EFFECTS OF DEBT FINANCING ON FINANCIAL PERFORMANCE OF LISTED INDUSTRIAL GOODS MANUFACTURING FIRMS IN NIGERIA

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Abstract

This study investigated effects of debt financing on financial performance of quoted industrial goods manufacturing firms in Nigeria. The independent variables were short-term debt, medium-term debt and long-term debt as proxy to debt financing and return on assets as proxy to financial performance. The specific objectives were to ascertain the extent short-term debt financing affects financial performance of listed manufacturing firms, to determine the extent medium-term debt financing affects financial performance of listed manufacturing firms and to ascertain the extent long-term debt financing affects financial performance of manufacturing firms in Nigeria. The hypothesis were stated in line with the stated objectives. The ex-post facto research design was adopted for this study. Secondary data sourced from the audited annual reports of the sampled listed firms were used. The study estimated the models numerically using the secondary data for the period 2019-2023. For the data analysis, the fixed and random effect model was used to test all hypothesis. The findings revealed that short-term debt financing has insignificant effects on financial performance, medium-term debt financing has significant positive effects on financial performance and long-term debt financing has significant negative effects on financial performance of listed industrial goods manufacturing firms in Nigeria. Based on these findings, the study recommends that firms should chase less of short-term debt in financing their operations since it has unnoticeable positive effects on their financial performance, rather firms should sort for more of medium-term debt than short and long-term debt for their operation since it will results to increase on their profitability and finally to reduce their long-term borrowing as its higher cost of finance would put financial pressure on the firm's profitability.

Keywords: Long-term debt, Medium-term debt, Short-term debt, Return on Assets

Introduction

The issue of choice for corporate financing among the financial mix and its relationship or effects on financial performance has been of serious concern to many scholars in the field of Accountancy, economics and finance and even to management of listed corporate entities. The financial mix to this context is the combination of earning reserve, debt and equity financing. Though emphasis will be on one aspect of financial mix which is debt financing considering the nature of most required financial mix of firms under study. On the other hand, financial performance is measuring the monetary quantitative value of returns or earnings from this financial structure (debt financing) employed. Financial performance shows how well a firm uses financial resources from its primary business to generate revenue (Dahiru, Dogarawa and Haruna, 2016). Measure of financial performance provide a valuable tool to stakeholders which aids them in evaluating the past, current and future financial position of a firm (Erasmus, 2008). How an organization is financed is of importance to both the managers of the firms and providers of funds. This is because if a wrong mix of finance is employed, the performance and survival of the business enterprise may be seriously affected (Osuji and Odita, 2012).

Industrial goods manufacturing sector has been one of the major driver of economic growth and development of many developed and developing economies of the world (Umaru, Ulori, Unoh and Salihu 2025). They contribute significantly to increasing Gross Domestic Products (GDPs) and enhancing the comparative advantages of most nations. But in Nigeria case, manufactured industrial goods export is barely 0.4 percent of total exports, while import of manufactured industrial goods is more than 15 percent of GDP or more than 60 percent of total import (Uzochukwu, 2018). These suggest low local production capacity possibly attributed to unstable and underdeveloped financial market which indirectly influences their financial performance. Even with increase in the trend of non-oil GDP as a result of significant improvement in other sectors of the economy the manufacturing

industrial goods sector remains the only sector that has been continuously registering decline in its production index irrespective of government introduced policies and programs (UNIDO, 2018; Result of Nigeria firm survey, RPED, 2018). It is important to note that Nigeria's financial system is characterized by underdeveloped debt market; most firms external debt finance are majorly short-term finance and greater reliance on commercial banks or other specialized financial institutions that provide most of debt finance, imposing extra burdens at very exorbitant cost on the firm. Theoretical body of knowledge had established that long and short-term debt ratio are good measures of leverage ratio in Nigeria due to fund mismatching constrained by limited long-term debt (Usman, 2019). Apparently, the occurrence of this is prone to default as payment of interest and repayment of principal may fall due when the proceeds (cash inflow) from the investment are not readily available. Furthermore, other works on debt financing and its effects on financial performance done has their findings either unsatisfying, contradicting or insufficiency of variable coverage.

Furthermore, after the irrelevance theory of Modigliani and Miller (1958) which revealed that no relationship exists between company's financial structure and financial performance, other research studies have been carried out. Salawu (2007) study on empirical analysis of the capital structure of selected quoted companies in Nigeria from 1990-2004, the study examined short-term debt only as measure for debt financing and result of finding showed negative relationship exist between short-term debt financing and financial performance. Babalola (2014) studied on Triangulation analysis of capital structure and firm's performance in Nigeria, the study concentrated on total debt to total assets relationship alone without considering other forms of debt, the result revealed negative relationship between total debt and total assets. Ogunlowore and Ashogbon (2014) studied debt financing and performance ignored short-term debt and long-term debt financing which constitute forms of debt financing for firms in Nigeria. The results of these studies revealed negative relationship exist between long-term debt financing and financial performance. Weli (2014), studied debt financing and profitability on listed industrial goods manufacturing companies in Nigeria (2011-2013), the findings revealed that a negative yet non-significant relationship and association exist between industrial goods manufacturing firm's debt financing and profitability. Ohaka, Edori and Ekweozor (2020) studied debt financing and firm's financial performance in Nigeria (2011-2018), result of findings revealed size of firms, short-term and long-term debt which constitute measures for debt financing has a positive impact on listed firm's financial performance, as size of firm do not constitute form of debt financing . Usman (2019), on the study impact of capital structure on financial performance of consumer goods industry in Nigeria (2012-2016), the result revealed that short-term and long-term debt has no significant impact on financial performance of listed firms, as medium-term debt were not considered. Aniefor and Onatuyeh (2019) which studied effects of debt financing on the corporate performance on listed consumer goods firms in Nigeria (2006-2017), the finding revealed that total debt, long-term and short-term debt to asset ratio positively influence the performance of consumer goods manufacturing firms listed in Nigeria. Other foreign works include; Mahakud and Misra (2009) that studied effects of leverage and adjustment cost on corporate performance conducted in India, the result found that corporate debt financing has a negative impact on the firm's financial performance as a result of high interest burden and agency cost. Cheng (2009) found significant negative relationship between debt financing and financial performance of listed companies in Taiwan.

However, due to inconsistence and contradicting views in above empirical reviews, inadequate combination of three major forms of debt financing (short-term, medium-term and long-term financing) as measure for debt financing, period of interval which those works were carried out and giving that only the study of Weli (2013) on debt financing and profitability of listed industrial goods manufacturing companies in Nigeria (2011-2013), has a link between debt financing and financial performance for industrial goods manufacturing firms in Nigeria, yet couldn't investigate all the three major forms of debt and their effects on performance necessitated gap in empirical works done.

The general objective of the study were to examine the effects of debt financing on the financial performance of industrial goods manufacturing firms quoted in Nigerian Stock Exchange for the period 2019-2023. However, the specific objectives of the study are; (1)To ascertain the extent short-term debt financing affects financial performance of listed manufacturing firms in Nigeria.(2)To determine the extent medium-term debt financing affects financial performance of listed manufacturing firms in

Nigeria.(3)To ascertain the extent long-term debt financing affects financial performance of listed manufacturing firms in Nigeria.

2. REVIEW OF RELATED LITERATURE

2.1 CONCEPTUAL FRAMEWORK

2.1.1 Debt Capital

These consist of all liabilities that a firm incurs through its primary activities for financing its operation. It could also be the capital which a company borrowed either for a specific period of time (redeemable) or possibly in perpetuity (irredeemable). According to Edore and Ujuju, (2020) debt is a deferred payment, or series of payment that is owed in the future which is what differentiates it from an immediate purchase. Ihenetu, Iwo and Ebiware (2016) posited that debt capital is the long span obligation an entity applied in funding its investment activities which is accompanied with a long repayment period. It is essential component of every quoted company's capital structure whose cost is cheaper to compare equity capital in the perspective of the investor. This is because equity investment in a company is always more risky than investment in the debt capital of same company (Strategic Financial Management, ICAN study pack, 2014).

2.1.2 Debt financing

Ohaka, Edori and Ekweozor (2020) posited that debt financing involves an action that is bound by time for the repayment of debt and the debt's interest at an agreed end of the period. It occurs when a firm borrowed needed cash resulting to debt to a lender or an investor for a short-term, medium-term or for long-term capital needs of the firm. According to Uremadu and Onuegbu (2018) debt financing implies raising fund through selling of bonds, mortgages or borrowed directly from financial institutions. It is expected that borrowed funds by the company is repaid as at when due with periodic agreed interest charge. Ubesie (2016), asserted that debt financing arise when an organization raises money for working capital or capital disbursement by selling corporate bonds, trade bills or notes to individual and/or institutional investors. In return for lending the money, the individual or institutions becomes creditors and receives a promise when the principal and interest on the debt will be repaid. The repayment of the interest element of this debt affects or reduces the operating profit of companies. Debt financing has advantage of equity financing as the interest on debt financing is tax deductible (Obonyo, 2017).

Most debt financing for listed companies are externally sourced, either through financial institutions, government and international financial market. Gomis and Khatiwada (2016) posited that external debt financing plays an important role to increase future productivity of firms and more important for future growth as well as reducing their profitability.

2.1.3 Long-term debt financing

It's a form of debt financing sourced from international capital market or government bonds which its repayment is expected to be repaid after one year. Such bonds might be loan stock or debenture. Long-term debt financing normal has it maturity date till perpetuity or convertible to shares, such debts are preferred in financing long-term investment as it attracts higher fixed interest and its repayment period is expected to last more than an accounting period. According to Ward (2008), with long-term financing the schedule repayment of loan and estimated useful life of the assets extends over more than one year. Long-term debt financing is preferable in financing non-current liabilities than short-term financing as they have longer period of repayment of principal and interest.

2.1.4 Short-term debt financing

It is obtaining debt sources of finance through mostly commercial bank to finance working capital whose repayment is expected to be repaid within one year. According to Edore and Ujuju (2020) short-term debt financing is obtaining short-term loan to finance current assets that can be quickly turned back into cash. Short-term debt financing are usually in the form of bank overdraft, issuing of commercial paper in the money market, arranging for bill acceptance with bank (Strategic Financial Management, ICAN study pack, 2014). Short-term debt financing is sourcing fund for day-to-day

activities or financing needs of firms (Uremadu and Onuegbu, 2018). Such debt financing unlike long-term debt financing are not expected to be used in financing long-term investment as returns on such investment will start yielding longer than the required period of repayment.

2.1.5 Medium-term debt financing

This is another form of borrowing to run a business other than long-term and short-term debt financing. In other words, it is a form of debt financing whose maturity period is about five or seven years and are usually in a bank loan (Strategic Financial Management, ICAN study pack, 2014). Most medium-term debt financing comes inform of lease (Edore and Ujuju, 2020).

2.1.6 Financial Performance

According to Erikie and Osagie (2017), financial performance is the measuring of results of a firm's policies and operation in monetary terms. These results are reflected in the firm's Return on Assets, value added etc from data obtained from the annual audited financial statement of the company. The financial performance of a firm can be analyzed from its audited financial statement such as statement of financial position, comprehensive incomes cash flow statement etc through financial ratios which express relationship between variables reported in the financial statements of firms (Latridis, 2010). According to Akle (2011), accounting-based measurements are generally considered as an effective indicator of a firm's financial performance. Accounting-based measurement indicates the profitability of firms on the short-term in the past years. Thus, it assists management in measuring the firm's overall efficiency and profitability.

Financial performance is a subjective measure of how well a firm can utilize its assets from its primary mode of business and generate revenues. It is a term used as a general measure of a firm's overall financial health over a period of time and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. In particular, Erasmus (2008) noted that financial performance measures the profitability, financial risk and liquidity and as such provides a valuable tool to stakeholders to appraise the past financial performance and the current position of a firm. Different measure has been applied in examining financial performance with capital structure by authors and they include Return on Equity, earning per share and Return on Assets (Ajibola and Qudus, 2018). But for this study, emphasis will be on Return on Assets as financial performance measure since it's another profitability ratio which indicates how well a company is managing its available recourses and assets to generate net higher profits.

2.2 Empirical Review

For the purpose of the study, they have been two contradicting views from the literatures reviewed concerning and related to the study.

The first views are those with no or negative significant relationship between debt financing and financial performance. Usman (2019) studied the impact of capital structure on financial performance of 6 sampled consumer goods listed companies in Nigeria for a period of 5 years from 2012-2016. The data was analyzed with descriptive statistic, correlation and regression analysis to find out the relationship between dependent variable as financial performance and independent variable as long-term debt, short-term debt and return of equity (which should form part of the financial performance measure). The result of the findings showed that short-term debt have no significant impact on the financial performance, long-term debts have no significant impact on the financial performance and equity has significant impact on the financial performance of consumer goods listed companies in Nigeria. The study further suggested that in making decision on what the composition of their capital structure will be, companies should look critically and making comparison between the cost of obtaining a particular source of capital and the benefit that can be derived from it instead of making capital structure decisions on baseless generalization.

In a related study of such, Uremadu and Onuegbu (2018) that studied the effects of capital structure on corporate performance on 4 sampled listed firms in consumer goods sector on the Nigeria stock exchange. The study used multiple regression of ordinary least square (OLS) method to analyze the variables. The result from the study showed a negative and insignificant impact of capital structure on corporate performance. Furthermore, long-term debt ratio to total assets had a negative and

insignificant impact on return on assets while total debt ratio to equity also had a negative and insignificant impact on return on assets. The study recommends that managers should be careful while using debt as a source of finance since negative impact exists between capital structure and corporate performance. Lucy (2014) examined the existence of relationship between capital structure and performance. The study adopted the explanatory non-experimental design for forty-two (42) non-financial companies in Kenya Nairobi Securities exchange. The study covered a period of seven (7) years 2006 – 2012. The study showed a statistical significance and an inverse relationship between the variables.

Olokoyo (2013) studied capital structure and corporate performance of Nigeria quoted firms: A panel data approach, the result was based on 2003-2007 accounting and marketing data from one hundred and one (101) firms that quoted in Nigeria. Employing the fixed-effect estimation, random-effect estimation as well as a pooled regression model and an identification tests and Hausaman's chi^2 statistics were computed to test if the fixed effects model estimator is alternatively appropriate to the random model. Among other findings, the studies found out that firm's leverage have significant and negative impact on accounting performance of firms.

Osuji and Odita (2012) in their examination of capital structure impacts on financial performance in Nigeria firm used 30 firms (non-financial) listed on the Nigeria Stock Exchange from 2004-2014 using the ordinary least squares to analyze the panel data collected, the study found that capital structure of firms has significant and negative impact on firms performance.

Mustafa and Osama (2013) used 76 Jordanian firms for a period of 2001 – 2006 to study on the impact of capital structure on corporate performance. Employing the Ordinary Least Square (OLS) came into conclusion that capital structure negatively and statistically associates with firms' performance but there is insignificant impact of gearing on highly geared and lowly geared firm's performance. Oke and Fadaka (2021) examined capital structure and firm performance of Nigerian consumer goods manufacture firms listed on the Nigerian Stock Exchange. Secondary data for the study were collected from eighteen consumer goods listed manufacturing firms from 2008-2018. The result from the regression analysis carried out by the study showed that firm performance has a negative relationship with capital structure in listed Nigerian manufacturing firms.

Wambua (2019) examined the effect of debt financing on financial performance of listed firms on the Nairobi Securities and Exchange. Descriptive design was used for the study. 35 non-financial firms listed on the Nairobi Securities Exchange were used for the period from 2014-2018. Analysis of data was carried out through descriptive statistical techniques, correlation analysis and multiple linear regression. The findings revealed that debt financing had a weak negative correlation that was significant. It further concluded that firm liquidity positively and significantly affects financial performance of non-financial firms listed on the Nairobi Stock Market. Magoro and Abeywardhana (2017) focused on debt capital and its effects on financial performance on South African companies. The study sampled 25 retail and wholesale South Africa firms for the period of 2011-2015. Using regression analysis, secondary data was analyzed and outcomes indicated that debt capital both long and short-term debt have a negative effects on financial performance.

Lorpev and Kwanum (2012), examined the impact of capital structure on the performance of manufacturing companies in Nigeria. The annual financial statement of 15 manufacturing companies listed on the Nigeria Stock Exchange were used for the study from 2005-2009. Multiple regression analysis was applied on performance indicators such as return on assets and total debt to equity as capital structure variables. The results show that there is a negative and insignificant relationship between short-term debt to total assets and long-term debt to total assets, and ROA and profit margin, while total debt to equity is positively related with ROA and negatively related with profit margin. Short-term debt to total assets is insignificant to ROA while long-term debt to total assets is significant using profit margin. The findings show statistically that capital structure is not a major determinant of firm performance. Attaullah Shah (2004), investigated on determinant of capital structure in listed Pakistani non-financial firms for five-years period. The results show that assets tangibility is positively correlated with debt. These suggest that large firms will employ more debt than small and have more advantage to borrow from public. Growth is negatively correlated with leverage and strong relationship was found between profitability and leverage. Profitability as measured by net profit before tax divided by total assets is negatively correlated with leverage that supports the pecking order theory.

Babalola (2014) studied on Triangulation analysis of capital structure and firm's performance in Nigeria, the study concentrated on total debt to total assets relationship alone without considering other forms of debt, the result revealed negative relationship between total debt and total assets. Ogunlowore and Ashogbon (2014) studied debt financing and performance ignored short-term debt and long-term debt financing which constitute forms of debt financing for firms in Nigeria. The result of the study revealed negative relationships exist between long-term debt financing and financial performance. Weli (2013), studied debt financing and profitability of 17 listed industrial goods companies in Nigeria for a period of 3years from 2011-2013. The study collected panel data of the sampled companies and data analyzed using descriptive statistics, regression and correlation. The result of the analysis showed that there is a negative yet non-significant relationship and association between firm's debt financing and profitability. Further results suggested that 51% of total assets in the industrial goods sector listed companies are represented by debt, confirming the fact that they are capital intensive and highly geared. Olawola and Jeleel (2017) studied effects of leverage of firm's performance in Nigeria for 3 sampled listed firms from a period of 2000-2009. Ordinary Least Square was employed. Return on Asset was used to measure performance while Equity and debt ratio for capital structure. The result of the finding revealed that debt ratio has a negative and insignificant relationship on the performance measure. The study further suggested that firms in the sector should use more equity financing than debt.

Lawal, Edwin, Monica and Adisa (2014) conducted on effects of capital structure on firm's performance of 10 listed manufacturing companies in Nigeria from 2003-2012. Descriptive and regression technique was employed to consider the impact of some key variable such as return on assets, return on equity, total debt to total assets, total debt to equity ratio on firm performance. The study found out that total debt and debt to equity ratio are negatively related to firm's performance. It further recommends manufacturing firms should use more of equity than debt in financing their business activities, even though value of a business can be enhanced using debt financing. In a related study by Ajayi and Araoye (2017) that investigated the effects of capital structure on the financial performance of 10 listed manufacturing firms in Nigeria multiple regression analysis was used to analyze relationship between variables of return on assets and return on equity were used to measure the financial performance while debt-equity, asset turnover and age of firm were used to measure capital structure. The study found out that debt-equity ratio has a negative but statistical significant effect on financial performance, age of firm has negative insignificant effects on financial performance. The study further recommends that management should be careful when using debt as its sources of financing. Dada (2014) investigated the relationship between profitability and debt of big firms in Nigeria. ROA and ROE which were used to measure the performance of companies while short-term and long-term debt were used as independent variables of debt financing. Fixed effect and panel data techniques were used for the analysis. The results showed that if there is increase in debt financing then the profitability of those will decline.

Akingunola, Olawale and Olaniya (2017) investigated capital structure decision and firm performance taking evidence from non-financial firms in Nigeria for 2011-2015. The study used the sample of 22 listed firms in the non-financial sector of the Nigerian Stock Exchange. The study after analyzing the panel data set using pooled, fixed effects and random effect methods, and the Hausman's test in selecting the appropriate model shows that short-term debt and total debt has significant and positive effects on return on equity. In Jordan, Zeitun and Tian (2007) conducted a study on capital structure and corporate performance on 167 Jordanian listed firm from1999-2003. They found a significantly negative relationship between capital structure and corporate performance. Many dependent variables such as return on assets, return on equity, profitability and Tobin's Q were used to measure financial performance while leverage, growth, size and tangibility were proxies for capital structure. In a related foreign study, Aziz and Abbas (2019) conducted a study on effects of debt financing on firm's performance for sample of listed 360 companies from 2006-2014 in Pakistian. Descriptive statistics were used to analyze panel data collected and pair wise correlation was used to measure the relationship between the variables. The result of the study indicated that debt financing have a negative but also significant impact on firm performance in Pakistan. Abor (2007) investigated the relationship between debt financing and performance of small and medium-sized enterprise in Ghana and South Africa from 1998-2003. The study used a sample of 92 SMEs firms from Ghana and 68 SMEs firms from South Africa. The study used Return on Assets as measure for financial

performance and long-term debt by short-term debt ratio, long-term debt ratio and total debt ratio as measure for debt financing. The study used Generalized Least Square (GLS) panel model for the estimation. The results revealed a significant negative relationship between the measures of debt financing and firm financial performance in Ghana SMEs. The study further revealed that Ghanaian SMEs uses high debt level which significantly leads to lower financial performance. On the South African sample, the result showed a significant positive relationship between short-term debt financing and return on assets. Thus, it revealed that short-term debt seemed to be relatively less costly, thus increasing the short-term debt will induce high level of profit. For long-term debt and total debt, the results revealed a significant negative relationship with firm performance. Thus, it showed that the cost of long-term debt is high and this will lead to low level of firm performance.

Abeywardhana and Magoro (2017) empirically studied debt capital and financial performance: A comparative analysis of South Africa and Sri Lankan listed companies. The analyzed data from 2011 – 2015 of the wholesale and retail sector companies in South Africa and Sri Lanka. The fixed –effect (within) regression method was adopted in the data analysis. The result shows a negative impact of short-term and long-term debts on financial performance in both sectors in South African but in Sri Lanka, short-term debt showed a negative impact while long-term debt showed a positive impact.

Kumar and Woo (2010) examined the relationship between debt and economic growth in Ghana. The methodology adopted in the study was GMM (SGMM) dynamic panel regression. The study concluded that impact of debt on the growth is negative. So, increase in debt cause the decrease in growth.

Lavorskyi (2013) explored the relationship of debt and performance in Japan. The variables used in the study for performance measure were Total Factor Productivity (TFP), ROA and EBIT while leverage and long term leverage. The methodology adopted in the study was fixed effect regressions and dynamic model. The study concluded leverage cause the decrease in performance. Gabrijelcic (2013) examined the relation of Italian firm's performance and leverage. The study results showed that increase in leverage cause the decrease in performance. The study used OLS and suggested that firms should use foreign financing to improve the performance but not too much which can negatively affect the firm performance.

Akhter and Sadaqat (2011) examine the implication of capital structure on Pakistan commercial banks. The adopted OLS and showed evidence on significant relation of bank's size, profitability, tangibility and liquidity is found that the banking sector of Pakistan is likely to follow trade – off theory.

Gropp and Heider (2018) used 200 largest listed banks (100 from US and 100 from the EU). They found that standard cross-sectional determinants of firm leverage also apply to the capital structure of large bank in the United States and Europe. And also or remarkable consistency in sign, significance and economic magnitude. Like non-financial firms, banks appear to have stable capital structures at levels that are specific to each individual bank. The results suggest that capital requirement only be of second order importance for banks' capital structures and confirm the robustness of current corporate finance finding in a holdout sample of banks.

Matarirano and Fatoki (2010) investigated the impact of debt financing on the profitability of small manufacturing firms in Zimbabwe. The study employed regression analysis to analyze set of data for sampled small manufacturing firms, the results of the study revealed that use of debt financing has a negative impact on the profitability of those sampled manufacturing firms. The study thus recommended the creation of tax incentives and more equity funding for small manufacturing firms.

Furthermore, Ogebe; Ogebe, and Alewi (2013) conducted a study on the impact of capital structure on firm performance in Nigeria from 2000-2010. They considered the impact of some key macroeconomic variables (gross domestic product and inflation) on firm performance. The traditional theory of capital structure was used to determine the significance of leverage and macroeconomic variable on firm's performance. The study made comparative analysis of the selected firms which were classified into highly and lowly geared firms setting a leverage threshold of above 10% as being highly geared. Using fixed effect regression estimation model, a relationship was established between performance (proxied by return on investment) and leverage of the firms over a period of ten years. Their results provided strong evidence in support of traditional theory of capital structure which asserts that leverage is a significant determinant of firm's performance. A significant negative relationship was established between leverage and performance. From their findings, they strongly recommended that

firms should use more of equity that debt in financing their business activities; their reason was that in spite of the fact that value of a business could be enhanced with debt capital, that it would get to a point that it would become unfavorable.

In a likely word, Chechet and Olayiwola (2014) examined capital structure and profitability of the Nigerian listed firms from the Agency Cost Theory perspective with a sample of seventy (70) out of population of two hundred and forty-five firms listed on the Nigerian Stock Exchange (NSE) for the period of ten years (2000-2009). Panel data for the firm were generated and analyzed. Two independent variables which served as proxy for capital structure were used in the study: debt ratio and equity while profitability was used as the only dependent variable in the study. The result of the study showed that debt ratio was negatively related with profitability, while equity was directly related with profitability. Leon (2013), studied the impact of capital structure on financial performance of the listed manufacturing firms in Sri Lanka from 2008-2012. Financial performance was measured in term of accounting profitability by return on equity (ROE) and return on assets (ROA). 30 listed manufacturing firms were selected as sample. The data were analyzed and hypotheses were tested through correlation and regression analysis by using SPSS. The findings revealed that, there was a significant negative relationship between leverage and return on equity. And there was no significant relationship between leverage and return on assets.

Al-Taani (2013), investigated the relationship between capital structure and firm performance across different industries using a sample of Jordanian manufacturing firms in Jordan. The annual financial statement of 45 manufacturing companies listed on the Amman Stock Exchange were used for the study which covered the period of five (5) years from 2005-2009. Multiple regression analysis was applied on performance indicator such as return on asset and profit margin as well as short-term debt to total assets, long-term debt to total assets and total debt to equity as capital structure variable. The result showed a negative and insignificant relationship between short-term debt to total assets and long-term debt to total assets and return on assets and profit margin; while total debt to equity is positively related with return on assets and negatively related with profit margin. Short-term debt to total assets was significant using return on assets while long-term debt to total assets was significant using profit margin. The study concluded that, capital structure was not a major determinant of firm performance. The study therefore recommended that managers of manufacturing companies should exercise caution while choosing the amount of debt to use in their capital structure as it would likely affects their performance negatively, so to say. Anga, Ebenezer and Xicang (2012) in Ghana seek to provide evidence on the impact of short-term debt on a firm's value. The analysis was implemented on all the 34 companies quoted on the Ghana stock exchange (GSE) for the year ended 31st December 2010. The ordinary Least Squares method of regression was employed in carrying out the analysis. The result of the study revealed that in an emerging economy like Ghana, equity capital as a component of capital structure is relevant to the value of a firm, and long-term debt was also found to be the major determinant of a firm's value. Following from the findings of the study, corporate financial decision makers are advised to employ more of long-term than equity capital in financing their operations since it impacts more on a firm's value.

Kibunja and Fatoki (2020) examined the effect of debt financing on the financial performance of non-financial firms listed on the Nairobi Securities Exchange from 2013 – 2017. The study Used Sample 23 listed non-financial firm's secondary data and analyzed the data using panel data regression method. The independent variables were short-term debt, medium-term debt and long-term debt while the dependent variable were return on equity. The result of the study revealed that medium-term debt had a negative and statistical significant relationship with return on equity. Long-term debt had a positive but statistically insignificant relationship while short-term debt had a negative relationship with return on equity.

Muchiri (2016) investigated the relationship between short-term debt and financial performance of listed firms at the East Africa Security Exchanges. The study employed explanatory research design with secondary panel data from the financial statements of 61 firms retrieved from the security exchange hand books for the period December 2006-2014. Feasible Generalized Least Square method, random effect for models without moderator and fixed effects for model with moderator based on Hausman specification test was used. The study found out that short-term debt, long-term debt had insignificant negative relationship with return on assets. While combined financial structure had a

significant positive and negative relationship with return on equity and return on assets respectively. The study recommended that firms should combine both debt and equity in their financial structure as to enhance their financial performance. Murital (2012) studied empirical analysis of capital structure on firm's performance. The study examined the optimum level of medium-term debt financing through which a firm can increase its financial performance using annual data of ten firms for a five years period. Panel Least Square (PLS), Pesaran and Shine unit root test was used. The result revealed negative relationships exist between capital structure and operational financial performance. Kajirwa (2015) examined the effects of debt financing on firm performance for a period of five years using eleven commercial banks listed in Kenya. The study showed that debt financing does not influence the financial performance of commercial banks. Puwanenthiren (2011) examine the impact between short-term debt and company performance, taking into consideration the level of company's financial performance capacity during 2005 – 2009. Financial year of business companies in Sri Lanka. The results showed that relationship between the short-term debt and financial performance shows negative association at 0.114. Co-efficient of determination is 0.013. F and t values are 0.366, 0.605 respectively. It reflects the insignificant level of the business companies in Sri Lanka. Hence, business companies mostly depend on the debt capital. Therefore, they have to pay interest expenses much.

Fengju, Fard, Maher and Akhteghan (2013) studied the relationship between financial leverage and profitability with an emphasis on income smoothing companies in Iran's capital market. The study surveyed the income smoothing effects on financial leverage and profitability during 2006-2010 period among 60companies listed on the Tehran Stock Exchange selected through systematic elimination. The study utilized the sample linear regression, Pearson's correlation test and Zr to test its hypothesis, and the ECKEL model was used to differentiate smoothing firms from non-smoothing. The results showed that they are significant different between financial leverage and profitability between this two group of firms. The results revealed that for short-term debt- in smoothing companies no significant relationship with total assets and return on equity; while in non-smoothing companies, there was a significant relationship between short-term debt ratio to total assets. For long-term debts, the study found that- in smoothing companies has a significant correlation between long-term debt ratio to total assets and return on equity; and in non-smoothing companies, no significant relationship exist between long-term debt ratio to total asset and return on equity.

The second views are of positive significant relationship between debt financing and financial performance. Aniefor and Onatuyeh (2019) studied the effects of debt financing on the corporate performance of listed 15 consumer goods firms in Nigeria. The study employed ex-post facto design, descriptive statistics was used to answer the research question and regression analysis was used to test the hypothesis. The study found out that total debt, long-term debt and short-term debt to assets ratios positively influence the performance of consumer goods firms in Nigeria. In a similar study, Edori and Ekweozor (2020) studied debt financing and firms' financial performance in Nigeria. The study employed panel least square, random and fixed effect and Huasman statistics. The study found out that size of the firm, short-term debt and long-term debt had a positive and significant impact on the financial performance of those listed firms in Nigeria. Mubeen and kalsoom (2014) examined capital structure impact on financial performance and shareholders wealth. 155 Pakistan firms in the textile sector was the sample of the study. Result of the analysis concluded that there is a positive impact of capital structure on both financial performance and shareholders wealth.

Nirajmi and Priya (2013) confirmed a positive relationship between capital structure and financial performance after their analysis of data using correlation and multiple regressions in a similar study. Ibrahim and Nageri (2020) investigated on debt financing and firm performance for sampled 80 quoted companies in Nigeria. Multiple regression techniques, panel cointegration model, pooled regression was employed. The panel cointegration result indicates existence of long-run relationship between debt and firm performance while there is significant short-run relationship between debt and return on assets. Antwi and Zhao (2012), investigated effects of financing mix on financial performance, the study used cross-sectional data on some selected quoted firms in Ghana and using OLS their result shows that component of capital structure is important to the firm value. Long-term debt as the key determinant of firms value and is discovered to have more impact than equity capital. Aribiyan and Safari (2017), examined the effects of capital structure on financial performance from 2001-2007. Having explored multiple regression, their results show a positive relationship between

short-term debt and total debts and performance (ROE) while long-term debt and financial performance (ROE) are negatively related. Adeyemi and Oboh (2011), examined the empirical effects of corporate capital structure on the market value of some selected firms listed on the Nigerian Stock Exchange. They used both descriptive and inferential statistics for their analysis. A sample size of 150 respondents and 90 firms were selected for both primary data respectively. Descriptive statistics wad to analyze the primary data, while Chi-Square was used to draw inference of perceived relationship between capital structure and firms value. The results of the study suggested that a positively significant relationship existed between a firm's choice of capital structure and its market value in Nigeria. The study also suggested that listed firms in Nigerian capital market should strategically plan and manage their capital structure in order to maximize their market value. Strategically in the sense that they should use long-term capital with a moderate short-term debt in their capital structure mix. Barine (2012), examined capital structure determinants of quoted firms in Nigeria and lessons for corporate financing decisions. The results from the regression analysis of data obtained from seventeen financially successful quoted firms in Nigeria showed that capital structure was positively determined by cost of equity, existence of debt tax shield, covenant restrictions in debt agreements, firm dividend policy, competitor's capital mix and profitability; and was negatively determined by cost of debt, parent company influence and fear of financial distress necessitating new and financially unsuccessful firms to reduce debt/equity ratio when there existed a likelihood of increase it when cost equity, profitability and benefits from tax shield is high, ensuring optimal trade-off between cost and net tax advantage of additional leverage, costs and benefits of equity in a firm's capital structure.

Oboh, Isa and Adekoya (2012) empirically examined the effects of a firm's medium-term debt on its market value. Data set from 39 non-financial listed companies for the period of 2005-2009 were used for analysis. Results from the regression analysis revealed a significant and positive relationship between non-financial firms' market value and their debt-equity ratios. Whereas, a negative relationship exists between a firm's total-debt/total-capital ratio and its market value. The study concluded that firms' leverage positively influence their market values. Bufema (2015) examined the determinants of capital structure in Libyan business environment. The results of cross-sectional OLS regression show that both the static trade-off theory and agency cost theory are pertinent theories to the Libyan companies' capital structure whereas there was little evidence to support the asymmetric information theory. The lack of secondary market may have an impact on agency cost, as shareholders who are unable to offload their shares might exert pressure on management to act in their best interest.

Ahmed (2013) examined capital structure effect on performance of Malaysian consumer and industrial sectors. The study used return on asset (ROA) and Return on Equity (ROE) as proxies for performance and for performance, and short-term debt (STD), long-term debt (LTD) and total debt (TD) as proxies for capital structure four variables found by literature to have an influence on firm's operating performance, namely size, asset grow, sales grow and efficiency, were used as control variables, 58 firms were identified as the sample firms and financial data from the year 2005 – 2010 were used as observations for the study, resulting in a total number of 348 observations. A series of regression analysis were executed for the models. Lag values for the proxies were also used to replace non-lag values in order to ensure that any extended effect of capital structure on firm performance was also examined. The result revealed that only STD and TD have significant relationship with ROA while ROE has significant effect on each of debt level. However, the analysis with lagged values shows that none of lagged values for STD, TD and LTD has significant relationship with performance.

Ashraf, Ameen and Shahzadi (2017) investigated the impact of Capital structure on firm profitability of listed cement companies in Pakistan. The study covered twenty two cement manufacturing companies over the ten years period (2006 – 2015). The independent variables were debt-equity, interest coverage ratio, debt ratio, short-term debt ratio and long-term debt ratio. The dependent variables were return on equity and return on assets. The balance panel data model was used to derive the results for descriptive statistics, correlation analysis and regression analysis. The study indicated that Pakistan cement manufacturing firms use more debt than equity in their financing and the findings were that short-term debt ratio has a significant positive relationship with financial performance measures.

Alkhazaleh and Al-Dwirg (2018) carried out a study on the impact of fiancé leasing on Islamic banks in Jordan. The study covered the period 2010 – 2016 and had sample size of four financial

institutions. The study used secondary data and the regression analysis method was used as that research design. The independent variable was finance lease and the dependent variable were return on assets and return on equity. The study revealed that finance lease has become an alternative to medium term and long-term debt financing. The study found that finance lease had an impact on return on assets but no impact on the return on equity. FurthermoreOmete and Isabwa (2017) conducted a study on long-term debt and financial performance of state owned sugar firms in Kenya. The study covered the period between 2004- 2014 with a sample size of four selected state owned firms. The study revealed that long-term debt financing was directly linked to the growth of the company's operating capacity and was mainly used in investment in long-term capital assets such as machinery and the financing was therefore well-structured and defined.

Abdadi and Abu-Rub (2012) examined the effect of capital structure on the Palestinian financial institution. Using the multiple linear regression models, they utilized the data of 8 banks listed on the Palestine Securities Exchange. They found that a positive relationship exist between leverage and market efficiency. Mathanika, Vinothini and Paviththira (2015) investigated the impact of short-term debt on a firm's value of listed manufacturing companies on Colombo Stock Exchange (CSE) in Sri Lanka from (1997 – 2013). The study used secondary data from 15 manufacturing companies on using Random Sample Techniques. Correlation and multiple regression analysis techniques were used to analysis the impact of capital structure in firm value. Debts to equity ratio have significant influence on firm value but debt to total assets has not significantly associated with firm's value. The study findings lead to the conclusion that equity ratio, and debt ratio has significant impact on firm value of the companies.

In a related research, Ali (2012) analyzed the impact capital structure on the profitability of petroleum sector of Pakistan while controlling the size of the company. They carried out a regression analysis on the data of 12 randomly selected companies for a period of 10 years. They found that in overall analysis, there is a significant and positive impact of capital structure on the profitability of the petroleum sector whereas in individual analysis the analysis has no significance because every company has their own capital structure. Salawu (2009) investigated the effect of financial risk and long-term debt on the performance of Nigerian listed companies from 1990-2006. Using seventy companies, the study measured capital structure by long-term debt and firm performance by return on asset (ROA). Using Ordinary Least Square and Generalized Method of Moment, the study found a positive and significant relationship between long-term debt financing and firm performance measured by return on assets. Ajibola and Qudus (2018) studied on capital structure and financial performance of sampled 10 listed manufacturing firms in Nigeria from 2005-2014. The study employed panel ordinary least square to analyze the data. The results showed that a positive statistically significant relationship exist between long-term debt ratio, total debt ratio (measure of debt financing) and return on equity (financial performance) while a positive statistically insignificant relationship between return on equity and short-term debt ratio. Dahiru, Dogarawa and Haruna (2016) carried empirical studies on the impact of capital structure on financial performance of sampled 31 listed manufacturing firms in Nigeria. The study employed correlation research design, descriptive statistics and least square multiple regression was used to analyze the panel data. The study found that total debt, long-term debt and short-term debt has significant impact on the financial performance of sampled listed manufacturing firms in Nigeria. Utile, Ikya and Akwuobu (2016) studied effect of short-term debt on the performance of cement manufacturing firms in Nigeria from 1997-2014. Secondary data were used. The findings revealed that managers of firms are under pressure to determine the right proportion of debt and equity that would be used to achieve financial performance. It was concluded that researchers are yet to reach a compromise on the optimal debt structure of a firm that would maximize firm's performance. It has been recommended that as managers continue to vary the debt to equity proportions more research should be conducted to find out an optimal capital structure that would optimize firm's performance. Echekoba and Ananwude (2016) examined the impact of short-term debt on performance of agricultural and healthcare firms listed in Nigerian Stock Exchange for a period of twenty one (21) years from 1993 – 2013. The study selected fifteen (15) out of the sixteen (16) firms listed on agricultural and healthcare sectors. Data were collected from the Nigerian Stock Exchange fact book of various issues as relevant and were analyzed using the pool OLS, fixed random effect models and the granger causality test. Financial structure was surrogated by total debt to total equity ratio, short-term debt to total equity and

total debt to total asset ratio while firm performance was measured by return on assets, return on equity, earning per share and profit before tax. The analysis for the agricultural firms revealed that financial structure significantly impacts on earning per share but does not impact on return on equity, return on asst and profit before tax, for healthcare firms, financial structure significantly impacts on earning per share and profit before tax but does not impact on return on equity and return on assets. To this effect, the study suggested that it is very crucial for firm's management to carefully look at the debt- equity mix, which according to the result of the study, significantly impacts on performance of firms in agricultural and healthcare sector. While combined, financial structure had a significant positive and negative relationship with return on equity and return on assets respectively. On moderation of the relationship between financial structure and financial performance, it was found that gross domestic product growth rate had a significant moderating effect. It is therefore recommended that firms combine both debt and equity in their financial structure and East Africa governments grow and maintain their GDPs trends since GDP was found to have a contingent effect on the financial structure. Edore and Ujuju (2020) which investigated the effects of financial leverage on value of cross section of 5 listed firms in Nigeria for 18years (2000-2017). Ex-post facto design was adopted, data analyzed using descriptive statistics and Pearson moment correlation and panel Least square employed to analyze hypothesis. The results revealed that long-term debt has a significant positive effect on the value of sampled consumer goods firms. Medium-term and short-term debts has significant positive influence on the same sampled consumer goods firms. Other foreign study includes the study of Mamaro and Legotto (2020) which investigated the impact of debt financing on financial performance of retail firms listed on the Johannesburg Stock Exchange for the period of 2010-2019. The study applied Fixed Effects using return on equity as measure for financial performance whereas long-term debt and total debt as measure for debt financing. The result revealed that long-term debt financing and total debt positively influence the return on equity.

2.4 Gap in literature

From the above reviewed available literatures, it is crystal clear that results from investigation between debt financing and financial performance are contradictory and inconclusive and require further work. Several factors may be the rationale for the contradiction of results in empirical results. Most empirical studies do not combine the three major sources of debt financing (short-term debt, medium-term debt and long-term debt financing) except the study of Edore and Ujuju (2020) but focused on consumer goods firms listed in the Nigeria while this study investigated effects of the three forms of debt financing on financial performance focusing on listed industrial goods manufacturing firms considering their contribution to economic growth and development. Even though, Weli (2014) studied debt financing and profitability of selected 17 industrial goods listed firm in Nigeria from 2011-2013, the study was carried out 7years age and with the introduction of some economic policies and financial support to improve the industrial goods sector of the economy necessitated a gap. This study filled the gap by introducing three major forms of debt financing (long-term debt, medium-term debt and short-term debt) as measure to debt financing and ascertain the extent of their effects on Return on Assets (ROA) as measure for financial performance from 2019-2023 for the eleven listed and still active industrial goods manufacturing firms in Nigeria. This study further established the extent of relationship and effect between the debt financing and financial performance as to reveal whether debt financing is the rationale behind poor financial performance of listed industrial goods manufacturing firms in Nigeria.

3. METHODOLOGY

3.2 RESEARCH DESIGN

This study used ex-post facto research design. This is because the researcher cannot manipulate the independent and dependent variables as they exist in the already audited financial statements for the periods under study.

3.8 METHOD OF DATA PRESENTATION AND ANALYSIS

The data of this study were presented and analyzed based on the three research question and the three hypotheses formulated. The data were presented in panel form. The panel data were subjected

to descriptive statistics (such as mean, median, standard deviation, skewness, minimum and maximum) and hypothesis were tested using the panel regression model (Ordinary Least Square). The panel regression technique were employed to enable the researcher investigate the level of influence that forms of debt financing (independent variables) has on financial performance (dependent variable) over 5 years (time series) with a sample of listed industrial goods manufacturing firms (cross-section) at a 0.05 level of significance.

3.11 MODEL SPECIFICATION

The model of this study was built on Maina and Ishmail (2014) on the effect of debt financing on the corporate performance. However, the model of that study is as thus;

$Y_{it}=\alpha_0 + \beta_1 TATS_{it} + \beta_2 LTDS_{it} + \beta_3 STDSit + SIZE + e_{it}$ -------- equation 1

Where,

$Y_{it=}$ (Return on Assets) ROA

Therefore, the model were modified for this study as below;

$ROA= f(STD+ MTD + LTD)$ ---------- equation 2

$ROA= \beta_0 + \beta_1 STD + \beta_2 MTD + \beta_3 LTD + e_{it}$ ---------- equation 3

To maintain same unit of measures, the variable will be logged as follows;

$ROA= \beta_0 + \beta_1 logSTD + \beta_2 logMTD + \beta_3 logLTD + e_{it}$ ------- equation 4

Where,

ROA = Return on Asset (ROA) for firm i in time t as a measure of financial performance (Net profit after tax/total Assets)

α_0 = Constant term

β_1 = Coefficients of the explanation variable

e = error term

STD_{it} = Short-term debt for listed sampled firm i in time t (total value of short-term debt for each sampled firm)

MTD_{it}= Medium-term debt for listed sampled firm i in time t(total value of medium-term debts for each sampled firm)

LTD_{it} = Long-term debt for listed sampled firm i in time t(total value of long-term debt for each sampled firm).

4.1 Data Presentation

4.2 Descriptive statistics test

Descriptive statistics test was carried out to examine the characteristics of the dependent and independent variables. The descriptive result is presented in the table 1 below.

Table 2: Descriptive statistics result

	LROA	LLTD	LMTD	LSTD	INFL	LEXCR
Mean	-2.565591	12.81826	12.85433	15.19123	8.402564	5.634149
Median	-2.385967	11.80418	11.92983	14.05763	8.300000	5.723258
Maximum	-1.108663	19.16932	18.57332	19.83307	9.000000	5.726717
Minimum	-5.521461	5.545177	9.115480	12.27994	8.100000	5.286650
Std. Dev.	1.014937	3.710976	2.779561	2.446428	0.322398	0.178848
Skewness	-1.346256	0.192562	0.735557	0.873978	1.136566	-1.460054
Kurtosis	4.693609	2.232859	2.484319	2.215251	2.734646	3.132496
Jarque-Bera	16.44164	1.197342	3.948923	5.965672	8.511006	13.88495
Probability	0.000269	0.549541	0.138836	0.050649	0.014186	0.000966
Sum	-100.0580	499.9121	501.3190	592.4578	327.7000	219.7318
Sum Sq. Dev.	39.14371	523.3111	293.5865	227.4304	3.949744	1.215496
Observations	39	39	39	39	39	39

Sources: Descriptive Analysis, 2024 from E-view 9.0 version

Table 2: above shows the descriptive statistical analysis between the dependent and independent variables. The mean is the average value of the series which is determined by dividing the total value of the series by the number of observations. The average percentage of Return on Assets (ROA) across the listed and active industrial goods manufacturing firms in Nigeria within the period under study (2019-2023) stood at -2.57%. This indicates that the volume of return on assets among the industrial goods manufacturing firms in Nigeria is very low. Financial performance measured as return on assets has minimum and maximum values of -5.521461 and -1.108663 respectively.

The long-term debt (LTD) averaged 12.81826 over the study period. It implies that listed and active industrial goods manufacturing firms in Nigeria maintain moderate long-term debt component in their capital structure which might influence financial performance over the years. The minimum and maximum values of long-term debt are 5.545177 and 19.16932 respectively.

The value of medium-term debt (MTD) stood at 12.85433on average and this shows that medium-term debt exerts moderate influence on the financial performance of listed and active industrial goods manufacturing firms in Nigeria. This suggests that medium-term debts have moderate effects on activities of listed and active industrial goods manufacturing firms in Nigeria with respect to their financial performance. The medium-term debt has minimum value of 9.115480and the maximum value of 18.57332.

The value of short-term debt (STD) stood at 15.19123on average and this shows that short-term debt exerts relative moderate influence on the financial performance (return on assets) of industrial goods manufacturing firms in Nigeria. This suggests that industrial goods manufacturing firms in Nigeria considers short-term debt in their capital structure and operations and as such, exerts pressure on the financial performance of the industrial goods manufacturing firms in Nigeria. The short-term debt has minimum value of 12.27994 and the maximum value of 19.83307.

The standard deviation is a measure of spread or changes in a series of data. The standard deviation for ROA, LTD, MTD, STD, INFL, and EXCR are 1.014937, 3.710976, 2.779561, 2.446428, 0.322398, and 0.178848 respectively. The values of ROA, LTD, MTD, STD, INFL, and EXCR shows reasonable spread of the variable and as such, predictable and capable of exerting influence on financial performance of industrial goods manufacturing firms in Nigeria.

4.3 Correlation Test

The study used correlation test to ascertain the strength and magnitude of the influence of the independent variables on the dependents variables. The correlation test result is presented in table 3 below.

Table 3: Correlation Matrix

	ROA	LTD	MTD	STD	INFL	EXCR
ROA	1.000000	0.139197	0.374275	0.218773	-0.018223	0.093194
LTD	0.139197	1.000000	0.574289	0.693075	0.084299	-0.049545
MTD	0.374275	0.574289	1.000000	0.884219	-0.102431	0.104657
STD	0.218773	0.693075	0.884219	1.000000	-0.142808	0.151901
INFL	-0.018223	0.084299	-0.102431	-0.142808	1.000000	-0.953895
EXCR	0.093194	-0.049545	0.104657	0.151901	-0.953895	1.000000

Source: Empirical Analysis, 2024 From E-view 9.0 version

The correlation test result in table 3 above indicates that LTD has positive relationship with ROA of industrial goods manufacturing firms in Nigeria. This is confirmed by the value of the coefficient estimate as presented on table 3 above. This implies that LTD has direct relationship with financial performance of industrial goods manufacturing firms in Nigeria, meaning that increase in the level of

long term debt leads to increase in financial performance of industrial goods manufacturing firms in Nigeria. The correlation test result also shows that Medium Term Debt (MTD) has positive relationship with the financial performance of industrial goods manufacturing firms in Nigeria. This is confirmed by the value of the coefficient estimate as presented on table 3 above. This implies that Medium Term Debt has direct relationship with the performance of industrial goods manufacturing firms in Nigeria indicating that increase in the level of the medium term debt leads to increase in financial performance of industrial goods manufacturing firms in Nigeria.

In the same vein, the correlation test result as shown in table 3 above indicates that short-term debt (STD) has positive relationship with the financial performance of industrial goods manufacturing firms in Nigeria. This is confirmed by the value of the coefficient estimate as presented on table 3 above. This implies that Short-Term Debt has direct relationship with the financial performance of industrial goods manufacturing firms in Nigeria indicating that increase in the level of the short-term debt leads to increase in performance of industrial goods manufacturing firms in Nigeria.

Conversely, the correlation test result as shown in table 3 above indicates that inflation rate; that is one of the control variables (INFL) has negative relationship with the financial performance of industrial goods manufacturing firms in Nigeria. This is confirmed by the value of the coefficient estimate as presented on table 3 above. This implies that inflation rate has inverse relationship with the performance of industrial goods manufacturing firms in Nigeria indicating that increase in the inflation rate leads to decrease in financial performance of industrial goods manufacturing firms in Nigeria.

Meanwhile, table 4 below presents the baseline regressions results using Pooled OLS. Fixed Effect Model (FEM) and Random Effect Model (REM).

Table 4: Panel Regression Results

Series	Pooled OLS (1)	FE OLS (2)	RE OLS (3)
C	-8.216913	-4.237111	-2.387589
	[0.0000]	[0.0003]	[0.0228]
LLTD	-0.400288	-1.334086	-4.219715
	[0.6915]	[0.1942]	[0.0002]
LMTD	3.147064	1.242703	3.592477
	[0.0035]	[0.2255]	[0.0011]
LSTD	-4.656721	-0.658215	1.040315
	[0.0001]	[0.5164]	[0.3058]
INFL	7.524748	6.897695	2.445818
	[0.0000]	[0.0000]	[0.0200]
LEXCR	8.5400	5.778691	2.319066
	[0.0000]	[0.0000]	[0.0267]
Observations	39	39	39
R-Squared	0.766504	0.776504	0.570555
Adj. R-squared	0.650286	0.660286	0.540033
F-Value	7.681456	6.681456	7.447969
	[0.0000]	[0.0000]	[0.0002]
Hausman Test =		p-value = 1.0000	

Sources: Empirical Analysis, 2024, from E-view 9.0 version

In table 4, the study considered the pooled regression result, fixed effect and random effect ordinary least square (OLS) regression results. Observing this result, the study pools all the 39 observations together and ran the regression model, neglecting the cross section and time series nature of the data. It was found that the R-squared value for the pooled regression model was 0.766504 indicating that 76.65% of the total variation in return on assets (ROA) of selected industrial goods manufacturing firms in Nigeria is explained by the explanatory variables, debt management. Two sub-variables, medium term debt (MTD) and short-term debt (STD) in addition to the control variables,

inflation rate (INFL) and exchange rate (EXCR) were found to have significant influence on financial performance (return on assets) of selected industrial goods manufacturing firms in Nigeria. This is confirmed by their respective P-values [0.0035], [0.0001], [0.0000] and [0.0000] for medium-term debt, long-term debt, inflation rate, and exchange rate. The major problem with pooled regression model is that it does not distinguish between the various industrial goods manufacturing firms in Nigeria that are in the sample. In other words, by combining different industrial goods manufacturing firms in Nigeria by pooling, the heterogeneity or individuality that may exist among the eleven (11) selected industrial goods manufacturing firms in Nigeria is not considered.

In order to allow for heterogeneity or individuality among the industrial goods manufacturing firms in Nigeria by allowing the companies to have its own intercept value; the fixed effect model (FEM) was applied. Fixed effect model was therefore applied because it is time invariant indicating that although the intercept may change across the industrial goods manufacturing firms in Nigeria, it however does not change over time. The R-squared value of 0.776504 indicates that 77.65% of the total variation in financial performance proxy by return on assets (ROA) of the industrial goods manufacturing firms is explained by the explanatory variables namely, LTD, MTD, and STD in addition to INFL and EXCR (control variables). However, the explanatory variables, LTD, MTD, and STD were found to have insignificant influence on financial performance (return on assets) of the industrial goods manufacturing firms as confirmed by their respective P-values of [0.1942], [0.2255], and [0.5164].

The random effect regression model was also applied in order to account for the unobserved effects in fixed effect model. The random effect model shows that the R-squared value of 0.570555 indicates that 57.05% of the total variations in return on assets(ROA) are accounted for, by the explanatory variables, LTD, MTD, and STD in addition to INFL and EXCR (control variables). Furthermore, it was found that two of the explanatory variables, long-term debt (LTD) and Medium-term debt (MTD) in addition to the control variables (INFL and EXCR) have significant influence on return on assets (ROA) as confirmed by their P-values of [0.0002], [0.0011],[0.0200] and [0.0267] respectively.

The study applied the Hausman test. The Hausman test was used to select the model (fixed effect or random effect) that will be mostly appropriate for estimation. Hausman test null Hypothesis states that Random effect model was appropriate while its alternative hypothesis states that fixed-effect model was appropriate. The selection of either fixed effect model or random effect model is based on the statistical significance of the P-value. From table 4 above, the Hausman test statistics P-value is [1.0000]. It implies that its P-value is insignificant because it is more than 5% (0.05) chosen level of significance. Thus, the null hypothesis was upheld. Therefore, it is concluded that random effect model was desirable for prediction.

The panel (random effect) regression result presented in table 4 above, reveals that Long-term debt (STD) and Medium-term debt (MTD) in addition to the control variables (INFL and EXCR) have significant effects on Return on Assets (ROA) while short-term debt has insignificant effect on Return on Assets (ROA) of the industrial goods manufacturing firms listed in Nigeria. Although, one out of the three variables in addition to the control variables had negative significant effects which was not in conformity with the apriori expectation that rising level of Long-term debt would have positive effects on the financial performance of industrial goods manufacturing firms in Nigeria, it was understandable that the higher the number of long-term debt, the higher the cost of financing that would put pressure on the profitability of the companies. The result shows that a unit increase in the value of long-term debt employed in industrial goods manufacturing firms will lead to -0.018608 unit decrease in the financial performance of industrial goods manufacturing firms in Nigeria. It is a moderate indication of inverse relationship between long-term debt (LTD) and return on assets (ROA) of industrial goods manufacturing firms in Nigeria.

The panel (random effect) regression result presented in table 4 also revealed that medium term debt (MTD) and control variables (INFL and EXCR) have positive significant effect on financial performance (ROA) of industrial goods manufacturing firms in Nigeria. This result is in conformity with the prior expectation that rising level of medium term debt brings about positive significant capital expansion which consequently affect on financial performance of industrial goods manufacturing firms in Nigeria.

The result further shows that a unit increases in the medium-term debt (MTD) will lead to 0.023938unit increase in the financial performance of industrial goods manufacturing firms in Nigeria. On the contrary, short-term debt shows insignificant effect on return on assets of industrial goods manufacturing firms in Nigeria.

4.3 Test of Research Hypotheses

In testing the first, second, and third hypotheses, the P-values of the t-statistics in table 4 (Panel 4) was used. The hypotheses were tested considering random effect model. Panel regression result obtained in table 4 formed the basis for the test of hypotheses first, second, and third.

Step 1: Restatement of the null Research Hypothesis

Step 2: Decision Rules

Decision Rule 1: Accept the alternate hypothesis and reject the null hypothesis if the P-value is less than the chosen level of significance (0.05). It implies that the estimated variable has significant effect on the dependent variable.

Decision Rule 2: Uphold the null hypothesis and reject the alternate hypothesis if the P-value is insignificant impact on the dependent variable.

HYPOTHESIS ONE

$H0_1$: Short-term debt has no significant effect on financial performance of industrial goods manufacturing firms in Nigeria.

RESULT OF HYPOTHESIS TEST

Based on the regression result presented in table 4 (Panel 4), the coefficient of short-term debt (STD) is 1.12E-10 while the P-value is [0.3058]. The parameter of STD is positive and insignificant in measuring the performance (ROA) as confirmed by its P-value. Since 5% (0.05) level of significance is less than the P-value [0.3058], the study upheld the null hypothesis and concludes that the short-term debt (STD) value has insignificant effect on the financial performance (ROA) of industrial goods manufacturing firms in Nigeria. The study, accordingly upheld the null hypothesis since the p-value is greater than 0.05 at 5% level of significance.

HYPOTHESIS TWO

$H0_2$: Medium-term debt has no significant effect on financial performance of industrial goods manufacturing firms in Nigeria.

RESULT OF HYPOTHESIS TEST

Based on the regression result presented in table 4 (Panel 4), the coefficient of mediun-term debt (MTD) is 0.023938 while the P-value is [0.0011]. The parameter of MTD is positive and significant in measuring the performance (ROA) as confirmed by its P-value. Since 5% (0.05) level of significance is less than the P-value [0.0011], we rejected the null hypothesis and conclude that the medium-term debt (MTD) value has significant effect on the financial performance (ROA) of industrial goods manufacturing firms in Nigeria. The study, accordingly rejected the null hypothesis since the p-value is greater than 0.05 at 5% level of significance.

HYPOTHESIS THREE

$H0_3$: long-term debt has no significant effect on financial performance of industrial goods manufacturing firms in Nigeria.

Step 3: Decision

Based on the regression result presented in table 4 (Panel 4), the coefficient of long-term debt (LTD) is -0.018608 while, the P-value is [0.0002]. The parameter of LTD is negative and significant in measuring the financial performance (LTD) as confirmed by its P-value. Since 5% (0.05) level of significance is greater than the P-value [0.0002], the alternate hypothesis was accepted and concludes that the long-term debt value has significant effect on financial performance (ROA) of industrial goods manufacturing firms in Nigeria. The study accordingly rejected the null hypothesis since the p—value is less than 0.05 at 5% level of significance.

4.4 DISCUSSION OF FINDINDS

From the outcome of descriptive statistics analysis and literature reviewed, it is evidenced that short-term debt exerts relatively moderate effects on financial performance of industrial goods manufacturing firms in Nigeria. These was supported with the outcome of hypothesis testing which

showed that short-term debt financing has insignificant effects on financial performance (ROA) of industrial goods manufacturing firms in Nigeria. This indicates that any increase in value of short-term borrowing by will not result noticeable improvement or positive effects on the profitability (ROA) of the firms. The finding is in agreement with the study of Usman (2019), Lorpev and Kwanum (2012) which revealed that short-term debt have no significant impact on the financial performance of consumer goods listed companies in Nigeria and short-term debt to total assets is insignificant to ROA as measure to performance respectively. Furthermore, the findings is also in connection with the study of AL-Taani (2013) and Muchiri (2016), their findings revealed that short-term debt has insignificant relationship with return on assets and short-term debt has insignificant negative relationship with return on assets respectively. Therefore, it is evidenced that having greater percentage of short-term debt financing structure in a geared listed manufacturing firms with result to unnoticeable positive improvement or increase in the profitability of such firms.

From the outcome of description statistics test and test of hypothesis two, it was evidenced that medium-term debt finance has significant positive effects on financial performance of industrial goods manufacturing firms in Nigeria. The study concluded that an increase in value of medium-term debt will results to an increase in the profitability of the company. This shows that as firms increase value of their medium-term borrowed, the more their financial performance (ROA) will increase positively. Though very few studies has considered investigating effects of medium-term debt financing as independent variable on financial performance and among the few, finding of Alkhazaleh and Al-Dwirg (2018) is in agreement with finding of the study, which revealed that finance lease has become an alternative to medium-term debt and that medium-term had a positive impact on financial performance (ROA). This indicates that more increase in level of medium-term debt will result to firms making more profit.

Finally, after the literature review and outcome of descriptive statistics test, the finding of the study concluded that long-term debt has significant negative effects on financial performance of listed industrial goods manufacturing firms. These mean that any increase in long-term debt will result to decrease or negative effects on the profitability of listed manufacturing firms in Nigeria. The finding is in agreement with the findings of Dada (2014), Aziz and Abbas (2019) and Abor (2007) which revealed that long-term debt financing has negative effects on financial performance (as increase in long-term debt will result to decline in profitability), that long-term debt financing have a negative but also significant impact on firm's performance and that long-term debt financing has a significant negative relationship on firm's financial performance respectively. Furthermore, the finding of Matarirano and Fatoki (2010) is also in agreement with the findings of the study which revealed that use of long-term debt financing has a negative impact on the profitability of manufacturing firms. Therefore, it showed from the finding that financing those firms with more of long-term debt will continue to result in noticeable decline or decrease on profitability of industrial goods listed manufacturing firms.

5.2 Conclusion

Based on the findings the following conclusions were drawn:

The study which examined the effects of debt financing on financial performance of listed industrial goods manufacturing firms in Nigeria for the period of 2019-2025, therefore concludes that debt financing has significant effects on firm's financial performance for listed industrial goods manufacturing firms in Nigeria. The study strictly focused on the three major forms of debt financing and their extent of significant effects on return on assets (ROA) as measure for financial performance, it therefore conclude that short-term debt has unnoticeable effect on financial performance of manufacturing listed firms which indicates that any increase in units of short-term borrowing by firms will not result to noticeable positive increase on the profitability of the firms. These might be the required short period of its repayment. Therefore, listed manufacturing firms in Nigeria should identify optimum level for short-term debt in their gearing structure and maintain as to reduce financial cost risk.

Apparently, medium-term debt financing has positive significant effect on financial performance of listed industrial goods manufacturing firms. These conclude that any increase in unit level of medium-term debt will definitely result an increase in the profitability or financial performance for

those firms. Therefore, Firms should sort for more medium-term debt than short-term and long-term debt financing as to increase the profitability.

Finally, the study concludes that long-term debt financing has negative significant effect on financial performance of listed industrial goods manufacturing firms in Nigeria. Therefore, long-term debt financial contributes to reduction in profit of firms. The study further concludes that firm should maintain a very low level of long-term debt and avoid increase in level of long-term debt as to increase their financial performance.

5.3 Recommendations

Based on the findings of the study, management of listed industrial goods manufacturing firms in Nigeria is expected to be very careful is setting optimum level of debt financing option, as to ensure they maximize the profit through the followings:

1. The study recommends to management of listed industrial goods manufacturing firms in Nigeria to reduce borrowing more of short-term debt for their operations since the short-term debt financing has unnoticeable positive effects on their financial performance. That is management should ascertain and uphold a low optimum level of short-term debt financing as to maintain healthy working capital only, since from the findings short-term debt has no noticeable positive contribution to firm's profit.
2. Furthermore, management of listed industrial goods manufacturing firms should ensure they finance their operations with more of medium-term debt financing (that is, if faced with debt financing option) than using long-term debt or short-term debt. Since the increase in medium-term debt will result to more increase on the profitability or financial performance of the listed industrial goods manufacturing firms in Nigeria. This is consistent with static trade-off theory and pecking order theory. Therefore, since marginal cost of medium-term debt will not exceed the return on assets, management are expected to go for more medium-term after exhausting retained earnings option as increase in medium-term debt financing increases firm's profitability.
3. Finally, since the findings revealed that long-term debt (LTD) financing has a significant negative effect on financial performance, management are recommended to reduce their long-term borrowing level as to avoid or reduce the negative effects it will have on financial performance of their manufacturing firms as higher level of long-term debt will bring about higher cost of finance that would put financial pressure on the firm's profitability. Therefore, listed industrial goods manufacturing firms in Nigeria should sort for more of retained earnings than increasing long-term debt volume as more increase in long-term debt will result to decrease in firm's profitability thereby reducing their borrowing chances and earnings per share value.

5.4 Limitation of the Study

The major challenge of the study was the limited availability of local literature on debt financing and its effects or relationship on corporate entity's financial performance posed. In West Africa region, they have not been a specific study on debt financing alone and its effects on financial performance for listed industrial goods manufacturing firms except that of the study of Weli (2013). Other study of such was only found in East Africa (Karuma, Ndambiri and Oluchi 2028) which investigated on the effects of debt financing on financial performance of manufacturing firms in Nairobi. Similar to such work is that of (Jean 2017) which compares effects of debt financing on business performance between International and Mortgage Bank and Bank of Kigali in Rwanda. The two mentioned studies focused not in West Africa, thereby posing a threat on availability of local literature on the study. Though, the intention is to localize the research, however it was difficult to gather reasonable local literature in this area.

Again, limitation of the study was gathering of statistical data from various financial statements and account of the fourteen actively listed industrial goods manufacturing firms grouped under industrial goods sector of Nigeria Stock Exchange for the period under study posed a huge threat. It is on that ground that the study was limited to eleven industrial goods manufacturing firms listed and still active in the Nigeria Stock Exchange within the period under study which is believed to contribute

more to economic growth and development. However, efforts were made to overcome the identified challenges.

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Table1

S/N	NAMES OF COMPANIES	TRICKER	DATE OF INCORPORATION	DATE LISTED	ACTIVE OR NOT-ACTIVE TILL 2023
1	A.G Leventis Nig.	AGLEVENT	1978	1978	Not active till 2023
2	Austin Laz & Company	AUSTINLAZ	1982	2012	Still active till 2023
3	Beta Glass Co.	BETAGLAS	1974	1986	Still active till 2023
4	Cement Company of Northern nig.	CCNN	1962	1962	Not active till 2023
5	Cutixplc	CUTIX	1982	1987	Still active till 2023
6	Dangote Cement	DANGCEM	1992	2010	Still active till 2023
7	Greif Nigeria	VANLEER	1940	1940	Still active till 2023
8	Lafarge Africa	WAPCO	1959	1979	Still active till 2023

9	Berger paints plc	BERGER	1959	1959	Still active till 2023
10	CAP Plc	CAP	1965	1978	Still active till 2023
11	Meyer Plc	MEYER	1960	1979	Still active till 2023
12	Notore Chemical IND.	NOTORE	2005	2018	Active after the study base year 2019
13	Portland paints & products Nig. plc	PORTPAINT	1985	2009	Still active till 2023
14	Premier paints plc	PREMPAINT	1982	1995	Still active till 2023

Source: Nigerian Stock Exchange fact book January, 2024