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SHORT TERM DEBTAND RETURN ON ASSETS OF LISTED INDUSTRIAL GOODS MANUFACTURING FIRMS IN NIGERIA

Dr. Okpolosa Matthew Onyebuchi & Osutu Sunny Ikechuchukwu
Department of Accounting, Faculty of Management Sciences,
Ignatuis Ajuru University of Education, Rumuolumeni, Port Harcourt, Rivers State

Email: *onyebuchi,okpolosa55@gmail.com*

Abstract
This study investigated the effect of debt structure on financial performance of listed industrial goods manufacturing firms in Nigeria. The objective was to determine short-term debt and return on assets of listed industrial goods manufacturing firms in NigeriaThe study adopted positivism philosophy and ex-post facto research design. The population of the study consists of twelve (12) industrial goods manufacturing firms listed on the Nigerian Exchange Group were sampled to six using purposive sampling technique. The data used in this study were sourced from annual reports and statement of accounts of the selected companies. This study employ descriptive statistics and Panel Least Square (PLS) estimate using panel data from 2015 to 2024 covering a period of ten (10) years for eight listed industrial goods manufacturing firms. The study result disclosed that the effect of short-term debt on return on assets of listed industrial goods manufacturing firms in Nigeria is significant. It was suggested amongst others that to curb the significant effect of short-term debt on return on assets, the management of the listed industrial goods firms should maximize the functions of the risk committee formed to measure the risks involved in debt financing.

Keywords: Short Term Debt, Return on Assets, Debt Structure, Financial Performance

Introduction
In emerging economies, laws and regulations related to accounting requirements, information disclosure, and securities transactions are unable to operate efficiently. These problems are created new opportunities for managers to manipulate debt structure for seeking benefits at the cost of shareholders (Pham & Nguyen, 2020). There will be two types of debt structure which are long-term debt and short-term debt. Long-term debt financing indicates total debt repayable beyond one year while short-term debt requires companies to obtain capital quickly within one year (Jabar & Akinadewo, 2023). Therefore a company will take a policy by way of debt, debt is one of the funding decisions that come from external. This debt policy is intended to increase the company's funds to be used to meet the company's operational needs. Debt has an important influence on the company because apart from being a source of funding for expansion, debt can also be used to reduce agency conflicts. The availability of sources of funds and capital greatly affects the survival and development opportunities of a company (Dian et al., 2022).

According to Jonah et al (2021), the major financing options available to organisations are equity and debt. Debt structure is one of the financial mixes that can influence financial performance of an organization. When an organization employs debt, it is expected to pay interest to debt holders and prompt payment of debt is dependent on the performance of such organization (Jonah, 2021). When an organization responds slowly to interest payment, the debt holders may not be motivated to give more and if the company uses more of debt than equity the profitability of such organization may likely suffer because the source of finance is decreasing. There may be break-down in the overall financial performance of the organization (Kale, 2014). The role of debt financing in magnifying the return of the shareholders' based on the assumptions that the fixed charges on funds (such as the loan from financial institutions and other sources or debentures) can be obtained at a cost lower than the firm's rate of Return on investment (Ganiyu et al., 2019). Fund requirement (capital structure) is not the same for all firms. The firm's asset, structure, and system is a determinant of debt structure, which is why this study is focused on oil and gas firms in Nigeria, given that they are one subs-sector. Thus, it is important to know if the use of debt structure has relationship with financial performance of listed oil and gas companies in Nigeria.

Despite the increase of the debt-financing structure, debate among academics and researchers in the field of corporate finance over the past few decades, have been in finding an optimal capital structure remains an indefinable concern (Onyenwa & Glory, 2017). Debt structure comprises of short-term debt and long-term debt. Short-term debt is a type of debt, which has maturity tenure of one year or less, and is recorded as a current liability in a firm's statement of financial position. Jonah et al (2021) posited that short term debt financing has a maturity period of one year or less. They are re-paid quickly within 90 – 120 days. Term loans with short maturities help to meet immediate need for financing without long term commitment (Avci, 2016). The cost of servicing short term debt is less that tax paid on the firm. Short term loans usually offer lower interest charges, and most lenders do not charge interest until all credit allowance period is breached (Kahl et al., 2015). Short-term assets and liabilities management are critical because they lay bare the financial stability of the firm and the market (Peirson et al, 2014). Short term debt has been observed by various scholars and researchers to have influence on profitability. David et al (2020) found that firms can make use of short-term financing which may influence profitability of the firm depending on the cost of the source of financing to that particular firm. Diamond and He (2014) observed that firms which had high short-term debt levels when compared to their long-term debt performed better than their peers. Onyenwe and Glory (2017) observed that firms may have a certain ration of short-term liabilities in its financing structure which they feel are optimum in enhancing performance and profitability.

Hypotheses

The following research questions guided the study:

Ho_1: The effect of short-term debt on return on assets of listed industrial goods manufacturing firms in Nigeria is not significant,

Ho_2: The effect of short-term debt on return on equity of listed industrial goods manufacturing firms in Nigeria is not significant,

Short Term debt

According to David (2017), STD is a form of debt structure incurred by business organizations to cater for recurrent expenditures. This form of debt is commonly due for payment within a short period that is within twelve months (1year). Short term debt structure has a maturity period of one year or less, they must be repaid quickly within 90 – 120 days. According to Omaliko and Okpala, (2020), short-term debt is an account shown in the current liabilities portion of a firm's statement of financial position and it comprises of any debt incurred by a firm that is due within a year period. Term loans with short maturities help to meet immediate need for financing without long term commitment (Caroline & Willy, 2015). The cost of servicing short term debt is less taxing on the company. Short term loans usually offer lower interest charges, and most lenders do not charge interest until all credit allowance period is breached.

In reality, the interest charges on short term debt are small compared to the long-term debt. Wambua (2019) perceived STD as the most reliable corporate debt. This is because it requires a short period for processing and little amount as interest which would be completed within a short period. As credited by the world bank financial report (2016), STD contributes to the survival of many businesses across the globe, thus promote manufacturing firms like consumer goods firms in Nigeria as they will have higher level of cash to run their day-to-day operations. Consequently, firms have free access to short term debt as no asset is required as collateral security. However, some researchers (David, 2017; Ahmed, 2017; Abeywardhaha & Magoro, 2017) reported a negative relationship between STB and performance of firms. Caroline and Willy (2015) in their study on debt financing suggest that aggressive liquidity policy combine the higher levels of normally lower cost short-term debt and less long -term capital. Although capital costs are reduced, this increases the risk of a short -term liquidity. They established that total and short term debt is positively related to firm's profitability, which might be the most important factor in accessing outside financing in countries with weak collateral laws. From their studies they also found out that a negative relation between tangibility and short-term debt and a positive relationship between tangibility and long-term debt exists.

According to Jonah et al (2021), the problem associated with the continuous use of short-term debt is the default risk which is associated with the lender not willing to grant more short-term debt to the borrower. Also, another potential risk in the use of short-term debt is volatility in interest rate which could spike the interest expense associated to those debts. When companies feel that the interest savings will more than compensate for the spike in interest rate the firm could continue using short term debts as permanent means of financing or move to secure long-term debts to fund its operation on a permanent basis. The study by Aamir et al (2021) sought to establish the relationship between Debt financing and firm performance: Empirical evidence from the Pakistan Stock Exchange. The study found out that there was a negative impact of short term debt on return on assets. Mehwish (2019) analysis showed that firms with a higher amount of short-term debt will hold higher levels of cash, because it might lower the risks of the non -renewal the short -term debt. Shubita and Alsawallah, (2012) argued that increase in short term debt finance is associated with decrease in firm profitability and they concluded that a significant negative relationship exists. This is because short-term debt tends to be less expensive and increasing it with a relatively low interest rate will lead to an increase in profit levels and therefore performance (Jonah et al., 2021). The short-term debt (STD) demonstrates the financial obligations of a company that are expected to be paid off within one year. Based on the research of Hatem (2017), the short-term debt is usually not enough to bring short-term assets and the firm may have a higher amount of financial expenses if it contracts the longterm debt. As a result, the financial performance of the company will be influenced and its profits generated will also be decreased.

Return on Assets

Capital employed must be used productively. Capital is mobile and if not used productively, will eventually move to where it can generate a competitive return. Return on assets (ROA) is the first main measure and most widely used to represent the profitability of the firm. By using return on assets (ROA), the average amount of profits produced by each unit of assets can be measured. In general, the higher value in return will result in a more efficient management for a company in utilizing its assets (Harelimana, 2017). Hence, the return on assets is a famous indicator that applied to determine the efficiency of a company in managing its assets (Petersen & Schoeman, 2008). The main parts of the return on assets (ROA) are the net profit and total assets and both of them can be found from the annual report of the companies selected. ROA provides a measure for assessing the overall efficiency with which the assets are used to produce net income from operations. It also is indicative of management's effectiveness in deploying capital, because it is certainly possible to be efficient and yet poorly positioned in terms of how capital is being utilized (Orlu et al., 2022).

The return on assets financial ratio is a measure of the relationship between net profit or earnings and the total assets of the company. Net asset is not as preferred as the return on equity ratio in measuring the profitability of a company because of reasons such as the variability in the asset composition between firms or across different industry or sectors, generally because some capital intensive industries such as automobile manufacturers or utilities industry will mostly report lower return on asset as compared to firms in the service industry such as law firms, accounting firms or software development firms. Some capital-intensive firms such as manufacturing firms may require more expensive equipment which raises the nominal value of the firm's assets as compared to service providing firms (Hassan et al.. 2022). In the use of return on assets to determine the profitability of firms, it is therefore important to consider peer analysis before drawing conclusions. The capital structure of a firm can significantly effect the return of asset, therefore when conducting peer analysis, the analyst may consider adding back the interest and tax expenses to net income. As stated earlier, this measure of profitability is not the most preferred, rather it is considered by many analysts as a measure of operating efficiency rather than the profitability of the firm (Gillingham, 2015). Return on assets, is calculated by dividing profit after tax (PAT) and interest by total assets. Which can be interpreted as a ratio of income to its total assets Return on assets is probably the single best overall measure of operating performance. It ties together the results of operations with the resources used to produce those results. It is also relatively easy to interpret (Orlu et al., 2022).

The link between short-term debt and financial performance

The links between short-term debt and financial performance has indicated a positive, negative, significant and insignificant effect from prior studies. Studies that indicated positive and significant include; Horsfall (2023) study disclosed that short term debt (STD) was found to have significant effect on financial performance on ROCE, with a positive relationship on NPM of listed oil and gas firms in Nigeria. The study therefore, concluded that short term debt is one of the strong determinants of the financial performance of listed oil and gas firms in Nigeria. Hassan et al (2022) results indicate a significant but negative relationship between short term debt and return on assets. Aamir et al (2021) results indicated that long-term debt has significant impacts on firm performance in profitability. Efeeloo (2021) findings revealed that short term debt had positive influence on book value per share while firm size had positive and significant relationship. It was recommended that financial managers of oil and gas companies should ensure optimal financing mix that will ensure greater shareholders wealth at all times. Aniefor et al (2019) results of the panel regression technique revealed that short-term debt to asset ratios positively influence the performance of consumer goods firms in Nigeria.

However, the following prior studies indicated negative and insignificant and they include; Jabar and Akinadewo (2023) discovered that short-term debt profile has a negative insignificant effect on financial performance captured with earnings per share of listed consumer goods firms in Nigeria. Dian et al (2022) result of the study state that the Short term debt ratio (STDA) has no effect on Return on Assets. Adam et al (2021) results indicated that long-term debt (LTD) have positive and insignificant effects on return on asset (ROA), which means that the increase in the long-term debt will lead to an increase in the return on assets. Diana and Doni (2021) results found that short term debt has a negative effect on company profitability. Edward et al (2020) result indicated that short tenured debt finances do not positively and significantly impact return on assets. Also, findings indicated that short tenured debt finances do not positively and significantly impact return on equity

The Static Trade-Off

The theory coined by Miller and Modigliani (1958) and later expounded by Myers (1984). The trade-off theory refers to the idea that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits. Trade-off theory allows the bankruptcy cost to exist. It states that there is an advantage to financing with debt (namely, the tax benefit) and that there is a cost of financing with debt (the bankruptcy costs and the financial distress costs of debt). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing. Empirically, this theory may explain differences in D/E ratios between industries, but it doesn't explain differences within the same industry (Ifurueze et al., 2022)

The static trade-off theory of capital structure (also referred to as the tax based theory) states that optimal capital structure is obtained where the net tax advantage of debt financing balances leverage related costs such as financial distress and bankruptcy, holding firm's assets and investment decisions constant (Baxter, 1967 and Altman, 1984). In view of this theory, issuing equity means moving away from the optimum and should therefore be considered bad news. According to Myers (1984), firms adopting this theory could be regarded as setting a target debt-to-value ratio with a gradual attempt to achieve it. However, he suggested that managers will be reluctant to issue equity if they feel it is undervalued in the market. The consequence is that investors perceive equity issues to only occur if equity is either fairly priced or overpriced. As a result investors tend to react negatively to an equity issue and management is reluctant to issue equity (Orlu et al., 2022).

Criticisms of Modigliani and Miller Theory

This theory is criticized by many researchers objecting that there are no perfect capital markets in reality, although later the authors revised their earlier theory by incorporating tax benefit and argued that under market imperfection where interest payments are tax deductible, firm value will increase with the level of financial leverage (Modigliani and Miller, 1963).

The study is anchored on the static trade-off theory and this is so because in the context of this study, this theory implies that for companies to continue to perform financially well and not face distress, their financing structure is germane and hence managers have to ensure an optimal financing structure and this decision according to the theory will depend on the trade-off between tax benefit of debt and the costs of bankruptcy. Hence the theory directly identifies that an optimum financing structure is at the core of corporate survival and this is the focus of the study to examine what kind of financing mix will be beneficial for financial performance of companies.

Research Design

Research design is the determination of how to conduct a research and the methods used. The population of the study consists of Twelve (12) industrial goods manufacturing firms listed on the Nigerian Exchange Group. According to Gomez-Meija et al. (1987), pooling performance over a five-year time span reduces variability and provides a better long term indicator. In order to reduce the population size, judgmental sampling techniques were adopted to select the sample industrial goods manufacturing firms listed on the Nigeria Exchange Group during the period of 2015-20224. Firms whose data are adequate and consistently made their financial statements available to the respective Stock Exchange for the studied period were chosen for this study. Six (6) industrial goods manufacturing firms listed on the Nigeria Exchange Group was selected. They are:

1. AUSTIN LAZ & COMPANY PLC,

2. LaFarge Wapco Plc,
3. CUTIX PLC,
4. Berger Paint Plc,
5. TRIPPLE GEE COMPANY PLC,
6. MEYER PLC

This study adopted descriptive statistics, unit root test, diagnostic test and Panel Least Square (PLS) multiple regression with the aid of E-View 12.

Results
Test of Hypotheses
Statement of Hypotheses

Ho_1: The effect of short-term debt on return on assets of listed industrial goods manufacturing firms in Nigeria is not significant.

Decision Rule: Accept Ho if P > 0.05. Otherwise reject

Decision: The result in table 1 discovered that short-term debt had a positive t-value of **|2.815|** and a probability value of **0.007 < 0.05** indicating a significant positive effect of short-term debt on return on assets. This implies that an increase in short-term debt will improve the return on assets of listed industrial goods manufacturing firms in Nigeria. Thus the null hypothesis one is rejected which implied that the effect of short term debt on return on assets of listed industrial goods manufacturing firms in Nigeria is positive and significant.

Ho_1: The effect of long-term debt on return on assets of listed industrial goods manufacturing firms in Nigeria is not significant.

.**Decision Rule:** Accept Ho if P > 0.05. Otherwise reject

Decision: The result in table 1 discovered that long-term debt had a negative t-value of **|-2.305|** and a probability value of **0.025 <0.05** indicating a significant negative effect of long-term debt on return on assets. This implies that an increase in long-term debt will decrease the return on assets of listed industrial goods manufacturing firms in Nigeria. Thus the null hypothesis three is rejected which implied that the effect of long term debt on return on assets of listed industrial goods manufacturing firms in Nigeria is negative but significant.

Model II: Return on Equity (ROE) Model

ROE = f (STD, LTD, RCS) Equ. 3

This can be written in Ordinary Least Square (OLS) form as:

$ROE_{it} = a_o + a_1STD_{it} + a_2LTD_{it} + a_3RCS_{it} + U_t$ Equ. 4

$a_1>0; a_2>0l\ a_3>0$

Table 2 Model Two Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.736[a]	.542	.518	.77458	1.435

a. Predictors: (Constant), RCS, STD, LTD
b. Dependent Variable: ROE
Source: SPSS Output 2025

From Table 2 above, a positive correlation coefficient (R) of 0.736 was observed which indicates a strong relationship between the regressors (STD, LTD and RCS) and return on equity (ROE). The coefficient of determination (R2) of 0.542 suggests that a 54.2% variation in return on equity (ROE) is described by changes in the regressors (STD, LTD as well as RCS) while a 45.8% variation in return on equity (ROE) is described by factors other than those used in the model. Also, the table showed Durbin Watson in the statistic of 1.435 which is within the minimum value for autocorrelation as such the utility of the model was upheld by the researchers.

Table 3 Model Two ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.772	3	13.257	22.096	.000[b]
	Residual	33.599	56	.600		
	Total	73.370	59			

a. Dependent Variable: ROE
b. Predictors: (Constant), RCS, STD, LTD

The above table 3 disclosed that, the f-calculated value of |22.096| had a corresponding probability value of 0.000 indicating that, the overall model is statistically significant at 0.05 of short term debt (STD), long term debt (LTD) and risk committee size (RCS) and return on equity (ROE) of listed industrial goods manufacturing firms in Nigeria.

Table 4 Model Two Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.226	.666		1.840	.071
	STD	.583	.114	.651	5.093	.000
	LTD	.136	.157	.113	.867	.390
	RCS	.099	.102	.093	.971	.336

a. Dependent Variable: ROE
Source: SPSS Output 2025

Test of Hypotheses
Statement of Hypotheses

Ho_2: The effect of short-term debt on return on equity of listed industrial goods manufacturing firms in Nigeria is not significant.

Decision Rule: Accept Ho if P > 0.05. Otherwise reject

Decision: The result in table 4.8 discovered that short-term debt had a positive t-value of **|5.093|** and a probability value of **0.000 < 0.05** indicating a significant positive effect of short-term debt on return on equity. This implies that an increase in short-term debt will improve the return on equity of listed industrial goods manufacturing firms in Nigeria. Thus the null hypothesis two is rejected which implied that the effect of short term debt on return on equity of listed industrial goods manufacturing firms in Nigeria is positive and significant.

Discussion of Findings
Short Term Debt and Financial Performance Measures

Results from the multiple regression coefficient of model one and two in table 4.5-table 4.8 revealed that, short-term debt of debt structure has positive and significant effect on return on assets (ROA) and return on equity (ROE) of financial performance of listed industrial goods manufacturing firms in Nigeria. The findings of this study is consistent with the work done by
Horsfall (2023) who study disclosed that short term debt (STD) was found to have significant effect on financial performance of listed oil and gas firms in Nigeria. The study therefore, concluded that short term debt is one of the strong determinants of the financial performance of listed oil and gas firms in Nigeria. Efeeloo (2021) findings revealed that short term debt had positive influence on book value per share while firm size had positive and significant relationship. It was recommended that financial managers of oil and gas companies should ensure optimal financing mix that will ensure greater shareholders wealth at all times. Aniefor et al (2019) results of the panel regression technique revealed that short-term debt to asset ratios positively influence the performance of consumer goods firms in Nigeria. However, Jabar and Akinadewo (2023) disagreed with this study result and their study discovered that short-term debt profile has a negative insignificant effect on financial performance captured with earnings per share of listed consumer goods firms in Nigeria. Dian et al (2022) result of the study state that the Short term debt ratio (STDA) has no effect on Return on Assets. Diana and Doni (2021) results found that short term debt has a negative effect on company profitability. Edward et al (2020) result indicated that short tenured debt finances do not positively and significantly impact return on assets. Also, findings indicated that short tenured debt finances do not positively and significantly impact return on equity. Others prior studies include Bindu (2021); Nnajieze et al, (2021); Lawrence et al, (2021) and Kamilu and Olukunle (2021) whose findings shows very weak positive and insignificant relationship between short term debt and return on investment of listed constructions firms in Nigeria.

Conclusion(s)

This study established empirical evidence assessed the effect of debt structure and financial performance of listed industrial goods manufacturing firms for the period 2015 to 2024 in Nigeria. Based on the data obtained from the annual financial reports of listed industrial goods manufacturing firms for the period 2015 to 2024 in Nigeria from Nigeria Exchange group; the data were presented and analyzed. Therefore, the study concluded that;

1. The effect of short-term debt on return on assets of listed industrial goods manufacturing firms in Nigeria is significant,
2. The effect of short-term debt on return on equity of listed industrial goods manufacturing firms in Nigeria is significant,

Recommendation(s)

Based on the findings and conclusion of the study, the following recommendations were made:

1. It is recommended that to curb the significant effect of debt financing on financial performance, the management of the listed industrial goods firms should maximize the functions of the risk committee formed to measure the risks involved in debt financing. This would ensure the right choice of the components of corporate debt and their full utilization towards the right angle.
2. The financial institutions in charge of credit facilities should judiciously investigate their debtors (corporate firms) regarding their ability to maintain a productive relationship with them. This would minimize the sudden closure of many firms in the industrial sector due to their inability to pay up their debts or survive after the full payment has been made.

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