Capital Structure and Firm Performance: Evidence from Publicly Quoted Insurance Companies in Nigeria

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Abstract

This paper investigated the nexus between capital structure and firm performance in Nigeria. Secondary data of long-term and short-term debts ratios and firm size as well as firm performance metrics of earnings per share and book value per share were obtained from the annual reports and accounts of thirty-one (31) insurance companies publicly quoted on the floor of the Nigerian Stock Exchange. The data obtained were analyzed by means of descriptive (mean, standard deviation, minimum and maximum values, and correlation matrix) and inferential (multivariate regression) statistical techniques. Findings of the study revealed that there is significant link between short-term, long-term and total debts ratios and firm performance of earnings per share and book value per share. Based on the findings of the study, it is recommended that management should strive to improve on their companies' short and long-term debts, as this will go a long way in determining their survival. Moreover, firms are encouraged to use more of equity than debt in financing their operations, this is because in spite of the fact that the value of a firm can be enhanced with debt capital, it gets to a point that it becomes detrimental.

Keywords: Capital structure; Firm performance; Insurance companies; Earnings per share; Book value per share

Introduction

In accounting and finance literature, there is the axiom that financing and investment are two (2) key decision areas of corporations. For instance, in financing decision, managers are concerned with assessing the optimal financing mix or capital structure of corporations. Thus, capital structure is considered key in determining the financing decision of corporation. In the views of Ogebe, Ogebe and Alewi (2013); Damodaran (2001), capital structure refers to a mix of debt and equity that a corporation employs in financing its operations. Capital structure has been a fundamental issue in finance ever since Modigliani and Miller (1958) postulated that given frictionless markets, homogeneous expectations, capital structure of corporations are irrelevant (Onaolapo & Kajola, 2010; Akinlo, 2011).

In the past few decades, the nexus between capital structure and firm performance has been extensively investigated. According to Yinusa, Ismail, Yulia and Olawale (2019), capital structure could have two effects; *first*, corporations with same risk class could likely have greater cost of capital with higher leverage; and *second,* capital structure may affect the value of the corporation, with more leveraged firms being riskier. This perhaps, may make more leveraged corporations undervalued than less leveraged corporations. Given the shareholder's wealth maximization objective, capital structure has occupied a central place in finance decision, as it could result to an optimal financing mix, which maximizes the earnings, book value and market price per shares of corporations (Nenu, Vintila&Gherghina, 2018; Avci, 2016).

More importantly, the choice of capital structure of a corporation is determined by a number of dynamics, which encompassed market forces, type of industry, internal policies of corporation, firm size and age, profitability, corporate tax and bankruptcy costs (Iavorskyi, 2013; Akinyomi; 2013; Oino & Ukaegbu, 2015) among others. Besides, there have been diverse schools of thoughts on the relevance of capital structure to a corporation's performance, given the fact that most corporation's decisions are dictated by managers. The capital structure of a corporation can either take the form of short or long-term debts.

The optimal mix of a corporation capital structure has long been an important in finance literature, given the fact that from strategic management standpoints, capital structure is related with corporations' ability to meet demands of diverse stakeholders (Roy & Minfang, 2000; Ogebe, *et al*, 2013; Yinusa*etal*, 2019). Debt and equity are the two major classes of liabilities, with debt-holders and equity-holders representing two types of investors in a corporation. Moreover, each of the investors are linked with diverse level of risks, benefits, and controls. While debt-holders exert lower control, they earn a fixed rate of return and sternly protected by contractual obligations with respect to their investments. On the other hand, equity-holders are residual claimants, bearing most of the risk and have greater control over decisions. Consequently, the issue for corporations is that of ascertaining an appropriate capital structure; this important not only because of the need to maximize returns, but also because of the impact such a decision may have on corporations' ability to deal with its competitive environment. Following the works of Modigliani and Miller (1958), much research has been carried out in corporate finance to determine the effects of a corporation's choice of capital structure on performance. The difficulty facing corporations when structuring their finance is to determine its impact on performance, as performance of the corporation is crucial to the value of the firm and consequently, its survival.

In the Nigerian context, the challenges facing corporations has to do more with the financing – whether to raise debt or equity; the inability of corporations to identify the optimal mix of debts and equity has been acknowledged as one of the reasons for the collapse of most corporations (Akinyomi, 2013; Oino & Ukaegbu, 2015). Thus it is necessary for corporations to be able to finance their operations and grow over time, if they are ever to play an increasing and predominant role in creating value. More worrisome is the fact that whilst we acknowledged a robust body of knowledge in this area, although with mixed findings, there is dearth of studies among insurance companies in Nigeria; hence this investigation. In this paper, we seek to investigate the effects of capital structure (measured by short, long and total debt ratios) on the performance (earnings per share and book value per share) of companies in Nigeria.

Theoretical Framework

The theoretical framework of this paper is premised on the traditional theory of capital structure postulated by Jensen and Meckling (1976). The underlying axiom of this theory is that debt capital of a firm is cheaper than equity; thus, firms can augment its capital structure or value by borrowing up to a reasonable limit. This clearly indicates that an optimal level of leverage ratio exists for a firm and that there exists a significant connection between leverage and firm performance; with a positive connection between leverage and firm performance. Precisely, this relationship is shown as:

$$perf = f(Lev) \qquad \text{eq. 1}$$

whereperf – performance and Lev – financial leverage. Thus, equation 1 expresses performance as a function of financial leverage.

Worthy of note is the fact that diverse works on capital structure and firm performance have modified the traditional capital structure theory by extending it with diverse control metrics. For instance, Ahmad, Abdullah and Roslan (2012); Ogebe *et al* (2013) extended the traditional capital structure theory with four control variables of size, growth and efficiency. The view of the traditional capital structure theory is that capital structure of a firm is relevant. Contrary to the view of the traditional capital structure theorists, Modigliani and Miller (1958) hypothesized that capital structure of a firm is irrelevant; a negative relation exists between capital structure and firm performance.

The relevance of this theory to the study is that firm performance can be mirrored in the light of its capital structure. The traditional theory of capital structure by Jensen and Meckling (1976) is criticized on the ground that the theory does not conform with practical reality. Kraus and Litzenberger (1973) noted that the absence of taxes and transaction costs as underlying axioms is too idealistic rather than being realistic.

Review of Related Literature

Overview of Capital Structure and Metrics

The classical Modigliani-Miller theorem (1958) asserts irrelevance of capital structure for firm value. However, since the authors considered Arrow-Debreu environment (complete markets, no taxes, absence of transaction and bankruptcy costs), theory about debt irrelevance is hardly realistic. In the view of Akinyomi (2013), capital structure depicts a firm's financial framework, which consists of debt and equity used to finance corporation. Corporation's to carry out their stakeholders' requirements is closely related to capital structure. According to Nassar (2016), capital structure is a mix between debt and equity that a corporation uses in its operation.

In finance literature, the nexus between capital structure and firm performance can be categorized into two groups (Tudose, 2012; Iavorskyi, 2013). The first group is centered on information asymmetries and signaling. Ross (1977) came up with a model explaining the choice of debt-to-equity ratio by willingness of a corporation to send signals about its quality. The main idea of Ross (1977) is that it is too costly for a low-quality corporation to abuse the market and signal about its high quality by issuing more debt. In view of this, low quality firms have low amount of debt, and leverage increases with value of a corporation.

The second group explains the nexus between capital structure and firm performance via agency costs theory developed by Jensen and Meckling (1976) and Myers (1977). The view is that agency costs are related to conflicts of interest between different groups of agents (managers, creditors, stockholders). According to Iavorskyi (2013), managers who are afraid to lose their job after takeover, may be willing to accumulate higher than necessary amount of debt. In this current paper, capital structure was measured using leverage comprising of short, long and total debt ratios.

Firm Performance and Metrics

A number of metrics measuring firm performance are usually accounting based measures of performance derived from financial statements (Nassar, 2016). Firm performance refers to the ability of corporations to maximize wealth objectives (Yinusa *et al*, 2019). Generally, performance of an entity is ascertained via the use of ratios, which express relationships between variables disclosed in financial statement. Ratios are useful and meaningfully used as performance metrics when compared with other related meaningful information, either at present or a past similar

measures for the same entity or similar ones in the same industry (Kabayeh, Nu'aimat & Dahmash, 2012).

According to Al-Matari, Al-Swidi and Fadzil (2014), the concept of performance forms the core of strategic management. Most strategic studies make use of the construct of business performance in an attempt to examine various strategy content and process concerns. The prominent performance metrics employed are return on equity, return on asset, earnings per share, book value per share, and net profit margin. Moreover, stock market returns and volatility in returns are used as performance metrics of firms.

In this paper, we used two metrics of firm performance: earnings per share (difference in profit after tax and preference dividend divided by number of ordinary shares ranking for dividend) and book value per share (shareholders fund less preference dividend and divided by the number of ordinary shares of an entity).

Review of Empirical Studies

There is robust body of empirical knowledge on the nexus between capital structure and firm performance in the manufacturing and financial subsectors in Nigeria, the world over while there is dearth of studies among insurance companies in Nigeria and mixed findings in literature; a review of some recent empirical studies in Nigeria and the word over capture this gap.

In Nigeria, Yinusa *et al* (2019) examined the effects of capital structure on firm performance in other sectors other than financial services and investment firms in Nigeria during the period 1998-2015. Metrics of return on equity, leverage ratios (i.e. short term leverage, long term leverage and total leverage) were employed and findings from the dynamic panel model (two step generalized method of moments) estimation result showed a statistical significant link between capital structure and firm performance, specifically when debt financing is moderately used. This study addressed financial services, particularly banks while insurance companies were neglected. Thus, this study offers a gap in literature on whether capital structure will affect performance of insurance companies as obtainable in the banking subsector.

In Romania, Nenu *et al* (2018) investigated the impact of capital structure on risk and firm performance in manufacturing industry. Metrics of leverage, size of firm and share price volatility were obtained during the period 2000-2016. The multivariate fixed-effects regressions and dynamic panel-data estimation results indicated that leverage is positively related with size of the firm and share price volatility. However, debt structure has a negatively and significant impact on firm performance.

In Istanbul, Avci (2016) investigated the connection between capital structure and manufacturing firm performance during the period 2003-2015. Return on equity and assets were used as metrics of firm performance, short-term debt to total assets, long-term debt to total assets and debt to equity were used as metrics of capital structure while total assets as control variable. The regression result revealed that both short-term and long-term debts have a negative and statistically significant effect on return on assets and equity.

In Nigeria, Akinyomi (2013) studied the relationship between capital structure and the performance of firms in the manufacturing sector using data during from 2007-2011. Measures of return on equity, debt to capital, debt to common equity, short-term debt to total debt, long-term debt to capital and age of the firm were utilized. The correlation result indicated that all measures

of capital structure significantly and positively relate to return on equity except long-term debt to capital that significantly but negatively related to return on equity

In Ukraine, Iavorskyi (2013) assessed the link between the capital structure and firm performance using metrics of financial leverage and tax shield obtained from a sample of manufacturing firms during the period 2001-2010. Regression results showed that there is a link between the leverage and firm performance; although the relation is negative.

In Nigeria, a study by Ogebe *et al* (2013) analyzed the effects of capital structure on firm performance during the period 2000-2010. Macroeconomic metrics of gross domestic product and inflation, return on investment (firm performance) and leverage (capital structure) were utilized. Findings from the fixed effect regression model showed a connection between performance (return on investment) and leverage of the firms. Additionally, the results revealed a significant negative association between leverage and performance.

The gaps in literature are that *first*, there is dearth of studies on capital structure and firm performance among insurance companies in Nigeria; *second*, there is mixed findings in finance literature, some supporting the view of traditional capital structure theory while others contradicting it. Thus, this paper fills the gap in literature (see Yinusa *et al*, 2019; Akinyomi, 2013) and resolve puzzle of findings in finance literature by investigating whether capital structure affects firm performance in the insurance subsector using dissimilar methodologies.

Materials and Methods

In this paper, the ex-post facto design was adopted; the choice of the design is based on the fact that the study seeks to establish factors that are connected with certain occurrence by analyzing past variables of already existing condition. The study population comprised of all publicly quoted insurance companies on the Nigerian Stock Exchange (NSE). As at 31stDecember, 2019, there are fifty-three (53) insurance companies publicly quoted on the NSE (NAICOM and NSE, 2019). Given the large nature of the study population, thirty-one (31) insurance companies were sampled via purposive sampling. The choice of thirty-one (31) insurance companies were based on data availability, relevant and consistent dataset needed for this study.

The data required for this study was obtained from secondary sources. The secondary data was obtained from the NSE Fact-books, annual report and accounts and internet webpage of quoted insurance companies. In this paper, three (3) variables are of interest: performance (earnings per share and book value per share), capital structure (*leverage:* short-term debt, long-term debt, and total debt ratios) and control variable metrics (firm size). The data obtained have been validated by regulatory body of business operations in Nigeria. In order to capture the impact of capital structure on firm's performance, we specified a model in line with the paper's theoretical framework; hence we adopted the capital structure axiom, which states that firm performance depends on capital structure.

$$perf = f(Lev) \qquad \text{eq. 2}$$

Moreover, we modified the capital structure and firm performance model by extending it with control metrics of firm size.

$$perf = f(Lev, Fsize) \qquad \text{eq. 3}$$

Where perf – performance and Lev – financial leverage. The aforementioned model shows that firm's performance depends on capital structure, and firm size. Given the numerous firm

performance metrics (earnings per share and book value per share) and capital structure metrics (*leverage:* short-term debt, long-term debt, and total debt ratios), a multivariate regression model was specified as shown in equations 4-6:

Model 1: Performance and short-term debt ratio, moderated by size of insurance firms

$perf = f(STDR, Fsize)$ eq. 4a

$perf_{it} = \alpha_0 + \alpha_1 STDR + \alpha_2 Fsize + \varepsilon_{it}$ eq. 4b

Model 2: Performance and long-term debt ratio, moderated by size of insurance firms

$perf = f(LTDR, Fsize)$ eq. 4a

$perf_{it} = \alpha_0 + \alpha_1 LTDR + \alpha_2 Fsize + \varepsilon_{it}$ eq. 5b

Model 3: Performance and aggregate debt ratio, moderated by size of insurance firms

$perf = f(TTDR, Fsize)$ eq. 6a

$perf_{it} = \alpha_0 + \alpha_1 TTDR + \alpha_2 Fsize + \varepsilon_{it}$ eq. 6b

Where, *perf* is proxied *by* Earnings per share (EPS) and Book value per share (BVPS), *lev* captures components of capital structure Short-term debt ratio (STDR), Long-term debt ratio (LTDR), and Total debt ratios (TTDR) and moderating metrics of *Fsize* representing Size of insurance firms measured by logarithm of total assets. The introduction of size of insurance firm is evident from the fact that firm size tends to increase firm performance. Following the theoretical framework, a priori expectations for the parameters are $\alpha_1 < 0$, $\alpha_2 > 0$. Descriptive statistics (mean, standard deviation, minimum/maximum values and correlation) and inferential statistics (R-squared adjusted), t-statistic, *f*-statistic and *p-value* were employed. The statistical analysis was done via STATA 13.0 version.

Result of the Findings

Table 1: Descriptive Statistics of Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
eps	217	4.004862	11.0271	-29.9	106.9
bvps	217	1.632074	1.845598	-7.04	11.78
stdr	217	.2676037	.1893331	-.12	1.2
ltdr	217	4.844977	4.527416	-1.24	25.04
ttdr	217	5.112627	4.560531	-1.37	25.39
fsize	217	11.15668	1.735619	5	12

Source: SPSS Output, 2020

From Table 1, earnings per share (eps), book value per share (bvps), short-term debt ratio (stdr), long-term debt ratio (ltdr), total debt ratio (ttdr) and firm size (fsize) recorded a mean of 4.0049, 1.6321, .2676, 4.8450, 5.1126 and 11.1567respectively. This implies that eps, bvps, stdr, ltdr, ttdr and fsize can deviate from the mean both side by 4%, 1.6%, .3%, 4.8%, 5.1% and 11.2%. The mean, standard deviation, minimum and maximum values of the variables clearly indicates that the data are not consistent and are good enough in conducting other analysis

Table 2: Correlation Matrix

	eps	bvps	stdr	ltdr	ttdr	fsize
eps	1.0000					
bvps	0.2116	1.0000				
stdr	0.1691	0.7026	1.0000			
ltdr	0.1611	0.0327	0.1549	1.0000		
ttdr	0.1671	0.0617	0.1953	0.9992	1.0000	
fsize	0.1235	0.0064	-0.1021	0.1961	0.1904	1.0000

Source: SPSS Output, 2020

Table 2 shows that the highest correlation is between ltdr and ttdr with value of .9992. Moreover, all the variables are positively correlated with eps and bvps.

Table 3: Regression Result for Model I

Equation	Obs	Parms	RMSE	"R-sq"	F	P
eps	217	3	10.80572	0.0486	5.470448	0.0048
bvps	217	3	1.311401	0.4998	106.908	0.0000

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
eps						
stdr	10.69739	3.903704	2.74	0.007	3.002755	18.39203
fsize	.9038952	.4258424	2.12	0.035	.0645124	1.743278
_cons	-8.942271	5.021447	-1.78	0.076	-18.8401	.9555603
bvps						
stdr	6.92725	.4737601	14.62	0.000	5.993416	7.861084
fsize	.0839621	.0516809	1.62	0.106	-.0179068	.185831
_cons	-1.158422	.6094112	-1.90	0.059	-2.35964	.0427952

Source: SPSS Output, 2020

Table 3 shows that the values of R^2indicate that the independent variables explain 4% and 49.98% variation on the dependent and control variables. Thus, bvps model provides a good fit to the data. Furthermore, the f-values 5.470448 and 106.908 with respective p-values of 0.0048 and 0.0000 are less than 0.05, indicating that there is significant link between short-term debt ratio and firm performance in publicly quoted insurance companies.

Table 4: Regression Result for Model II

Equation	Obs	Parms	RMSE	"R-sq"	F	P
eps	217	3	10.88438	0.0347	3.850766	0.0228
bvps	217	3	1.853211	0.0011	.1144552	0.8919

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
eps						
ltdr	.3466986	.1668171	2.08	0.039	.0178835	.6755137
fsize	.6073885	.4351475	1.40	0.164	-.2503357	1.465113
_cons	-4.451326	4.819696	-0.92	0.357	-13.95148	5.048831
bvps						
ltdr	.0133273	.0284028	0.47	0.639	-.0426579	.0693124
fsize	-.0000247	.0740897	-0.00	1.000	-.1460637	.1460143
_cons	1.567779	.8206176	1.91	0.057	-.0497491	3.185308

Source: SPSS Output, 2020

Table 4 shows that the values of R^2indicate that the independent variables explain 3% and 0.1% variation on the dependent and control variables. Thus, models do not provide good fit to the data. Furthermore, the f-values 3.8507766 and .1144552 with respective p-value of 0.0228 is less than 0.05, indicating that there is significant association between long-term debt ratio and firm performance in publicly quoted insurance companies.

Table 5: Regression Result for Model III

Equation	Obs	Parms	RMSE	"R-sq"	F	P
eps	217	3	10.8737	0.0366	4.068649	0.0184
bvps	217	3	1.85064	0.0038	.4122369	0.6627

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
eps						
ttdr	.3601083	.1652549	2.18	0.030	.0343726	.6858441
fsize	.604553	.4342255	1.39	0.165	-.2513537	1.46046
_cons	-4.581043	4.813449	-0.95	0.342	-14.06889	4.906801
bvps						
ttdr	.0254019	.0281254	0.90	0.367	-.0300364	.0808403
fsize	-.0059171	.0739027	-0.08	0.936	-.1515875	.1397532
_cons	1.568219	.8192211	1.91	0.057	-.0465572	3.182995

Source: SPSS Output, 2020

Table 5 shows that the values of R^2indicate that the independent variables explains 3.7% and 0.38% variation on the dependent and control variables. Thus, models do not provide good fit to the data. Also, the f-values 4.068649 and .4122369 with respective p-value of 0.0184 is less than

0.05, indicating that there is significant relationship between total debts ratio and firm performance in publicly quoted insurance companies.

Conclusion

In literature, it is widely argued that capital structure can have both positive and negative effect on firm performance. However, this largely depends on how debt is utilizeto resolve the agency conflict between owners of wealth and management on one hand and between owners of wealth and debt-holders on the other hand. In this paper, we examined the effect of capital structure on firm performance among quoted Nigerian insurance companies. In view of the multivariate regression result, it was concluded that capital structure models tested have a low predictive power on performance; although the link between capital structure and firm performance among insurance companies is positive and significant; this finding corroborate with prior studies.

Consequently, the results confirm relevance of capital structure theory to explain relationship between capital structure and firm performance in the Nigerian context. The paper contributes to the body of knowledge in finance literature by showing that capital structure positively and significantly affects firm performance, particularly with the moderating role of firm size in the insurance company.

Recommendations

In line with the findings of the study, the following recommendations were made:

i. That management should strive to improve on their companies' leverage ratio (short and long term debts), as this will go a long way in determining their survival.

ii. Firms are encouraged to use more of equity than debt in financing their operations; this is because in spite of the fact that the value of a firm can be enhanced with debt capital, it gets to a point that it becomes detrimental.

iii. In addition, firms are also encouraged to use cheap finance sources rather than expensive fixed interest bearing debts that are capable of plummeting the performance of firms.

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