

## Determinants of Capital Structure in Listed Insurance Companies in Nigeria

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### Abstract

This study investigates the determinants of capital structure in listed insurance companies in Nigeria for the period of thirteen years, from 2006-2018. Ex-post facto research design was adopted for this study. The population of the study is made up of the 28 insurance companies listed on the floor of the Nigerian Stock Exchange (NSE) as at 2018. Since the population is not too large, this study utilized census sampling technique to take all the population. The data used in this study were secondary data derived from annual reports of insurance companies that are listed on the NSE. The study used panel regression with respect to the use of Hausman specification test to determine the use of fixed or random effect model. The random effect regression result revealed that that firm size has insignificant positive effect on capital structure (CST) of listed insurance companies in Nigeria. The study showed a significant positive effect between age and CST of listed insurance companies in Nigeria. Based on the regression result, asset tangibility has insignificant negative effect on CST, the regression result shows that risk has insignificant positive effect on CST, while the study found that insurance growth has significant positive effect on CST of listed insurance companies in Nigeria. The study concludes that size, age, tangibility of asset, insurance risk and growth are determinants of CST of listed insurance companies in Nigeria. The study recommends that insurance companies should have a high consideration for the value of total asset when determining their capital mix. Also, insurance companies that have been incorporated for long should consider external financing likewise, insurance companies should not give fixed asset priority when considering their capital structure mix. Debt providers should seek for high return in order to hold the risk related to the bankruptcy and financial distress. Lastly, debt holders should require such return to hold the risk of agency conflicts with shareholders and management.

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## INTRODUCTION

Capital structure is a way a company finances its overall operations using diverse sources of funds. It is also a mix of debt and equity. The level of risk in a company can be best measured by its capital structure. The nature of insurance business is to protect their clients as the need arises via minimization of losses. Shareholders' wealth maximization depends on some issues like managing lower cost of capital and reducing the agency costs of debt and equity. All these issues are determined and managed by reaching at a point of optimal capital structure. As a result, financial managers strive to ensure the optimal mix of debt and equity in the firm's capital structure.

An insurance company can finance its investment decision by debt, equity or both. Such capital gearing could have implications for the shareholders earnings and risk, which could eventually affect the cost of capital and the market value of the firm.

Few researches have been carried out on the perspective of developing economies. This makes it uneasy to say whether conclusions from theoretical and empirical research carried out on developed economies are also applicable for developing economies too or whether a different set of determinants work in deciding capital structure in developing economies like Nigeria.

The studies on developing countries have divergent views on determinants of capital structure of listed companies in Nigeria and very few on insurance companies. Despite the dearth of research related to determinants of capital structure of listed insurance companies in Nigeria, most of the studies have provided contradictory findings; Shehu (2011) concludes that like other developing economies, the area of research for capital structure is still unexplored in Nigeria. More so, some of these works mainly focused on banking, petroleum, and manufacturing industries.

In Nigeria, limited studies have been carried out on determinants of capital structure of listed insurance companies, studies like (Shehu, 2012; Ogbulu & Emeni, 2012; Adaramola & Olarewaju, 2015). The study of Shehu (2012) and Ogbulu and Emeni (2012) failed to measure firm risk as one of the firm characteristics variable while the study of

Adaramola and Olarewaju (2015) also ignored firm age as an attribute of insurance companies in Nigeria. Therefore this study sets out to bridge this gap in knowledge by examining the determinants of capital structure of listed insurance companies in Nigeria considering firm size, growth, age, asset tangibility and risk on capital structure of listed insurance companies in Nigeria, thereby filling the identified gap in literature.

## LITERATURE REVIEW

### Concept of Capital Structure

Capital structure is generally considered as the mixture of debt and equity that makes up the firms total capital it uses for its business. Gajurel (2005) described it as the different sources of funds that make up a firm's capital. According to Abor (2008), capital structure is the particular blend of equity and debt a firm uses to finance its operations. However, it does not make sense to consider the capital structure of a firm or any business without taking into consideration the firm's or business's peculiar economic situation or environment. It is held by financial analysts and researchers that the firms which are exposed to high operational risk or hazards tend to have a low level of debt in its capital structure and vice versa.

### Determinants of Capital structure

Capital structures differ between countries, industries and firms within a given industry. This supports Baral (2004) argument that differences in capital structures between industries may be due to attributes specific to the firm. The focus of capital structure studies to date has been to identify determinants that can explain the financing behaviour and choices of firms. As a result of these theoretical and empirical studies, several determinants have emerged to better explain capital structures. According to Harris and Raviv (1991), and Brigham and Daves (2004), the consensus is that firm' levels of leverage increase with fixed assets and firm size. Similarly, levels of leverage decrease due to volatility, advertising expenditure, the probability of bankruptcy, profitability and the uniqueness of the product (Rajan & Zingales, 1995). The predominant firm characteristics from prior research (Booth, Aivazian, Demirgüç-Kunt, &

Maksimovic, 2001; Vasiliou, Eriotis & Daskalakis, 2005; Baral, 2004; Chen & Hammes, 2004) that are included in this study are asset tangibility, business risk, age, growth and size. These firm characteristics are identified as important factors in both developed countries and developing countries.

### **Empirical Review**

Naveed, Zulfqar and Ishfaq (2010) studied the life insurance sector of Pakistan and the result of OLS regression model indicates that size, profitability, risk, liquidity and age are important determinants of capital structure of life insurance companies. In the same manner, Akinlo (2011) examined the determinants of capital of 66 firms listed on the NSE during the period 1999-2007 using panel data. The results showed that there is a negative relationship between leverage and growth opportunities, leverage and tangibility, but positively related to liquidity as well as size. It also shows that size and leverage are positively related. In the same way, Sheik and Wang (2011) explored the factors that affect capital structure of manufacturing firms in Pakistani firms. The results revealed that there is a negative relationship between debt ratio and profitability, liquidity, earnings volatility, and tangibility; while firm size has a positive relationship with debt ratio. There was no significant relationship identified between the dependent variable of debt ratio and the independent variables of non-debt tax shields and growth opportunities.

Zabri (2012) surveyed the determinants of capital structure among small and medium scale enterprises in Malaysia. Profitability, size, tangibility of assets, growth of firm, age of firm, non-debt tax shield and liquidity were considered in the analysis. The results of the study revealed in overall that three out of seven selected firm's characteristics such as liquidity, tangibility of assets and non-debts tax shield were found to have statistically significant relationship with firm's capital structure. Furthermore, all the three variables of liquidity, tangibility of assets and non-debts tax shield were also found to have ability in explaining variations in the firm's capital structure. By extension, Sharif, Naeem and Khan (2012) investigated factors that determine capital structure of insurance companies in Pakistan. The outcomes

of study affirm that, profitability, age and earnings volatility has indirect relationship with leverage and was significant. Liquidity also maintain inverse relationship with debt ratio but insignificant. Alternatively, size and growth opportunities have direct relationship with leverage but only size is significant. In addition, Shehu (2011) investigated the determinants of capital structure in Nigerian listed insurance firms using data obtained from annual report of the sampled firms for the period of 2001-2010. It used five explanatory variables to measure their effects on debt ratio. The determinants of capital structure is examined with five variables, namely age, growth rate, tangibility, profitability, and size of the 15 Nigerian listed insurance firms on December 31, 2010. The result revealed that all the explanatory variables have statistically and significantly influenced the explained variable. The results approve the prediction of pecking order theory in the case of profitability and trade-off theory in case of tangibility variables.

Oppong-Boakye, Appiah and Afolabi (2013) explored the determinants of capital structure among 33 listed and non-listed companies during the period 2003-2007 in Ghana. Six factors of profitability, assets' tangibility, size of firm, business risk, growth and tax were examined. The results revealed that leverage has a positive relationship with profitability, assets tangibility, size, business risk on one hand; but a negative relationship was observed with growth and tax on the other hand.

Kingsley (2013) employed panel regression model in examining the capital structure of insurance companies in Ghana. Firm size, profitability and growth were the statistically significant factors. Negative relationship between profitability and leverage also indicates that profitable insurance companies prefer internal sources of finance to external sources. As well as the study of Mohamed and Mahmoud (2013) examined the impact of corporate characteristics on capital structure of Egyptian insurance companies from 2006 to 2011. The study demonstrates that firm size, tangibility of assets, profitability and firm age factors are positively related to the total leverage. On the other hand, growth opportunities, liquidity and non-debt tax shield appear to be the

significant factors that adversely influence the total leverage and capital structure. In effect, Chechet, Garba and Odudu (2013) assessed the determinants of capital structure in Nigerian Chemical and Paints companies listed in Nigeria, OLS was employed, the study revealed that for the Nigerian chemical and paints sector, tangibility and profitability have significant impact on leverage, while size, growth and age have insignificant impact on the dependent variable. It also showed that the coefficient of the two significant explanatory variables, which are tangibility and profitability are negative. All in all, three out of five of the explanatory variables have significant on the dependent variable whereas the remaining two, which include profitability and tangibility are not significant.

Onaolapo, Kajola and Nwidobie (2015) examined the determinants of corporate capital structure of thirty-five firms listed on the NSE between 2006 and 2012. Results revealed that the three leverage ratios total leverage ratio, long-term leverage ratio and short-term leverage ratio are negatively and significantly related with profitability. Firm size and asset tangibility are however, positively and significantly related with leverage proxies. Adaramola and Olarewaju (2015) examined the determinant of capital structure of quoted composite insurance companies in Nigeria using descriptive research designed. The results revealed that tangibility, growth and liquidity had a negative impact on the leverage while risk, return on asset and size have a positive influenced on leverage; it was discovered from this study that all the variables identified are statistically significant except ROA and growth; the model was reliable and appropriate for determining capital structure of composite insurance companies.

Yusuf, Mustapha and Garba (2015) examined the determinant of capital structure decision of listed food/beverages and tobacco firms in Nigerian capital market. The study reveals that tangibility, firm growth, profitability has a significant positive effect on determinant of capital structure decision of listed food/beverages and Tobacco firms in Nigeria. The findings further revealed that, firm size is positively correlated and significant. Ahmad (2015) examined the determinants of capital structure of a firm. Capital

structure is encapsulated by total liabilities to total assets. The results of the cross-sectional OLS regression show that growth opportunity, firms' age, liquidity, profitability, size, tangibility, and industry type have statistically significant relationship with firm's leverage. Dividends policy and ownership structure of the firm, however, were found to have negative but statistically insignificant relationships with capital structure. Findings of the study reveal that firm's age, growth opportunities, liquidity, profitability, firm's size, tangibility, and type of industry are determinants of capital structure of firms listed in Kuwaiti stock exchange. Dividends policy and ownership structure, however, are revealed to be non-determinants of capital structure. Martina (2015) investigated the relationship between tangible assets and the capital structure of Croatian small and medium-sized enterprises. The results of this research indicate that tangible assets are differently correlated with short-term and long-term leverage. The relationship between tangible assets and short-term leverage is negative and statistically significant in all observed years. The relationship between tangible assets and long-term leverage is positive in all observed years and statistically significant. The results showed that small and medium-sized companies use their collateral to attract long-term debt. Ahmed (2016) investigated empirical evidence on capital structure determinants in Nigeria. The relationship between the short-term and long-term debt and four explanatory variables were observed. The findings of this study confirm that profitability, growth, firm size and tangibility are explanatory variables of capital structure.

## THEORETICAL FRAMEWORK

Three key theories shape discussions on capital structure by scholars globally. The Static Trade-off Theory, the Agency Theory, and the Pecking Order Theory.

**Pecking Order Theory:** The Pecking Order Theory (POT) propounded by Myers (1984) and Myers and Majluf (1984) admit that firms follow a hierarchy of financial decisions when establishing its capital structure. Initially, firms prefer internal financing and if this is not sufficient they then go for external financing. The sequence of external

financing will be the issuing of debt and convertible debt, before opting for issuing equity shares. The POT holds that firms that are more lucrative are naturally less indebted since they can finance their new capital projects without the need to issue debt or equity. The reluctance in issuing new equity apart from the transactional cost involved, according to Myers and Majluf (1984) is due to asymmetric information between the management and the new shareholders.

The foremost prediction of the model is that firms will not have a target optimal capital structure, but will instead follow a pecking order of incremental financing choices that places internally generated funds at the top of the order, followed by debt issues, and finally only when the firm reached its “debt capacity” new equity financing. It has been found in practice that firms prefer internal financing. If the internal funds are not sufficient to meet the investment outlays, firms go for external finance, issuing the safest security first. They start with debt, then possible hybrid securities such as convertible debentures, then perhaps equity as a last resort. There are other theories, such as Modigliani and Miller’s and also those based on agency theory. This study therefore adopts the POT in line with other similar studies, to add to demonstrate the numbers that explain the need for further application of the theory to the Nigeria’s context.

**METHODS**

This study adopts ex-post facto and causal research design. The population of this study is made up of 28 insurance companies listed on the

floor of the Nigerian Stock Exchange from year 2006 to 2018. This period is considered important due to the fact that the industry witnessed capitalization during this period. As at 2018, 28 insurance Companies were listed on the exchange. In this study statistical sampling is not used due to the small size of the population, all the population elements are census.

The data that are used for this study is secondary in nature. This study utilized panel ordinary least squares model to examine the effect of the independent variables on the dependent variable of capital structure of listed insurance companies in Nigeria, Panel regression techniques are used to analyze this study because the study involves the combination of time series and cross sectional data. Hausman specification test was utilized to test whether the fixed or random effect model is appropriate. Thus, the technique is consistent with the research design employed in the study and the objective of this study.

**Model Specifications**

$$CST_{it} = \beta_0 + \beta_1FSZ_{it} + \beta_2AGE_{it} + \beta_3TAN_{it} + \beta_4RSK_{it} + \beta_5GRT_{it} + e_{it}$$

Where;

CST = Capital Structure

FSZ = Firm Size

TAN= Asset Tangibility

GRT = Firm Growth

AGE = Firm Age

RSK = Business Risk

e = error term

$\beta_0$  = Intercept of the regression line

$\beta_1$ - $\beta_5$  = Coefficient of the independent variables

**Data Analysis and Results**

**Table 1.** Fixed Effect Model Regression Results

Variable	Coefficient	Standard Error	t-statistics	Prob
C	0.017717	0.109694	0.161509	0.8718
FSZ	0.008206	0.014413	0.569392	0.5695
AGE	0.167991	0.051432	3.266296	0.0012

TAN	-0.005054	0.062072	-0.081419	0.9352
RSK	0.017379	0.014575	1.192418	0.2340
GRT	0.021255	0.010817	1.964914	0.0503
R <sup>2</sup>	0.36			
Adj. R <sup>2</sup>	0.24			
F-Statistics	4.3247			
Prob(F-Statistics)	0.0007			
Hausman Chi-Sq. Stat.	5.74			
Hausman Prob. Value	0.33			
Heteroskedasticity F-Statistics	5.009144			
Heteroskedasticity Observed R-square	0.0831			
Br-Godfrey LM Stat	8.356766			
Br-Godfrey LM Ob. R	0.0945			

Source: E-view Output, 2019

#### **Dependent variable: Capital Structure (CST)**

The F-Statistic of 4.3247 and its corresponding P-value of 0.0007 indicates that the model is fit and the independent variables are properly selected, combined and used. The Coefficient of Determination (R<sup>2</sup>) of 0.36 indicates that about 36% of variation in CST can be explained by FSZ, AGE, TAN, RSK and GRT or the ability of the regression line to predict CST is about 36%. The remaining 64% are attributed to other independent variables that are not captured in the regression. The study therefore, accepts alternate Hypothesis which states that, FSZ, AGE, TAN, RSK and GRT are determinants of CST and they have significant effect on capital structure of listed insurance companies in Nigeria. The Breusch Pagan-Godfrey Test of Heteroskedasticity indicates that the probability chi-square value of 0.0831 indicates that the data are homokedasticity. Thus, the p-value of 0.0831 which is greater than 0.05 makes the study to accept the null hypothesis that the residuals are not heteroskedasticity but homokedasticity and is desirable. The Breush--Godfrey serial correlation LM test for serial correlation was performed on the residuals and the results showed observed R-squared of 0.3161, which is in excess of 0.05, which lead us to reject the presence of serial correlation in the residual. The Hausman Specification Test indicates that Random Effect Model is most appropriate to Fixed

Effect Model given the Chi-Square value of 5.746465 and its corresponding P-value of 0.3317 which is greater than the critical value of 0.5.

#### **Discussion of Findings**

In the regression result, FSZ has insignificant positive effect on CST of listed insurance companies in Nigeria. This indicates that FSZ does not influence CST. The coefficient of FSZ is positive which may be as a result of the fact that large firms are visible and this finding agrees with the Pecking order theory of Myer and Majluf (1984) who argued that there is less asymmetrical information about the larger firms (Kester, 1986) and as such they are viewed as less risky by lenders, which then enable them to go for loans more frequent than smaller firms. The finding is in tandem with the findings in the previous works of Akinlo (2011); Sheik and Wang (2011); Afza and Hussain (2011); Sharif, Naeem and Khan (2012); Appiah and Afolabi (2013); Oppong-Boakye; Albulena, Skender, Vlora and Edona (2014); Olakunle and Jones (2014); Sritharan (2014); Ahmad (2015); Onaolapo, Kajola and Nwidobie (2015); Adaramola and Olarewaju (2015); Yusuf, Mustapha and Garba (2015); Ahmed (2016), but contradicts the study Chen (2004); Tariq and Hijazi (2006); Naser and Krassimir (2011); Ogbolu and Emeni (2012); Zabri (2012); Shehu (2012); Chandrasekharan (2012); Oladele and Adebayo

(2013); Aremu, Ekpo, Mustapha and Adedoyin (2013).

In the case of Age and capital structure, a significant positive effect was found. This indicates that debt will increase when there is an increase in insurance companies' age. This means that increase in age will increase gearing. This implies that as an insurance company advances in age, the insurance company's need for external financing will tend to increase. Also, reputation mean the good name a firm has built up over the years; the name is recognized by the market, which has observed the firm's ability to meet its obligations in a timely manner. This finding is consistent with the findings in previous studies such as Naveed, Zulfqar and Ishfaq (2010); Bayeh (2013); Shehu (2012); Mohamed and Mahmoud (2013); Ahmad (2015). Also, the finding is contrary to the study of Zabri (2012); Ogbolu and Emeni (2012); Sharif, Naeem and Khan (2012); Chechet, Garba and Odudu (2013).

Based on the regression result, TAN and CST, TAN has insignificant negative effect on CST. The effect of tangibility on capital structure according to both trade off theory and pecking order theory suggests a positive relationship between tangibility and capital structure but the result of this finding indicates a negative insignificant relationship between tangibility of assets and CST of listed insurance companies in Nigeria. This means that a firm that has the incentive of getting debt at a lower interest rate as a result of possessing higher percentage of fixed asset is expected not to borrow more as compared to a firm whose cost of borrowing is high because of having less fixed assets. It is assumed, from the theoretical point of view, that tangible assets can be used as collateral. Therefore higher tangibility lowers the risk of a creditor and increases the value of the assets in the case of bankruptcy. This is in line with the findings of Sheik and Wang (2011); Akinlo (2011); Ogbolu and Emeni (2012); Sritharan (2014); Adaramola and Olarewaju (2015); who found a negative insignificant relationship listed insurance companies. On the other hand, another study conducted by Mishra (2011); Naser and Krassimir (2011); Chandrasekharan (2012); Zabri (2012); Shehu (2012); Oppong-Boakye, Appiah and Afolabi (2013); Aremu, Ekpo, Mustapha and

Adedoyin (2013); Oladele and Adebayo (2013); Mohamed and Mahmoud (2013); Chechet, Garba and Odudu (2013); Albulena, Skender, Vlora and Edona (2014); Onaolapo, Kajola and Nwidobie (2015); Martina (2015); Ahmad (2015); Yusuf, Mustapha and Garba (2015); Ahmed (2016) found positive relationship between tangibility and capital structure for listed insurance companies in Nigeria.

The regression result of insurance risk and capital structure shows that RSK has insignificant positive effect on CST. RSK does not have a significant effect on CST. It indicates that RSK does not influence capital structure of listed insurance companies in Nigeria. The reason for such relationship in the listed insurance companies in Nigeria is due the theoretical prediction of the agency theory; the required rate return from investors should be suitable to their risk in the firm. Shareholders will require high return in order to hold the risk related to the bankruptcy and financial distress since the debt holders have the priority in the case of bankruptcy. Also, the debt holders will require such return to hold the risk of agency conflicts with shareholders and management. The findings is in line with the studies of Oppong-Boakye, Appiah and Afolabi (2013); Bayeh (2013); Adaramola and Olarewaju (2015). This finding contradicts the study of Naveed, Zulfqar and Ishfaq (2010).

The study found that GRT has significant positive effect on CST of listed insurance companies in Nigeria. This means that GRT influences CST of listed insurance companies in Nigeria positively. According to the pecking order theory hypothesis, a firm will first use internally generated funds which may not be sufficient for a growing firm. And next options for the growing firms is to use debt financing which implies that a growing firm will have a high leverage (Drobotz & Fix, 2003). On the other hand, agency costs for growing firms are expected to be higher as these firms have more flexibility with regard to future investments. The reason is that bondholders fear that such firms may go for risky projects in future as they have more choice of selecting between risky and safe investment opportunities. Deeming their investments at risk in future, bondholders will impose higher costs of lending to growing firms. Growing firms, thus, facing higher cost of debt will

use less debt and more equity. The study is in harmony with the studies of Sharif, Naeem and Khan (2012); Oladele and Adebayo (2013); Kingsley (2013); Bayeh (2013); Sritharan (2014); Ahmad (2015); Yusuf, Mustapha and Garba (2015); Ahmed (2016). This finding contradicts the study of Akinlo (2011); Ogbolu and Emeni (2012); Oppong-Boakye, Appiah and Afolabi (2013); Mohamed and Mahmoud (2013); Chechet, Garba and Odudu (2013); Adaramola and Olarewaju (2015).

## CONCLUSION

The matter of determinants of capital structure has become an essential matter in the literature of finance. Attempt has been made in this study to examine the effects of five determinants such as firm size, age, growth, business risk and asset tangibility on capital structure of listed insurance companies in Nigeria. Based on the result that FSZ has insignificant positive effect on CST of listed insurance companies in Nigeria, the study concludes that firm size is not a significant factor that determines the capital structure of listed insurance companies in Nigeria, although there is an insignificant positive relationship. It shows that large firms tend to go for loans more frequent than smaller firms. In line with significant positive effect of AGE on CST of listed insurance companies in Nigeria, the study concludes that age is a significant determinant of capital structure in listed insurance companies in Nigeria. The positive coefficient of age implies that as an insurance company advances in age, the insurance company's need for external financing will tend to increase. Also, reputation mean the good name a firm has built up over the years; the name is recognized by the market, which has observed the firm's ability to meet its obligations in a timely manner.

In the case of insignificant but negative effect of asset tangibility (TAN) on capital structure of listed insurance companies in Nigeria, the study concludes that an insurance company has the incentive of getting debt at a lower interest rate as a result of possessing higher percentage of fixed asset is expected not to borrow more as compared to a firm whose cost of borrowing is high because of having less fixed assets. The regression result of

insurance risk and capital structure shows that RSK has insignificant positive effect on CST. RSK does not have a significant effect on CST. Based on the insignificant positive relationship between insurance risk (RSK) and capital structure of listed insurance companies in Nigeria as it has been reported in the regression, the study concludes that required rate of return from investors is suitable to their risk in the insurance companies listed on the NSE. According to the result that insurance growth (GRT) has significant positive effect on CST of listed insurance companies in Nigeria. This means that GRT influences CST of listed insurance companies in Nigeria positively. The study concludes that a growing insurance company will have a high leverage.

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