



EFFECT OF FINANCIAL LEVERAGE ON PERFORMANCE OF LISTED MANUFACTURING COMPANIES IN NIGERIA

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Abstract

The study examined the effect of financial leverage on the performance of listed manufacturing companies in Nigeria (2011-2020). Specifically, the study was conducted to examine the effect of debt to assets, debt to equity, short-term leverage and long-term leverage on Stock returns of listed manufacturing Companies in Nigeria. Relevant literatures were reviewed and the study was anchored on; Trade-Off Theory and Pecking Order Theory. The study employed ex-post-facto research design, and used random sampling technique in selecting twenty-eight (28) listed manufacturing companies out of forty-three (43). The study utilized secondary data that was mainly collected from the published financial statements of these companies, and data on stock returns were computed from share prices obtained from ng.investors.com. The quantitative secondary data collected was analyzed using E-views 10. The study employed Panel Generalized Least Square Regression to determine the effects of financial leverage variables on stock prices after testing for normality, multi-collinearity, autocorrelation and heteroscedasticity. The findings from the test of hypotheses revealed that debt to assets ratio and debt to equity ratio has positive and significant impact on stock returns. However, short term leverage and long-term leverage has negative and insignificant effects on stock returns. The overall F-statistics revealed that aggregated financial leverage have significant effect on stock returns of manufacturing companies in Nigeria. The study recommends that listed manufacturing firms when setting their financing sources should strike a balance between bankruptcy cost and tax saving advantage identified with borrowed funds.

Keywords: Financial leverage, Short term debt, Long term debt and Performance Debt to Assets Leverage Debt to Equity Leverage

1.0 Introduction

Financial leverage is the degree to which Companies employ debt in their capital structure. Increase in the use of debt in a firm's capital structure increases the risk of financial distress and probability of bankruptcy which may arise as a result of default. There are certain benefits and costs associated with usage of debt financing. Companies can take advantage of tax shields benefits of debt by employing debt in their capital structure. Interest on debt is tax deductible and the use of debt in a firm's capital structure, unlike equity, does not lead to dilution of ownership. However, they are certain costs associated with

debt financing vis-à-vis fixed interest payments, cost of financial distress and bankruptcy costs arising from inability of Companies to meet up with their debt obligations as at when due. Companies are therefore, expected to trade-off the benefits of debts against its costs in order to improve financial performance (Abubakar, 2016).

The effect of financial leverage on firm performance has been a controversial issue in corporate finance literature since the seminal work of Modigliani and Miller in 1958

(Abubakar, 2017). Modigliani and Miller (1958) asserted irrelevance of debt-to-equity ratio for firm value. However, since they considered the assumptions of perfect markets, with no taxes, absence of transaction and bankruptcy costs, the theory about the debt irrelevance becomes unrealistic. Later, Modigliani and Miller (1963) relaxed a no-tax assumption and developed a theory about tax benefits of debt. That paper gave rise to a serious academic discussion on the theory of financial leverage (Iavorskyi, 2013).

Stock returns is usually used as a benchmark to gauge firm's performance and its variations as a pointer of the economic status, or otherwise, of a firm hence the need to be familiar with the indicators that could affect Stock returns. Investment in equity shares is one of the major ways of investment that yields substantial returns to investors. It is also a financial capital source requirement of Companies. Returns from equity investments are subject to differ because of the Stock returns movement, that depends on various indicators which could be firm specific and internal such as book value, dividends and external indicators such as Gross domestic product (GDP), interest rate, government regulations, inflation and foreign exchange rate (FOREX) and earnings per share.

Salman and Yazdanfar (2012), debated that firm performance is majorly simulated by several factors, one of the most important being capital structure. Financial leverage is one of the most noteworthy decisions made by a firm as it is concerned with the determination of optimum capital structure for the firm (Chadha & Sharma, 2015). Capital structure integrates the firm's debt, specific short term debt, common equity and retained earnings, which are all essential in financing the firm's overall operations and growth (Hasan, Ahsan, Rahaman, & Alam, 2014). Capital structure primarily merges equity and debt but does not generally consider short term debt (Hasan, Ahsan, Rahaman and Alam, 2014). Chadha and Sharma (2015) noted that capital structure is a continuous process in making essential decision when a firm needs funds for its projects. They added that capital structure can only reach its optimum point when

it boosts the firm's market value. Adding to that, Hasan, *et al.* (2014), suggest that an optimal capital structure is one that maximizes the value of the firm while reducing the cost of capital, thereby balancing the firm's risk and return. The challenge is that it is still impossible to ascertain a specific approach for determining the firm's optimal capital structure.

Gultom *et al.* (2013), stated that the factors that influence the value of the firm are leverage, liquidity, company size and profitability. Also, it was noted that investment decisions, dividend policy and capital structure influences the value of a firm. Companies have several financing sources to finance their investment. Consequently, financing sources can be categorized into two; the internal financing sources which include reserves and retained earnings; external financing which includes long-term loans, bond issuance, ordinary and preferred stock issuance.

Companies should apply the best financing sources to arrive at the optimal capital structure so that they can make suitable financing decision that would enable them achieve positive returns. Financial leverage is the extent to which fixed income securities (debt) are used in a firm's capital structure. Financial leverage can be seen as the application of money borrowed. It is concerned with using money generated on a fixed cost with a view to enhancing the shareholder's return.

Chadha and Sharma (2015), submitted that financial leverage is the ratio of debt and equity, which states the relationship between borrowed funds and owner's funds in the capital structure of the firm". They also denote that Companies that depend on equity alone are called ungeared Companies whereas those that depends on both debt and equity are called geared Companies. To Rajkumar, (2014) financial leverage can be seen as the extent to which a firm uses fixed income securities such as debt and preferred equity. To him, the higher the financial leverage, the higher the interest payments leading to low earnings per share.

Technically, financial leverage represents the percentage change in earning after tax (EAT) divided by percentage change in earnings before interest and tax (EBIT). A firm can be either highly geared (having more debt than equity in its capital structure) or lowly geared (having more equity than debt in its capital structure). Companies with higher leverage are mostly inclined to improve their performance (Weill, 2008). However, higher leverage usually leads to higher agency costs because of the diverging interests between shareholders and debt holders. Thus, leverage may negatively affect performance. Furthermore, having debt in a firm's capital structure is beneficial to a firm; this is because a firm with debt in its capital structure enjoys tax savings as interest is paid before tax is deducted from the firm's income. Financial experts also state that financial leverage is a financial tool that is widely used to improve a firm's rate of return and its performance. However, financial leverage irrespective, of its benefit to a firm, also creates financial risk such as risk to the company; if a highly geared firm is unable to make sufficient EBIT, such firm might go into liquidation as it may not be able to meet its interest obligations and also finance other expenses of the firm. It is on this premise that the study examined the effect of financial leverage on the performance of listed manufacturing firms in Nigeria.

1.2 Statement of the problem

Leverage is a worldwide problem either for developed or developing countries. It is important that firms identify the problematic areas and act carefully to provide solutions to 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 (NEG) 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 NSG.

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, 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.

There is therefore a need to continually ascertain whether variations in capital structure or leverage are significantly associated with variations in stock returns.

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:

- i. To examine the effect of debt to assets ratio on stock returns of listed manufacturing companies in Nigeria.
- ii. To investigate the effect of debt-to-equity ratio on stock returns of listed manufacturing companies in Nigeria.
- iii. To evaluate the effect of short-term leverage on stock returns of listed manufacturing companies in Nigeria.
- iv. To ascertain 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

Given the investment decision of a firm, it has to decide the manner in which the investment will be financed. Each time a firm makes an investment decision, it is equally making financing decision. Managers can enhance the return of shareholders by avoiding gearing altogether, when they include other explanatory variables (tax rates and industry concentration), gearing remains significant and negative but when they estimate returns with CAPM, they find that companies having higher tax rates earn higher returns. When they estimate returns with CAPM, they find that companies having higher tax rates earn higher returns (Adami et al 2015).

A company can carry its investments by debt and equity. The firm may also use preference capital. The rate of interest on debt is fixed irrespective of the firm's rate of return on equity or assets. The rate of preference dividend is equally fixed, but preference dividends are paid when the firm earn profits. The ordinary shareholders are entitled to the residual income. That is, earnings after interest and tax less preference dividend belong to them. The equity dividend rate is not fixed and relies on the dividend policy of the firm. The use of the fixed charged sources of fund such as debt and preference capital alongside with the owner's equity is known as Financial Leverage or Gearing (Pandy, 2010).

Lasher (2011), maintains that leverage is the ability to multiply the effect of some efforts. The term comes from physics where a lever is used to

multiply force. Financial leverage is the use of money borrowed to multiply the effectiveness of the equity invested in a firm. The money borrowed which financial leverage is concerned is the debt in the firm's capital structure. Thus, financial leverage and capital structure are used interchangeably.

To be levered means to have debt and to be unlevered means no debt.

In generic terms, financial leverage is the use of debt in the capital structure of a firm. In the field of finance, capital structure represents the manner in which finances its assets with the use of equity, debt or both. To this end, a firm's capital structure is the composition of its liabilities. For instance, a firm that sells N30 billion in equity and N70 billion in debt, this implies that the firm finance its operation with equity by 30% and the firm's ratio of debt to total financing is 70% this illustration represents the firm's leverage. Thus, a firm's capital structure is an indicator of the proportion of debt to equity and assets.

Cheng and Tzeng (2010) indicate that the positive influence of leverage to firm value tends to be stronger when firm financial quality is better. Since insolvency reduce firm value, then, a firm's debt value has a negative relationship with its insolvency (otherwise bankruptcy probability). Companies with a higher bankruptcy probability will be demanded to pay higher interest on debt and comply with more constrains in debt covenants. The demands may further increase the firm's insolvency probability, thus further reducing firm value.

The use of debt in a firm's capital structure is regarded as financial leverage. The more debt a firm has, the greater is the firm's degree of financial leverage and that, debt acts as a lever owing to the fact that using it can significantly magnify both gains and losses. However, financial leverage maximizes the possible rewards to shareholders, but it also increases the potential for financial hardship and firm failures.

2.1.2 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, investor 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.

Hapsoro and Husain (2019), states that the debt to asset ratio is commonly used by analysts, investors, and creditors to determine the overall risk of a company. Companies with a higher ratio are more leveraged and, hence, riskier to invest in and provide loans to. If the ratio steadily increases, it could indicate a default at some point in the future. A ratio equal to one ($=1$) means that the company owns the same amount of liabilities as its assets. It indicates that the company is highly leveraged. A ratio greater than one (>1) means the company owns more liabilities than it does assets. It indicates that the company is extremely leveraged and highly risky to invest in or lend to. A ratio of less than one (<1) means the company owns more assets than liabilities and can meet its obligations by selling its assets if needed. The lower the debt to asset ratio, the less risky the company.

2.1.3 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, finished goods inventory need etc. Thus, short term financing source can be defined as any source of funds from which funds are loaned and borrowed for a period not more than a year. Nurhinkmawaty and Isnurhadi (2020), submitted that debt to equity ratio (DER) and have direct and indirect effects on stock returns.

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 (Olawaju, 2019).

2.1.4 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 optimal financial structure is vital in deciding how much money should be borrowed and the best mixture of debt and equity to fund business operations (Shubita & Alsawalhah, 2012). 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). Short term debt financing has a maturity period of one year or less, they must be re-paid quickly within 90 – 120 days. Term loans with short maturities help to meet immediate need for financing without long term commitment. The cost of servicing short term debt is less taxing on the firm. Short term loans usually offer lower interest charges, and most lenders do not charge interest until all credit allowance period is breached (Kahl, Shivdasani & Wang, 2015).

3.1 Research methodology

The ex post facto research design was adopted for the study. The design is considered because it is method in which groups with qualities already in existence are compared on the dependent variable. Equally called the after-fact research, ex post facto is considered quasi-experimental because subjects are randomly assigned. The entire listed manufacturing companies in the Nigerian Stock Exchange (NSE) are considered to be the population of the study.

3.2 Model specification

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

$$RET_{it} = \beta_0 + \beta_1 DAL_{it} + \beta_2 DEL_{it} + \beta_3 STL_{it} + \beta_4 LTL_{it} + \beta_5 FSIZ_{it} + \beta_6 LQD_{it} + \beta_7 MEF_{it} + \varepsilon_t$$

where,

- 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

Table 4.3: Regression Coefficients using Panel 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

4.1 Test of hypotheses

Effect of debt to asset ratio on stock returns

The first objective of the study was to assess the effect of debt to assets ratio aspect of financial leverage on stock returns of manufacturing companies listed on Nigerian Stock Exchange. Debt ratio was given as total debt/total assets. From findings in table, the model shows 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.

Effect of debt-to-equity ratio on stock returns

The second objective of the study was to assess the effect of debt-to-equity ratio aspect of financial leverage on market share price (stock returns) of manufacturing companies listed on Nigerian Stock Exchange. Debt ratio was given as total debt/total equity. From findings, the panel regression model shows that debt to equity 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. This suggests that debt to equity ratio significantly increases stock returns by about 9.2 percent annually.

Hence, 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. It is therefore accepted that debt to equity ratio significantly affects returns on Stock returns (stock returns) of listed manufacturing companies in Nigeria.

Effect of short-term leverage on stock returns

The third objective of the study was to assess 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 shows 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 suggests short-term leverage does not significantly reduce stock returns by about 5.1 percent annually.

Hence, we accept the null hypothesis that short-term leverage does not significantly affect returns on Stock returns of listed manufacturing companies in Nigeria.

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 annually.

Hence, we accept the null hypothesis that long-term leverage does not significantly affect returns on Stock returns of listed manufacturing companies in Nigeria.

4.2. Discussion of findings

From the test of hypotheses, four findings are presented here:

Debt to assets ratio has positive and significant impact on stock returns. The generalized Least Square estimate revealed a significant impact of about 12.4 percent. This agrees with the findings of Ahmad et al (2013) who found that debt to assets ratio had positive impact on stock returns. Equally, the study findings reveal that debts to equity ratio have positive and significant impact on stock returns. The impact of debt to equity ratio on returns was estimated at about 9.2 percent. This agrees with the findings of Nuhinkmawaty and Isnurhadi (2020) who found that debt to equity ratio had positive impact on stock returns. The results disagree with the findings of Uwuigbeet et al (2012) who found a negative effect in their empirical study.

The study results disclosed that both short term leverage and long term leverage has a negative impact on stock returns, revealed by a coefficient of -0.051 and -0.003 respectively. These results are in line with the work of Adami et al. (2015) that found out that debt financing negatively affect stock returns.

Also, the results are in line with 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) suggested that the opposite results are best explained by investors prefer to invest with firms who are financially flexible and hence earn higher returns when doing so.

The results are inconsistent with the majority of accepted theories. The trade-off theory suggests that up to a certain level of debt, the optimal debt level a firm with a lower debt ratio should in accordance with this generate a lower return

(Brealey, Myers & Allen 2011). Some manager's responses agree that a company's debt level does not necessarily affect the return in their stocks however some of them on a low extent consider leverage as one of the factors that affect returns. The negative effect of debt on the firm performance tends to support the pecking order theory too. The results indicate non-response of capital market against levered nature of the firm theory and Miller and Modigliani (M.M) theory. Several studies have demonstrated that the market timing theory holds such as Hovakimian & Tehranian (2004) and in respect of control variables, the study found that firm size had capacity advantages over small firms and this advantage was utilized well by the listed firms.

5.1 Conclusion

From findings, the study concluded that both debt to asset and debt to equity positively and significantly explain stock returns. This suggests that debt to assets ratio and debt to equity significantly increases 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 there turns obtained from investing in the in stocks. The study equally concluded short-term and long-term leverage has negative and insignificant effect in explanation of stock returns. This suggests short-term leverage and long-term leverage does not significantly reduce stock returns.

Recommendations

Based on the findings, the study recommended that listed manufacturing companies should managers should maintain an appropriate debt level that do not affect the firm negatively in order to achieve the wealth maximization objective of the firm since high debt application reduces stock returns (performance). This will help striking a balance between bankruptcy and tax saving advantage when setting their financial sources.)

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