

PANEL DATA ANALYSIS OF DEBT FINANCING AND PERFORMANCE IN NIGERIAN MANUFACTURING FIRMS

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Abstract

This study assessed debt financing and financial performance of quoted manufacturing firms in Nigeria. The objective of the study was to ascertain if there was significant relationship between debt financing and financial performance of quoted firms. The study adopted deductive approach and employed the ex post facto research design and relied on secondary data from the quoted firms while data were analyzed using panel data analysis, ordinary least square estimator, fixed effects and random effect models. The study found that 60 per cent variation on the return on equity of the manufacturing firms were traced to variation on the debt financing. Long term debt have negative and significant effect, short term debt have negative and no significant effect while total debt ratio have positive and significant effect on return on equity of the manufacturing firms. 49 per cent variation on the earnings per share of the selected manufacturing firms was traced to variation on the debt financing. Long term debt have negative and significant effect, short term debt have negative and no significant effect while long term debt ratio have negative and significant effect on earnings per share of the manufacturing firms. From the findings, the study concludes that debt financing have significant effect on financial performance of the manufacturing firms. The study recommends that Quoted firms in Nigeria should substitute all the proportion of long-term debt in the capital structure with short-term debt and that optimal capital structure is essential for the profitability of manufacturing companies in Nigeria. Management of corporates corporate firms Nigeria Exchange Group to incorporate borrowed funds in their capita mix to improve performance and recommended the need for managers to pay attention on other financing sources in their capital mix. The need to reduce information asymmetry and moral hazard between in corporate financing and financial institutions should also be aware of the importance of transparency measures, which can improve their relationship with financial institutions in the business environment. Leverage to be employed by corporate managers in a prudent manner that the cost of borrowing does not exceed the return for their corporates and Quoted firms should to form joint ventures and to partner with both domestic and foreign partners to access more assets particularly long-term assets with modern technology

Keywords: Debt Financing, Financial Performance, Manufacturing Firms, Panel Data, Nigeria

INTRODUCTION

Sources of financing for small and medium enterprises such as the poultry enterprise remain a policy thrust to government and non-governmental institutions. Apart from external financing such as debt capital, internal financing such as retained earnings constitute major source of equity financing among small and medium enterprises. Determining the optimal capital structure of the firm is a critical finance management function. Equity and non-equity financing involves the weighing of the pros and cons of various sources of financing and selects the most advantageous keeping in view the target capital and its effect on the value of the firm. It is continuous decision that is taken whenever a firm needs additional capital (Pandy, 2005). Corporate Financing decisions and finance management functions such as capital structure is mainly

determine by the management and the internal operating factors of the firms such as the firm size, composition of assets, ownership structure, capital structure, profitability and board composition (Akingunola, Olawale, & Olaniyan, 2017).; Lucky, Akani & Anyamaobi, 2015).

Combination of equity and non-equity financing must be developed with an eye towards risk because it has a direct link with the value (Al-Najjar & Hussainey, 2011). Risk may be factored for two considerations: 1. that equity and non-equity financing must be consistent with the firm's business risk and 2. That equity and non-equity financing results in a certain level of financial risk. The debt-equity mix can take any of the following forms: 100% equity: 0% debt, 0% equity: 100% debt and X% equity: Y% debt. From these three alternatives, option one is that of the unlevered firm, that is, the firm shuns the advantage of leverage (if any) Option two is that of a firm that has no equity capital (Olokoyo, 2012; Akani & Lucky, 2015). Equity finance refers to the sale of an ownership interest to raise funds for business purposes. In order to grow, any company will face the need for additional capital, which is to obtain through debt or equity. If the company opts for equity, the owner sells a stake to others. During early growth stages of a company, especially when the company does not have sufficient equity financing can provide capital from investors who are willing to take risks along with the entrepreneur (Le & Phan, 2017). Announcements of equity signal good news to investors since it identified value adding projects to investment. Equity financing announcements followed by a share price drop which is inconsistent with the efficient market hypothesis which advocates that if capital markets are efficient share prices should be correctly priced with no under or overpricing (Okeke, 2019).

The debt capital in a firm's capital structure refers to the long-term bonds the firm use in financing its investment decisions because the firm has years, if not decades, to come up with the principal, while paying interest only in the meantime. The cost of debt capital in the capital structure depends on the health of the firm's statement of financial position (Muchiri, et al., 2016). Debt restructuring refers to a firm changing its debt structure by either increasing or decreasing leverage. In practice, borrowers might make more new loan contracts (increase leverage) or renew debt. Debt restructuring usually means the injection of high levels of debt to increase the leverage of the company and thereby reduces the likelihood that the firm will be a takeover candidate (Uwah & Asuquo, 2016; Akani & Lucky, 2016). The traditional capital structure theory (the Naïve Theory)

Prior to 1958 was based on the idea of weighted average cost of capital principle, which states that companies issue debt in order to reduce their weighted average cost of capital principle as debt is considered less costly than equity (Uzokwe, 2019). The Pecking theory which was developed by Steward Myers in 1984 in his paper, "Capital Structure Puzzle" presented two sides of the capital structure issue, which are called static trade-off theory and pecking order hypothesis (Herliansyah, 2019). The static trade-off theory holds that the capital structure choices may be explained by the trade-off between benefits and costs of debt versus equity. A firm is regarded as setting a target debt level and gradually moving towards it. The relationship between equity and non-equity financing and corporate performance has well been documented in literature with limited studies of citable significant that have dealt with problem of capital

structure and the performance of small and medium scale enterprises. Similar studies by (Kira, 2013, Kipsha & Moshi, 2014) failed to establish the relationship between various components of equity and debt capital on the performance of poultry enterprises. From these points of view, it is appropriate for the researcher to study the effect of debt financing on the performance of quoted manufacturing firms in Nigeria.

LITERATURE REVIEW Equity Financing

Pandey (1999) defined equity capital as including share-capital, share premium, reserves and surpluses (retained earnings). Typically, equity capital consists of two types which include: contributed capital, which is the money that was originally invested in the business in exchange for shares of stock or ownership and retained earnings, which represents profits from past years that have been kept by the company and used to strengthen the statement of financial position or fund growth, acquisitions, or expansion. Generally, equity strategies are defined as dividend cuts or omissions and equity issues. Firms mostly accept this solution to maintain liquidity to conserve for debt obligations as well as raising funds in purpose of new investment and increase working capital.

With reference to a firm with performance or financial distress, a cutting dividend or dividend omission is normally executed. Another aspect of capital structure is for companies to buy back previously issued equity using debt financing. This would be accomplished by taking out a business, commercial, or bank loan in the amount of the equity buyback. In some cases, a company may have a capital structure heavily weighted towards equity. In such cases, buying back previously issued stock and substituting bank loans or other debt financing can optimize the capital structure resulting in a lower overall cost of capital. Equity unlike long-term debt includes paidup capital, share-premium, reserves and surplus or retained earnings. Igben (2004) defines paidup capital as the portion of called-up capital which has been paid-up by shareholders. He defined reserves as the amount set aside out of profit earned by the company, which are not designed to meet any liability, contingency, commitment or reduction in value of assets known to exist in the balance sheet. Furthermore, reserves may be voluntarily created by directors or statutorily required by law. Share premium is the excess amount derived from the issue of shares at a price that is above its par value. And finally, retained earnings are profit invested back into the business in order to create more resources for operations and invariably increase the value of the firm.

Non-Equity Financing

The debt capital in a firm's capital structure refers to the long-term bonds the firm use in financing its investment decisions because the firm has years, if not decades, to come up with the principal, while paying interest only in the meantime. The cost of debt capital in the capital structure depends on the health of the firm's statement of financial position. Debt restructuring refers to a firm changing its debt structure by either increasing or decreasing leverage. In practice, borrowers might make more new loan contracts (increase leverage) or renew debt. Debt restructuring usually means the injection of high levels of debt to increase the leverage of the company and thereby reduces the likelihood that the firm will be a takeover candidate.

A firm decides to negotiate creditors for interest lowering or maturity extent (Sudarsanam & Lai, 2001; Anyamaobi & Lucky, 2017). Debt can be restructured to benefit the business by refinancing existing loans or obtaining new ones secured by real property, equipment, receivables or in select cases, future cash flows. This process effectively reduces the cost of the debt in the long term and increases cash flow for the business. The increased cash flow can be reinvested in the company in a variety of ways that influence growth for the future. If an influx of capital is needed, a new commercial or business loan can provide for growth. This is considered capital restructuring as new leveraged debt capital is added to the company balance sheet.

Leland and Toft (1991) stated that, the value of a firm is the value of its assets plus the value of tax benefits enjoyed as a result of debt minus the value of bankruptcy cost associated with debt. Modigliani (1980) points out that, the value of the firm is the sum of its debt and equity and this depends only on the income stream generated by its assets. The value of the firm's equity is the discounted value of its shareholders earnings called net income. That is, the net income divided by the equity capitalization rate or expected rate of return on equity. The net income is obtained by subtracting interest on debt from net operating income. The value of debt is the discounted value of interest on debt. Jensen (1986) suggests that, when firms have more internally generated funds than positive net present value (NPV) projects, debt forces the managers to pay out funds that might otherwise have been invested in negative net present value projects. This over-investment problem can be lessened if managers are forced to pay out excess funds for servicing debt, therefore enhancing the firms' value. Myers (1993) suggested that, a firm with outstanding debt may have the incentive to reject projects that have positive NPV if the benefits from accepting the project accrue to the bondholders without also increasing shareholders wealth. McConnell and Servas (1995) posited that, seeds of under-investment problem lie in the solution of overinvestment of U.S firms. They discovered that for firms with high P/E ratios or for high-growth firms, value is negatively related to leverage and those firms with low P/E ratios or for low-growth firms, value is positively related to leverage. Their evidence supports the contentions that for lowgrowth firms, leverage acts as a monitoring mechanism to enhance firm value. Whereas for highgrowth firms, leverage cause under investment and destroys the value of the firm.

The Trade-Off Theory

The trade-off theory is to a large extent based on the Modigliani & Miller (1963) proposition. This proposition suggests that firm value is maximized with 100% of debt-financed capital. However, such an extreme prediction is often unachievable, making the model incomplete in its predictions. Obviously, there are other factors that limit the amount of debt in a firm's capital structure. One such factor is bankruptcy costs. Using these offsetting costs, Lopez and Vishny (2000) proposed a model where the optimal level of debt is defined by the trade-off between the tax shield from debt financing and the costs associated with riskier activity due to increased financial leverage. According to this model, the value of a firm increases as long as the marginal tax benefits are higher than marginal bankruptcy costs, yielding the optimal debt to equity ratio at the point where these two factors are equal. Myers (1984) further investigates this issue and

proposes the existence of a target debt to value ratio, which is gradually pursued by a firm. Hence, Myers (1984) hypothesizes that the choice between debt and equity is not only a static process, but can rather have dynamic characteristics where firms adjust their capital structures over several periods.

Under the static trade-off theory, any increase in the bankruptcy costs is associated with a reduction in the optimal level of debt, while an increase in the personal tax rate on equity, positively relates to the optimal debt level (Bradley et al., 1984). Although these propositions sound logically correct, the empirical test of this model is problematic. In the real market environment, firms operate over several periods, making the model hold only under specific assumptions. One such assumption is the absence of retained earnings that play a crucial role in capital structure decision making. In the dynamic environment on the other hand, these assumptions can be relaxed. Brennan & Schwartz (1984) and Kane et al. (1984) introduced continuous time models, where a firm is deciding on its financing across several periods.

Assuming no transaction costs but accounting for taxes, bankruptcy costs and uncertainty, such a firm would react to increased (decreased) profitability or any other adverse shock immediately and readjust its capital structure. Fischer et al. (1989) propose a more realistic theory that accounts for transaction costs, making capital structure adjustment costly. According to this model, the recapitalization process follows adrift based on the financial performance of a firm. Brennan & Schwartz (1984) showed that even a small transaction cost detains capital structure rebalancing, which explains empirical variations in the debt ratios. Different versions of the trade-off theory employ different assumptions. While one version considers the firm's cash flow to be exogenous (Kane et al., 1984), others assume that the firm's financing choices are related to its cash flows, and thereby consider investment and financing choices simultaneously (Brennan & Schwartz,

1984; Mello & Parsons, 1992; Titman & Wessels, 1984). Hennessy & Whited, 2005; Tserlukevich, 2008). Dividend payout policy, as well as taxation regimes, on the other hand, may also be crucial assumptions in financing decisions (Stiglitz & Weiss, 1981, Hennessy & Whited, 2005). Nevertheless, Hackbarth et al. (2007) showed that the trade-off theory is quite sufficient in explaining corporate capital structures; the fact that the dynamic trade-off theory has been modified and revised for the past 30 years raises the discussion of its reliability for modern financial markets. By relaxing different assumptions on taxes, transaction costs, payout policy, etc., different dynamic trade-off models yield somewhat different conclusions. However, while a consensus on the optimal capital structure is not reached, much of the work is still in progress, which indicates the on-going importance of the issue for modern financial theory.

The Pecking Order Theory

An alternative explanation of the empirical capital structure distribution is suggested by Myers (1984), who argues over the hierarchical distribution of capital sources. In particular, he claims that firms would often prefer to utilize internal sources of financing rather than external. Debt financing, in turn, is also superior to equity, as equity issuance is least preferable for a profitable firm. Such a pecking order of funding is able to explain empirical variation in the capital structures. Profitable firms that do not issue

debt as recommended by the trade-off theory, simply generate sufficient internal resources to finance their investments. Moreover, the theory of a pecking order is rather simple for understanding signaling hypotheses based on adverse selection and agency cost issues. These models suggest that a firm's decision to issue debt or equity is dependent not only on internal costs and tax advantages, but also on the investors' reaction and managerial incentives. Myers and Majluf (1984) suggested that asymmetric information between managers and investors would require a firm to follow the pecking order of capital structure if it wants to signal its attractiveness to the market. Any positive net present value (NPV) project that would result in increased firm growth and improved profitability would rarely be financed by new equity issues, as the current stakeholders would not like to split future profits with new ones. In contrast, if the project that requires financing may cause an increase in riskiness and higher costs, then existing shareholders would rather reallocate this risk among new stakeholders.

However, the pecking order is not as simple as it seems due to certain limitations. For example, Myers (1984) argued that in case of risk free debt, it is similar to internal sources of financing, while with introduction of risk, the debt falls somewhere in between internal and equity financing. This same proposition is described by Viswanath (1993) and Ravid & Spiegel (1997). At the same time, as suggested by Pandey (2009) there are actually multiple equilibria in the case of risky debt and the choice between them is not that obvious. A similar case with multiple equilibria arises when the information asymmetry is two-sided (Eckbo et al., 1990). Ravid and Spiegel (1997) in turn argue that a well-designed managerial contract, which is tied to the firm value, could resolve the adverse selection problem but then the question of optimal contract arises. Another possible solution for the adverse selection problem is to allow present equity holders to participate in the new equity issues, as suggested in the model of Eckbo & Masulis (1992).

The Modigliani-Miller Theorem

In corporate finance, value maximization is the generally accepted goal of any firm, which translates into maximizing the market value of the firm in the interest of its shareholders. Firms can choose to fund its operations in two ways, by lending the needed capital or by raising equity capital. This choice of capital funding, either by debt, equity or a mix between the two, is revealed in a firm's balance sheet and in corporate finance the term for this choice is the 'Capital Structure' of the firm. Both types of funding come with its own characteristic costs, where the cost of equity is usually the return which investors expect on their investment in the firm and where the cost of debt is the interest the firm is charged on its borrowed funds.

There is an ongoing pursuit of what the optimal capital structure of a firm looks like, which is due to several reasons. As implied by this, the issue can be approached from many different perspectives. In the mid-20th-century, there had been several attempts at explaining the issue, however, none had managed to do so in a satisfying manner. This was the outset in the 1958 study 'The Cost of Capital, Corporation Finance and the Theory of Investment' by professors Franco Modigliani and Merton H. Miller. In the study, the professors investigated if the capital structure actually affected the market value of a firm and its cost of capital at all. According to Modigliani & Miller (1958), the intention with the study was to develop an adequate theory

from a market value approach, inferred from objective market data. The CAPM further assumes that all investors are homogenous. The investors are also risk averse and aim to maximize their return for any given level of risk. This leads to the fact that all investors create a mean-variance efficient portfolio which means that the variance of the expected return of the portfolio is minimized (Brealey et al., 2016; Lucky, 2017).

Signaling Theory of Capital Structure

In finance, the signaling theory and the pecking order theory both concern the relationship between a firm's financial leverage and cash flow under asymmetric information. Signaling theory suggests a positive relationship, while pecking order behavior implies a negative relationship. These contradictory theoretical implications are both supported in the empirical. Baskin (1989) and Jensen, Solberg, and Zorn (1992), Crutchley and Hansen (1989) found evidence supporting the pecking order hypothesis. Sunder and Myers (1999) test a panel of 157 firms from 1971 to 1989 and find statistically significant support for the pecking order theory. Considering the capital structure in the signaling setting, Ravid and Sarig (1991) find firms signal their quality by the optimal combination of dividends and leverage. They predict that better firms to be highly leveraged and to pay higher dividends than lower quality firms. This assertion is supported by many empirical studies (Masulis, 1980) that document positive abnormal returns follow either a dividend increase or an increase in leverage).

Empirical Review

Herliansyah (2019) examined the influence of capital expenditure variables, company growth, and company size on firm value through financial performance is moderated by the capital structure of the company in LQ 45 companies listed on the Indonesia Stock Exchange. The research methodology uses quantitative methods, the number of observations as many as 50 sourced from 45 companies over 5 annual periods. The results of this study found that: (1) Capital Expenditure (Capex), Company Growth (Growth) and Company Size (Size) had no effect on Company Value (PBV), (2) Capital Expenditure (Capex) does not affect Financial Performance (ROE), (3) Company Growth (Growth) and Company Size (Size) have a significant effect on ROE, (4) Financial Performance (ROE) has a significant positive effect on Value Company (PBV), (5)

Financial Performance (ROE) does not mediate the effect of Capital Expenditure (Capex), Company Growth (Growth) and Company Size (Size) on Firm Value (PBV), (6) Capital Structure (DER) moderates the influence of Financial Performance (ROE) to Company Value (PBV). Taipi and Ballkoci (2019) investigated the link between the capital expenditures and firm performance of Albanian firms in the construction sector, based on the data collected from 30 firms between 2008 and 2015. The study took into consideration the fact that capital expenditures is not the only variable that influences the model and as a consequence other variables affecting financial performance were analyzed, which are: leverage ratio and firm size. The linear regression model was used to analyze this relationship. According to the survey the model was explained 63% by the chosen variables. The regression analysis indicated that capital expenditures and leverage ratio are statistically significant and positively correlated with the financial

performance of the firm. On the other side, the size of the firm is not a statistically significant variable and it is also negatively correlated with firm performance.

Etim (2019) determined the extent to which capital expenditure decisions made by listed manufacturing companies in Nigeria relate with the value of the firms in the long term. The ex post facto and correlational research designs were adopted for the study. Secondary data were extracted from the Nigerian Stock Exchange Fact Books for the period, 2010 – 2016. The number of manufacturing companies listed in the Stock Exchange during this period was 83, and the sample size used was 69. With the aid of regression analyses, the findings revealed that capital expenditure decisions had a significant relationship with long term value of manufacturing firms. The study concluded that capital expenditure decisions have a significant relationship with the long term value of manufacturing firms in Nigeria. It was recommended that management of manufacturing companies should ensure the holistic use of all techniques, exploring risks, real and growth options analyses as well as portfolio management techniques involving capital assets, in appraising capital investments before taking decisions.

Muchiri, Muturi and Ngumi, (2016) examined the effect of capital structure on firm performance in Vietnam within the period 2007-2012 using panel regression. The study used ROA, ROE, and Tobin Q as the dependent variables representing firm performance, while book leverage and market leverage were used to represent capital structure, the independent variable. Findings showed that both book leverage and market leverage have negative relation with firm performance. Adesina, Nwidobie and Adesina (2015) carried out a study on capital structure and financial performance in Nigeria within the period 2005 -2012 using ordinary least squares analysis. The study represented the dependent variable with interest before tax and the independent variables with equity and long term debt. Findings of the study showed that both equity and long term debt have a positive and significant effect on interest before tax. Setiadharm and Machali M (2017) employed panel regression to study the effect of asset structure and firm size on firm value spanning 2010-2014 while using capital structure as the intervening variable. Ratio of Market equity to book equity was used to represent firm value while ratios of long term capital to total equity, fixed asset to total asset, and book value of total asset were all employed as measures of capital structure. From the result, while there was a direct effect of asset structure on the firm value; there was no direct effect of firm size on firm value and even with capital structure as intervening variable; there was neither an indirect effect of asset structure nor indirect effect of firm size on the firm value.

Akingunola, Olawale and Olaniyan, (2017) researched on capital Structured and firm performance of non-financial Firms in Nigeria within the time scope 2011 - 2015 using Panel regression analysis. The dependent variable, performance, was proxied by ROA and ROE, while the ratio of short term debt to total asset (STDTA) ,total debt to total equity (TD/TE), long-term debt to total asset (LTDTA) while firm size was represented by the natural log of total asset. Findings showed that the ratio of short term debt to total asset (STDTA) and total debt to total equity (TD/TE) had significant inverse effect on ROA; short-term debt to total asset (STDTA) and long-term debt to total asset (LTDTA) had significant positive effect on ROE; total debt to total equity (TD/TE) had significant negative effect., while firm size had significant positive effect

in both models. Yinusa, Adelopo, Rodionova and Samuel (2019) worked on capital structure and firm performance in the sector with data spanning 2005-2007 and using OLS to regress profit efficiency measure (PEFF) - return on equity (ROE) with the ratio Equity/Total assets (ECAP) and Loans/Total assets (L/A). The result showed that at relatively low levels of leverage, a linear relationship exists between debt and profit efficiency resulting to higher bank performance, while an inverse effect occurred at relatively high levels of leverage in Australian financial sector. Cole, Yan, and Hemley (2015) examined Capital Structure and Firm Performance in Nigeria from 1998 - 2012 using two step generalized method of moments (GMM) for analysis. It indicated quite clearly that performance is enhanced with moderate debt financing and decreased with too much debt financing. Hossain, Khan and Khalid (2019) used pooled panel data regression to examine Capital structure and firm performance in Srilankan firms during 2002-2008 periods. As performance indicators, they used Return on Assets (ROA) and Tobin Q (TQ), and as capital structure indicators, they used total debt to total assets ratio (TD/TA), total debt to total equity ratio (TD/TE) and short term debt to total assets ratio (STD/TA). Findings showed that firm performance is inversely affected by the use of debt capital.

El-Chaarani and El-Abiad (2019) investigated if capital structure impact firm performance in USA by studying three sectors in the country within the period 2004 – 2013 using simple regression analysis. As performance measures, they used Market Value per Share, Return on Assets, Operating Return, and Profit Margin, and as capital structure indicators, they used longterm liabilities to total assets ratio. The result showed that in all the three sectors, Capital structure had a negative relationship with return on assets and operating return and that it positively affects profit margin in the Industrial Sector, negatively affects profit margin in the Energy Sector, and no relationship in the Healthcare Sector. There was equally no relationship between capital structure and stock prices in all three sectors. Nwala, Gimba and Oyedokun (2020) examined the impact of corporate financial policy on firm value of insurance firms in Nigeria for the period 2011 to 2017. In carrying out this study, expost-facto research design was employed and secondary data sourced from 25 insurance annual report and Nigeria Stock Exchange factbook for the period of 7 years. Pool time series data were extracted related to dividend payout, equity issuance, debt asset, equity asset, return on asset and Tobin Q was used as proxies for firm value in this study. The findings indicate that dividend payout and equity issuance have significantly impacted on firm performance (Tobin Q), the study also stated that ROA has no significant relationship with dividend payout, equity asset, debt assets and equity issuance during the period under study. It was recommended that insurance managers should devote adequate time in designing a dividend policy that will enhance firm's performance (ROA) and shareholder value. Again, the company should review its dividend policy in order to reduce agency cost and maximize the value of the company.

Okeke (2019) examined the effect of capital structure on firm value of selected quoted firms in Nigeria. It adopted long term debt, equity capital, as independent (x) variables of capital structure while Tobin Q was used as proxy for firm value the dependent variable. It adopted ex-post facto research design. The statistical package used for the analysis was e-view version 8.0. The population of the study was firms drawn from

conglomerate and consumer goods sectors of Nigeria Stock exchange for a period of nine (9) years 2007-2015. Descriptive statistics, correlation and ordinary least square (OLS) of multiple regression analysis were used to test the hypotheses formulated to guide the study. The coefficient of determination R^2 showed that 65% systematic variations in firm value could be explained by the independent variables. The F value (62.44647) was significant at 1% which means that the parameters estimated were statistically significant in explaining the effect of the independent variables on the dependent variable. The study therefore, concluded that capital structure with regard to long term debt was negatively but statistically significant to firm value, while equity capital was positively insignificant to firm value. The study recommended that firms should be more concerned with management of equity capital in business financing since it is more related to the value of the firm.

Uzokwe (2019) examined the effect of debt financing on the financial performance of quoted firms in Nigeria stock exchange using time series data from 2000-2017. The objective was to examine the controversial findings of scholars on the effect of capital structure on corporate performance of firms. Return on assets and return on equity was modeled as the function of debt equity ratio, debt ratio, equity ratio, total liability ratio and long term debt ratio. Multiple regressions with the aid of statistical package for social sciences were used as data analysis techniques. Model one found that a correlation coefficient (r) of .872 this implies that a very strong correlation exists between return on assets and explanatory variables. The coefficient of determination (r^2) is .678 which shows that 67.8% of the variation in Return on Assets is attributable to the variations in the financial leverage. Also, the F- value calculated of 8.338 has a correlation corresponding value of .004 which implies a good model utility. The test of significance conducted as shown in the tables above states that ROA has a calculated value of 242.032 and a corresponding significance value/probability value of .014. The positive sign of tvalue (1.653) shows the direction of the variables. This therefore implies that when a financial leverage is well used, this leads to a better, reliable and fairer financial result that is objective and represent the true state of affairs in the food and beverage companies proportionately. Model two found that a correlation coefficient (r) of .772 this implies that a very strong correlation exists between return on assets and explanatory variables. The coefficient of determination (r^2) is .639 which shows that 63.9% of the variation in return on equity is attributable to the variations in the financial leverage. Also, the F- value calculated of 7.644 has a correlation corresponding value of .004 which implies a good model utility. The test of significance conducted as shown in the tables above states that ROE has a calculated value of 568.906 and a corresponding significance value/probability value of .003. The positive sign of t-value (3.310) shows the direction of the variables. This therefore implies that when a financial leverage is well used, this leads to a better, reliable and fairer financial result that is objective and represent the true state of affairs in the food and beverage companies proportionately.

Evaluation of Literature Review

The empirical review of capital structure of quoted firms has yet to provide a convincing causal link among measures of equity and non-equity financing. A reasonable conclusion based on previous research is that

both equity and non-equity financing affect corporate performance. This is in line with the argument of Gordon's as opposed to the view of Miller and Modigliani. A number of conceptual, empirical and methodological study gaps arise from existing studies of the issues examined in this study. The conceptual gaps arise from the fact that the effect of equity and non-equity financing has largely been studied in the developed countries and not well studied in developing African countries. Existing studies in developing countries are subject to lots of criticism as the measures of variables are very limited and one sided; addressing either equity or non-equity financing.

METHODOLOGY

Ex-post facto research design was employed in obtaining, analyzing and interpreting the relevant data for hypotheses testing. The rationale for the variety is that ex-facto research design allows the researcher the opportunity of observing one or more variables over a period of time (Uzoagulu, 1998). The population of the study was the entire 20 quoted consumer goods manufacturing firms in Nigeria. The study population was considered finite. The sample size was the 20 quoted manufacturing firms in Nigeria Stock Exchange which are: Champion breweries, Seven Up Bottling Co, international breweries, Cadbury, UAC, DN tyre and rubber, Pabod Breweries, Floor Mills, Guinness, N. Nigeria flour mills, Nasco Allied Industry, Union Decon salt, Nestle, UTC Nig, Nigeria Enamel wares, Nigeria Breweries, PZ Cushion, Unilever, Golden Guine and Vita Foam. The secondary data that was used in this study comprised quantitative data on earnings per share, return on equity, employee training cost, and information as dependent variables while data on the independent variable comprised employee cost of wages and salaries, employee training cost, and employee pension cost. There are several studies performed in the area and the researcher has gathered information from these studies to enhance this research work and to proffer solution to the research problem. Manufacturing firms' annual statements and reports (2014-2023) are deemed to be reliable because they are statutorily required to be audited by a recognized auditing firm before publication. In an attempt to achieve the set general and specific objectives of this study and to solve the problem under study secondary data were obtained by scanning the financial reports and accounts of the quoted manufacturing firms and from websites of the firms and fact book of the Nigeria Stock Exchange 2023 edition.

Method of Data Analysis

To obtain the observed values on the expectation of the impact of debt financing on firm performance, panel data analysis for a ten year period was employed. Panel data structure allowed us to take into account the unobservable and constant heterogeneity that was, the specific features of each quoted firm. In addition the researcher employed pooled Ordinary Least Square (OLS), Fixed Effects and Random Effects regression models to test the various hypotheses. Pooled OLS regression technique is popular in financial studies owing to its ease of application and precision in prediction.

Further, OLS method has been employed in a wide range of economic relationships with fairly satisfactory results. Citing the work of Gaur and Gaur (2006), Ujunwa (2012) stressed that fixed effects and random effects models would aid to observe variations among cross-sectional units simultaneously with variations within individual units over time. It assumed that variables were strictly time disparity or time invariant.

This undermined an exploration of the effect of slow changing within individual firms' factors. Hence, the rationale for adopting Fixed Effects and Random Effects models estimator as additional test was to enable the researcher control time contrast and time invariant variables, and thereby control for the effect of the unobserved heterogeneity in the dataset. Ujunwa (2012) opined that coefficient of estimations were reliable when regression parameters do not change over time and do not differ between various crosssectional units. Therefore, when the regression estimation differ widely between the two models (Fixed and Random Effects models), the adoption of Hausman test would be essential. Panel data over the period from 2014-2023 were used and in line with notable literature, such as the work of Majumdar and Chhibber (1999), Zeitun and Tian (2007), and Onaolapo and Kajola (2010), firm's performance measure was regressed on each of the variants of financial structure and other control variables holding other factors that may affect firm's performance not included in the equation constant. These analytical techniques enabled the researcher attain justifiable and robust results.

$$Y = \beta_0 + \beta_1 X_{it} + \epsilon_i \quad 1$$

Where,
 Y = Dependent Variable
 $\beta_1 X_{it}$ = Independent variable
 β_0 = Regression Intercept
 ϵ = Error Term

Disaggregating Equation 1 to form the multiple regression models, we have

$$ROE = \beta_0 + \beta_1 LTD + \beta_2 STD + \beta_3 TDR + \epsilon_i \quad 2$$

Transforming equation 2 to econometrics form, we have Where

ROE = Return on equity of manufacturing firms

EPS = Earnings per Share of the manufacturing firms

LTD= Long term debt

STD = Short term debt

TD = Total debt ratio

ϵ = Error Term

$\beta_1 - \beta_4$ = Coefficient of Independent Variables to the Dependent Variables

β_0 = Regression Intercept

Statistical Approach

(i) Coefficient of Determination (R^2): This is used to measure the extent to which the independent variables in the model can explain changes on the dependent variable. **(ii) T-Test:**

This is used to measure the significance of the independent variables to the dependent variable and the hypothesis was tested at 5% level of significance and at 95% confidence interval. The hypothesis for this test is stated as follows:

Null I hypotheses: $H_0: \beta = 0$, (Statistically not significant)

Alternate hypotheses; $H_1: \beta \neq 0$. (Statistically Significant)

And the decision rule states that “ H_0 ” should be rejected when i-statistics is greater than the critical value, but when the T-statistics is lower than the critical value, the “ H_0 ” is accepted with its conclusion.

(iv) F-Test: This is used to find out the overall significance of the regression model at 5% level of significance. The hypothesis for this test is stated as:

Null Hypotheses; $H_0: \beta_1 - \beta_6 = 0$ (all slope coefficients are equal to zero)

Alternative Hypotheses: $H_0: \beta_1 - \beta_6 \neq 0$ (all slope coefficients are not equal to zero) The decision rule for this test is that “ H_0 ” should be rejected when F-statistics is greater than the critical value of F. but when the F-statistics is lower, then the “ H_0 ” is accepted while the H_1 is rejected.

(v) Test of Autocorrelation: The Durbin Watson statistics is used in this research to test for the presence of autocorrelation. When there is presence of autocorrelation, the First order autoregressive scheme will be employed to correct it. The hypotheses states that: $H_0: \rho = 0$ (There is serial independence in the errors) $H_1: \rho > 0$ (There is first order (AR) positive autocorrelation.

When the Durbin Watson Statistics (DW-Stat) is lesser than lower Durbin Watson (D_L), the null hypothesis (H_0) is being rejected but if the Durbin Watson statistics is greater than the upper Durbin Watson (D_U), the null (H_0) is then accepted.

ANALYSIS AND DISCUSSION OF FINDINGS

Table 1: Panel Regressions Results: The Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Panel 1: Debt Financing and Return on Equity				
LTD	-0.022383	0.032953	-6.679254	0.0000
STD	-0.008680	0.040802	-0.212733	0.8318
TDR	0.041645	0.027684	4.504293	0.0000
C	13.55576	1.806663	7.503204	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.757734	Mean dependent var	14.44754	
Adjusted R-squared	0.560049	S.D. dependent var	2.391788	
S.E. of regression	2.462554	Akaike info criterion	4.748610	
Sum squared resid	1067.294	Schwarz criterion	5.129243	
Log likelihood	-449.4867	Hannan-Quinn criter.	4.902662	
F-statistic	5.490171	Durbin-Watson stat	2.113720	
Prob(F-statistic)	0.000005			
Panel 2: Debt Financing and Earnings per Share				
LTD	-1.057403	1.178687	-4.897102	0.0000
STD	-0.005934	1.461558	-0.004060	0.9968
TDR	-0.940758	0.995327	-3.945175	0.0009

C	87.48719	64.80446	1.350018	0.1788
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.796216	Mean dependent var		17.71269
Adjusted R-squared	0.518055	S.D. dependent var		87.27775
S.E. of regression	88.06215	Akaike info criterion		11.90332
Sum squared resid	1349360.	Schwarz criterion		12.28663
Log likelihood	-1149.477	Hannan-Quinn criter.		12.05849
F-statistic	8.841995	Durbin-Watson stat		2.265743
Prob(F-statistic)	0.000097			

Source: Computed from E-view 9.0, 2024

Interpretation of the Result

Table 1 presents the effect of the debt financing on the financial performance of quoted manufacturing firms over the 10 years periods covered in this study. Panel I presents results of effect of debt financing on return on. Based on the fixed effect regression model, the adjusted coefficient of determination (Adjusted R²) indicates that 56 percent variation on the return on equity of the selected manufacturing firms can be traced to variation on the debt financing of the firms; this implies that 44 percent variation can be traced to factors not captured in the model. The results of the estimated model proved that the model is statistically significant based on the Fstatistics and probability. The Durbin Watson statistics proved the presence of serial autocorrelation among the variables. The regression intercept is positive and significant which implies that holding other variables constant, return on equity of the manufacturing firm will increase by 13.55 units. Furthermore, the results indicates that long term debt have negative and significant effect, short term debt have negative and no significant effect while total debt ratio have positive and significant effect on return on equity of the manufacturing firms.

Panel II presents results of effect of debt financing on Earnings per share. Based on the random effect regression model, the adjusted coefficient of determination (Adjusted R²) indicates that 51.8 percent variation on the earnings per share of the selected manufacturing firms can be traced to variation on the debt financing of the firms; this implies that 48.2 percent variation can be traced to factors not captured in the model. The results of the estimated model proved that the model is statistically significant based on the F-statistics and probability. The Durbin Watson statistics proved the presence of serial autocorrelation among the variables. The regression intercept is positive and significant which implies that holding other variables constant, return on equity of the manufacturing firm will increase by 87.4 units. Furthermore, the results indicates that long term debt have negative and significant effect, short term debt have negative and no significant effect while total debt ratio have negative and significant effect on earnings per share of the manufacturing firms.

Table 2: Panel Regressions Results: The Random Effect Model

Variable	Coefficient	Std. Error	
Panel 1: Debt Financing and Return on Equity			
LTD	-0.724805	0.032488	5.763519
STD	-0.610466	0.040438	4.258804
TDR	0.037514	0.025390	1.477539
C	13.85856	1.735945	7.983297
Effects Specification			
		S.D.	Rho
Cross-section random		0.000000	0.0000
Idiosyncratic random		2.462554	1.0000
Weighted Statistics			
R-squared	0.714866	Mean dependent var	14.44754
Adjusted R-squared	0.600290	S.D. dependent var	2.391788
S.E. of regression	2.392135	Sum squared resid	1115.851
F-statistic	8.980846	Durbin-Watson stat	2.039439
Prob(F-statistic)	0.000007		
Unweighted Statistics			
R-squared	0.514866	Mean dependent var	14.44754
Sum squared resid	1115.851	Durbin-Watson stat	2.039439
Correlated Random Effects - Hausman Test			
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.
Cross-section random		0.526101	3
Cross-section random effects test comparisons:			
Variable	Fixed	Random	Var(Diff.)
LTD	-0.022383	-0.024805	0.000030
STD	-0.008680	-0.010466	0.000030
TDR	0.041645	0.037514	0.000122
Panel 2: Debt Financing and Earnings per Share			
LTD	-0.944411	1.162017	-3.812734
STD	-0.712753	1.448329	-3.708805
TDR	-0.400450	0.910709	-0.439713
C	61.35561	62.23412	0.985884
Effects Specification			
		S.D.	Rho
Cross-section random		0.000000	0.0000
Idiosyncratic random		88.062151	1.0000

Weighted Statistics				
R-squared	0.504618	Mean dependent var		17.71269
Adjusted R-squared	0.490854	S.D. dependent var		87.27775
S.E. of regression	87.75012	Sum squared resid		1486116.
F-statistic	8.298496	Durbin-Watson stat		2.048691
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.504618	Mean dependent var		17.71269
Sum squared resid	1486116.	Durbin-Watson stat		2.048691
Correlated Random Effects - Hausman Test				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		2.1810003		0.5357
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
LTD	-1.057403	-0.944411	0.039020	0.5673
STD	-0.005934	-0.012753	0.038495	0.9723
TDR	-0.940758	-0.400450	0.161286	0.1785

Source: Computed from E-view 9.0, 2024

Table 2 presents the effect of the debt financing on the financial performance of quoted manufacturing firms over the 10 years periods covered in this study. Panel I presents results of effect of debt financing on return on. Based on the fixed effect regression model, the adjusted coefficient of determination (Adjusted R²) indicates that 60 percent variation on the return on equity of the selected manufacturing firms can be traced to variation on debt financing of the firms; this implies that 40 percent variation can be traced to factors not captured in the model. The results of the estimated model proved that the model is statistically significant based on the F-statistics and probability. The Durbin Watson statistics proved the presence of serial autocorrelation among the variables. The regression intercept is positive and significant which implies that holding other variables constant, return on equity of the manufacturing firm will increase by 13.5 units. Furthermore, the results indicates that long-term debt have negative and significant effect, short term debt have negative and no significant effect while total debt ratio have positive and significant effect on return on equity of the manufacturing firms.

Panel II presents results of effect of debt financing on Earnings per share. Based on the random effect regression model, the adjusted coefficient of determination (Adjusted R²) indicates that 49 percent variation on the earnings per share of the selected manufacturing firms can be traced to variation on debt financing of the firms; this implies that 51 percent variation can be traced to factors not captured in the model. The results of the estimated model proved that the model is statistically significant based on the F-statistics and probability. The Durbin Watson statistics proved the presence of serial autocorrelation

among the variables. The regression intercept is positive and significant which implies that holding other variables constant, return on equity of the manufacturing firm will increase by 61.35 units. Furthermore, the results indicates that long term debt have negative and significant effect, short term debt have negative and no significant effect while total debt ratio have negative and significant effect on earnings per share of the manufacturing firms.

Results on the cross sectional differences between random and fixed effect models proved that there significant difference between the random effect and the fixed effect models. The question as to whether FEM or REM model is more appropriate is very difficult to answer. Judge et al, (1980) made a few suggestions which are related to the context of the data, and its environment beside the correlation between error component and regressions. If it is assumed to be uncorrelated, random effects may be appropriate, whereas if correlated, fixed effects are unbiased and then are more appropriate. The Hausmann (1998) specification test could also be used to determine the appropriateness of the models, fixed or random effects models. However, econometricians seemed to generally agree that the random effects model was more appropriate to be used if individual intercepts are drawn randomly from a large population. By contrast, the FEM was more appropriate in the case of focusing on specific sets of the firms. An important test for model specifications was to decide whether the FEM or REM was more appropriate Maddala, (2001). The null hypothesis was that the residuals in the random effects (REM) are uncorrelated with the regressions and that the model was correctly specified. Consequently, the estimated coefficients by the REM or FEM should be statically equal; otherwise, the REM estimator was inconsistent. If the null hypothesis is rejected, then the units' specific effects are correlated with the regressors or the models are not correctly specified (Baltagi, 2005; Lucky & Akobundu, 2017). In other words, the null hypothesis stated that individual effects are not correlated with other Regressors in the model. If correlated (H_0 is rejected) a random effects model produces biased estimators, so the fixed effects model was preferred (Hun Myoung park, 2005).

To put it more simply, the idea behind this test was that if U_i is uncorrelated with X_t then there was no difference between estimates from both fixed effects (within the group 's estimator) or random effects (GLS estimators) models. Under the null hypothesis, random effects would be consistent and efficient (H_0 is true), but under the alternative hypothesis, random effects would be inconsistent. The FEM is consistent whether the null hypothesis was true or not, this means if the Hausmann test is significant then we accept the alternative hypothesis that there was a correlation between individual effects (Baltagi, 2005). The Hausmann test, tests the null hypothesis that the coefficients which are estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed effects estimator. Therefore, this includes insignificant P-value, $\text{Prob} > \chi^2$ larger than 0.05, the more suitable to use random effects. However, if this study has a significant P-value, then researcher should use fixed effects models. Accordingly, the above table showed that the Hausmann specification test model has the value of $p=0.0000$ for the regression model of dependent and independent variables. This showed that the fixed effect model was more appropriate, because the null hypothesis was not accepted. Therefore, this included insignificant

P-value, $\text{Prob} > \chi^2$ larger than 0.05, then it was more suitable to use random effects. However, if we have a significant P-value, then we should use random effects models.

This finding is contrary to the expectation of the result as the variables according to the market timing theory and the tradeoff theory formulated by Meyer in 1983 is expected to have as positive impact on the dependent variable. This finding confirms the irrelevance theory of Miller and Modigliani. The positive impact of the variable is in line with the objective of Gordons that capital structure is relevant against the irrelevant opinion of Miller and Modigliani. The findings of this study is not supported by the findings of Hassan, Adiri and Oloba (2022) that any increase in the leverage of a firm in its debt capital mix, the return on asset of the firm is negatively impacted, Akingunola, Olawale, and Olaniyan (2018) found a direct and significant effect of short-term debt on the profitability of the companies examined, Oke, Saheed, and Quadri (2019) that short-term debt financing is the most effective way for conglomerate companies to finance their assets, Akinleye and Akomolafe (2019) that long-term debt financing had a significant positive effect on the profitability of the selected companies, Mukumbi, Eugene, and Jinghong (2020) that the financial performance of firms increased as debt financing increased, Dinh and Pham (2020) supported the trade-off theory of capital mix structure, Winata, Endri, Yuliantin, and Hamid (2020) that debt to equity negatively affected the value of selected companies. The findings of the study were in line with the findings of Abdullah and Tursoy (2021) that capital structure mix on the financial performance of the selected companies. Low interest rates and lower debt costs contributed to this. The trade-off theory therefore matches capital structure, contradict the findings of Endri, Ridho, Marlapa, and Susanto (2021) negatively affected by LDTC, and EPS was insignificantly positively affected by LDTC, Opoku-Asante, Winful, Sharifzadeh, and Neubert (2022) that total debt was found to be negatively correlated with financial performance and the findings of Habibniya, Dsouza, Rabbani; Nawaz and Demiraj (2022), Kurniashi, Rustam, Heliantono and Endri (2022) revealed capital mix affects firm value positively.

Conclusion

The study investigated the effect of debt financing and corporate performance in Nigeria using selected public limited liabilities. Return on equity and earnings per share were modeled as the function of long term debt, short term debt and total debt ratio. The study found that 60 percent variation on the return on equity of the selected manufacturing firms was traced to variation on debt financing of the firms. The regression intercept is positive and significant which implies that holding other variables constant, return on equity of the manufacturing firm will increase by 13.5 units. Furthermore, the results indicates that long-term debt have negative and significant effect, short term debt have negative and no significant effect while total debt ratio have positive and significant effect on return on equity of the manufacturing firms. 49 percent variation on the earnings per share of the selected manufacturing firms was traced to variation on debt financing of the firms. The regression intercept is positive and significant which implies that holding other variables constant, return on equity of the manufacturing firm will increase by 61.35 units. Furthermore, the results indicates that long term debt have negative and significant effect, short

term debt have negative and no significant effect while total debt ratio have negative and significant effect on earnings per share of the manufacturing firms.

Recommendations

- i. Debt financing raised cash-flows for the firms, but it increases the financial risks of the firms and its shareholders and may result in the dilution of ownership control of the shareholders, as well as lower returns to equity holders, therefore debt financing should be properly applied in corporate financing.
- ii. Quoted firms in Nigeria should substitute all the proportion of long-term debt in the capital structure with short-term debt and that optimal capital structure is essential for the profitability of manufacturing companies in Nigeria. There is need for considerable attention by management when constituting corporates' financing structures as they influence varying impact on performances of an organization.
- iii. Management of corporates corporate firms Nigeria Exchange Group to incorporate borrowed funds in their capita mix to improve performance and recommended the need for managers to pay attention on other financing sources in their capital mix. The study recommended for the need to reduce information asymmetry and moral hazard between in corporate financing and financial institutions should also be aware of the importance of transparency measures, which can improve their relationship with financial institutions in the business environment.
- iv. Debt financing to be employed by corporate managers in a prudent manner that the cost of borrowing does not exceed the return for their corporates. Quoted firms should to form joint ventures and to partner with both domestic and foreign partners to access more assets particularly long-term assets with modern technology

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