

## **Effect of Capital Structure on the Profitability of Listed Insurance Firms in Nigeria**

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### **Abstract**

This study examined the effect of capital structure on profitability of listed insurance firms in Nigeria for the period 2013-2017. The study used correlation research design. The source of data which were collected from the published annual financial reports of studies listed insurance firms in Nigeria. The population of the study comprised of the 28 listed insurance firms. The sample size was fifteen (15) listed insurance firms in Nigeria. The data collected were analyzed with the aid of OLS multiple regression technique. Using 75 firm-year paneled observations, the result of the ordinary least square regression showed that short-term debt has a negative and significant effect on the profitability of listed insurance firms in Nigeria. In addition, long-term debt has a positive and significant effect on profitability. Finally, premium growth has positively significant effect on profitability of listed insurance firms. Based on the findings, the study recommends that the management of listed insurance firms should strive towards having optimum capital structure by increasing their equity level and reducing dependence on debts so as to avoid being cash strapped and debt ridden.

**Keywords:** Profitability, Short-Term Debt, Long-Term Debt and Premium Growth.

**JEL classification:** C88, G22, G24, G29

### **1. Introduction**

In real world profitability for any business attached with the firm business performance. Profitability is seen as proxy of financial performance, which is one of the main objectives of company's management (Burca & Batrinca, 2014). It is a crucial prerequisite for an increasing competitiveness of a company that operates in a market. To optimize economic results, a special attention should be given to the proper grounding of managerial decisions (Malik 2011). Profitability of insurance companies can be analyzed through micro and macroeconomic level, being determined both by internal factors represented by specific characteristics of the company which is totally under the hand of the corporate management system, and external factors regarding connected industry and macroeconomic environment in general which also not under the hand of the corporate management but identifying and knowing its directions and magnitude was helps to develop the strategy to get the opportunity or to minimize the treat (Kripa & Ajasllari, 2016).

Increasing profitability involves determining which areas of operation and a financial strategy are working and which ones need improvement. Understanding the key factors and its magnitude determining profitability assists managers in developing an effective profitability strategy for their company. Malik (2011) insurers' profitability is determined first by underwriting performance (losses and expenses, which are affected by product pricing, risk selection, claims management, and marketing and administrative expenses) and second, by investment performance,

which is a function of asset allocation and asset management as well as capital structure. The choice of capital structure adopted by a firm is fundamentally a financial and marketing problem and it depends on the risk and return characteristics of the firm and /or its management (Olaniyi; 2015).

The capital-mix of a firm can take many forms, but the most realistic is that which combines both a certain percentage of debt and equity in the capital structure and thus, the advantages of leverage (if any) is exploited (Olokoyo; 2012). There is no doubt that benefits abound in the use of debt in the capital structure of firms which influences long term solvency of that firm.

Abu-Rub (2012) contends that financing decision vary according to the rate of risk related to each financing options as well as the relationship between risk and return. Managers of corporate entities are much concerned on how to achieve high financial performance as it has a long-term effect on their corporate goals which ranges from management efficiency (utilization of limited resources at their disposal); investors goal (wealth maximization) and lenders driven (repayment of debt and interest charge). Capital structure is very important in insurance business because there must be proper combination of all the funds accruing to the company so as to avoid excessive debt in the company. Insurance is one of the major risks mitigating mechanism in modern economy. The existence and survival of financially strong Insurance Companies is therefore inevitable.

According to kari (2018) insurance sector has been described as the weakest link in the Nigerian economy because of the low capital base of operators. He noted that the sector that ought to insure critical sectors such as aviation, should not be seen to have capital base, which is even less than that of microfinance banks. Currently capital base of life insurance firms in Nigeria is N2 billion, that of non -life is N3 billion, composite firms have N5 billion capital while reinsurers have N10 billion capital base. Kari, expressed disappointment that whereas the Central Bank of Nigeria recently announced plans to increase minimum capital of micro finance banks to N5 billion and mortgage banks N6 billion, recent move by the National Insurance Commission (NAICOM) to do same was rejected by operators.

The insurance sector which ought to provide risk cover for other sectors seemed to be losing its ground as parties that should secure or breaking new grounds leaving it behind. The sector as the weakest link in the Nigerian economy and now to be less capitalized than mortgage guarantee banks with N6 billion and less capitalized than microfinance banks with N5 billion and this is grievously affecting their profitability. "How can an insurance company that insures the aviation sector have capital less than that of microfinance banks? Some insurance operators argue that capital is not important. If capital has no function, how come banks bought over insurance companies that used to be owned by insurance companies? "Insurance anywhere in the world is the mobilizer of funds and provider of security. You cannot provide security if you don't have capital. The sector is daily confronted with the challenges of low level of financial literacy, poverty, lack of trust (failure of insurance companies to settle claims), adding that the combination of all of these have continued to negatively affect profitability of listed insurance firm and their level of penetration, (Kari 2018).

Several studies have been conducted on capital structure both in developed and developing countries using capital structure as the independent variable. For instance, (Degryse, Goeij, & Kappert, 2010; Ebaid, 2009; Osuji & Odita, 2012; Akinlo 2011 Bhaird & Lucey, 2010; Onaolapo et al., 2015Abdullah et al., 2011; Ibrahim & Masron, 2011)). However, few studies were conducted on using capital structure variable in determine profitability of listed insurance firms. For example, Chechet and Olayimuwola, (2014) examined capital structure and profitability of the Nigerian listed firms. Muritala (2012) carried out a similar research but the focus was on the manufacturing sector of the Nigerian economy. Muritala (2012) was in support of more of equity financing as against debt financing. Oladeji & Olokoyo (2015 ) examined effect of Capital Structure on Performance of Firms in the Petroleum Industry in Nigeria.

Moreover, very few studies have been conducted in the financial sector, for instance, (Musah, 2018) , Pinto and Joseph (2018), examined effect of Capital Structure on Profitability of commercial banks in Ghana using debt to total assets ratio and debt to equity ratios as independent variables and return on capital employed (ROCE) as a proxy of financial performance. Though, the banking and insurance firms are both financial institutions, but the findings of the banks cannot be extrapolated to the insurance firms because of industry regulations, policies and other sectorial environmental changes. Moreover, the operations of the banks and insurance firms are based on different models that lead to some notable contrasts between them (Thangavelu 2015). Their conclusions suggest that there were some common attributes in the capital structures of firms in different countries but they advocated the necessity of further research to be carried out on capital structure and profitability in particular institutional settings or countries.

It is in recognition of this that it is deemed imperative to specifically examine the effect of capital structure (proxied, short-term debt to total asset, long-term debt to total asset and premium growth) on profitability of listed insurance

firm in Nigeria. The objective of the study is to examine the effect capital structure on profitability of listed insurance firms in Nigeria for the period 2013-2018. The researcher therefore hypothesized in null that capital structure does not have a significant effect on profitability of listed insurance firms in Nigeria. The practical outcome of the study is expected to be of benefit because financial performance is a direct outcome of revenue generation and effective utilization of capital mix of a company. The outcome of the study will equip Nigeria insurance firms with useful information that will assist in making financing decisions. The existing and potential investors will also find it useful as it will help them to take right action in respect investment decision.

The remainder of the paper is organized as follows: section 2 presents relevant extant studies. Section 3 discusses the methodology employed for the study. In section 4, the results of data analysis are presented and discussed. Section 5 concludes the study by highlighting the finding and its policy implications.

## 2. Literature Review

This section reviews relevant studies on capital structure and profitability.

### 2.1 Nexus between Capital Structure and Profitability

Capital structure is a combination of debt and equity that corporate firms used to finance their business operations and growth activities. Whether a business is newly born or is on-going it requires funds to carry out its activities (Chechet & Olayiwola; 2014). Structure of a firm in terms of capital (i.e capital structure) embodies the way the firm finances its operation via the combination of debt and equity (Aftab, Eshan, Naseer & Awan; 2012; Dare and Sola, 2010). This form of corporate structure is very critical and fundamental in the life of a business not only for profit maximization purpose, but also for sustainability and optimal attainment of the overall business objectives. Capital structure is referred to as the way in which the firm finances itself through debts, equity and securities. It is the composition of debt and equity that is required for a firm to finance its assets. The capital structure of a firm is really extremely important since it is related to the ability of the firm to meet the requirements of its stakeholders (Sivalingam & Kengatharan; 2018). On the other hand, profitability is the ability of a given investment to earn a return from its use (kaguri; 2013). Many empirical studies have been conducted on effect of capital structure on profitability of firms. Many of these studies have identified some specific firm level of financing structure that affect profitability.

Ishaya & Abduljeel (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 change (NSE) for a period of ten (10) years: 2000 - 2009 with the aid of the NSE Fact Book covering the period under review. Panel data for the firms are generated and analyzed using fixed-effects, random-effects and Hausman Chi Square estimations. Two independent variables which served as surrogate for capital structure were used in the study: debt ratio, DR and EQT while profitability as the only dependent variable. The result show that DR is negatively related with PROF, the only dependent variable but EQT is directly related with PROF. The study by these findings, indicate consistency with prior empirical studies and provide evidence against the Agency Cost Theory.

Also, Cyril (2016) investigated the effect of Nigerian banks' capital structure on the performance of conglomerates quoted on the floor of the Nigerian stock exchange from 2011 to 2015. The study identified four levels of dependent variables such as return on assets, ratio (ROA), return on equity ratio (ROE), assets turnover ratio (AT) and earnings per share whereas the independent variable is financial leverage. Essentially the paper sets out to determine the effect of capital structure on the above dependable variables hence return on assets of quoted conglomerates, return on equity of quoted conglomerates, asset turnover of the quoted conglomerates and on the earnings per share of quoted conglomerates. Descriptive statistics and the pooled ordinary least square (POLS) regression analytical method were used for data analysis. The study finds that capital structure has effect on both return on assets and asset turnover of the conglomerates but no effect on return on equity and earnings per share of the conglomerate. It is then concluded that an in-depth analysis of business factors which affect a particular industry should be considered so as to obtain the benefits of the debt-equity mix. The result of the study is in agreement with most previous studies on other sectors that discovered mixed results on the effect of capital structure on financial performance. It is therefore necessary to employ a critical analysis of the appropriate debt-equity mix suitable for the company.

Furthermore, Pradhan & Khadka (2017) examines the firm specific and macroeconomics determinants of capital structure in Nepalese commercial banks. The ratio of total debt to total assets, ratio of long term debt to total assets, and ratio of short term debt to total assets are the dependent variables. Bank size, assets growth, liquidity, profitability, and net worth are the independent variables. Bank specific data are collected from the Banking and Financial Statistics and Bank Supervision Report published by Nepal Rastra Bank and annual reports of the selected banks and macroeconomic data are collected from Economic Survey published by Ministry of Finance. The survey

is based on 140 observations from 20 commercial banks in Nepal during the period of 2008 to 2014. The multiple regression models are estimated to test the significance and importance of capital structure in Nepalese commercial banks. The results show that there is positive relationship of bank size and gross domestic product with total debt to total assets ratio. The result also shows negative relationship of liquidity ratio, profitability and net worth with total debt to total assets ratio. This indicates that increase in liquidity, profitability and net worth leads to decrease in total debt to total assets ratio. The study revealed that bank size, profitability, net worth, gross domestic product and inflation have negative impact on long term debt to total assets. However, assets growth and liquidity ratio have positive impact on long term debt to total assets. The study also shows that there is positive impact of bank size, profitability, net worth, gross domestic product and inflation on short term debt to total assets ratio.

Alhassan (2017) examined the effect of capital structure (measures as short term debt ratio, long term debt ratio, and total debt ratio) on profitability (measured as Return on Assets and Return on equity) of commercial banks in Ghana. The study sampled 23 banking over a six year period from 2010 to 2015 and extracted data from the annual of these banks. Data was analysed using descriptive statistics, correlation analysis as well as panel regression analysis. The results showed that banks in Ghana are highly leveraged with debt financing constituting 84% of total capital out of which 77% is short term debt despite the increase in minimum equity capital of these banks. The regression analysis revealed that short term debt ratio and long term debt ratio are negatively related with profitability of banks in Ghana. However, total debt ratio was positively associated with profitability of Banks in Ghana. On the control variables, firm size, foreign ownership and age of the bank were positively associated with banks profitability whiles growth in customers' deposits was negatively associated with banks' profitability. The results show that commercial banks in Ghana reliance on short term financing (deposits) reduces banks profitability and as such banks should shift their financing focus from deposits to other sources. The results call for firms to choose the right mix of short term and long term debt that will maximize profitability of bank.

Anafo, Amponteng, & Yin (2015) examine the impact of capital structure or leverage on profitability of listed banks stock exchange Ghana from 2007 to 2013. The concept of capital structure in finance explains the way a firm finances its assets/operations by the use of a blend of debt and equity. The blend of debt and equity would make banks more profitable bearing in mind the adverse effect of the extreme of each form of financing. Data was collected from Ghana stock exchange and the annual reports of the 17 listed banks. Descriptive statistics and multiple regression models were used to analyze the data. The result revealed that the banks listed on the Ghana Stock Exchange are highly geared. This can be attributed to their over dependency on short term debt which is due to the relatively high Bank of Ghana Lending rate and low level of bond market activities. The study showed that financial leverage measured by short term debt to total assets (STDTA) had significant positive relationship with profitability measured by return on assets (ROA), return on equity (ROE) and earnings per share (EPS). Long Term Debt to Total Asset (LTDTA) also had a significant positive relationship with ROA and ROE but however, had a negative and insignificant relationship with EPS. Asset growth rate had a negative and insignificant relationship with profitability measured by ROA, ROE and EPS. Firm size also showed positive and significant relation with all the profitability measures such as ROA, ROE and EPS.

Kozak (2015) analyzed the main factors which influence the profitability and cost efficiency of 25 non-life insurance companies in Poland during the period of financial integration with the European markets. The research covered the years 2002–2009. In this study, profitability and cost efficiency are measured by four different variables: profitability ratio of technical activity, profitability ratio of investment activity, sales profitability ratio, and net-operating expenses ratio. The results of the analysis indicate that the total gross written premiums collected by the company, the market share of the foreign-owned companies, and the growth of GDP positively affect the profitability and cost efficiency of non-life insurance companies. However, profitability is affected negatively by the level of the company's operating costs, the share of motor insurance in the company's portfolio, and the number of insurance classes offered by the company.

Gill & Biger (2011) examining the effect of capital structure on profitability of the American service and manufacturing firms. A sample of 272 American firms listed on New York Stock Exchange for a period of 3 years from 2005 - 2007 was selected. The correlations and regression analyses were used to estimate the functions relating to profitability (measured by return on equity) with measures of capital structure. Empirical results show a positive relationship between i) short-term debt to total assets and profitability and ii) total debt to total assets and profitability in the service industry. The findings of this paper show a positive relationship between i) short-term debt to total assets and profitability, ii) long-term debt to total assets and profitability, and iii) total debt to total assets and profitability in the manufacturing industry. This paper offers useful insights for the owners/operators, managers, and lending institutions based on empirical evidence.

Pradhan & Khadka (2017) examines the firm specific and macroeconomics determinants of capital structure in Nepalese commercial banks. The ratio of total debt to total assets, ratio of long term debt to total assets, and ratio of short term debt to total assets are the dependent variables. Bank size, assets growth, liquidity, profitability, and net worth are the independent variables. Bank specific data are collected from the Banking and Financial Statistics and Bank Supervision Report published by Nepal Rastra Bank and annual reports of the selected banks and macroeconomic data are collected from Economic Survey published by Ministry of Finance. The survey is based on 140 observations from 20 commercial banks in Nepal during the period of 2008 to 2014. The multiple regression models are estimated to test the significance and importance of capital structure in Nepalese commercial banks. The results show that there is positive relationship of bank size and gross domestic product with total debt to total assets ratio. The result also shows negative relationship of liquidity ratio, profitability and net worth with total debt to total assets ratio. This indicates that increase in liquidity, profitability and net worth leads to decrease in total debt to total assets ratio. The study revealed that bank size, profitability, net worth, gross domestic product and inflation have negative impact on long term debt to total assets. However, assets growth and liquidity ratio have positive impact on long term debt to total assets. The study also shows that there is positive impact of bank size, profitability, net worth, gross domestic product and inflation on short-term debt to total assets ratio.

## **2.2 Theoretical Framework**

This section explains the related theories on which the study is based. There are a number of theoretical perspectives which are used in explaining the relationship between capital structure and profitability. Such as, Agency theory, Trade-off theory, Pecking order theory are used to underpin the study

### **2.2.1 Pecking Order Theory**

The pecking order theory of capital structure as introduced by Donaldson (1961) is among the most influential theories of corporate leverage. This theory tries to capture the costs of asymmetric information which states that companies prioritize their sources of financing (from internal financing to equity) according to the principle of least effort, or of least resistance, preferring to raise equity as a financing means of last resort. Hence, internal funds is used first, and when that is exhausted, debt is issued, and when it is not sensible to issue any more debt, equity is issued. On the other hand, Pecking Order Theory (Myers & Majluf, 1984) captures the effect of asymmetric information upon the mispricing of new securities, which says that there is no well defined target debt ratio. They opined that investors generally perceive that managers are better informed of the price sensitive information of the firms. Investors' perception is such that managers issue risky securities when they are overpriced. This perception of investors leads to the under pricing of new equity issue. Sometimes this under pricing becomes so severe that it causes substantial loss to the existing shareholders. To avoid the problem arising from information asymmetry firms usually fulfill their financing needs by preferring retained earnings as their main source of financing, followed by debt and finally external equity financing as the last resort. The theory underpinning this research work is the trade-off theory. Many studies (Chehet & Olayiwola, 2014; Onaolapo & Kajola, 2010; Akinlo, 2011) favour pecking order theory. The theory claims a negative relationship between capital structure and firm performance. The theory is profit motivated theory. Trade off theory explains that tax shield debt has effect on firm profitability and shows that firm can get optimum capital structure. The theory further shows that, the form of debt capital could equally have effect on firm's performance.

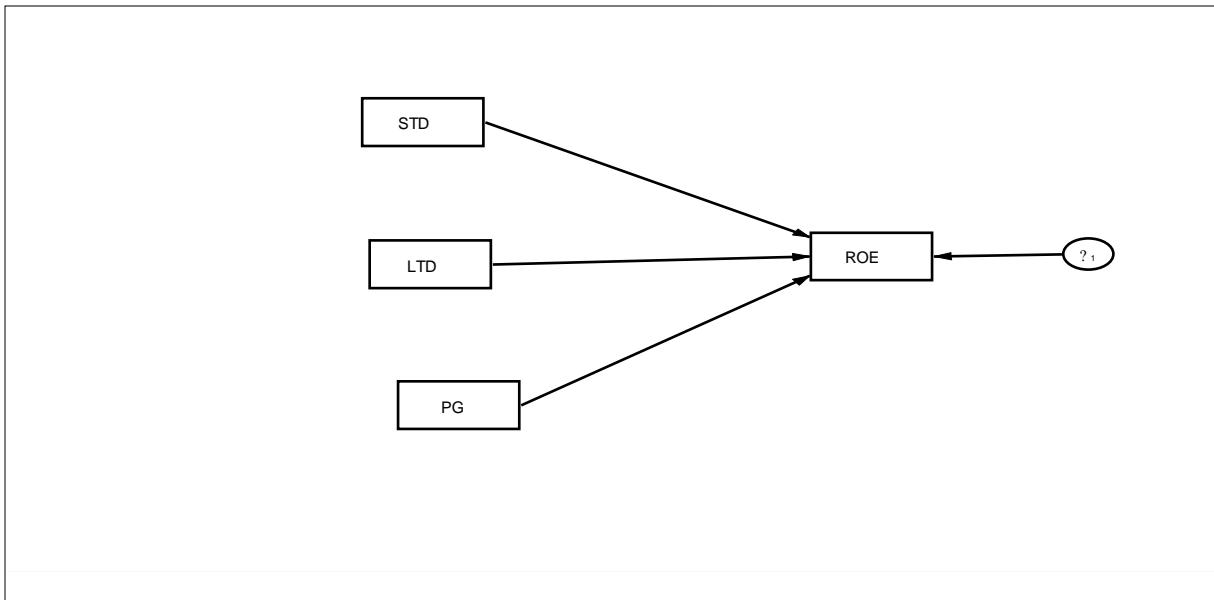
### **2.2.2 Agency theory**

This is a theory concerning the relationship between the principal (shareholders) and the agent of the principal (company's managers). This suggests that the firm can be viewed as a nexus of contracts (loosely defined) between resource holders. An agency relationship arises whenever one or more individual, called principals, hire one or more other individuals, called agents, to perform some service and then delegate decision-making authority to the agents. The use of debt in the capital structure can also lead to agency costs which arise due to a conflict of interest. According to Jensen and Meckling (1976), conflicts of interest can arise either between shareholders and bondholders (agency costs of debt) or between shareholders and managers (agency costs of equity). Jensen and Meckling (1976) suggested that, for an optimal debt level in capital structure by minimizing the agency costs arising from the divergent interest of managers with shareholders and debt holders. They suggest that either ownership of the managers in the firm should be increased in order to align the interest of managers with that of the owners or use of debt should be motivated to control managers' tendency for excessive extra consumptions. Jensen (1986) presents agency problem associated with free-cash flow. He suggested that free cash flow problem can be somehow controlled by increasing the stake of managers in the business or by increasing debt in the capital structure, thereby reducing the amount of "free" cash available to managers. Therefore, firms which are mostly financed by debt given managers less decision power of those financed mostly by equity, and thus debt can be used as a control mechanism, in which lenders and shareholders becomes the principal parties in the corporate governance structure.

### 2.2.3 Static Trade-Off Theory

The trade-off theory states that there is an optimal capital structure that maximizes the value of a firm. Therefore, management will set a target leverage ratio and then gradually move towards that. De Wet (2006) has demonstrated that firms select target leverage ratios based on a trade-off between the benefits and costs of increased leverage. This target leverage ratio is influenced by three factors: tax, financial distress costs and agency costs. Managers will therefore choose the combination of debt and equity that achieves a balance between the benefits of debt (tax advantage) and the various costs associated with debt (financial distress costs and agency costs) (De Wet 2006).

**Figure 2.1**



The above theoretical framework explains the relationship between capital structure and profitability of listed insurance firms.

### 3. Methodology

The study adopted the correlation research design. The design is informed by the research paradigm which is the positivism approach. The population of the study comprised of all the twenty-eight (28) insurance firms listed on the Nigeria stock exchange (NSE) and sample size is fifteen (15). The sampling technique is based on these criteria:

- i. The firm must be listed on the NSE one (1) year before 2013.
- ii. Firm must not be delisted during the period of study
- iii. Availability of data in the annual financial reports of the firms for the period under study i.e., 2013-2017.

The financial data used for the study is secondary in nature obtained from the annual reports. Panel regression analysis was employed based on the fact that the study involves the use of both time series and cross sectional data. The independent variables considered are shorter-term ratio, long-term and premium growth. While the dependent variable is profitability of listed insurance firms.

#### 3.1 Variables Measurement

Table 3.1 Variable Measurement and Description

S/N	Variable Name	Description/Measure	Variable Type	Source	Apriori Expectation
1	<b>ROE</b>	Measured as net profit after tax to shareholder equity for each of the insurance firms under study.	Dependent	Kakanda et al, (2016)	Positive sign
2	<b>STD</b>	short-term debt ratio is			

		measured as short-term debt to total asset	Independent	Khan, (2012)	Negative sign
3	<b>LTD</b>	long-term ratio is measured as long-term to total asset	Independent	Khan (2012)	Negative sign
4	<b>PG</b>	Premium growth is used as the control variable, and it's measured as Change (Increase/ decrease) in gross written premium	Control	Osuji & Odita (2012); Roanne, (2013)	Positive sign

Source: Researchers' Compilation, 2019

### 3.2 Model Specification

To investigate the effect of independent variables (short-term debt, long-term debt and premium growth) on the dependent variable (profitability measured as return on equity), a modified model was adopted. A regression of a variable, Y on X is an equation model that expresses the influence of Y (the dependent variable) on X (the independent variables)

Symbolically, the linear regression is:

$Y = F(X)$ , that is Y is a function of X

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \epsilon$$

Where,

$Y$  = the dependent variable (profitability)

$X$  = the independent variables

$\beta_0$  = the intercept, that is the value of the dependent variable Y, when the explanatory variable X assumes a value a value of zero

$\beta_1, \dots, \beta_n$  = coefficient of the explanatory variables or the slope, that is, the rate at which a change in the explanatory variable affects the behavior of the dependent variable and  $\epsilon$  is the error term

The empirical models estimated in the study were proxied as follows:

$$ROE_{it} = \beta_0 + \beta_1 STD_{it} + \beta_2 LTD_{it} + \beta_3 PG_{it} + \epsilon$$

ROE = Return on equity

STD = Short-term debt ratio

LTD = Long-term debt

PG = Premium Growth

$\epsilon$  = Error term

t = time

i = individual firms

### 4. Result and Discussions

In this section, data collected in the course of carrying out the study were presented and discussed. The hypothesis formulated for the study was tested to determine the effect of capital structure on profitability of listed insurance firms.

Table 4.1 Summary of Descriptive Statistics

Variable	Obs	Min	Max	Mean	Std. Dev.
ROE	75	-0.61	1.23	0.0695	0.2106
STD	75	0.01	0.25	0.0764	0.4745
LTD	75	0.06	0.85	0.4105	0.1907
PG	75	-0.43	0.9	0.0828	0.2036

Source: Output from STATA, 2019

Table 4.1 provides a summary of the descriptive statistics of the dependent and independent variables for the sampled listed insurance firms. This shows the average indicators of variables computed from the financial statements. The return rate measured by return on equity (ROE) reveals an average of 7 percent. This picture suggests a poor performance during the period under study. The ROE measures the contribution of net income per

naira (local currency) invested by the firms' stockholders; a measure of the efficiency of the owners' invested capital. The maximum and minimum values of ROE were 1.23 and -0.61 respectively. That means the most profitable insurance earned N1.23 of net income from a single N1 of asset investment. And the maximum losses incurred by insurance are a loss of N0.61 on each N1 of asset investment. The standard deviation of ROE is 0.2106 which shows low variability across insurance firms.

The variable STD measures the ratio of short-term debt to total asset. The average value of this variable is 0.0764. The value indicates that approximately 7.8 percent of total assets are represented by short-term debts, attesting to the fact that insurance firms largely depend on self-owned asset for financing their operations due to the difficulty in accessing short-term credit from financial institutions. The minimum and maximum value of STD are 0.01 and 0.25 respectively. The standard deviation of 0.4745 shows moderate variability across insurance firms. The ratio of total long-term debt to total assets (LTD) also stands on average at 0.4105. This suggests that about 51 percent of total assets are financed by long-term debt capital. The minimum and maximum of LTD are 0.06 and 0.85 respectively. The standard deviation of LTD is 0.1907, which shows low variability across sampled insurance firms. The above position reveals that the insurance firms are financially leveraged with a large percentage of long-term debt more than short-term debt. The average value of premium growth measured as Change (Increase/ decrease) in gross written premiums is 0.0828 with a standard deviation of 0.2036. Therefore, it indicates that, the Nigeria insurance firms are low risky because they incurred an average 8.3 percents of single N1 of premium earned and there exists low variation among the level of riskiness across those insurance firms included in this study. The minimum and maximum values were -0.43 and 0.9 respectively.

Table 4.2 Correlation matrix

	ROE	STD	LTD	PG
ROE	1.0000			
STD	-0.2642	1.0000		
LTD	0.2971	0.0042	1.0000	
PG	0.1897	0.0147	-0.0601	1.0000

Source: Output from STATA, 2019

From the correlation matrix table 4.2, it can be seen that STD negatively correlated with ROE of the listed insurance firms in Nigeria. The implication is that the above variable move in the opposite direction with the ROE. On the other hand, LTD and PG show a positive correlation with ROE, implying that the variables move in the same direction with ROE. Relatively, the table indicates that there is positive correlation between STD and LTD and PG while there is a negative correlation between LTD and PG.

#### 4.1 Residual tests

To test for the existence of heteroskedasticity, the present study used Breuch Pagan/Cook-Weisberg. The study reveal that Chi2 of 0.94 with p-value of 0.1706, implying absence of heteroskedasticity and that the null hypothesis that the variance of the residual is constant (homoscedastic) is not rejected.

The study conducted multicollinearity test to show the strength of relationship among the explanatory variables themselves, which may affect the result of the study. Variance inflation factor (VIF) was conducted and the values for all the variables are less than 10 and the tolerance values for all the variables are greater 0.10 (rule of thumb). This shows there is no multicollinearity problem.

The hausman speciation test was conducted to choose between the fixed and random effect model. The result of the hausman test revealed that the value of chi2 is 0.15 and the prob>chi 0.9649. The insignificant value as reported by the probability of chi2 indicates that the hausman test is in favor random effect model. Further to this, the Breusch and Pagan lagrangian multiplier test for random effect was conducted to choose between the random effect result and OLS regression. The result deduced from the test showed chi2 of 0.000 with the p-value of 1.000. This implies that OLS regression model is the best suitable to be interpreted in this study.

The result from the OLS regression model is presented in table 4.3 below.

Table 4.3: Regression Results

Variables	Coefficient	Std. Error	Z- value	P>(Z)
STD	-1.192909	0.4703311	-2.54	0.013
LTD	0.3425699	0.1168949	2.93	0.005
PG	0.2185109	0.109204	2.00	0.049

Constant	0.0040817	0.0652513	0.06	0.950
Adjusted R-Square:	0.1700			
Prob.:	0.0010			

Source: Output from STATA 2019

From Table 4.3, it can be observed that the adjusted  $R^2$  is 0.17 which means that 17% of variation in ROE of listed insurance firms in Nigeria was explained jointly by the independent variables captured in the model and p-value of 0.0010 shows that it is significant at 1%. This implies that the model is fit.

The beta coefficient of the STD is -1.1192909 and the p-value is 0.013, which is significant at 1% level of significance. This indicates that short-term debt to total assets has negative significant effect on the profitability of listed insurance firms. It means 1% increase in short-term debt will lead 112% decrease in profitability of listed insurance firms. The implication of this finding is that the lower the short-term debt to total assets ratio of a firm the better the quantum of profit to be reported by the firm. The result provided a basis for rejecting the null hypothesis, which states that short-term debt to total assets has not significant effect on the profitability of listed insurance firms in Nigeria. This findings is in line with that of Alhassan (2017) who submitted that short-term debt has a significant negative relationship with profitability but contradicts the study of Anafo, Amponteng, & Yin, (2015) and (Gill & Biger, 2011) who found that there was significant positive relationship between short-term debt and profitability.

Result from Table 4.3 shows that the beta coefficient of LTD is 0.3425699 and the p-value is 0.005 which is significant at 1% level of significance. This indicates that long-term debt to total assets has positive significant effect on the profitability of listed insurance firms. It means 1% increase in long-term debt will lead to 34.3% increase in profitability of listed insurance firms. The implication of this finding is that the higher the long-term debt to total assets ratio of a firm the better the quantum of profit to be reported by the firm. According to agency theory, firms which are mostly financed by debt given managers less decision power of those financed mostly by equity, and thus debt can be used as a control mechanism, in which lenders and shareholders becomes the principal parties in the corporate governance structure. The result provided a basis for rejecting the null hypothesis, which states that long-term debt to total assets has not significant effect on the profitability of listed insurance firms in Nigeria. This findings is in line with that of Gill & Biger, (2011) and Anafo, Amponteng, & Yin, (2015) who found that long-term debt has significant relationship with profitability. Conversely, it contradicts the results of Alhassan (2017) who found that long-term has significantly negative effect on profitability.

Finally, result from Table 4.3 shows that the beta coefficient of PG is 0.2185109 and the p-value is 0.049, which is significant at 5% level of significance. This indicates that premium growth has positive significant effect on the profitability of listed insurance firms. It means 1% increase in premium growth will lead to 21.85% increase in profitability of listed insurance firms. The implication of this finding is that the higher the premium of a firm the better the quantum of profit to be reported by the firm. The result provided a basis for rejecting the null hypothesis, which states that premium growth has not significant effect on the profitability of listed insurance firms in Nigeria.

## 5. Policy Implications

From the above analysis, the capital structure of listed insurance firms in Nigeria consists more of debt financing than equity financing. Excessive debts in the firm could discourage potential shareholders who are risk averse. This is justified by the facts that when insurance firms are insolvent, debts providers whose securities are mortgaged by the firm's assets would be settled first. Thus making risk averse shareholders to look for firms with less debt. As debts providers continue to demand for increase in interest, it raises fixed interest expenses, thus, shifting insurance firm's break-even point upward toward the expected sales level; it boosts the volatility of earnings and by extension, the share price. It increases the level of risk and could cause loss of confidence obtaining additional financing from lenders; it may also results in violating debt covenants.

Excessive equity on the other hand, could make insurance firms not to grow fast. This implication provides some support for the entrenchment hypothesis which states that; debt finance is cheaper than equity and when creditors are satisfied with the gearing level of a firm, they would continue to finance such firm toward meeting stakeholder's interest. Firms with excessive equity could lose the growth in revenue or profit as debt could make their supply flowing, meeting demand and gaining goodwill among its stakeholders. When a firm goes for more equity, it forfeits the interest on debt been treated as allowable expenses for tax purpose leading to lower tax. As part of steps toward tax planning, managers usually consider debt finance more than equity finance for specific transactions to add value to the firms operations. A low debt/equity ratio provides less risk to the lenders as the firm would appear to have a reasonable ability to repay debt.

## 6. Conclusion and Recommendations

The study investigated the effect of capital structure on the profitability of listed insurance firms in Nigeria, 15 out of the 27 listed insurance firms were used due to data availability. Data were sourced from annual financial reports of the firms. The study proxied capital structure by short-term debt and long-term debt, while premium growth was used as the control variable. Using the multiple regressions to analyze the data, this study found that there is a negative and significant relationship between short-term debt and profitability of listed insurance firm. In addition, significant relationship exists between long-term debt and profitability and the relationship was found to be positive. Finally, premium growth was found to have significantly positive relationship with profitability. Hence, the study recommends that the management of listed insurance firms should strive towards having optimum capital structure by increasing their equity level and reducing dependence on debts so as to avoid being cash strapped and debt ridden. This is because, beside equity holders providing funding, they could be helpful by bringing in their business experiences, skills, and contacts to grow the insurance firms. Investors are often prepared to provide follow-up funding as the business grows and they take a long-term view, as most do not expect return on their investment immediately.

## References

Abu-Rub, N., 2012. Capital structure and firm performance: Evidence from Palestine stock exchange. *J. Money Investment Bank.*, 23: 109-116.

Akinlo, O. (2011). Determinants of Capital Structure: Evidence from Nigeria Panel Data" *African Economic and Business Review*. 9 (1), 9-16.

Aftab M, Ehsan R, Naseer S, Awan T (2012). The effect of corporate strategy and capital structure on performance of banking sector of Pakistan. *Global Journal of Management and Business Research*. 12(17), 67-79

Anafo, S. A., Amponteng, E., & Yin, L. (2015). The Impact of Capital Structure on Profitability of Banks Listed on the Ghana Stock Exchange. *Research Journal of Finance and Accounting*.

BURCA, A.-M., & BATRINCA, G. (2014). The Determinants of Financial Performance in the Romanian Insurance Market. *International Journal of Academic Research in Accounting, Finance and Management Sciences*. <https://doi.org/10.6007/IJARAFMS/v4-i1/637>

Chechet, Ishaya Luka and Olayiwola, A. B. (2014). Capital Structure and Profitability of Nigerian Quoted Firms : The Agency Cost Theory Perspective. *American International Journal of Social Science*, 3(1), 139–158. <https://doi.org/10.1080/10426914.2010.536937>

Cyril, U. M. (2016). No Titlenppoo. *ММТ*, 4(6), 2016.

Gill, A., & Biger, N. (2011). The Effect of Capital Structure on Profitability : Evidence from the United States. *International Journal of Management*. <https://doi.org/10.1016/j.tet.2007.06.107>

Hifza Malik, (2011) Determinants of Insurance Companies Profitability: An Analysis of Insurance Sector Of Pakistan, *Academic Research International*, Volume 1, Issue 3,

Ishaya, L. C., & Abduljaleel, B., O. (2014). Capital Structure and Profitability of Nigerian Quoted Firms : The Agency Cost Theory Perspective. *American International Journal of Social Science*, 3(1), 139–158.

Muritala T. A. (2012) An Empirical Analysis of Capital Structure on Firms' Performance in Nigeria. *International Journal of Advances in Management and Economics* Available online at [www.managementjournal.info](http://www.managementjournal.info) ISSN: 2278-3369.

Musah, A. (2018). The Impact of Capital Structure on Profitability of Commercial Banks in Ghana. *Asian Journal of Economic Modelling*. <https://doi.org/10.18488/journal.8.2018.61.21.36>

Pradhan, R. S., & Khadka, P. (2017). Firm Specific and Macro-Economic Determinants of Corporate Capital Structure: A Case of Nepalese Commercial Banks. SSRN. <https://doi.org/10.2139/ssrn.3044061>

Onaolapo, A & Kajola, S. (2010). "Capital Structure and Firm Performance: Evidence from Nigeria" *European Journal of Economics, Finance and Administrative Sciences*

Olokoyo, F. O. (2012). *Capital Structure and Corporate Performance of Nigerian Quoted Firms*.

Thangavelu.(2015).*FDI Restrictiveness Index for ASEAN : Implementation of AEC Blueprint Measure*

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