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EFFECT OF FINANCIAL LEVERAGE ON PERFORMANCE OF LISTED INDUSTRIAL GOODS FIRMS IN NIGERIA

Kalu Ifeanyi Ike[1], Prof. Sani U. Guruwa[2], Godwin Nnabueze Ituma[3] & Tanimu Usman Gadi[4]
[1]M.sc Student, Department of Accounting, Taraba State University, Jalingo, Taraba State. Nigeria.
[2]Department of Accounting, University of Abuja. Nigeria.

[3&4]Department of Accounting, Taraba State University, Jalingo, Taraba State. Nigeria.

godwinnitumatsu@gmail.com

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Abstract

This study examines the effect of financial leverage on the performance of listed industrial firms in Nigeria from 2014 to 2023, utilizing an ex-post facto research design. The research focuses on analyzing how different forms of financial leverage short-term debt, long-term debt, and the debt-equity ratio affect firm performance, as measured by Return on Equity (ROE) and Tobin's Q. The study employs regression analysis to assess the impact of leverage on performance, providing empirical evidence that highlights significant relationships between leverage types and performance metrics. The findings reveal that while the debt-equity ratio has a positive effect on performance, both short-term and long-term debts are negatively associated with performance. The research contributes to the understanding of financial leverage within the context of Nigerian industrial firms, offering practical insights for financial managers and policy implications for regulators. The study therefore recommends that firms maintain an optimal debt-equity ratio that maximizes profitability while minimizing risks associated with excessive leverage. This involves regularly assessing debt levels relative to the firm's cash flow capabilities, investment opportunities, and prevailing market conditions. Firms should consider leverage as a strategic tool to finance growth opportunities and enhance returns on investment. However, they must exercise caution to avoid over-leveraging, especially during economic downturns or in high-interest rate environments, where the cost of debt servicing may outweigh the benefits.

Introduction

Capital is the lifeblood of any business, providing the necessary resources for operations, growth, and innovation. Whether through equity, debt, or internal reserves, access to capital is crucial for maintaining and expanding a company's activities. Companies can raise capital by issuing shares of stock. This provides funds without the obligation of repayment but dilutes ownership. Businesses can also obtain loans from banks or financial institutions, which must be repaid with interest. Financial leverage, the use of debt to finance these activities, plays a crucial role in determining how companies manage their capital structure.

The proportion of fixed interest capital (debt and preference share capital) used to fund company's operations is referred to as leverage. As a result, it is assumed that as the degree of leverage rises, the risk of a company failing to make its fixed payment obligations rises as well (Akinsulire, 2011). Financial leverage is a ratio that explains the point to which an organisation makes use of debts to fund opportunities with the expectation of getting gains in return (Afolabi, et al. 2019). In a situation where financial obligations of an organisation are partly footed with loans and equity that firm can be said to be leveraged (Ravindran & Kengatharan, 2021; Al Habsi & Khalil, 2021). A lot of firms these days are using debts

support their capital. By implication, firms are free to resort to debts in order to augment their assets so as to influence their performance (Alim, et al. 2022).

One of the approaches of determining a firm' leverage ratio is what is known as long term debt. This represents the portion of debt that a firm owe that can be paid in a period longer than 12 months (Lestari, 2021). Investors are relying on financial leverage to maximize the return on investment and achieve optimal financial performance (Adeniyi & Aderobaki, 2021). This suggests that financial leverage of a firm has a link with its financial performance. Long-term financial leverage involves the use of long-term debt to finance a company's operations, investments, and growth. This form of leverage includes obligations such as bonds, mortgages, and other loans due over a period exceeding one year. Understanding how long-term financial leverage impacts a company's performance is crucial for making informed decisions about capital structure and financial strategy.

The choice of an appropriate financing mix constitutes a critical decision for the survival and continuous growth of any business organization not only because of the need to maximize returns to the various interest holders, but also because of the impact such informed decision has on the performance of an organization in a competitive environment. The survival and growth of a firm is dependent on the availability and access to resources but financing these resources has limitations. Therefore, applying these limit resources should be in a way that creates an appropriate share of value for providers and users of resources because without capital the firm would be unable to run, grow and expand their business.

While financial leverage can enhance returns and provide tax benefits, it also introduces significant risks that must be carefully managed. Companies must strike a balance between leveraging debt to achieve growth and maintaining a sustainable capital structure to ensure long-term financial health. It is based on this motivation that the study seeks to evaluate the effect of financial leverage on performance of Industrial goods companies in Nigeria.

Modigliani and Miller (1958) opined that the capital structure of a firm is not related to the firm's value while Jensen and Meckling (1976) argued that leverage has impact on the corporate performance of a firm and also influence financial decisions. Ordinarily, an excellent capital structure framework is expected to bring about minimization of overall cost of capital, maximization of organizations' value and enjoying the advantage of corporate leverage with the presence of corporate taxes.

The effect of financial leverage on corporate performance remains a critical issue in financial management, particularly in developing economies like Nigeria. Industrial companies, which play a pivotal role in the Nigerian economy by contributing significantly to GDP and employment, often rely on various financing options to support their operations and growth. Financial leverage, the use of debt to finance company activities, can have profound implications on a firm's profitability, risk, and overall financial health.

Despite the potential benefits of leveraging debt to enhance returns on equity and fund expansion, excessive reliance on debt can increase financial risk, leading to higher interest expenses and potential insolvency. The volatile economic environment in Nigeria, characterized by fluctuating interest rates, inflation, and foreign exchange instability, further complicates the relationship between financial leverage and company performance.

There is a pressing need to empirically evaluate how financial leverage impacts the performance of Industrial goods companies in Nigeria. This study seeks to fill the gap in existing literature by systematically examining the influence of different levels and types of financial leverage on key performance indicators such as profitability, return on equity (ROE), and market valuation. Understanding this relationship is crucial for stakeholders, including managers, investors, and policymakers, to make informed decisions regarding optimal capital structure and sustainable financial practices in the Industrial goods sector.

While extensive research has been conducted on the relationship between financial leverage and company performance, significant methodological gaps exist in the context of Industrial companies in Nigeria. Many existing studies on financial leverage and performance are based on data from developed economies with stable financial environments. The unique economic conditions of Nigeria, characterized by high volatility in interest rates, inflation, and currency exchange rates, necessitate context-specific research. This gap highlights the need for studies that consider the Nigerian economic environment and its specific challenges.

Furthermore, this study assessed how financial leverage affects both financial and market performance, as previous literature has predominantly focused on financial performance. This comprehensive approach will improve upon previous methodologies. This version emphasizes the broader scope of the study and clearly states how it builds upon and enhances existing research.

Objective of the Study

The study examined the effect of financial leverage on the performance of listed Industrial firms in Nigeria. The specific objectives of this study are to;

i. evaluates the effect of debt to equity on performance of listed Industrial firms in Nigeria.
ii. assess the effect of short-term debt on performance of listed Industrial firms in Nigeria.
iii. determine the effect of long-term debt on performance of listed Industrial firms in Nigeria.

Research Hypotheses

In this study, the research tests the following research hypotheses in line with the objectives of the study.

Ho1: Debt to equity has no significant effect on performance of listed Industrial firms in Nigeria.
Ho2: Short term debt has no significant effect on performance of listed Industrial firms in Nigeria.
Ho3: Long term debt has no significant effect on performance of listed Industrial firms in Nigeria.

LITERATURE REVIEW

Leverage

Leverage reflects the proportion of fixed interest capital in an organization's financial structure. Leverage is quantified using three constructs in this study: Degree of Operating Leverage (DOL), Degree of Financial Leverage (DFL), and Degree of Combined Leverage (DCL). According to Abuamsha and Shumali (2022), leverage is defined as the use of borrowed funds (debt) to finance the purchase of assets, with the expectation that the income or capital gain from the new asset will exceed the cost of borrowing. It is a common strategy in both corporate finance and personal investing, aimed at increasing the potential return on investment.

Financial Leverage

Financial Leverage is the existence of debt in a firm's Capital structure (Pandey, 2008). It shows how much debt the firm employs in its capital structure. Financial leverage is the degree to which a company uses fixed-income securities such as debt and preferred equity. The more debt financing a company uses, the higher its financial leverage. A high degree of financial leverage means high interest payments, which negatively affect the company's bottom-line earnings per share.

Financial Performance

Financial performance looks at how well a firm can use assets from its primary mode of business and generate revenues. The term is also used as a general measure of a firms overall financial health over a given period. This is also a process of measuring result of a firm's policies and operations in monetary terms.

Financial performance is the most imperative measure for profitability of a company (Matar & Eheizan 2018). Financial performance predominantly shows the sector of a business outcome as well as results, showing the overall financial health condition of the business sector over a particular period of time.

Theoretical Review

Modigliani and Miller Theory

Modigliani and Miller (1958) investigated capital structure and made several propositions. At the onset, they found that the traditional perspective unacceptable because it seemed unsupported by the theoretic frameworks. In particular, they found little reasons apart from some marketing perceptions which they seemed to have an effect on the financing. At disequilibrium a levered firm may appear to have a higher value which according to MM will not persist for long at this firm and the levered firm is overvalued and therefore the investors in this company will attempt to make a switch from a levered firm to unlevered firm. Such investors will sell shares of a levered, borrow an amount which is equivalent to the amount which the management of the firm had borrowed on his behalf and then invest the entire cash proceeds in the levered firm (Modigliani& Miller, 1958). Modigliani and Miller (1963) indicated the acquiring for external debt increases financial performance through tax shield benefits. Removing suspicions in their work and presenting rivalry, insolvency costs, and information asymmetry, and having business model power, money structure has the earmarks of being an impact factor on firm esteem. The proposition is grounded on assumptions that when the levered value of shares is more than the unlevered then investors choose personal debt to raise the funds for financing a firm. The scenario then affirms the irrelevancy of capital structure in the valuation of a company.

Empirical Review

A comprehensive review of recent studies on the link between financial leverage and performance reveals various insights and methodologies used to explore this relationship. One notable study by Khan et al. (2023) examined the effect of financial leverage on firm performance in the context of manufacturing firms in Pakistan. The researchers employed a panel data approach, analyzing financial statements from 2000 to 2020. Their findings indicated a significant negative relationship between high levels of debt and firm performance, as measured by Return on Assets (ROA) and Return on Equity (ROE). The study utilized fixed-effects and random-effects models to control for unobserved heterogeneity and found that excessive leverage hampers financial stability and profitability. However, the study's focus on manufacturing firms in Pakistan might limit its applicability to other sectors or emerging markets, highlighting a need for further research across different industries and regions.

Another relevant study by Adamu and Kumi (2022) investigated the impact of financial leverage on the performance of listed banks in Nigeria. Using a sample of 15 banks over a period from 2010 to 2020, the researchers applied a multiple regression analysis to determine how short-term and long-term debts affect performance indicators such as ROA and Tobin's Q. The results showed that while short-term debt had a negative impact on performance, long-term debt had a positive effect, suggesting that the maturity structure of debt plays a crucial role in determining its impact on performance. The study's strength lies in its focus on the financial sector, which is particularly relevant given the sector's sensitivity to leverage. However, the study might not be generalizable to non-financial industries, which could experience different dynamics.

METHODOLOGY

This study adopted ex-post facto research design as the data that employed were readily available and obtained from the annual reports and accounts of the selected Industrial firms listed on the Nigerian Stock Exchange as at 31st December, 2023. The study population consists of all the fourteen (14) Industrial goods companies listed on the floors of Nigeria Exchange Group (NGX).

To ensure that the appropriate data suitable for analyses is achieved, we used the following judgment criteria. The company must; be listed on the floor of the Stock Exchanges before 2014 and still be there

in 2023; have adopted and using IFRS as well, continued operation (not suspended) all through the period under review (that is 2014 – 2023), to not have prepared accounts for 12 calendar months for each accounting period (change of accounting date) and such Company must have all the financial data and elements that form the study variables. After subjecting the study population to the above criteria; only eleven (11) companies from Nigeria satisfied the criteria. Given the panel nature of the data, the study employed the panel regression analysis to test effect of financial and financial performance. Other techniques of analysis that was used include the descriptive statistics and the correlation matrix.

Variables and Measurement

Variable	Measurement	Construct Validity
Return on Equity (ROE)	$\frac{Profit\ Before\ Tax}{Total\ Equity}$	Perinpanathan (2014), Ahmadu (2015)
Tobin's Q	Market value of equity + book value of total debt/ book value of total assets+ book value of total debt	Dura et al. (2021), Jonah and Aaron (2023)
DER=debt-to-equity ratio	Total debt/total equity	Innocent, et al., (2014)
STL=Short-Term leverage	Short-Term Debt (STD) to Total Asset	Ahmadu (2015), Kale (2014).
LTL = Long-Term leverage	Long-Term Debt (LTD) to Total Asset	Arhinful & Radmehr (2023), Kunga (2015)
FSZ= Firm Size	Natural log of total assets	Arhinful & Radmehr (2023), Robert & Mohamed (2015)

Model Specification

The models used in testing the hypotheses of the study are presented below:

$ROE_{it} = \alpha + \beta_1 DER_{it} + \beta_2 STL_{it} + \beta_3 LTL_{it} + e_{it}$

Where:

ROE = Return on equity
DER = Debt to Equity Ratio
STL = Short term leverage
LTL = Long-term leverage
β1- β3 = Beta Coefficient
e = error term
$_{i, t}$ = firm, time
α = Constant

RESULTS AND DISCUSSION

Descriptive Statistics

	ROE	TQ	DER	STL	LTL
Mean	0.115670	.3088051	83.86532	12138353	12038625
Maximum	0.161020	3.280621	1.174480	174121882	148077894
Minimum	0.022208	.0000262	0.008167	983.0000	26689.00
Std. Dev.	0.048355	.4379459	958.5094	34445682	30853921
Observations	110	110	110	110	110

Source: Generated from E-view, 2024

The analysis of the return on Equity (ROE) for the sampled industrial companies reveals a range of performance outcomes. The maximum ROE value observed among the sampled firms is 0.161020 (16.10%), which indicates that the most efficiently performing company in the sample is generating a return of 16.10% on its total assets. This positive return on assets suggests that the company is effectively utilizing its assets to generate profits, thereby adding significant value to the shareholders. Such a high ROE could result from efficient management practices, optimal use of resources, and strategic investments that enhance asset productivity.On the other hand, the minimum ROE value recorded is 0.022208 (2.22%), which, although lower, still indicates a positive contribution to the investors on their assets. A ROE of 2.22% means that even the least performing company in the sample is still generating a return above zero, reflecting that it is managing to provide some level of return on the assets employed. This outcome suggests that all sampled industrial companies, regardless of their performance range, are operating profitably to some extent and are not in a situation where their asset utilization leads to losses.The mean ROE across the sampled industrial firms is 0.115670 (11.57%), which provides an average measure of the firms' effectiveness in converting their investments in assets into earnings. An average ROE of 11.57% indicates a reasonable overall efficiency in asset utilization across the sector, suggesting that, on average, the companies are generating a return of 11.57% for every unit of asset invested. This is a good indicator for potential investors, showing a generally healthy level of asset performance in the industrial sector.The standard deviation of ROE is 0.048355 (4.84%), which measures the extent of variation or dispersion from the mean ROE. A standard deviation of 4.84% implies moderate variability in the ROA among the sampled companies. This level of dispersion indicates that while there is some variation in how different companies are performing in terms of asset returns, the majority of the firms tend to cluster around the mean ROE of 11.57%. This clustering around the mean suggests that most companies are achieving ROEs that are fairly close to the sector average, with fewer extreme performers either on the high or low end.Overall, the findings indicate a generally positive and stable performance among the sampled industrial firms in Nigeria in terms of asset utilization and profitability. The positive minimum and relatively high maximum ROEs suggest that even the lower-performing firms are still creating value for

investors, while the moderate standard deviation reflects a reasonable level of consistency in financial performance across the industry. These insights are crucial for stakeholders, including investors and management, as they reflect the general financial health and operational efficiency of the industrial sector in the country.

Correlation Matrix

	ROE	STL	LTL	DER
ROE	1.000000			
STL	0.186913	1.000000		
LTL	0.069448	0.401409	1.000000	
DER	0.165223	0.074459	0.093984	1.000000

Source: Generated from E-view, 2024

The study examines the correlation between various financial leverage measures and the return on equity (ROE) of listed industrial companies. Understanding the relationships between these variables is crucial for assessing the impact of leverage on a company's financial performance, specifically its ability to generate returns for its shareholders. Correlation analysis helps identify the strength and direction of the linear relationship between variables, which is important for determining whether multicollinearity exists and for understanding the potential interactions among the variables.

The study finds that there is no correlation problem between the variables, as the correlation coefficients are all below the commonly accepted threshold of 0.8 (80%). When correlation coefficients exceed this threshold, it indicates a strong linear relationship that could lead to multicollinearity issues in regression analysis. Multicollinearity can distort the results of regression models, making it difficult to assess the individual impact of each variable on the dependent variable. Therefore, the fact that all correlations are below 0.8 suggests that multicollinearity is not a concern in this study, allowing for more reliable interpretation of the results.Thus, short term leverage is positively correlated with return on equity to the extent of 18.7%, Long term debt is positively correlated with return on equity to the extent of 6.9% and the company’s debt equity is positively correlated with return on equity to the extent of 16.5%.

Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DER	0.223100	0.062590	3.564485	0.0012
STL	-0.213155	0.062749	-3.396966	0.0019
LTL	-0.238574	0.062697	-3.805182	0.0007
C	0.280432	0.016556	16.93870	0.0000

Source: Generated from Eview, 2024

Debt equity ratio has a positive significant effect on financial performance with p-value of 0.0012. this indicates that any increase in the company's debt, it will improve financial performance by 0.223100 coefficient. The coefficient of 0.223100 represents the magnitude of the effect of the debt-equity ratio on financial performance. A positive coefficient indicates that an increase in the debt-equity ratio is associated with an improvement in financial performance. Specifically, for every one-unit increase in the debt-equity ratio, the financial performance of the company, as measured by an appropriate performance metric, is expected to increase by 0.223100 units. This finding implies that companies that strategically use debt financing relative to equity can enhance their financial performance. The use of debt can provide a cost-effective way to finance growth and expansion because debt is typically less expensive than equity due to tax benefits (such as tax-deductible interest payments). As long as the return on investments funded by debt exceeds the cost of debt, the company can enhance its profitability and provide higher returns to shareholders. It was found that short term leverage has a negative significant effect on financial performance with p-value of 0.0019. This means that any increase in short term debt, it will decrease financial performance by0.213155 coefficient. Short-term leverage, which refers to debt obligations that are due within a year, can adversely affect a firm's financial performance for several reasons. First, short-term debt often comes with higher interest rates compared to long-term debt. This higher cost of borrowing can increase the financial burden on firms, particularly if they face difficulties in meeting short-term obligations. As a result, the increased interest expenses can reduce net income and overall profitability. Additionally, the need to regularly refinance short-term debt can expose firms to interest rate fluctuations and market volatility. If a firm's short-term debt is not properly managed, it may face higher borrowing costs or difficulties in securing new financing, especially during periods of economic uncertainty. This can lead to increased financial stress and potentially impair the firm's ability to invest in growth opportunities or manage operational costs effectively. The negative impact of short-term leverage on financial performance also reflects the potential liquidity risks associated with high levels of short-term debt. Firms may need to allocate a significant portion of their cash flow to meet short-term debt obligations, which could limit their financial flexibility and hinder their ability to fund long-term investments or respond to unexpected expenses. This reduced liquidity can further impact overall performance and stability. Recent studies support these findings, emphasizing the risks associated with short-term leverage. For instance, Chen, et al. (2020) found that firms with high short-term debt levels

experienced lower profitability and increased financial instability due to the pressure of frequent debt repayments and higher interest costs. Similarly, Nguyen and Tran (2021) highlighted that excessive reliance on short-term debt can lead to financial distress and reduced operational efficiency, negatively impacting firm performance. Furthermore, long term debt has a negative significant effect on performance with p-value of 0.007 which is less than 5% significant level. This indicates that any increase in long term debt will decrease financial performance by 0.238574 coefficient. Long-term debt is generally characterized by lower interest rates and extended repayment periods compared to short-term debt, which can make it an attractive option for financing. However, the negative impact observed in this study highlights that increased long-term debt can also carry significant downsides. One major concern is the financial burden of servicing long-term debt over an extended period. While lower interest rates might reduce immediate borrowing costs, the total repayment amount can accumulate significantly over time, impacting the firm's profitability. Furthermore, high levels of long-term debt can lead to increased financial risk. Firms with substantial long-term obligations may face difficulties if they encounter unexpected economic downturns or cash flow challenges, as they are committed to making substantial interest and principal payments regardless of their financial situation. This can constrain the firm's ability to invest in growth opportunities or respond flexibly to market changes, thereby affecting overall performance. The negative impact of long-term debt on performance can also be attributed to agency costs and potential misalignment of interests between shareholders and debt holders. For instance, firms with significant long-term debt may be under pressure to prioritize debt servicing over investments in innovation or other strategic initiatives, potentially stifling long-term growth.

CONCLUSION AND RECOMMENDATIONS

The study found that short-term leverage significantly negatively impacts financial performance, indicating that increases in short-term debt are associated with declines in financial performance. This result underscores the substantial challenges firms face when managing high levels of short-term debt, including increased costs and liquidity pressures. The negative relationship observed is consistent with the theoretical perspectives that highlight the risks associated with short-term debt, such as higher interest rates, frequent refinancing requirements, and potential liquidity constraints. These factors contribute to diminished profitability and financial stability, reinforcing the need for firms to carefully manage their short-term debt to maintain optimal financial performance. The study concludes that increased long-term debt correlates with decreased financial performance, highlighting the significant burden that long-term debt can impose on a firm. The adverse effect is likely due to the substantial fixed financial commitments and potential for financial distress associated with long-term debt. As firms face higher debt obligations, their capacity to invest in growth opportunities and manage financial stability can be constrained, ultimately affecting their overall performance.

Based on the finding, the study recommends that:

Firms maintain an optimal debt equity ratio that maximizes profitability while minimizing risks associated with excessive leverage. This involves regularly assessing debt levels relative to the firm's cash flow capabilities, investment opportunities, and prevailing market conditions. Firms should consider leverage as a strategic tool to finance growth opportunities and enhance returns on investment.

Regular financial monitoring is recommended to track the effects of short-term leverage on performance, using key performance indicators and stress tests to manage financial risks proactively. Lastly, exploring long-term financing alternatives can offer more predictable repayment schedules and potentially improve overall financial performance. By addressing these areas, firms can better manage their short-term debt and enhance their financial stability and performance.

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