Implication of Financial Leverage on Performance of Listed Manufacturing Companies in Nigeria

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Abstract
The study examined the impact of financial leverage on the performance of listed manufacturing companies in Nigeria. Specifically, it assessed how the debt-to-assets ratio, debt-to-equity ratio, short-term leverage, and long-term leverage influence the stock returns of these companies. Extant literature was reviewed, and the study was anchored on the Trade-off Theory and the Pecking Order Theory. An ex post facto research design was adopted. The study population comprised forty-three (43) manufacturing companies listed on the Nigerian Exchange Group, and the filtering method was employed to select a sample size of twenty-eight (28) manufacturing companies. The study utilized secondary data sources. The panel dataset was derived from the annual reports of listed manufacturing companies spanning 2014 to 2023. The data comprised short-term debt, long-term debt, total debt, equity, book values of common and preferred shares, total assets, and market prices of shares. The study employed panel estimation techniques and pooled OLS for data analysis. Findings revealed that the debt-to-assets ratio and debt-to-equity ratio exert significant positive effects on stock returns of listed manufacturing companies in Nigeria. However, short-term leverage and long-term leverage did not significantly affect stock returns. The study therefore recommends that the management of manufacturing firms should employ more sustainable debt funding for demanding and crucial sections of the firm in order to increase or grow the firm's investment in assets. Additionally, managers of manufacturing firms should utilize the lowest possible level of debt or maintain an optimum debt level that does not exert an adverse influence on the firm's performance.
Keywords: Financial Leverage, Debt Ratios, Manufacturing Companies and Performance

1.1 Introduction

Financial leverage refers to the extent to which companies employ debt in their capital structure. An increase in the use of debt within a firm's capital structure raises the risk of financial distress and the probability of bankruptcy, which may arise as a result of default. There are certain benefits and costs associated with the use of debt financing. Companies can take advantage of the tax shield benefits of debt by incorporating it into their capital structure. Interest on debt is tax-deductible, and unlike equity, the use of debt does not lead to the dilution of ownership.

However, there are also costs associated with debt financing, such as fixed interest payments, the cost of financial distress, and bankruptcy costs arising from a company's inability to meet its debt obligations as and when due. Companies are, therefore, expected to trade off the benefits of debt against its associated costs in order to enhance financial performance (Abubakar, 2016).

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The relationship between financial leverage and a firm's performance has long sparked debate among scholars in corporate finance, dating back to the influential work of Modigliani and Miller in 1958 (Abubakar, 2017). In their early research, they argued that the proportion of debt to equity in a company's capital structure does not affect its overall value. However, their theory assumed a perfect market one without taxes, transaction costs, or the risk of bankruptcy which doesn't reflect real-world conditions. Recognizing this limitation, Modigliani and Miller later revised their stance in 1963 by introducing the idea that debt could be beneficial to firms because of its tax advantages, especially since interest payments on debt are tax-deductible. That paper sparked extensive academic debate on the theory of financial leverage (Iavorskyi, 2013).

Stock returns are commonly used as a benchmark for gauging firm performance, with variations in stock returns often seen as indicators of a firm's economic status. Hence, it is important to understand the factors that influence stock returns. Investment in equity shares is a major avenue for generating substantial returns for investors and also serves as a key source of financial capital for companies. Returns from equity investments can vary due to movements in stock prices, which are influenced by various indicators. These may be internal or firm-specific, such as book value and dividends, or external, such as gross domestic product (GDP), interest rates, government regulations, inflation, foreign exchange rates (FOREX), and earnings per share.

Salman and Yazdanfar (2012) argued that firm performance is largely influenced by several factors, with one of the most critical being capital structure. Financial leverage is one of the most significant decisions a firm makes, as it relates to determining the optimal capital structure (Chadha & Sharma, 2015). Capital structure comprises the firm's long-term debt, specific short-term debt, common equity, and retained earnings, all of which are essential for financing overall operations and growth (Hasan, Ahsan, Rahaman, & Alam, 2014). While capital structure generally merges equity and long-term debt, it does not always account for short-term debt (Hasan et al., 2014).

Chadha and Sharma (2015) note that capital structure involves a continuous decision-making process, especially when a firm requires funds for its projects. They added that capital structure reaches its optimal point when it enhances the firm's market value. Furthermore, Hasan et al. (2014) suggest that an optimal capital structure is one that maximizes the value of the firm while minimizing the cost of capital, thereby balancing risk and return. However, the challenge remains that there is no universally accepted approach for determining a firm's optimal capital structure.

In technical terms, financial leverage measures how sensitive a company's earnings after tax (EAT) are to changes in its earnings before interest and tax (EBIT). This ratio helps indicate how much debt a company is using compared to equity. A firm is said to be highly geared when it relies more on debt than equity, and lowly geared when equity makes up the larger share of its capital. While companies with higher leverage may be driven to boost performance (Weill, 2008), relying heavily on debt can come at a cost. It often creates tension between shareholders and lenders, leading to what is known as agency costs, which can in turn harm the company's overall performance.

In addition, having debt in a firm's capital structure is beneficial because interest expenses are tax-deductible, thereby providing tax savings. Financial experts also consider financial leverage a widely used tool to enhance a firm's return and performance. Nonetheless, despite its benefits, financial leverage also introduces financial risk. For instance, a highly geared firm that fails to generate sufficient EBIT may be unable to meet its interest obligations and operational expenses, potentially leading to liquidation.

There is, therefore, a continued need to examine whether variations in capital structure or financial leverage are significantly associated with changes in stock returns.

1.2   Statement of the Problem

Leverage is a worldwide problem either for developed countries or developing countries. It

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is important to know the problematic areas where a firm has to act carefully and handle the problem. If borrowed capital can reduce the cost of capital, then to what extent are Nigerian manufacturing companies supposed to engage leverage in their capital structure to reap higher stock returns and cash flows, and avoid the possibility of insolvency and bankruptcy.

Similarly, as pointed out by Abubakar (2017), since the value of the firm is proportionally related to its financial performance, financial experts study the effect of financial leverage on the financial performance in order to validate theoretical predictions and to recommend the appropriate debt-equity mix that Companies should adopt in order to improve financial performance. However, empirical studies just like theories of financial leverage have varying outcome on the possible effect that financial leverage should have on financial performance.

In addition, review of empirical studies on the sectors of the Nigerian Exchange Group (NGX) reveals some important methodological weaknesses. First, to the best of the researchers' knowledge, there is no empirical study in Nigeria linking financial leverage with financial performance, using proxies as Stock returns performance, cash flows performance and solvency performance on companies quoted on the manufacturing Sector of the NSE. Second, leverage has been predominantly measured in prior literature as the ratio of total liabilities to total assets (see for example, Abubakar (2015) and Innocent et al. (2014)). This measure, according to Rajan and Zingales (1995), does not indicate whether the firm is at the risk of default. Third, there appears to be no consensus yet on the nexus between debt and equity in the corporate finance literature. The trade-off theory suggests that optimal ratio of debt and equity is to be ascertained after analyzing the costs of debt and equity. The pecking order theory, however, ranks the capital sources but does not predict maximum ratio between debt and equity. From the theoretical perspective, the relevance of leverage is yet to reach consensus This study fills these gaps by using the most recent data, appropriate measure of financial leverage and panel data technique, which is more robust than frequently used ordinary least square (OLS) regression technique to contribute to the empirical studies on the effect of financial leverage on the financial performance of manufacturing companies listed on the Nigerian Exchange Group.

1.3   Research Objectives
The main objective of this study is to ascertain the effect of financial leverage on the performance of listed manufacturing companies in Nigeria. The specific objectives include, to:
  i.   examine the effect of debt to assets ratio on stock returns of listed manufacturing companies in Nigeria.
  ii.   examine the effect of debt-to-equity ratio on stock returns of listed manufacturing companies in Nigeria.
  iii. examine the effect of short-term leverage on stock returns of listed manufacturing companies in Nigeria.
  iv.   examine the effect of long-term leverage on stock returns of listed manufacturing companies in Nigeria.

2.0   LITERATURE REVIEW

2.1   Conceptual Framework
2.1.1 Financial leverage
When a company decides to invest in a project or asset, it must also determine how to finance that investment. In essence, every investment decision is also a financing decision. A firm typically funds its investments through a mix of debt and equity, and in some cases, by issuing preference shares. Debt comes with a fixed interest rate, regardless of how well the company performs.

Similarly, preference shares offer a fixed dividend, though these dividends are only paid out

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when the company earns a profit. Whatever earnings remain after paying interest and preference dividends belong to the ordinary shareholders, whose dividends are not fixed but depend on the company's dividend policy and overall profitability.

Financial leverage refers to the use of borrowed funds primarily debt in proportion to shareholders' equity in a company's capital structure (Pandey, 2010). It reflects how much a firm relies on fixed-charge financing, including both debt and preference capital. This use of leverage can enhance a firm's ability to grow and generate returns but also exposes it to financial risk. As Rajput et al. (2020) noted, financial leverage acts like a double-edged sword: while it has the power to amplify shareholders' wealth when used wisely, it can just as easily lead to losses if poorly managed. The extent to which a firm uses debt in its capital structure signals its level of financial leverage. When leveraged funds are directed toward productive and profitable investments, they can help firms expand operations and achieve the overarching goal of maximizing shareholder value.

Ali et al. (2022) observed that a high level of leverage where debt outweighs equity leads to higher financial costs. These costs, such as increased interest payments, can negatively impact earnings per share (EPS). In other words, the more debt a firm carries, the more likely it is to experience a drop in EPS due to growing financial obligations.

To be "leveraged" simply means a firm has debt, while an "unleveraged" firm operates without it. Financial leverage is typically the portion of a firm's capital sourced from borrowed funds. According to Lasher (2011), leverage works much like a physical lever it magnifies effort. In finance, this means using debt to magnify the returns generated from equity investment.

Modigliani and Miller (1958) famously argued that the use of debt can increase a firm's value, especially when taxes are considered. However, they also cautioned that excessive borrowing increases financial risk and the likelihood of insolvency. At some point, the cost of potential bankruptcy outweighs the benefits of debt, leading to what is known as a trade-off. As a firm's debt rises, so does the risk of default, thereby increasing the chance of bankruptcy.

Cheng and Tzeng (2010) added that the positive effect of leverage on firm value is more pronounced when a company has strong financial health. Since financial distress erodes firm value, the amount of debt a company carries are negatively related to its probability of bankruptcy. In other words, the higher the likelihood of bankruptcy, the more cautious lenders and investors become, often demanding higher interest rates and stricter loan terms. These demands, in turn, can deepen financial stress and further reduce the firm's value.

Leverage is often assessed through various financial ratios that compare a firm's debt to its assets or equity. Common leverage ratios include the debt ratio, interest coverage ratio, capitalization ratio, debt-to-equity ratio, and fixed assets to net worth ratio (Gitman & Zutter, 2012). In this study, four specific measures of leverage are adopted: Debt-to-Assets Ratio (DAR), Debt-to-Equity Ratio (DER), Short-Term Leverage Ratio (STLR), and Long-Term Leverage Ratio (LTLR).

a)   **Debt to assets leverage**
The Debt to Asset Ratio, also known as the debt ratio, is a leverage ratio that indicates the percentage of assets that are being financed with debt. The higher the ratio, the greater the degree of leverage and financial risk. The debt to asset ratio is commonly used by creditors to determine the amount of debt in a company, the ability to repay its debt, and whether additional loans will be extended to the company. On the other hand, investors use the ratio to make sure the company is solvent, is able to meet current and future obligations, and can generate a return on their investment. The debt ratio assesses a company's level of leverage by comparing its total debt to its total assets. It is computed as total debt divided by total assets. That is, Total Debt / Total Assets = Debt Asset Ratio.

Abdullah and Tursoy (2019) explain that when a firm's debt ratio exceeds one (1), it indicates

that a significant portion of its assets is financed through borrowed funds meaning its liabilities outweigh its assets. Such a high ratio suggests potential financial vulnerability, particularly if interest rates were to rise suddenly, which could increase the risk of default. Conversely, a debt ratio below one (1) shows that a larger share of the firm's assets is financed by equity. While a lower debt ratio is generally seen as favorable, the ideal ratio may vary across different industries.

Kargar and Blumenthal (2014) emphasized that the debt ratio is a vital tool used by financial analysts and professionals to assess a firm's financial health. It reveals the extent to which a company's assets are financed by debt. Like other financial ratios, the debt ratio is most meaningful when evaluated over time, as it helps determine whether a company's financial risk is improving or worsening (Moradi & Paulet, 2019).

b)   Debt to equity leverage
Short term funds are needed to finance working capital of an entity. The short -term fund needs may come in the form of raw materials purchase need, salary and wages payment needs, fished goods inventory need etc. Thus, short term financing source refers to all funds generated for a period not more than a year. It is purely lack of experienced financial management to finance medium term and long-term funding needs with short term funds. In the same vein, it is bad financial management to finance short term and medium-term funding needs with long term funds. Analysts in the field of finance are in debate on advising the business organizations on the best structure of capital to employ while undertaking decisions (Olarewaju, 2019).

The Debt to equity is a ratio used to assess debt to equity. This ratio also provides general guidance on the financial viability and risk of the company. Debt to equity ratio for each company is different, depending on the business characteristics and diversity of cash. Companies with stable cash flow usually have a higher ratio than the less stable cash ratio (Hapsoro & Husain, 2019). Debt to equity ratio is an indicator of the proportion of corporate debt to investment stock. Debt holder's Debt to equity ratio is calculated by total debt divided by total stockholders' equity. "

c)   Short-term leverage
Short term debt ratio (otherwise known as short term leverage) is part of the financial leverage structure of a company. Financial leverage structure is the way a firm finances its assets through some combination of debt and equity that a firm deems as appropriate to enhance its operations (Kumah, 2013). The determination of a firm's optimum financial structure is fundamental in the decision of how much fund should be borrowed and the appropriate mixture of debt and equity to finance business activities. Therefore, the choice among ideal proportion of debt and equity can affect the value of the firm, as well as financial performance.

Short-term assets and liabilities are generally defined to be those items that will be used, liquidated, mature or paid off within one year. Short-term assets should be financed with short-term liabilities (Guin, 2011). Short-term term is primarily concerned with the analysis of decisions that affect current assets and current liabilities. Short term debt is measured as short-term liabilities divided by total assets. The anecdotal evidence suggests that there is a positive relationship between short term leverage and financial performance (Yazdanfar & Öhman, 2015).

d)   Long-term leverage
Long term debt ratio (otherwise known as long-term leverage) is the ratio which links the long-term debt of the firm to the long-term capital. The ratio is also a measure of solvency and relates to the long-term leverage position of the firm and the level of risk. Long term debt includes bonds, bank debt, and debentures (Yazdanfar & Öhman, 2015). Bonds are instruments and securities that are publicly tradable and carry a maturity of over twelve months. Bonds come with fixed maturity time such as a 10-year bond, 20-year bond, 30-year bond and more. There are so many categories of

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bonds such as puttable, callable, convertible, non-convertible, high yield bonds and investment grade bonds.

2.1.3   Performance

Different writers or scholars define business's performance differently. It could be financial performance or market performance. From the perspective of investors, financial performance is dignified by how healthier the investor is at the final of a period, than how he was at the commencement. Market definition is one of the most important analytical tools to examine and evaluate the competitive constraints that institution faces and the impact of its behavior on competition. Market definition is a complex task in addition; there is broad agreement that in some cases its appropriateness can be called into question. The main concerns relate to the limited value of even accurately calculated market shares and concentration measures in specific kinds of markets. Market definition serves several goals in identifying the scope of competition in a market. The major objective of market definition is to evaluate the existence, creation or strengthening of market power, which is defined as the ability of the firm to keep the price above the long-run competitive level.

The stock price (Stock returns) is the price that occurs on the exchange at a certain time, the stock price can change up or down in a matter of time that is so fast, can change in a matter of minutes even can change in seconds. This is possible because it depends on the demand and supply between the buyer of shares and the seller of shares. Some conditions and situations that determine a stock will experience fluctuations: Micro and macro conditions of the economy, company policy in deciding to expand (business expansion), such as opening a branch office, supporting branch offices both opened in domestic and abroad, change of directors suddenly, the existence of directors or commissioners of companies involved in criminal acts and cases have gone to court, company performance continues to decline at any time, systematic risk, which is a form of risk that occurs as a whole and has contributed to causing companies to get involved , The effects of market psychology that were able to suppress the technical conditions of buying and selling shares, the Company went bankrupt, Withdrawal of shares by shareholders after creditors' rights were fulfilled (Hapsoro & Husain, 2019).

As observed by Ikaka, Undie and Eghort (2025) in their article titled Human Resource Development and Internal Security: Linking Recruitment to Ethical Behavior in Nigeria Police Force noted that HRD may change organizational culture, inculcate integrity, and improve internal security when it is strategically integrated with ethical standards, accountability principles, and ongoing capacity-building. However, ignoring HRD initiatives weakens operational performance, promotes a culture of impunity, and erodes public trust in the police, all of which contribute to the Force's eventual decline in legitimacy, authority and institutional performance.

2.3   Theoretical framework
2.3.1   Trade-off theory by Myers Majluf (1984)

This theory, commonly referred to as the Tax–Bankruptcy Trade-Off Theory, suggests that firms determine their capital structure by weighing the tax benefits of debt against the potential costs of bankruptcy. According to Voutsinas and Werner (2011), companies view debt-equity decisions as a balancing act between the advantages of the debt tax shield and the drawbacks of leverage such as agency costs, the loss of non-debt tax shields, and the risk of bankruptcy. Modigliani and Miller (1958) highlighted that personal taxes on interest income can diminish the appeal of debt financing. Beyond taxes, debt also exposes firms to financial distress, which occurs when a company struggles to meet its debt obligations specifically, the repayment of interest and principal. Persistent default on these payments can eventually lead to insolvency. As Pandy (2015) noted, for a given level of operational risk, the likelihood of financial distress increases as the level of debt rises.

Under the trade-off theory, highly profitable firms which are better positioned to meet debt

obligations and have substantial taxable income are expected to carry higher levels of debt relative to equity. These firms benefit more from tax shields and typically face lower risks of bankruptcy, making debt a more attractive option. In contrast, less profitable firms are likely to avoid high debt levels due to their limited repayment capacity and higher financial risk. However, this perspective contrasts with the Pecking Order Theory, which argues that firms with higher profits prefer to rely less on debt. Instead, they use retained earnings to fund operations and investments, avoiding the need for external financing when internal resources are sufficient.

2.3.2 Perking order theory by Stewart C. Myers (1984)

This theory states that companies prioritize their sources of financing (from internal financing to equity) according to the law of least effort or least resistance, preferring to risk equity as a financing means of last resort. Hence, internal funds are used first and when that is depleted, debt is issued and when it is not sensible to issue anymore debt, equity is issued (Oye, 2014). The theory maintains that Companies adhere to hierarchy of financing sources and prefer internal financing when available and debt is preferred over equity if external financing is required (Oye, 2014). The pecking order theory is based on the assertion that managers have more information about their Companies than investors.

This disparity of information is referred to as asymmetric information. Other things being equal, because of asymmetric information, manager will issue debt when they are positive about their firm's future prospect and will issue equity when they are unsure. A commitment to pay to fix amount of interest and principal to debt holders implies that the company expects steady cash flow. On the other hand, an equity issue would indicate that the current stock returns are overvalued. Therefore, the manner in which managers raise capital leaves a signal of their belief in their firm prospect (Pandy, 2010). The pecking-order theory debates that, attributable to information spatiality, companies value more highly to use their retained earnings first to finance their investments (Myers & Majluf, 1984). Once internal finance is not enough, Companies issue debt first and equity as a last resort of raising capital. The theory propose that Companies have a specific finance order for capital accustomed financing their businesses (Myers and Majluf, 1984). Graham and Harvey (2001) submitted most financial managers ensure that debts are raised once their internal finances are not enough to fund their activities. Traditionally a firm's inability to source for funds through debt financing influences their decisions to issue ordinary shares. There is poor support for either the trade-off or the information asymmetry-based pecking-order theory of financial leverage (Graham & Harvey, 2001).

2.4 Empirical Review

Ibrahim et al. (2024) investigated the effect of financial leverage on the financial performance of listed industrial firms in Nigeria between 2018 and 2022. The study adopted an ex post facto research design and focused on all industrial firms listed on the Nigerian Exchange Group (NGX). Due to data irregularities, a purposive sample of thirteen (13) firms was selected. Secondary data were obtained from the annual reports of the selected firms for the period under review. The analysis was conducted using descriptive statistics, correlation, and multiple regression techniques with the aid of E-Views version 13. The findings revealed that the total debt-to-asset ratio had a significant positive effect on the gross profit margin, whereas the interest coverage ratio exerted a significant negative impact on the financial performance of listed industrial firms in Nigeria.

Khan and Siddiqui (2023) researched on the impact of financial leverage and liquidity on the performance of cement, textile, sugar and pharmaceutical companies in Pakistan (2011-2020). The study utilized data of 50 companies across these industries from their official and also, data from the World Bank was employed. the study data was analyzed using generalized method of moments

(GMM). The study findings make-known that financial leverage exerts positive effect on company performance in the textile, sugar and pharmaceutical industries whereas, a negative effect was discovered in the cement industry. However, liquidity has notable significant impact on companies' performance across all sectors.

Rizqa et al (2023) examined the relationship between leverage and firm value: the mediating effect of return on equity and earnings per share. the study adopted a quantitative research design. The purposive sampling was utilized to select a sample size of 687 companies quoted on the Indonesia Stock Exchange (IDX), 2021The study employed a partial least squares-structural equation modelling (PLS-SEM) technique for data analysis. The study findings found that leverage does not have direct impact on firm value, but the mediating role of return on equity is significant. On the other hand, earnings per share was discovered not to mediate the correlation between leverage and firm value.

Abideen (2023) conducted research on the link between financial leverage, firm liquidity, and firm size on company performance in China. The study employed a quantitative research design. The study used secondary data obtained from listed firms on the China stock exchange between 2010- 2022 with the aid of wind database. The study data was analyzed using the fixed effect model. Findings of the study revealed that firm liquidity and firm size exert notable influence on company performance in China.

Anifowose, Yusuf and Tanimojo (2020) investigated the effect of financial leverage on firms' performance, a study of listed pharmaceutical firms in Nigeria. The study employed annual panel data between 2003 to 2018 using E-view techniques. The study result demonstrated that debt equity ratio has significant positive effect, whereas debt ratio and Interest coverage ratio exerts negative significant effect on return on assets (ROA) and return on equity (ROE). This suggest that financial leverage significantly influence profitability and efficiency of firms' performance, specifically, listed Pharmaceutical Companies in Nigeria.

Nurhinkmawaty and Isnurhadi (2020) conducted a study on the effect of debt ratio (leverage) and return on equity on stock return with dividend policy as intervening variables in subsectors property and real estate on Bei. The study collected annual data for eighteen property and real estate companies in Indonesia from the Indonesia Stock Exchange over the period of 2014-2018 and applied multiple linear regression model using SPSS and the Sobel test. The study results unveiled that Debt-to-Equity Ratio (DER), Return on Equity (ROE), and Dividend Payout Ratio (DPR) positively and significantly influence stock returns, both partially and jointly. Furthermore, the result of Sobel test revealed Dividend Payout ratio (DPR) can be mediate the relationship of Debt-to-Equity Ratio (DER) and Return on Equity (ROE) on stock returns.

Tahmoorespour et al (2015) examine the relationship between capital structure and stock return by selecting Companies in 8 countries in the Asia Pacific region over the period (1990-2012). The results show that the effect of capital structure depends on the nature of industry and the market as well. There is a negative relationship between return and debt to common equity in Australia, China and Korea. Finally, there is a positive effect of long-term debt to common equity in Australia and Korea in the basic material industry.

Bergrren and Bergqvist (2014) examine the relationship between capital structure and stock return by taking 50 Swedish companies over the period (2009-2013). They use multiple regression panel data for analysis. The results show a positive effect of financial leverage, growth, and liquidity on stock return. However, there is a negative effect of profitability on stock return. In addition, the size of firm has a significant effect on financial leverage and stock return, and finally, volatility has a significant effect on financial leverage.

Ahmad et al (2013) explored the co-determinants of capital structure and stock return of 100 non-financial companies in the Karachi stock exchange (KSE) over the period (2006-2010). The

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results show that stock return and leverage affect each other, while liquidity, growth and profitability have a significant effect on both leverage and stock return. The relationship between profitability and financial leverage is negative but it affects the stock return positively, there is a positive impact of growth on leverage and stock return, but there is a negative relationship between liquidity and both financial leverage and stock return, finally, the size of the firm has insignificant relationship with financial leverage and stock return.

Olowoniyi and Ojenike (2013) explored the relationship between capital structure and stock return. As a sample, 85 Companies listed on the Nigeria Stock Exchange over the period (2000-2010) are taken for analyzing the above relationship. They use panel co-integration approach for analyses. The results of their study show that there is a long-run relationship between capital structure and stock return; therefore, attention must be paid to the two variables simultaneously.

Buigutet al. (2013) on their study on the link between capital structure and Stock returns in NSE assessed the effect of equity, gearing ratio and debt, equity on Stock returns. Using data pertaining to the energy sector over the period 2006 till 2012 and employing multiple regression analysis, the results indicated that equity, gearing ratio and debt were significant elements of Stock returns for the sector under investigation. Further, debt and gearing ratio were found to aversely influence Stock returns while equity inversely affected Stock returns.

Uwuigbe et al. (2012) examined the indicators of Stock returns in the stock exchange market in Nigeria. Using the sampling technique of judgmental, a total of 30 companies were selected and data (2006 to 2010) collected from the stock exchange and annual reports of the Companies. The paper modeled the effects of dividend payout, financial leverage and financial performance on Stock returns of listed Companies by using regression analysis. The study concluded that dividend payout and financial performance had a significant optimistic link with Stock returns while financial leverage (proxied by debt-equity ratio) had significant negative influence on the market value of Stock returns in Nigeria.

Uremadu and Efobi (2012) explore the impact of leverage and liquidity on corporate returns by taking 10 Companies in Nigeria over the period (2002–2006). They use OLS including log–linear least squares application for analysis. The results show a negative relationship between return and value of long-term debt, ratios of long-term debt to total liability, and ratios of short-term debt to total liability, and ratios of short-term debt to total liability; and equity capital to total liability. In addition, there is a positive relationship between profitability and domestic liquidity rate, ratios of long-term debt to equity capital and value of short-term debt. Adami et al (2010) examine the relationship between stock return and leverage by using 2673 companies listed in the London Stock Exchange over the period (1980– 2008). The study demonstrates a negative relationship between financial leverage and stock return. There is a significant and negative relationship between gearing and returns when the gearing is the sole independent variable.

3.1   METHODOLOGY

The ex post facto research design was adopted for the study. The design is considered appropriate data employed are already in existence. The entire listed manufacturing companies in the Nigerian Exchange Group (NGXE) are considered to be the population of the study. The study population comprises forty-three (43) manufacturing companies listed on the Nigerian Exchange Group and the filtering method was employed to select a sample size of twenty-eight (28) manufacturing companies. The study utilized secondary data source. The panel data set were derived from listed manufacturing companies' annual reports from 2014-2023. Data generated from this source consist of short-term debt, long term debt, total debt, equity, book value of common shares, book value of preferred shares, total assets, and market price of shares. The study employed panel estimation technique and pooled OLS in the analysis of data

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3.2 Model specification

The model specified for the test of hypotheses is stated below:

$RET_{it} = \beta_0 + \beta_1 DAL_{it} + \beta_2 DEL_{it} + \beta_3 STL_{it} + \beta_4 LTL_{it} + \beta_5 FSIZ_{it} + \beta_5 LQD_{it} + \beta_5 + MEF_{it} + \varepsilon_t$

were,

RET = Stock Return
DAL = Debt to assets leverage
DEL= Debt to equity leverage
STL = Short term leverage
LTL= Long term leverage
FSIZ = Firm Size
LQD = Liquidity
MEF = Management Efficiency
ε = Error term
i, t = firm and years

4.0 RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Table 1: Descriptive Statistics

	RET	DAR	DER	STL	LTL	FSIZE	MEF	LQD
Mean	0.1196	0.9757	1.3543	1.9356	23.7823	5.6036	7100.150	111.5142
Median	-0.0036	0.2450	1.0039	0.8572	2.3604	5.2411	105.5037	1.1768
Maximum	4.4953	1.4444	4791.206	158.2068	568.9574	8.9838	1874313.	2087.143
Minimum	-5.1544	0.0001	0.0094	0.0000	0.0000	3.2405	0.114132	0.0028
Std. Dev.	0.6290	10.351	659.6540	21.2415	68.7575	1.4137	112225.3	392.5233
Skewness	-0.7371	12.2140	5.6717	4.29067	4.7473	0.8652	16.59743	3.6473
Kurtosis	29.648	164.8359	34.1245	23.0190	28.8519	3.1407	276.6472	15.0049
Jarque-Bera	7479.072	312521.7	12803.15	5534.702	8848.796	35.16662	883322.0	2302.197
Probability	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Observations	252	280	280	280	280	280	279	280

RET=Stock returns, DAR=Debt to assets ratio, DER=Debt to equity ratio, STL=Short-term leverage, LTL=Long-term leverage, FSIZE=Firm size, MEF=Management efficiency, LQD=Liquidity, ROA=Returns on Assets.

Table 1 presents the descriptive summary for the variables, stock returns (RET), Debt to asset ratio (DAR), debt to equity ratio (DER), short term leverage (STL), long term leverage (LTL), Returns on assets (ROA), Firm size (FSIZE), Management efficiency (MEF) and Liquidity (LQD). From the findings, the average stock return was 11.96% with a minimum value of -5.15, maximum value of 4.49 and a standard deviation of 0.629. These findings indicate on average, the companies had moderate positive stock returns, with deviations being not too widely spread from the mean. The skewness value of -0.7371 and kurtosis value of 29.648 indicate that the data is negatively skewed with a leptokurtic (peaked) distribution. The Jarque-Bera statistics value of 7479indicate that the data does not follow normal distribution.

Debt to assets ratio (DAR) of the sampled Companies had an average value of 0.9757, and a standard deviation of 10.35. This implies, the debt to assets ratio distribution deviated from both sides of the average by 10.35, meaning, the data values of DAR were extremely widely dispersed from the mean. The DAR distribution had a maximum value of 1.444 and a minimum value of 0.0001

resulting in a range of 1.4439. The data for DAR was positively skewed with a coefficient of 12.214. This shows that, a greater portion of the DAR distribution fell on the right side of the normal curve. The kurtosis coefficient of 164.84 implies that the DAR distribution was abnormally distributed, which is explained by the wide range of 1.4439.

Debt to equity ratio (DER) of the sampled Companies had an average value of 1.354, and a standard deviation of 659.7. This implies, the debt-to-equity ratio distribution deviated from both sides of the average by 659.7, meaning, the data values of DER were extremely widely dispersed from the mean. The DER distribution had a minimum and a maximum value of 0.009 and 4791.2. The data for DER was positively skewed with a coefficient of 5.67. This shows that, a greater portion of the DAR distribution fell on the right side of the normal curve. The kurtosis coefficient of 34.12 implies that the DAR distribution was abnormally distributed and leptokurtic (peaked data).

Short term leverage (STL) of the sampled Companies had an average value of 1.935, and a standard deviation of 21.24. This implies, the ratio of short-term debt to common equity shares distribution deviated from both sides of the average by 21.24, meaning, the data values of STL were widely dispersed from the mean. The STL distribution had a minimum and a maximum value of 0.000and 158.21. The data for STL was positively skewed with a coefficient of4.29. This shows that, a greater portion of the STL distribution fell on the right side of the normal curve. The kurtosis coefficient of 23.02 implies that the STL distribution is leptokurtic. The Jarque-Bera statistics show that the data is abnormally distributed, with a JB value 5534.

Long term leverage (LTL) of the sampled Companies had an average value of 23.78, and a standard deviation of 68.76. This implies that the ratio of long-term debt to common equity shares is about 34 times, and the distribution deviated from both sides of the average by 68.76, meaning, the data values of LTL were widely dispersed from the mean. The LTL distribution had a minimum and a maximum value of 0.000and 568.96. The data for LTL was positively skewed with a coefficient of 4.75. This shows that, a greater portion of the LTL distribution fell on the right side of the normal curve. The kurtosis coefficient of 28.85 implies that the LTL distribution is leptokurtic. The Jarque-Bera statistics show that the data is abnormally distributed, with a JB value 8848.80

Firm size (FSIZE) of the sampled Companies had an average value of 5.60, and a standard deviation of 1.41 This implies, the log transformation of total assets (representing firm size) is moderate, and the distribution deviated from both sides of the average by 1.41, meaning, the data values of firm size were not widely dispersed from the mean. The firm size distribution had a minimum and a maximum value of 3.23 and 8.98. The data for firm size was positively skewed with a coefficient of0.87. The kurtosis coefficient of 3.14 implies that the firm size distribution is mesokurtic. The Jarque-Bera statistics show that the data is abnormally distributed, with a JB value 35.17.

Management Efficiency (MEF) of the sampled Companies had an average value of 7100.15, and a standard deviation of 112225.3 This implies that the growth in assets among sampled Companies is high for the period 2011 to 2020, and the distribution deviated from both sides of the average widely. The firm size distribution had a minimum and a maximum value of 0.11 and 1874313. The data for firm size was positively skewed with a coefficient of 16.60. The kurtosis coefficient of 276.65 implies that the MEF distribution is highly peaked (leptokurtic). The Jarque-Bera statistics show that the data is abnormally distributed, with a JB value 883322.

Firm liquidity (LQD) of the sampled Companies had an average value of 111.51 and a standard deviation of 392.52. This implies that on average, current assets cover current liabilities of sampled Companies by about 112 times in the period 2011-2020, and the distribution deviated from both sides of the average widely. The liquidity distribution had a minimum and a maximum value of 0.003 and 2087.14. The data for firm liquidity was positively skewed with a coefficient of 3.65. The kurtosis coefficient of 15.00 implies that the LQD distribution is highly peaked (leptokurtic). The

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Jarque-Bera statistics show that the data is abnormally distributed, with a JB value 2302.2.

Returns on assets (ROA) of the sampled Companies had an average value of 0.05 and a standard deviation of 0.24. This implies that on average, total assets employed of sampled Companies produces a 5% profit in the period 2011-2020, and the distribution deviated from both sides of the average with an insignificant amount. The liquidity distribution had a minimum and a maximum value of -0.99 and 1.52. The data for ROA was negatively skewed with a coefficient of-0.34. The kurtosis coefficient of 14.85implies that the ROA distribution is highly peaked (leptokurtic). The Jarque-Bera statistics show that the data is abnormally distributed, with a JB value of 1643.49.

4.2 Correlation Matrix and Multicollinearity

Table 2 highlight the correlation matrices of the variables adapted in the study. The Pearson Product-Moment Correlation Coefficient technique of data analysis was used to explore the connection between leverage and the Companies' financial performance. Pearson correlations and their probability values (*in parenthess*) are reported for the correlation among all variables, dependent variable, independent variables, control variables and ROA, used for the auxiliary regression.

From Table 2, there was a significantly strong and positive association between DAR and RET at the 5% level of significance [r= 0.3454, (p=0.047)]. There was a positive and significant correlation between DER and RET at the 5% level of significance [r= 0.2265, (p=0.044)]. There was negative association between STL and RET at the 10% level of significance [r= -0.1229, (p=0.074)]. There was negative association between LTL and RET at the 10% level of significance [r= -0.1323, (p=0.069)]. The data revealed that while debt ratios on assets (DAR) and total equity (DER) have positive correlations with stock returns (RET), short-term debt and long-term debt on common stocks leverage (STL and LTL) are negatively associated with RET. The relationship between the control variables and returns revealed the following data: FSIZE has a negative and insignificant relationship with RET [r= -0.005, (p=0.935)], MEF has a negative and insignificant relationship with RET [r= -0.0107, (p=0.865)], and LQD has a positive and insignificant relationship with RET [r= 0.0043, (p=0.945)]. The degree of association between control vectors and returns revealed that firm size and management efficiency are negatively associated with stock returns, while liquidity is positively related with stock returns.

Table4.2: Correlation Matrix

Correlation (*Probability*)	RET	DAR	DER	STL	LTL	FSIZE	MEF	LQD
RET	1.0000							

DAR	0.3454**	1.0000						
	(0.047)	-----						
DER	0.2265**	0.0493	1.0000					
	(0.044)	(0.435)	-----					
STL	-0.1229*	-0.0085	-0.0625	1.0000				
	(0.074)	(0.892)	(0.322)	-----				
LTL	-0.1323*	0.0707	0.2780***	0.0196	1.0000			
	(0.069)	(0.262)	(0.000)	(0.756)	-----			
FSIZE	-0.0051	-0.1592**	0.0997		-0.1191*	0.2125***	1.0000	

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	(0.935)	*(0.011)*	*(0.114)*	*(0.058)*	*(0.001)*	-----		
MEF	-0.0107	-0.0258	-0.0353	-0.0298	0.0577	0.1965***	1.0000	
	(0.865)	*(0.683)*	*(0.576)*	*(0.637)*	*(0.361)*	*(0.002)*	-----	
LQD	0.0043	-0.0422	-0.0085	-0.1040	-0.1012	0.1749***	0.0796	1.0000
	(0.945)	*(0.504)*	*(0.892)*	*(0.099)*	*(0.109)*	*(0.005)*	*(0.207)*	-----
ROA	0.1230**	-0.1609**	0.0316	-0.0197	-0.0028	-0.0443	-0.0416	0.0883
	(0.051)	*(0.010)*	*(0.616)*	*(0.755)*	*(0.964)*	*(0.482)*	*(0.510)*	*(0.162)*

*RET=Stock returns, DAR=Debt to assets ratio, DER=Debt to equity ratio, STL=Short-term leverage, LTL=Long-term leverage, FSIZE=Firm size, MEF=Management efficiency, LQD=Liquidity, ROA=Returns on Assets *, **, *** denote significant at 10%, 5% and 1% respectively.*

4.3 Hausman Specification Test

To choose a model to use in analysis between fixed or random effects, a Hausman test was done. In random effects model, the variation across entities is assumed to be random and uncorrelated with the predictor variables in the model enabling time in variant characteristics to be included in the model as predictors (Stock & Watson, 2003). The study used a 5% level of significance to determine which model to use, with the null hypothesis being the use of random effect in the panel regression model. The unreported Prob>chi2 was less than 5% for the general model. The Hausman test shows that the probability of chi-square is significant, thus the null hypotheses was rejected. Thus, the fixed effects model for analysis is recommended. This in line with Green (2008) recommendations.

4.4.1 Autocorrelation and heteroscedasticity test

Baltagi (2001) comprehensively elucidates testing for serial correlation in the presence of random and fixed effects. Many of these tests make specific assumptions about the nature of the individual effects or test for the individual-level effects jointly. Some of these tests, such as the Baltagi–Wu test derived in Baltagi and Wu (1999), are optimal within a class of tests. In contrast, because the Wooldridge test is based on fewer assumptions, it should be less powerful than the more highly parameterized tests, but it should be more robust. Since there was presence of serial/auto correlation and heteroscedasticity in the panel data, evidence by the unreported Durbin Watson statistics of 2.98, the Panel Generalized Least Square Panel Regression model was used to test the regressions of the study.

4.3 Regression Result

In this study, panel data is used to explore the relationship between financial leverage and stock returns. The results are reported using the Panel Estimated Generalized Least Square (EGLS), which solves the effects of the existence of autocorrelation and heteroscedasticity. The GLS model revealed an R squared of 0.31 with a significant F-stat of 6.97 (p=0.000). This indicates that the independent variables of the study jointly explain a significant variation in the dependent variable (stock returns), and the model is statistically significant and fit.

The control variables revealed that firm size, management efficiency and liquidity are all positive predictors of the dependent variable, with firm size affecting stock returns by a coefficient of 0.003, management efficiency affecting stock returns by a coefficient of 0.037 and liquidity affecting stock returns by a coefficient of 0.061. However, all the coefficients have p-values above 0.05 level of significance, indicating that the control variables do not significantly impact on stock

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returns.

Table 3: Regression Coefficients using Panel EGLS Regression

Variable	Standardized coefficients	t-statistics	p-values
C	0.001	0.9871	0.9989
DAR	0.124	7.9824	0.0000
DER	0.092	4.2318	0.0375
STL	-0.051	1.1129	0.3616
LTL	-0.003	0.8719	0.1818
FSIZE	0.003	0.7249	0.3743
MEF	0.037	1.0012	0.3651
LQD	0.061	1.2371	0.9699
R^2	0.31		
F-Statistics	6.97		
F (Prob)	0.0000		

Denotation: *RET=Stock returns, DAR=Debt to assets ratio, DER=Debt to equity ratio, STL=Short-term leverage,*
LTL=Long-term leverage, FSIZE=Firm size, MEF=Management efficiency, LQD=Liquidity

Effect of debt to asset ratio on stock returns
The first objective of the study assessed the effect of debt to assets ratio aspect on stock returns of manufacturing companies listed on Nigerian Exchange Group. Debt ratio was given as total debt/total assets. From the study findings in table 4.3, the model unveils that debt to asset is positive and significant in explaining stock returns, with a coefficient of 0.124[p=0.000] which is less than 0.05 at 5% level of significance]. This suggests that debt to assets ratio significantly increases returns by about 12.4 percent annually. Hence, we reject the null hypothesis that debt to assets ratio does not significantly affect returns on Stock returns of listed manufacturing companies in Nigeria. It is therefore accepted that debt to assets ratio significantly affects returns on market share price (stock returns) of listed manufacturing companies in Nigeria. The findings of this study are consistent with the declaration of Ibrahim, et al (2024) who asserts that total debt-to-asset ratio exert a significant positive influence on gross profit margin of listed industrial firms in Nigeria. The findings equally agree with the submission of Ahmad et al (2013) who found that debt to assets ratio had positive impact on stock returns. The findings of the study contradict the view of Rizqa et al (2023) who in their study found that leverage does not have direct impact on firm value

Effect of debt-to-equity ratio on stock returns
The second objective of the study investigated the effect of debt-to-equity ratio aspect of financial leverage on market share price (stock returns) of manufacturing companies listed on Nigerian Exchange Group. Debt ratio was given as total debt/total equity. From findings, the panel regression model demonstrated that debt to equity ratio is positive and significant in explaining stock returns, with a coefficient of 0.092 [p=0.0375] which is less than 0.05 at 5% level of significance. By implication, this indicates that an increase in debt-to-equity ratio results to a notable improvement in stock returns by about 9.2 percent. On the ground of the result, we reject the null hypothesis that debt to equity ratio do not significantly affect returns on Stock returns (stock returns) of listed manufacturing companies in Nigeria and concludes that that debt-to-equity ratio significantly affects returns on Stock returns (stock returns) of listed manufacturing companies in Nigeria. This implies that debt to equity ratio exert positive significant effects on returns on Stock returns (stock returns) of listed manufacturing companies in Nigeria. The finding resonates the assertion of Khan and Siddiqui (2023) who make-known that financial leverage exerts positive significant effect on company performance in the textile, sugar and pharmaceutical industries in Pakistan. The findings

also align with the findings of Nuhinkmawaty and Isnurhadi (2019) who found that debt to equity ratio had positive impact on stock returns. The findings negate the publication of Uwuigbeet et al (2012) who found a negative effect in their empirical investigation.

Effect of short-term leverage on stock returns
The third objective of the study evaluate the effect of short-term leverage aspect of financial leverage on market share price (stock returns) of manufacturing companies listed on Nigerian Stock Exchange. Short-term leverage was given as total short-term debt/common equity. From findings, the panel regression model discovered that short-term leverage is negative and insignificant in explaining stock returns, with a coefficient of -0.051 [p=0.3616] which is greater than 0.05 at 5% level of significance. This indicates that short-term leverage does not significantly reduce stock returns by about 5.1 percent Hence, we accept the null hypothesis that short-term leverage does not significantly affect returns on Stock returns of listed manufacturing companies in Nigeria. Adami et al. (2015) who in their study strongly affirmed that debt financing negatively affect stock returns. This finding disagrees with the postulation of Abideen (2023) Findings of the study revealed that firm liquidity and firm size exert notable influence on company performance in China.

Effect of long-term leverage on stock returns
The last objective of the study was to assess the effect of long-term leverage aspect of financial leverage on market share price (stock returns) of manufacturing companies listed on Nigerian Stock Exchange. long-term leverage was given as total long-term debt/common equity. From findings, the panel regression model shows long-term leverage is negative and insignificant in explaining stock returns, with a coefficient of -0.003 [p=0.1818] which is less than 0.05 at 5% level of significance. This suggests long-term leverage does not significantly reduce stock returns by about 0.3 percent. Hence, we accept the null hypothesis that long-term leverage does not significantly affect returns on Stock returns of listed manufacturing companies in Nigeria. The finding is inconsistent with the finding of Buigut et al. (2013) who in their results indicated that debt ratios are significant determinants of stock returns for the manufacturing sector. Further, gearing ratio and debt were found to positively affecting stock returns. Similarly, Anifowose, Yusuf and Tanimojo (2020) in their research demonstrated that debt equity ratio has significant positive effect on return on assets (ROA) and return on equity (ROE). However, findings of the study echoed the studies by Prince, Evans and Albert (2013) who found the relationship between long term leverage and stock returns to be negative. Adami et al. (2013) equally stated that the opposite results are best explained by investors preference to invest with firms who are financially flexible and hence earn higher returns when doing so.

5.   Concluding Remarks and Recommendation
The study examined majorly the effect of financial leverage on performance of listed manufacturing firms in Nigeria. Fron the findings the concluded that debt to asset ratio as well as debt to equity ratio were significant in the explanation of revealed that stock of listed manufacturing Companies in Nigeria. Both short term and long-term leverage negatively explains stock returns, but the coefficients showed that increase in leverage would cause a decrease in stock returns. Financial leverage might lead to poor stocks performance of Companies due to excessive costs of financing debt that might override the returns obtained from investing in the in stocks. On the ground of the findings, the study therefore, recommends that manufacturing firms management should employ more sustainable debt funding to demanding and crucial sections of the firm in order to increase or grow the firm's investment in assets. Again, managers of manufacturing firms should utilize lowest debt level or employ an optimum level of debt that will not exert adverse influence on the firm's performance. This is because of the inverse and negative relation between leverage and stock

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performance.

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