA) as a proxy for the company's financial performance. In contrast, the Financing to assets ratio (FAR) positively affects Return On Assets (ROA). Non-Performing Financing (NPF) and Operating Expenses (BOPO) have a negative effect on Return On Assets (ROA).

Kofoworola (2022) examined the impact of gearing intensity on the financial performance of deposit money banks in Nigeria. The objectives were to: investigate the effect of gearing on the operating performance of DMBs; assess the impact of gearing on accounting performance of DMBs and investigate the effect of gearing on the efficiency of DMBs in Nigeria. The study anchored on the static trade-off theory of capital structure. Data were collected from seven deposit money banks that includes Access Bank, Eco Bank, Fidelity Banks, Stanbic IBTC, United Bank for Africa, Union Bank and Zenith Bank for the period 2011 to 2020. The variables used in the study were gearing intensity, return on asset, return on capital employed, gross profit, non-performing loans, and net interest income obtained from the annual audited financial statements of 7 Deposit Money Banks. The data was analyzed using descriptive analysis, panel regression and multiple regression analysis. Analysis of results from the panel regression revealed gearing to be negatively related to gross profit, return on asset and return on capital employed.

Yusuf (2022) assessed the effect of the capital structure gearing levels on financial performance of public and private sector firms in Kenya's coastal vi counties. This involved a target population of 500 productive firms in Kenya's Coastal Counties. Using the Cochran's sample size formula, 50% proportion of the productive public and private sector firms randomly selected, the sample was 139 firms. They were observed for a period of 2003 to 2015.Questionnaires and structured interviews were used as instruments for collecting

primary data from finance officers or finance managers or their equivalent of the firms. Secondary data was obtained from financial statements. Data analysis was done using both descriptive statistics and inferential statistics (regression). The results showed that majority of the firms in Kenya's coastal counties used capital structure composed of short term debt financing, this implies that firms should go for capital structure with a higher component of long term finance. The firms had affinity for gearing and more affinity for higher gearing levels of over 30% whereas the optimum gearing level should be between 30% to less than 35%.Firms in the Kenya's coastal counties should avoid higher gearing levels for better financial performance.

John (2022) examined the effect of capital structure performance in Nigeria conglomerates. The population of the study comprised of six (6) firms. The data was collected, analyzed and tested using the descriptive statistics and the panel data analysis techniques. From the analysis, it was revealed that there was a significant relationship between debt ratio and conglomerates performance in Nigeria. Also, it was revealed that long term debt to capital employed had a significant influence on conglomerates performance in Nigeria. Furthermore, total debt ratio was found to have a significant effect on conglomerates performance in Nigeria.

Musa and Ibrahim (2022) examined the effect of leverage on profitability of Information and Communication Technology (ICT) companies listed on the Nigerian Stock Exchange. The study adopted ex post facto research design. Sample of the study was made of five out of the eight ICT companies listed on the Nigerian Stock Exchange. Secondary source of data was collected from annual reports of the companies for the period 2012 to 2020. The data was analyzed using multiple regression analysis. The results show that there is no significant relationship between total debt ratio and return on assets of the ICT companies listed on the Nigerian Stock Exchange and that debt-equity-ratio has no significant relationship with return on assets.

Aishwarya (2022) examined the impact of capital structure on profitability of companies listed in Indian stock exchange with respect to automobile industry. The hypothesis was tested by using fixed effect and random effect models by considering 10 years of data (from 2010-2019) from 17 automobile companies. The study found that there is a significant positive relationship between capital structure and firm performance.

Olaniyi et al. (2022) studied the link between capital structure and financial performance of Nigerian manufacturers. The study used ex-post-facto data to investigate variable relationships. Nigerian manufacturing firms were studied. The data was taken from the company's (2005-2020). Both descriptive and inferential statistics, such as Pearson correlation and panel regression, were used to examine the data. Return on equity, equity capital has a substantial influence on the performance of Nigerian manufacturing companies. 6.34 and 0.26 Total debt assessed by asset debt-to-equity ratio has no influence on stock market performance (p>0.6580). Sand return on equity has a positive significant influence on financial performance of Nigerian manufacturing firms by 6.331 (p=0.0000.05) and 0.117 (p=0.0070.05); long-term debt also has a positive significant effect. The study found that equity capital, total debt, and long-term debt have the potential to positively and significantly influence the financial performance of manufacturing firms in Nigeria, whereas short term debt has the potential to positively and insignificantly influence financial performance. Total asset has the potential to positively and significantly influence financial performance.

Imeokparia et al. (2021) 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.

Muhammad and Zango (2021) examined the impact of capital structure on the financial performance of listed construction and real estate companies in Nigeria from 2015-2019. The

study made use of ex-post facto research design which involved gathering panel dataset from published annual reports and accounts of the sampled companies. Purposive/judgemental sampling technique was used to select five (5 listed construction and real estate companies as at December 2019. Descriptive statistics, correlation and regression analysis were used to evaluate the data. The findings revealed that, the capital structure had a negative and insignificant effect on the financial performance of construction and real estate firms in Nigeria for the period under study.

Liviani and Rachman (2021) determined the influence of leverage on the value of the company in real estate, property, and construction companies listed on the Stock Exchange Indonesia period of 2016-2018. This research was a quantitative research. The samples were real estate, property and building construction sector companies listed on the Indonesia Stock Exchange for the period of 2016-2018, amounting to 20 companies. The sampling technique used was non probability sampling with a purposive sampling method. The regression result show that leverage significantly affects the company value.

Abubakar (2021) assessed the effect of financial leverage on the financial performance, using data from the annual reports of 7 quoted oil and gas firms in Nigeria, as well as from the Nigerian Stock Exchange (NSE) daily official lists over the period 2005- 2018. Descriptive statistics were used in data presentation, while random effects panel estimator was applied in determining the effect of financial leverage variables as short-term debt ratio (STDR), long-term debt ratio (LTDR) and total-debt equity ratio (TDER) on the financial performance, measured by the return on equity (ROE). The regression results from the random effects model (REM) indicate that STDR and LTDR have no significant effect on the financial performance, and TDER has a negative but significant effect on the financial performance denoted by ROE. The study concludes that higher financial leverage of quoted oil and gas companies in Nigeria attenuates shareholders' wealth.

Abubakar (2020) determined the effect of financial leverage on the financial performance, using secondary data obtained from the annual reports of 7 quoted Oil and Gas firms in Nigeria, and the Nigerian stock exchange (NSE) daily official lists over the period 2005-2016. Descriptive statistics such as mean, median, minimum, maximum, standard deviation, coefficient of variation, skewness and kurtosis were used in data presentation, while random effects panel estimator is applied in determining the effect of financial leverage variables as short-term debt ratio (STDR), long-term debt ratio (LTDR) and total-debt equity ratio (TDER)

on the financial performance measured by the return on equity (ROE). The regression results from the random effects model (REM), the best panel estimator in this study as revealed by the F-test and the Hausman test for best model selection, indicate that STDR and LTDR have no significant effect on the financial performance, and TDER has a negative significant effect on the financial performance denoted by ROE. The study concludes that higher financial leverage in the capital structure of quoted Oil & Gas firms in Nigeria deteriorates shareholders wealth measured by ROE.

Gikama (2019) determined the influence of gearing and corporate performance of non-financial firms listed on the NSE. The target population being 42 companies with 35 companies meeting the threshold for a balanced panel regression for the period 2008-2017. The study adopted longitudinal quantitative research design with random-effects GLS models. The corporate performance was assessed by ROCE and Q ratio while gearing was measured using leverage ratio. The findings reveal that the gearing is positively and statistically insignificant related with corporate performance of the listed non-financial firms at the NSE measured using ROCE and positively significantly related to Tobin's Q.

Jayiddin et al. (2017) examined the effect of debt ratio on the performance of Malaysian public listed company companies which operate in the construction sector, and with data window between 2010 to 2014. This specific sector was chosen for their high gearing which renders firms to relatively high insolvency exposure emanating from interest rate fluctuations. The five-year timeframe was selected to isolate potential data contaminations streaming from global financial crisis which winds down in 2009. Financial data of the company were extracted from Bloomberg Terminal based on a pre-prepared list of Bloomberg tickers. A total of 225 observations were recorded in this study. Using Tobin s Q as a proxy for firm performance, this study finds a mixed result where short term debts ratio indicates a significant negative effect, while long term debt ratio presents a non-significant influence.

Enekwe, Agu and Eziedo (2014) determined the effect of financial leverage on financial performance of the Nigeria pharmaceutical companies over a period of twelve (12) years (2001–2012) for the three (3) selected companies. This work employed three (3) financial leverage for the independent variables such as: debt ratio (DR); debt-equity ratio (DER) and interest coverage ratio (ICR) in determining their effect on financial performance for Return on Assets (ROA) as dependent variable. The ex-post facto research design was used for this study. The secondary data were obtained from the financial statement (Comprehensive

income statement and Statement of financial position) of the selected pharmaceutical companies' quoted on the Nigerian Stock Exchange (NSE). Descriptive statistics, Pearson correlation and regressions were employed and used for this study. The results of the analysis showed that debt ratio (DR) and debt-equity ratio (DER) have negative relationship with Return on Assets (ROA) while interest coverage ratio (ICR) has a positive relationship with Return on Assets (ROA) in Nigeria pharmaceutical industry. The analysis also revealed that all the independent variables have no significant effect on financial performance of the sampled companies. The results further suggested that only 16.4% of the variations on the dependent variable are caused by the independent variables in the model suggesting that 83.6% of the variations in financial performance are caused by other factors outside the model.

3. MATERIAL AND METHODS

The present study employed an *ex-post facto* research design, a methodology chosen for its effectiveness in investigating the potential impact of gearing ratio on profitability. This research design is especially valuable in scenarios where collecting data from past events is essential for addressing business and social science questions (Liviani & Rachman, 2021). In the context of this study, where we aim to assess how past gearing ratios have influenced the profitability of construction firms in Nigeria, the ex-post facto design is considered the most suitable approach. This is because it allows us to examine historical financial data, which is already available and provides a rich source of information for assessing the relationships between gearing ratios and profitability over time. This study specifically focuses on construction companies in Nigeria. Thus, the population of the study includes all the 8 construction companies that are listed on the floor of the Nigerian Exchange Group as at 31st December, 2023. The companies are shown in Table 1:

Table 1 Listed Construction Companies in Nigeria

Names of Firms
1. Arbico Plc
2. Julius Berger Nig. Plc.
3. Ronchess Global Resources Plc
4. Sfs Real Estate Investment Trust
5. Smart Products Nigeria Plc
6. Uh Real Estate Investment Trust
7. UPDC Plc
8. UPDC Real Estate Investment Trust

Source: Nigerian Stock Exchange (2023)

The study adopted a purposive sampling approach in the determination of sample size. Ronchess Global Resources Plc. was listed on the Nigerian Exchange Group on December 17, 2021. UPDC Real Estate Investment Trust started submitting their annual reports to the Nigerian Exchange Group in 2016. Thus, the two firms were removed. The sampling approach of purposive technique was chosen in order to obtain a sample of only firms that have complete annual reports from 2014 to 2023. Based on this yardstick, the following six (6) companies were chosen:

Table 2 Study's Sample Size

Names of Firms
1. Arbico Plc
2. Julius Berger Nig. Plc.
3. Sfs Real Estate Investment Trust
4. Smart Products Nigeria Plc
5. Uh Real Estate Investment Trust
6. UPDC Plc

Source: Researchers' Compilation (2024)

The research employed a secondary method of data collection, which involved gathering data from audited financial statements of construction companies in Nigeria between the years 2014 and 2023. This data collection instrument is deemed reliable and valid due to several reasons. Firstly, the audited financial statements were signed and approved by the top management of the companies. Secondly, the financial statements were audited by independent auditors, which ensured that they were free from errors and biases.

Table 3 Operationalization of variables

Variable	**Measurement**	**Source**
Return on Asset	Earnings after tax/total asset	Oranefo & Egbunike, 2023
Debt to Equity Ratio	Total liabilities/Total Equity	Hasanudin, 2023
Debt to Asset Ratio	Total liabilities/Total Asset	Utari, 2023
Interest Coverage Ratio	Earnings before interest/Interest expense	Enekwe, Agu & Eziedo, 2014

Debt to Market Capitalisation	Total capitalisation	liabilities/market	Srivastav, 2023

Source: Researchers' Compilation (2024)

The present study adapted the model developed by Gikama (2019) in examining the effect of gearing ratio on firm profitability. The equation as adopted from Gikama (2019) is given thus:

$(\text{Firm Profitability})_{it} = a_{it} + b_1(\text{Gearing})_{it} + e_{it}$……eqn 1

Where: a = constant

b = coefficient of gearing

e = error term

it = firm *i* in year *t*

The above equation was modified to arrive at the under-listed linear functional form of equation covering the research variables of interest:

ROA = f (DER, DAR, ICR, DMCR) ……eqn 2

The functional equation above is transformed to an econometric model shown in equation 3 below:

$ROA_{it} = a_{it} + b_1(DER)_{it} + b_2(DAR)_{it} + b_3(ICR)_{it} + b_4(DMCR)_{it} + e_{it}$…….eqn 3

Where,

ROA = Return on Asset

DER = Debt to Equity Ratio

DAR = Debt to Asset Ratio

ICR = Interest Coverage Ratio

DMCR = Debt to Market Capitalisation Ratio

e = Error term

i = the firm in question

t = the time in question

$b_{1\text{-}4}$ = regression coefficients

a_0 = constant

After collecting the data, the data were presented in a straightforward table and a descriptive analysis was performed. Various statistical tools such as mean, minimum and maximum values, and standard deviation were used to better understand the characteristics of the data. To test the null hypotheses, panel least square technique was applied. The study chose to use Panel least square regression analysis for hypothesis testing in order to minimise the sum of

the squared differences between the observed and predicted values to obtain the best fit line or curve. Panel least square regression was used to test the hypotheses. All statistical analyses were performed at a significance level of 5% with the help of EVIEWS version 12 statistical software package. The inferential analysis was based on an alpha level of 5%. As a decision rule, if the *p-value* is greater than 5%, the null hypothesis is accepted while the alternate hypothesis is rejected and vice versa.

4. RESULT AND DISCUSSIONS

4.1 Descriptive Analysis of Data

Table 4 below shows the descriptive analysis of the data.

Table 4 Descriptive Analysis

	ROA	DER	DAR	ICR	DMCR
Mean	-0.000892	6.966672	0.551523	0.319370	12.35104
Median	0.030498	0.846107	0.472970	0.000000	1.062070
Maximum	0.131842	105.6041	1.189828	5.110578	261.5484
Minimum	-0.782194	-99.02704	0.031071	-10.19163	0.036640
Std. Dev.	0.141417	24.46226	0.374156	1.806984	42.02256
Skewness	-3.886991	0.355194	0.035074	-2.780904	4.817309
Kurtosis	19.43541	12.21964	1.432045	21.16282	26.29747
Jarque-Bera	826.3937	213.7662	6.158508	902.0545	1588.995
Probability	0.000000	0.000000	0.045994	0.000000	0.000000
Sum	-0.053504	418.0003	33.09138	19.16222	741.0624
Sum Sq. Dev.	1.179923	35305.74	8.259563	192.6462	104187.8
Observations	60	60	60	60	60

Source: Eviews 12 Statistical Output (2025)

As shown in Table 4, the average Return on Assets (ROA) for the listed construction firms in Nigeria is negative, with a mean value of -0.000892, indicating that, on average, these firms are not generating positive returns from their assets. The maximum ROA is 0.131842, suggesting that under certain conditions, firms have achieved a positive return of around 13%. However, the minimum value of -0.782194 reveals that some firms are experiencing significant losses, with returns as low as -78.2% of their total assets. The standard deviation of 0.141417 shows considerable variation in the ROA across the firms. The skewness of -3.886991 indicates a highly negative skew, meaning most firms have very low or negative

returns on assets, while a few firms perform exceptionally well. The kurtosis value of 19.43541 indicates a distribution with heavy tails, meaning there are a few extreme outliers that significantly impact the overall data distribution. The probability of Jarque-Bera being 0.000000 implies that the ROA data is not normally distributed, as the p-value is less than 0.05.

The average Debt to Equity Ratio (DER) is 6.966672, suggesting that, on average, the construction firms in Nigeria have approximately seven times more debt than equity. The maximum ratio of 105.6041 reflects a situation where some firms are heavily reliant on debt, far exceeding their equity base. The minimum DER of -99.02704 is unusual and likely reflects data anomalies, where negative equity or reporting errors could be present. The standard deviation of 24.46226 shows a high variation in how debt is utilized across the firms, indicating diverse financial structures. The skewness value of 0.355194 is slightly positive, indicating that the majority of firms have a more moderate debt-to-equity ratio, with a few firms exhibiting extremely high levels of debt. The kurtosis of 12.21964 suggests that the distribution is leptokurtic, with more frequent extreme values than would be expected in a normal distribution. The probability of Jarque-Bera being 0.000000 confirms that the DER data is not normally distributed, likely due to the extreme outliers present.

The average Debt to Asset Ratio (DAR) is 0.551523, which indicates that, on average, the listed construction firms have about 55% of their assets financed through debt. The maximum value of 1.189828 suggests that some firms have more liabilities than assets, potentially indicating financial distress or a highly leveraged structure. The minimum value of 0.031071 indicates that some firms are largely financed through equity, with very little debt. The standard deviation of 0.374156 shows moderate variation, suggesting that there is a diverse range of financial structures within the sector. The skewness value of 0.035074 is close to zero, indicating a roughly symmetrical distribution, with no significant tendency toward high or low values. The kurtosis of 1.432045 is relatively low, suggesting that the distribution of the DAR is closer to a normal distribution with fewer extreme values. The probability of Jarque-Bera being 0.045994 suggests that the DAR data is marginally non-normally distributed, as the p-value is slightly above the typical 0.05 threshold for normality.

The mean Interest Coverage Ratio (ICR) of 0.319370 indicates that, on average, the listed construction firms in Nigeria do not earn enough to cover their interest expenses, with an average ratio significantly below 1. The maximum ICR of 5.110578 suggests that a few firms

are performing well enough to cover their interest payments more than five times. The minimum value of -10.19163 is concerning, as it indicates that some firms have negative earnings before interest, taxes, and depreciation (EBITDA), and thus are unable to meet their interest obligations, signaling potential financial difficulties. The standard deviation of 1.806984 highlights the considerable variation in firms' ability to cover their interest expenses. The skewness value of -2.780904 suggests a negatively skewed distribution, with most firms having a low or negative ICR, while a few firms perform well. The kurtosis of 21.16282 shows a distribution with extremely heavy tails, indicating a presence of extreme outliers. The probability of Jarque-Bera being 0.000000 implies that the ICR data does not follow a normal distribution.

The mean Debt to Market Capitalisation Ratio (DMCR) is 12.35104, indicating that, on average, the firms have a substantial level of debt relative to their market capitalization. The maximum value of 261.5484 suggests that some firms have far more debt than their market value, potentially reflecting undervaluation or significant leverage. The minimum value of 0.036640 shows that some firms have very little debt compared to their market value. The standard deviation of 42.02256 indicates high variation in the debt market capitalization relationship across the firms, which may be indicative of varying financial strategies. The skewness value of 4.817309 is highly positive, suggesting that the majority of firms have relatively low debt compared to their market capitalization, with a few firms exhibiting extremely high debt levels. The kurtosis value of 26.29747 is very high, indicating an extremely leptokurtic distribution with a large number of extreme outliers. The probability of Jarque-Bera being 0.000000 confirms that the DMCR data is not normally distributed, largely due to the influence of extreme values.

4.2 Hypotheses Testing

Table 5 shows the result of the hypotheses testing using Panel Estimated Generalised Least Square.

Table 5 Test of Hypotheses

Dependent Variable: ROA

Method: Panel EGLS (Cross-section SUR)

Date: 12/28/24 Time: 15:17

Sample: 2014 2023

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DER	0.000316	0.000261	1.214739	0.2297
DAR	-0.178356	0.026456	-6.741695	0.0000
ICR	0.049435	0.008668	5.703361	0.0000
DMCR	0.000431	0.000135	3.190299	0.0023
C	0.075994	0.006788	11.19502	0.0000
	Weighted Statistics			
R-squared	0.590233	Mean dependent var		0.448788
Adjusted R-squared	0.560432	S.D. dependent var		1.885763
S.E. of regression	1.025496	Sum squared resid		57.84031
F-statistic	19.80564	Durbin-Watson stat		1.516351
Prob(F-statistic)	0.000000			

Source: Eviews 12 Statistical Output (2025)

Table 5 shows the regression analysis of the study which examined the effect of gearing ratio on the profitability of listed construction firms in Nigeria. The Adjusted R-squared value of 0.560432 indicates that approximately 56% of the variation in the return on assets (ROA) of listed construction firms in Nigeria can be explained by the four independent variables: Debt to Equity Ratio (DER), Debt to Asset Ratio (DAR), Interest Coverage Ratio (ICR), and Debt to Market Capitalization Ratio (DMCR). This suggests that the model has a moderately good fit, though there is still a significant amount of unexplained variation in ROA. The Prob(F-statistic) value of 0.000000 is highly significant, indicating that the overall model is statistically significant at the 5% level, meaning that the independent variables jointly have a significant effect on ROA. The Durbin-Watson statistic of 1.516351 suggests that there may

be some positive autocorrelation in the residuals, but it is close enough to 2 to not raise serious concerns about the independence of residuals.

4.2.1 Hypothesis I

H_{01}: Debt to equity ratio has no significant effect on the return on assets of listed construction firms in Nigeria.

The coefficient for Debt to Equity Ratio (DER) is 0.000316, which suggests that for each unit increase in the debt to equity ratio, the return on assets (ROA) increases by 0.000316, holding all other factors constant. The marginal effect here is quite small, meaning that changes in DER have a minimal direct impact on the profitability of the listed construction firms.

4.2.1.1 Decision: The probability value for DER is 0.2297, which is greater than the 5% significance level, indicating that the effect of DER on ROA is not statistically significant. Therefore, we fail to reject the null hypothesis (H01), implying that the debt to equity ratio does not have a significant effect on the return on assets of listed construction firms in Nigeria. Thus, Debt to equity ratio has a positive but non-significant effect on the return on assets of listed construction firms in Nigeria ($\beta = 0.000316$; p-value = 0.2297). This suggests that while an increase in the debt-to-equity ratio marginally improves profitability, this effect is not strong enough to be statistically significant. One possible reason for this result could be that the construction sector, often characterized by large-scale projects with long timelines, faces challenges in fully benefiting from high leverage. Excessive reliance on debt in a capital-intensive industry could lead to financial distress or increased operational costs, which may offset any potential improvements in profitability, making the effect of DER insignificant.

The finding that the Debt to Equity Ratio (DER) has a positive but non-significant effect on the Return on Assets (ROA) of listed construction firms in Nigeria is consistent with a number of studies. For instance, Oranefo and Egbunike (2023) found a positive but non-significant effect of capital gearing on the operating cash flow performance of Nigerian manufacturing firms, indicating that while debt can have an impact, it may not always yield a significant result. Similarly, the study by Abubakar (2021) on oil and gas firms in Nigeria reported that the debt equity ratio had a negative but significant effect on ROE, which contrasts with the positive but insignificant relationship observed here for ROA in the construction industry. Furthermore, Yusuf (2022) found that higher gearing levels negatively affect financial performance in Kenya's coastal firms, aligning with the argument that high levels of debt may not always contribute positively to performance. In contrast, Harris and Mawardi (2023) found a positive and significant relationship between gearing ratio and ROA in Indonesian

firms, suggesting that gearing ratios may have a more direct and favorable impact in different geographical or industry contexts.

4.2.2 Hypothesis II

H_{02}: Debt to asset ratio does not significantly affect the return on assets of listed construction firms in Nigeria.

The coefficient for Debt to Asset Ratio (DAR) is -0.178356, meaning that for every one-unit increase in the debt to asset ratio, the return on assets (ROA) decreases by 0.178356, all else being equal. This represents a negative marginal effect, implying that higher debt relative to assets tends to reduce profitability.

4.2.2.1 Decision: The probability value for DAR is 0.0000, which is highly significant and less than the 5% level, indicating that the effect of DAR on ROA is statistically significant. Thus, we reject the null hypothesis (H02) and conclude that the debt to asset ratio significantly affects the return on assets of listed construction firms in Nigeria, with higher debt leading to lower profitability. Thus, Debt to asset ratio has a negative and significant effect on the return on assets of listed construction firms in Nigeria (β = -0.178356; p-value = 0.0000). This indicates that higher levels of debt relative to assets are associated with lower profitability, which is a statistically significant relationship. High leverage, indicated by a higher debt-to-asset ratio, can increase financial risk, particularly in the construction industry where firms often face long payment cycles and delays in project completions. The cost of servicing debt could strain the firm's cash flow, reducing the profitability that can be derived from asset investments. As a result, firms with higher debt relative to assets are likely to experience diminished returns on their assets, as evidenced by the significant negative relationship.

The finding that the Debt to Asset Ratio (DAR) has a negative and significant effect on ROA in Nigerian construction firms is supported by several studies. For instance, Enekwe, Agu, and Eziedo (2014) observed a negative relationship between debt asset ratio and ROA in Nigeria's pharmaceutical sector, suggesting that higher debt levels can undermine asset profitability. Similarly, Muhammad and Zango (2021) reported that capital structure, which includes debt-to-asset ratios, had a negative and insignificant effect on the financial performance of construction firms in Nigeria, a finding that partly supports the negative relationship here, albeit with statistical significance in this study. A study by Imeokparia, Adesanmi, and Fadipe (2021) also found that debt asset ratio had a strong negative effect on the financial performance of Nigerian deposit money banks, reinforcing the notion that a higher debt burden can erode profitability, particularly in capital-intensive industries like

construction. Additionally, Essel (2023) found that various debt ratios, including debt-to-assets, exhibited negative associations with financial performance in Ghanaian firms, indicating that over-leverage can hinder profitability across different sectors.

4.2.3 Hypothesis III

H_{03}: Interest coverage ratio does not significantly affect the return on assets of listed construction firms in Nigeria.

The coefficient for Interest Coverage Ratio (ICR) is 0.049435, indicating that for every unit increase in the interest coverage ratio, the return on assets (ROA) increases by 0.049435, assuming other variables remain constant. The positive sign of the coefficient shows that better coverage of interest expenses is associated with higher profitability.

4.2.3.1 Decision: The probability value for ICR is 0.0000, which is highly significant and well below the 5% threshold, meaning the effect of ICR on ROA is statistically significant. As a result, we reject the null hypothesis (H03), and we conclude that the interest coverage ratio significantly affects the return on assets of listed construction firms in Nigeria, with firms better able to cover interest payments showing higher profitability. Thus, Interest coverage ratio has a positive and significant effect on the return on assets of listed construction firms in Nigeria ($\beta = 0.049435$; p-value = 0.0000). This suggests that firms that are better able to meet their interest obligations tend to experience higher profitability. A higher ICR implies that a firm has sufficient earnings to cover its interest expenses, which enhances its financial stability and ability to reinvest in profitable activities. In the context of the construction industry, where projects can span several years, firms that maintain a strong interest coverage ratio are less likely to face financial distress, allowing them to allocate resources more effectively to sustain or improve profitability.

The positive and significant effect of the Interest Coverage Ratio (ICR) on ROA in Nigerian construction firms is supported by studies that emphasize the importance of financial stability in maintaining profitability. For example, Meteke et al. (2022) found that the interest coverage ratio had a positive effect on ROA for Nigerian banks, indicating that firms with a better ability to cover interest payments tend to have stronger financial performance. Similarly, Enekwe, Agu, and Eziedo (2014) reported that ICR had a positive relationship with ROA in Nigeria's pharmaceutical sector, suggesting that a firm's ability to manage interest expenses is crucial for maintaining profitability. Aishwarya (2022) also found a significant positive relationship between capital structure and firm performance, highlighting the role of adequate interest coverage in enhancing profitability. In the construction sector, firms with better

interest coverage are less likely to experience financial distress, and this likely contributes to the positive relationship between ICR and ROA observed in the study.

4.2.4 Hypothesis IV

H_{04}: Debt to market capitalization ratio has no significant effect on the return on assets of listed construction firms in Nigeria.

The coefficient for Debt to Market Capitalization Ratio (DMCR) is 0.000431, suggesting that for each unit increase in the debt to market capitalization ratio, the return on assets (ROA) increases by 0.000431, holding other factors constant. Although the effect is positive, the marginal effect is very small.

4.2.4.1 Decision: The probability value for DMCR is 0.0023, which is less than the 5% significance level, indicating that the effect of DMCR on ROA is statistically significant. Therefore, we reject the null hypothesis (H04), concluding that the debt to market capitalization ratio significantly affects the return on assets of listed construction firms in Nigeria, with firms that are more highly leveraged relative to their market value achieving higher profitability. Thus, Debt to market capitalization ratio has a positive and significant effect on the return on assets of listed construction firms in Nigeria ($\beta = 0.000431$; p-value = 0.0023). This implies that firms with a higher level of debt relative to their market capitalization tend to have higher profitability. This positive relationship could be explained by the fact that firms with larger market capitalization are generally seen as more stable and have better access to capital markets. They can use debt as a tool for expanding operations or financing large projects without endangering their financial position.

The ability to leverage market capitalization with additional debt can lead to higher returns on assets, as the market confidence and capital influx associated with a larger capitalization help fund profitable ventures. The positive and significant effect of the Debt to Market Capitalization Ratio (DMCR) on ROA in Nigerian construction firms reflects the notion that larger, more capitalized firms can efficiently leverage debt for profitability. This is supported by studies such as the one by John (2022), which found a significant relationship between debt ratios and performance in Nigerian conglomerates. Firms with larger market capitalization have better access to capital markets and can use debt to fund expansion and growth without significantly jeopardizing their financial stability. Similarly, studies like Bui, Nguyen, and Pham (2023) observed a positive influence of debt ratios on ROA in Vietnamese firms, though with varying impact levels depending on the debt structure. The positive relationship found by Abubakar (2020) on oil and gas firms, where debt ratio had a significant

effect on ROE, further supports the idea that market capitalization, combined with an appropriate level of debt, can boost profitability. Furthermore, Harris and Mawardi (2023) found that gearing had a positive and significant effect on ROA in Indonesian firms, suggesting that firms that can effectively balance debt with market capitalization tend to perform better financially.

5. CONCLUSION AND RECOMMENDATIONS

The effect of gearing ratios on the profitability of listed construction firms in Nigeria presents a complex picture, with different debt measures influencing profitability in varying ways. The study finds that while the debt to equity ratio does not significantly affect return on assets, the debt to asset ratio shows a significant negative relationship, suggesting that higher levels of debt relative to assets may hinder profitability. This implies that while firms may take on debt to finance operations, an excessive reliance on debt could potentially reduce their ability to generate returns from their assets, possibly due to the increasing financial burden of servicing debt. On the other hand, the interest coverage ratio and debt to market capitalization ratio exhibit a positive and significant effect on profitability. Firms with a stronger ability to cover their interest payments are more likely to maintain higher profitability, indicating that good debt management plays a crucial role in financial performance. Similarly, a higher debt to market capitalization ratio seems to be associated with improved profitability, pointing to the potential benefits of increased debt when coupled with a strong market position. These results suggest that while high debt levels can be a double-edged sword, managing the debt structure effectively can contribute to enhanced profitability, especially when supported by solid operational performance.

Taken together, these findings highlight that the relationship between gearing and profitability is not straightforward, and its impact depends on how different types of debt are structured and managed. While high levels of debt relative to assets can be detrimental to profitability, other measures, such as interest coverage and the debt to market capitalization ratio, can have positive effects on firm profitability. Therefore, firms in the construction sector need to carefully balance their debt levels and ensure that they have sufficient operational capacity to manage financial obligations effectively in order to maintain or improve profitability.

The study therefore recommends that:

1. Senior management teams of listed construction firms should carefully monitor their debt to equity ratio and continue optimizing their overall financial strategy, focusing on long-term growth and sustainability, rather than overemphasizing adjustments to the debt-equity mix. This would allow the firms to maintain financial flexibility while addressing other factors that drive profitability.

2. Financial directors and strategic planners of listed construction firms should reduce the level of debt relative to total assets by paying down high-interest debt or seeking alternative financing options in order to mitigate the negative effects of excessive debt while potentially improving the firms' ability to generate returns from their assets.

3. Chief financial officers (CFOs) and finance departments of listed construction firms should focus on improving their interest coverage ratios by increasing operating income or restructuring debt to reduce interest expenses. Maintaining a strong ability to meet interest obligations not only enhances profitability but also helps to safeguard against financial distress, which is critical for sustaining long-term performance in the construction sector.

4. Investors and corporate financiers in the construction industry should consider supporting firms that effectively use debt in proportion to their market capitalization. By providing financing options that align with the firms' market value, stakeholders can help construction firms optimize their capital structure, which in turn can lead to improved profitability.

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