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EFFECT OF CAPITAL STRUCTURE ON FINANCIAL PERFORMANCE OF QUOTED MANUFACTURING COMPANIES IN NIGERIA

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ABSTRACT: *Capital structure is a mixture of the financing options a company uses to finance its investments. However, deciding on an optimal capital mix has been a huge task for most manufacturing companies. This paper therefore examined the effect of capital structure on financial performance of quoted manufacturing companies in Nigeria. The study covered ten companies for a period of seven years from 2013 to 2019. Panel data analysis was used to test the hypothesis. The independent variables used are total debt to total asset ratio (TDTAR), long-term debt to total assets (LDTAR), short-term debt to total assets (SDTAR) and total debt to total equity (TDTER) while the dependent variables are return on asset (ROA) and return on equity (ROE). The results of the study showed that SDTAR and LDTAR have positive but insignificant effects on ROA, and TDTAR has a negative significant effect on ROA and ROE respectively. Also, TDTAR and TDTER have negative insignificant effect on ROE. The study concluded that SDTAR, LDTAR, TDTER have no significant effect on ROA and ROE but TDTAR have effect on ROA. This study therefore recommended that firms should be cautious in accumulating debt that could eventually have adverse effects on their value and financial performance.*

KEYWORDS: capital structure, return on assets, return on equity, total assets, total debts

INTRODUCTION

Finance is a very important factor in an organization and it is germane to its sustainability, growth and existence. Availability of finance plays a major role in running the daily activities of a business. It is the life of any entity. Many companies collapsed within few years of starting up because of a lack of access to funds. In the same vein, how a firm finances its daily activities and various investments affects its survival and existence. A firm can generate funds internally through retained earnings via profits made by the firm or externally through equity or debt. Equity involves the issuance of shares to the general public to generate funds while debt involves borrowings made by firms through the issuance of bonds or debentures. The external source offers a firm three ways of financing their investments which are; 100% equity, 100% debt or a mix of debt and equity.

As opined by Dada and Ghazali (2016), capital structure refers to a system where a firm uses both or either equity or debt to finance its activities to yield maximum returns. Achieving an optimal capital structure to minimize the cost of capital and maximize profitability is of paramount

importance to management. Also, as affirmed by Ishaya and Abduljeleel (2014), an optimal capital structure is the best equity to debt ratio of a firm which maximizes the value of the firm and the success of a business depends on the management identifying the optimal capital to sustain the business. Capital structure has become a major issue in finance since Modigliani and Miler propounded the "irrelevance theory of capital structure" in 1958. Their theory is based on the assumptions of a tax-free economy, no transaction costs, a perfect capital market, and investors' homogeneous expectations. However, in reality, firms need to consider all the aforementioned in determining an optimal capital mix.

There is an association between capital structure and the financial performance of a firm. The financial performance depicts how well or otherwise a firm is using its assets to generate more revenue. Financial performance is one of the variables used by investors and shareholders in evaluating the financial position of a firm and its sustainability. Performance is most times measured by profitability (Akinyemi, Wisdom and Lawal, 2018). Profitability, as defined by Owolabi and Obida (2012), is the ability of a company to use the resources at its disposal to make returns higher than the cost of financing its activities to ensure the continued survival of the company. Manufacturing companies in Nigeria are drivers of the nation's economy; however, this sector has witnessed the collapse of companies at an alarming rate as most of them collapsed due to enormous debt. Therefore, this study examined the effect of capital structure on the financial performance of manufacturing firms.

Statements of the Problems

Financing decision plays an important role in sustaining a business and the profitability of a company is affected by the composition of its capital structure. It is the goal of a company to maximize its value and the wealth of its shareholders therefore, company needs to maintain an appropriate capital structure that would maximize performance and minimize financing cost, (Dahiru, Dogarawa and Haruma, 2016).

However, deciding on an optimal capital mix has been a huge task for most companies. The Nigeria manufacturing sector is one of the drivers of the Nigerian economy but has witnessed the collapse of many firms in recent times due to financial constraints, (Ani and Ugwunta, 2012). In Nigeria, the basis for determining optimal capital mix in the corporate sector depends on the width and depth of the various financial markets. Also, manufacturing firms need long-term, medium-term and short-term means of running their operations, most of these manufacturing companies use financial leverage to finance their operations. However, selecting an optimal capital mix creates financial friction in most firms.

There have been various studies on capital structure and financial performance of firms however, most of them focused on short-term debt, total debt to total assets and long-term debt neglecting

the other type of financing, which is equity. Babalola (2012) focused on total debt to total assets, Salawu (2007) used only short-term debt for his study. Sebastian and Rapuluchukwu (2012) did not include equity financing in their work. Idode, Adeleke, Ogunlowore and Ashogbon (2014) ignored long-term and short-term debt. Also, Velnampy and Vickneswaran (2014) focused on capital structure and liquidation only. Thus, this creates a gap for this study to fill by considering short-term debt, long-term debt, total debt, total equity, total assets, return on assets and return on equity.

The general objective of this research is to examine the effect of capital structure on the financial performance of manufacturing companies in Nigeria. The specific objectives are to examine the effect of capital structure on return on assets and to examine the effect of capital structure on return on equity. Thus, the following hypotheses were formulated for the study, and they are stated in their null forms

H01: Capital structure has no significant effect on return on assets
H02: Capital structure has no significant effect on return on equity

This study focused on the effect of capital structure on manufacturing companies that are listed on Nigeria Stock Exchange (NSE). It covered a period of seven years from 2013 to 2019. Manufacturing companies are used due to the fact that they are larger producers of goods and important drivers of the economy. Also, manufacturing companies use financial leverage to run their operations. The remainder of this paper covers the empirical review, theoretical review, conceptual framework, methodology, results and discussions, conclusion and recommendations.

LITERATURE REVIEW

Capital Structure

Capital structure refers to the composition of capital a firm employed in financing its activities. It is the proportion of debt and equity that forms the total capital structure of the firm. Also, according to Salawu (2009), capital structure is the mixture of diverse securities utilized by a company in financing its profitable ventures. It is referred to as capital mix or financing mix. A firm needs funds to finance its daily activities as well as its long term investment. A firm can generate capital through the issuance of stock (equity capital) or debentures or bonds (debt capital). A firm can finance it activities through any of these options; 100% equity, 100% debt or a mixture of both equity and debt. The capital structure of a company is crucial because it has to maximize returns to various sectors of the company and the impact its financing decision would have in a competitive environment, (Arikekpar, 2020).

Financial Performance

The financial performance of a firm is about how effectively and efficiently a firm uses the finances at its disposal to run its operations, keep the firm going and maximize the wealth of the shareholders. Different variables are used to measure the financial performance of firm such as return on assets, return on equity, profitability, and earnings per share.

Return on Assets

Return on assets (ROA) is used to measure how well a company is utilizing its assets in terms of profitability. Unlike other metrics, ROA takes the debt of a company n consideration. It is calculated by dividing net income of a company by its total assets. The ROA figure shows the effectiveness of a company in converting the money invested into net income.

Return on Equity

Return on equity is one of the measures of financial performance. It shows how efficiently a company handles and uses the money shareholders contributed to the company. It is calculated by dividing net income by shareholders' equity. The higher the return on equity, the more efficient the company is in generating income from the equity of the shareholders.

Profitability

Profitability is also a measure of the financial performance of a company. According to Owolabi and Obida (2012), profitability is defined as the ability of a firm to make profits from all its activities which are operating, investing and financing activities. A firm must be able to generate revenue in excess of direct and indirect cost incurred to generate the revue before it can make profit. Also, maximizing shareholders' wealth means a firm is able to pay dividend consistently as a result of the appreciation of the worth of the firm's market share (Olowe, 2018).

Equity Capital

This is the capital from external source generated by a firm through the issue of equity shares to the public to fund its investment activities. Shareholders of equity own part of the firms and are giving dividends at the end of every accounting year through the profit made by the firm.

Debt Capital

This is also the capital from external sources a firm generates to fund its investment activities and it is accompanied with a long period of repayment.

Firm Size

Firm size refers to the volume of operation of the firm. The size of a firm is a major factor in determining the profitability of the firm. Firm size is measured by total assets, total revenue, market capitalization and total sales.

Short-term and Long-term Debt
Short-term debts are debts owed by a firm and whose obligation fall within one year. Long-term debts are debt whose obligation exceeds one year.

THEORETICAL FRAMEWORK

Modigliani and Miller Theory
The first theory on capital structure was proposed by Modigliani and Miller in 1958. The theory known as "capital structure irrelevance" is based on the concept that the relationship between cost of capital and capital structure is irrelevant, that is, the increase in debt has not no effect on cost of capital. Their theory was based on assumptions such as perfect capital market, no taxes, no transaction costs, and homogeneous expectations.

Pecking Order Theory
Pecking order theory developed by Stewart Myers and Nicolas Majluf (1984) is based on the concept that firms prioritize sources of financing their investment. According to the theorists, there is asymmetric information between managers and investors. Thus, investors would want higher returns to compensate for the risk they are taking and the less information at their disposal. Therefore conclusion drawn based on asymmetric information is that firms have a hierarchy of financing preferences; firms initially rely on internal funds, or turn to debt and later issue equity to cover for the remaining capital if there is need for it. Internal financing is the cheapest source of financing in contrast to external sources such as debt or equity. Of the two external sources, firms prefer debt financing because of the lower cost of obtaining as opposed to equity financing.

Trade off Theory
Trade off theory was propounded by Miller in 1977 and it is based on the concept that a firm would consider how much of debt finance and equity finance to be used, taking its benefits and costs into consideration. It is based on a trade-off between tax savings and distress costs of debts (www.ebrary.net). The theory states that target debt-equity ratio is approached at the point where the tax advantage of debt is offset by the costs of prevailing market imperfections. As opined by Muritala (2012), the theory is premised on the fact that a company will choose how much debt finance and equity finance will be needed by balancing the costs and benefits.

Agency Theory
This theory is based on the relationship between the principal (the shareholders) and the agent (the managers). The agency relationship occurs when the principal hire the agent to act and perform certain services on its behalf. The principal is the owner of the company and expects maximum returns on their investment. The agency relationship leads to conflicts of interest and priorities where the agent tends to pursue his own interest instead of the interest of the principal. Thus, in order to ensure that the agent maximizes the wealth of the principal, the principal must undertake some agency cost to monitor the activities of the agent or to compensate him.

Empirical Reviews

Different literatures with contradicting results existed on capital structure and financial performance of manufacturing companies. Some of the studies showed positive results between capital structure and financial performance, others showed negative results while some are not significant.

Rahman et al (2020) examined the impact of financial leverage on profitability of listed textile firms in Bangladesh. Using pooled ordinary least square to carry out the analysis, their results showed that there is a significant negative relationship between leverage and firm's profitability. Lawal et al (2014) studied the impact of capital structure on performance of manufacturing companies in Nigeria. Using panel data analysis on ten companies for the period from 2002 to 2012, they discovered that total debt, age, and debt to equity ratio have negative relationship with firm performance. Also, Ishaya et al (2014) found out that debt ratio is negatively related with profitability of firms in Nigeria while equity is directly related with profitability.

In their study, Amraoui, Jianmu and Bouarara (2018) examined firms' capital structure determinants and financing choice of industries in Morocco. The results of their panel data and regression analyses showed that return on asset, asset tangibility and liquidity have negative impact on performance while size is positively significant. Likewise, Abeywardhana (2015) examined capital structure on performance of firm in the manufacturing small and medium enterprises sector in the UK. Variables such as leverage, liquidity, firm size, and# total debt to total asset were used. Their results revealed that there is significant negative relationship between leverage and firm performance, strong negative relationship between liquidity and firm performance, highly significant positive relationship between size and firm performance. Onaolapo and Kajola (2010) examined capital structure and performance of firms in Nigeria and discovered that there is significant negative effect between return on assets and return on equity and debt ratio.

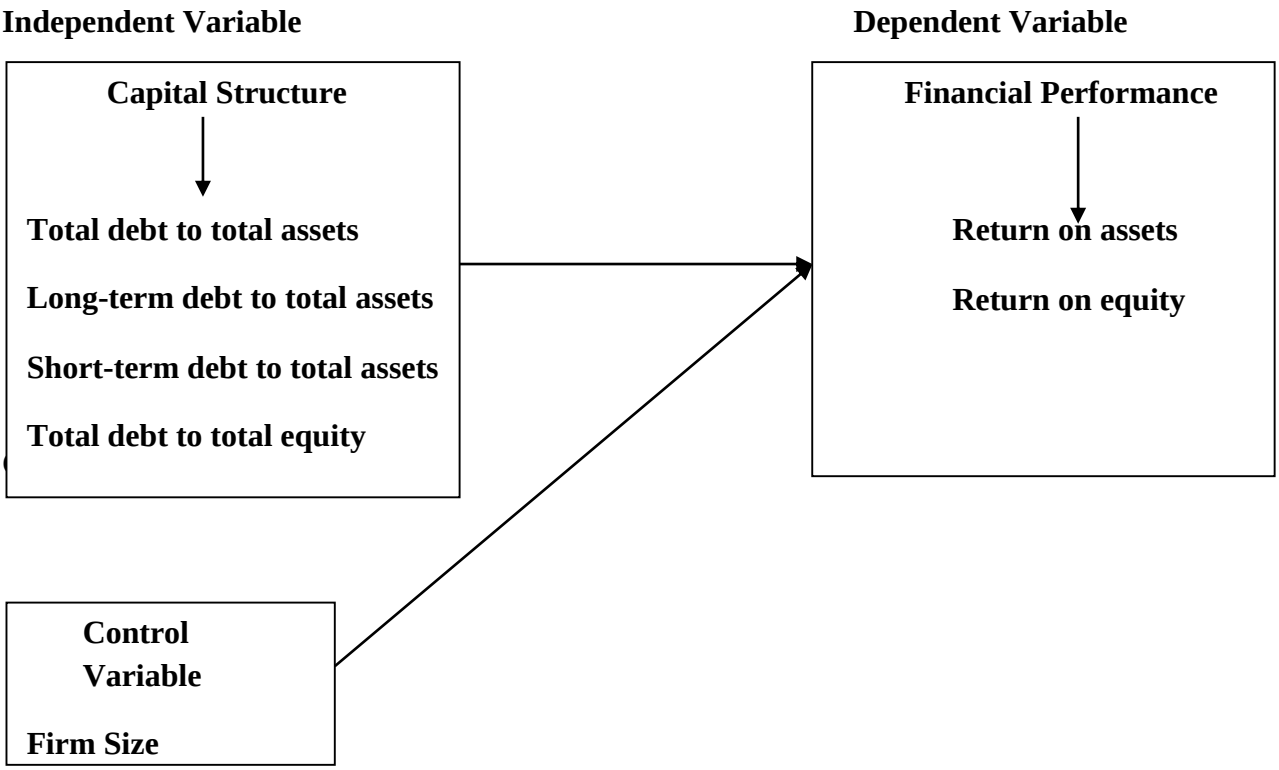
Olalade, Omotosho and Adeniyi (2017) studied the effect of capital structure on the performance of manufacturing companies in Nigeria. The results of their multiple regression analysis showed that capital structure had no significant effect on return on equity while it had a significant effect on return on assets, earnings per share and sales growth. In the same vein, Umoru and Iyoha (2017) examined the causal link between capital structure and financial performance of 75 companies from 2010 – 2014. Their results showed that financial leverage proxy by ratio of non-current liabilities to overall assets has no causality with return on assets but ratio of current liabilities to overall assets or equity has a causality return on assets.

Arikekpar (2020) examined capital structure and firm performance of manufacturing companies in Nigeria. The study covered a period of five years, from 2014 to 2018. Fixed effect regression model was used. Return on assets, return on equity and earnings per share were used proxies for firms' performance while equity ratio and debt ratio were indicators for capital structure. Findings from the study revealed that capital structure has positive significant effect on financial performance of selected firms in Nigeria. Ajayi and Obisesan (2020) studied the impact of capital

structure on firm performance in Nigeria. Using fixed effect regression estimation model, a significant negative relationship was established between performance which was proxy by return on investment and leverage of the firms over a period of five years.

In their study of capital structure and financial performance of listed Nigeria manufacturing firms, Ajibola, Wisdom and Qudus (2018), discovered that there is a positive statistically significant relationship between long-term debt ratio, total debt ratio, and return on equity while LTD, STD and TD had negative relationship with ROA. Adeoye and Olojede (2019) found that debt to equity ratio has significant negative impact on ROA and ROE; asset tangibility has significant impact on ROA while it has no significant impact on ROE.

Conceptual Framework



METHODOLOGY

Study Area

The study area covered manufacturing companies that are quoted on the Nigeria Stock Exchange. Data from the financial statements of the companies were used

Research Design
This study employed ex-post facto research design. Ex-post facto refers to research design that examines occurrences of the past in order to determine current events.

Population
Population for the study comprised all the fifty-two manufacturing companies that are listed on the Nigeria Stock Exchange (NSE) as at November 2020. According to NSE website, the manufacturing sector is classified into consumer goods, healthcare, industrial goods, conglomerate and agriculture.

Sampling Technique and Sampling Size
Stratified and purposive sampling techniques were used to select the manufacturing companies used for this study. Stratified sampling technique was used to divide the companies into stratum using their market capitalization, thus categorizing them as "Big, Medium and Small". Purposive sampling technique was used to select companies whose annual reports can be obtained for the period of seven years, 2013 – 2019, from each stratum. Four companies were selected from the consumer goods sector, three from healthcare sector, and three from industrial goods sector. This makes it a total of ten companies used as sample size for the study

Sources of Data and Data Collection Instrument
Only secondary data were used for this research. The secondary data were obtained from the annual financial reports of the selected manufacturing companies.

Description and Measurements of Variables
Independent variable used in this study is capital structure and it is proxy by Total Debt to Total Assets Ratio (TDTAR), Short-term Debt to Total Assets Ratio (SDTAR), Long-term Debt to Total Assets Ratio (LDTAR), Total Debt to Total Equity Ratio (TDTER) while the dependent variable is financial performance which is proxy by Return on Assets (ROA) and Return on Equity (ROE). The control variable is Firm Size (FS). How the variables were measured is shown in the table below:

Variables	**Measurements**
Return on Assets (ROA)	Profit before tax/Total Assets
Return on Equity (ROE)	Profit before tax/Shareholders' Equity
Short-term Debt to Total Assets Ratio (SDTAR)	Short-Term Debt/Equity + Debt
Long-term Debt to Total Assets Ratio (LDTAR)	Long-Term Debt/Equity + Debt
Total Debt to Total Assets Ratio (TDTAR)	Total Debt/Total Assets
Total Debt to Total Equity Ratio (TDTER)	Total Debt/Total Equity
Firm Size (FS)	Ln(Total Assets)

Method of Data Analysis
Panel data analysis was used to examine each of the objectives. Haussmann test was carried out and the result of the Haussmann test was used to determine the model to choose between Fixed

Effect Model and Random Effect Model. Fixed Effect Model was selected if the Haussmann result is less than 0.05 level of significance while Random Effect Model was selected if the Haussmann result is greater than 0.05 level of significance.

Model Specification

The model specified for this study used return on assets (ROA) and return on equity (ROE) as proxy for financial performance which is the dependent variables and SDTAR, LDTAR, TDTAR, TDTER as proxy for independent variables.

Y = a + bx …….Regression Equation

Where:

Y = Dependent Variable (Financial Performance)

a = Constant

b = Coefficient

x = Independent Variable (Capital Structure)

The regression model is stated below:

FINPERF = α + ß1SDTAR + ß2LDTAR + ß3TDTAR + ß4TDTER + ß5FS + µ ….....equation 1

ROA = α + ß1SDTAR + ß2LDTAR + ß3TDTAR + ß4TDTER + ß5FS + µ …….……..equation 2

ROE = α + ß1SDTAR + ß2LDTAR + ß3TDTAR + ß4TDTER + ß5FS + µ …….……equation 3

This is transformed to logarithm as:

*Log*ROA = α + *log*SDTAR + *log*LDTAR + *log*TDTAR + *log*TDTER + *log*FS + µ ……...…equation 4

*Log*ROE = α + *log*SDTAR + *log*LDTAR + *log*TDTAR + *log*TDTER + *log*FS + µ ……..……equation 5

Where:

FINPERF = Financial Performance

ROA = Return on Assets

ROE = Return on Equity

SDTAR = Short-term Debt to Total Assets Ratio

LDTAR = Long-term Debt to Total Assets Ratio

TDTAR = Total Debt to Total Assets Ratio

TDTER = Total Debt to Total Equity Ratio

FS = Firm Size

RESULTS AND DISCUSSIONS

This section contains the results of the analysis and discussion of data collected from secondary source. Annual financial reports of ten manufacturing companies listed in the Nigeria Stock Exchange in the consumer goods, industrial goods and health sectors were used. The data extracted were analyzed with both inferential and descriptive statistical tools, and interpreted and discussed.

Correlation Analysis

From the correlation table, it was revealed that short-term debt to total assets ratio (SDTAR), total debt to total asset ratio (TDTAR), total debt to total equity ratio (TDTER) and firm size (FS) have negative but statistically weak relationship with return on assets while they long-term debt to total assets ratio (LDTAR) has no relationship with ROA. Moreover, SDTAR, LDTAR. TDTA, TDTER are not statistically correlated with return on equity (ROE). Also, the independent variables SDTAR, LDTAR, TDTAR, TDTER and control variable FS have statistically weak correlation with one another with values lower than 0.8. This showed the absence of multi-co-linearity among the independent variables.

Table 4.1: Correlation Analysis among Variables

	LOGROA	LOGROE	LOGSDTAR	LOGLDTAR	LOGTDTAR	LOGTDTER	LOGFS
LOGROA	1.0000						
LOGROE	0.5245*	1.0000					
	0.0000						
LOGSDTAR	-0.3354*	-0.0969	1.0000				
	0.0045	0.4248					
LOGLDTAR	-0.2316	0.0867	0.3907*	1.0000			
	0.0537	0.4753	0.0008				
LOGTDTAR	-0.4094*	-0.1228	0.4643*	0.2472*	1.0000		
	0.0004	0.3113	0.0001	0.0391			
LOGTDTER	-0.3646*	-0.1888	0.4797*	0.5054*	0.3395*	1.0000	
	0.0019	0.1176	0.0000	0.0000	0.0040		
LOGFS	-0.2448*	-0.0836	0.2978*	-0.0408	-0.1668	0.1344	1.0000
	0.0411	0.4913	0.0123	0.7371	0.1676	0.2673	

Effect of Capital Structure on Return on Assets

Panel data analysis was used to examine the effect of capital structure on financial performance of firms. The independent variable, capital structure is proxy by short-term debt to total assets ratio (SDTAR), long-term debt to total assets ratio (LDTAR), total debt to total assets ratio (TDTAR), total debt to total equity ratio (TDTER) and firm size (FS) while the dependent variable, financial performance is proxy by return on assets (ROA). Due to the panel nature of the data, Hausman test was done to determine which one to choose between fixed effect model and random effect model. The result of the Hausman test, presented in table 4.2 below, showed that prob>chi2 = 0.5209,

which is higher than 0.05 level of significance. This implies that random effect model was chosen and the analysis of the objective was based on it.

The result of random effect model was presented in table 4.3 below. It was observed that SDTAR at 0.297>p=0.05 has a positive but insignificant effect on ROA. This means that firm uses short-term debt to finance their investments but increase in using it has no effect on the financial performance (ROA) of the firms. This contradicted the results of Olalade et al (2017) and Ajibola et al (2018) which revealed that short-term debt has negative significant effect on ROA. LDTAR at 0.938>p=0.05 has a positive but no significant effect on ROA. This implies that firm also uses long-term debt to finance their investments, however, increase in the use of long-term debt of firm does not affect their ROA. This is in variance with the findings of Ajibola et al (2018), Arikekpar (2020) but support the work of Rahman et al (2020). Also, TDTAR at 0.008<p=0.05 has a negative and significant effect on ROA. This implies that increase in total debt results in a decline in ROA thereby affecting the financial performance of the firms. This is in support of the findings of Lawal et al (2014), Onaolapo et al (2017) and Ajibola et al (2018). Likewise, TDTER at 0.163>p=0.05 has a negative insignificant effect on ROA. This means that increase in total debt has no effect on ROE. This supports the work of Adeoye at el (2019).

Return on assets (ROA) is a measurement of financial performance, showing how well a company can utilize its assets to maximize profits, increase its value and that of the shareholders. TDTAR shows the extent to which a company uses debt to finance its assets, and result from this study showed a negative significant effect of TDTAR on ROA. Therefore, firms should make sure their total debt does not have adverse effect on their ROA. The findings is in support of Trade off theory which states that firms would consider how much of debt finance and equity finance to be used, taking its benefits and costs into consideration.

Table 4.2: Hausman Result of Effect of Capital Structure on Return on Assets

	---- Coefficients ----			
	(b)	**(B)**	**(b-B)**	**sqrt(diag(V_b-V_B))**
	fixed	**random**	**Difference**	**S.E.**
LOGSDTAR	.2586493	.1699244	.0887249	.0693144
LOGLDTAR	.1077807	.0129752	.0948055	.0965054
LOGTDTAR	-.465347	-.4746598	.0093128	.1076761
LOGTDTER	-.1966006	-.2046105	.0080098	.0431039
LOGFS	-1.687428	-2.549868	.8624404	1.346892

Table 4.3: Random Effects of Capital Structure on Return on Assets

LOGROA	**Coef.**	**Std. Err.**	**z**	**P>|z|**	**[95% Conf. Interval]**	
LOGSDTAR	.1699244	.162926	1.04	0.297	-.1494047	.4892534
LOGLDTAR	.0129752	.1677635	0.08	0.938	-.3158352	.3417856
LOGTDTAR	-.4746598	.1781424	-2.66	0.008	-.8238124	-.1255072
LOGTDTER	-.2046105	.1467552	-1.39	0.163	-.4922454	.0830245
LOGFS	-2.549868	1.300528	-1.96	0.050	-5.098855	-.0008809
_cons	.7250526	1.132956	0.64	0.522	-1.495501	2.945606

sigma_u .23040951

sigma_e .37485716

rho .27420857 (fraction of variance due to u_i)

Effect of Capital Structure on Return on Equity

Tables 4.4 and 4.5 presented the results of Hausman test and random effect model respectively of the panel data analysis used to examine the effect of capital structure on return on equity (ROE). The independent variable used are TDTAR, SDTAR, LDTAR, TDTER and FS while ROE is the dependent variable.

The result of the Hausman test showed that prob>chi2 = 0.2701, which is higher than 0.05 level of significance. This implies that random effect model was chosen and the analysis of the objective was based on it. It was observed from the random effect result that short-term debt to total assets ratio (SDTAR) at 0.445>p=0.05 has a positive but insignificant effect on ROE. This means that firm uses short-term debt but increase in using it does not affect ROE of the firms. This is in agreement with the studies of Olalade et al (2017) and Ajibola et al (2018).

Long-term debt to total assets ratio (LDTAR) at 0.245>p=0.05 has a positive but no significant effect on ROE. This implies that firm uses long-term debt to finance their investments, however, increase in the use of long-term debt of firm does not have any negative effect on ROE. This result contradicted the findings of Dahiru et al (2016), Ajibola et al (2018). Also, total debt to total asset ratio (TDTAR) at 0.658>p=0.05 has a negative and insignificant effect on ROE. This implies that increase in total debt decreases ROE thereby affecting shareholders' equity of the firms. This is in support of the findings of Lawal et al (2014), Onaolapo et al (2017) and Ajibola et al (2018). Likewise, total debt to total equity ratio at 0.059>p=0.05 has a negative insignificant effect on ROE. This means that accumulation of debt reduce the equity of shareholders which is not good for the financial performance of the firms. This corroborated the results of Dahiru et al (2016) but in variance with the work of Adeoye et al (2019). Furthermore, firm size (FS) at 0.779>p=0.05 has negative insignificant effect on ROE. This means the size of a firm does not determine the return on its shareholders' equity.

Table 4.4: Haussmann Result of Effect of Capital Structure on Return on Equity

	---- Coefficients ----			
	(b)	**(B)**	**(b-B)**	**sqrt(diag(V_b-V_B))**
	fixed	**random**	**Difference**	**S.E.**
LOGSDTAR	.2664572	.149673	.1167842	.0827682
LOGLDTAR	.1595023	.2323133	-.072811	.1188117
LOGTDTAR	-.0535177	-.0938754	.0403577	.1323107
LOGTDTER	-.2949886	-.3347533	.0397647	.0492136
LOGFS	.6790779	-.428511	1.107589	1.65061

Table 4.5: Random Effect of Capital Structure and Return on Equity

LOGROE	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
LOGSDTAR	.149673	.1959619	0.76	0.445	-.2344053	.5337512
LOGLDTAR	.2323133	.199882	1.16	0.245	-.1594483	.6240748
LOGTDTAR	-.0938754	.2122203	-0.44	0.658	-.5098195	.3220687
LOGTDTER	-.3347533	.1770534	-1.89	0.059	-.6817715	.0122649
LOGFS	-.428511	1.528244	-0.28	0.779	-3.423815	2.566793
_cons	-.5026691	1.331549	-0.38	0.706	-3.112456	2.107118

sigma_u .25215589

sigma_e .4503691

rho .23866003 (fraction of variance due to u_i)

Summary
This study examined the effect of capital structure on financial performance of firms. A total of ten firms listed on the Nigeria Stock Exchange were selected from the industrial goods, healthcare and consumer goods sectors of the manufacturing industry. Secondary data were used and obtained from the annual financial reports of the selected companies for a period of seven years (2013 - 2019). Panel data analysis was employed to examine the objectives. The result of the study showed that short-term debt to total assets ratio (SDTAR), long-term debt to total assets ratio (LDTAR) have positive and insignificant effect on financial performance (ROA) while total debt to total assets ratio (TDTAR) has negative and significant effect on financial performance (ROA). Further results show that SDTAR and LDTAR have positive but insignificant effect on return on equity (ROE). Also, TDTAR, total debt to total equity ratio (TDTER), and FS have negative but significant effect on financial performance (ROE) of firms in the healthcare, consumer goods and industrial goods sectors.

CONCLUSION

Based on the findings this study, it is concluded that short-term debt to total assets ratio (SDTAR), long-term debt to total assets ratio (LDTAR) and total debt to total equity ratio (TDTER) have no significant effect on return on assets (ROA). However, total debt to total assets ratio (TDTAR) has a significant but negative effect on ROA. Also, SDTAR, LDTAR, TDTAR, TDTER, and FS (firm size) have no significant effect on return on equity (ROE).

Recommendation

The study recommended that, though short-term debt because of its short maturation period and long-term debt because it can be spread over many years, have no significant effect on ROA and ROE, firms in the manufacturing sector should be cautious in accumulating debt that could eventually have adverse effect on their value and financial performance because total debts to total assets ratio has a negative significant effect on return in assets. Also, manufacturing firms should opt for optimal capital structure that would reduce leverage ratio.

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