

Capital Structure and Financial Performance of Insurance companies listed at Nairobi Securities Exchange.

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ABSTRACT

Capital structure refers to the mix of debt and equity used by a firm in financing its assets. It enables a firm to determine its financial strengths and to identify its weaknesses and also strengthens the firm's ability to meet maturing obligations and to convert assets into cash. The research was guided by the objective to establish the relationship between capital structure and financial performance of listed insurance companies at NSE in Kenya. To meet the objectives of the study, a descriptive research design was adopted. The study mainly used secondary data collected from audited Financial statements from listed insurance firms at NSE for 10 years. The population of interest was the performance as measured by ROA, ROE and capital structure as measured by the debt/equity ratio from the Financial years from 2009 to 2018. Data obtained from insurance companies for a period of ten years was analyzed using financial ratios to ascertain the change in financial performance as a result of different capital structures. Data was presented using tables and analysed by statistical software STATA version 15.. Capital structure decision was found to be critical for any business organization due to the need of maximizing returns to various organizational components, and also because of the impact such a decision has on a firm's ability to deal with its competitive and volatile environment effectively. The findings indicated that debt to equity ratio accounted for a smaller percentage of financial performance of all three types of insurance companies. There was a positive but weak relationship between capital structure and financial performance.

Keywords: Insurance, capital structure financial performance, NSE.

INTRODUCTION

Capital structure relates to the way in which a business is financed by a combination of long-term capital (ordinary shares, reserves, preference shares, debentures, long term bank loans, convertible loan stock and so on) and short-term liabilities (such as bank overdrafts, short-terms bank loans and trade creditors) (Myers & Majluf, 1984). Capital structure decision can also refer to financing mix of a firm's assets in terms of owners' equity, debt financing, retained earnings and a hybrid of securities such as preferred shareholding. Capital structure is thus the mixture of company's long-term debt, specific short – term debt, common equity and preferred equity; that is, how a firm financing its overall operations and growth using different sources of fundings (Myers, 2001).

Performance is the result of the fulfillment of the tasks assigned. Company performance describes how individuals in the company try to achieve a goal. Company performance illustrates the magnitude of the results in a process that has been achieved compared with the company's goal. Financial performance is a determinant of an organization's income and profits increase in value as evidenced by the appreciation in the entity's worthiness (Asimakopoulos, 2009).

Financial performance is measured differently by different researchers, but in a wider perspective four major

groups of accounting ratios that are used to measure financial performance.

A high of debt creates a financial risk which could have an impact on the business from a number of different perspectives, including both internal and external stakeholders. The potential problems might typically include:

the company as a whole could be put in danger in liquidation if it creates high levels of debt that cannot be repaid. If a company goes into debt and liquidated, then its creditors will suffer as they are unlikely to be paid in full; management and staff will suffer as well, with high debt level, the business is likely to have to either streamline or close, leaving some or all workers and management redundant. If the business has high debts, then the company might not make enough distributable profit for shareholders to receive any dividends and this in turn would lead to market confidence suffering; customers, when faced with a business where customer confidence is suffering, could well seek out alternative organisations with which to business (Myers, 2001).

Statement of the Problem

The place of insurance industry in the wider economy is of critical importance as it handles risk management. Survival of businesses in an economy rests on stability of insurance firms. Resilience of these firms is a factor of their capital structure decisions. Insurance firms in Kenya are subject to regulation by the Insurance Regulatory Authority, which regulates and supervises their operations and compliance levels with industry standards.

Kenya's insurance industry consists of 54 insurance firms but this paper used saturated sampling of all the listed insurance firms at the NSE. Financial performance of these listed firms has been volatile based on differences in capital structure. The ideal scenario requires that insurance firms hold adequate capital structure base, make prudent capital structure mix with optimal use of debt financing and equity financing for their resilience. However, financial performance has not been positive across the listed firms. Stallion Insurance Company, Lake Star Insurance Company, Concorde insurance Company, Standard Insurance, United insurance and Kenya National Assurance collapsed. Poor financial performance within the broader insurance industry is worth investigating to ensure that various risks in an economy are well managed.

In the 2014 insurance penetration was at 2.9% which decreased to 2.8% in 2015 and 2.75% in 2016. In the year 2013, the operating profit in the industry was Ksh. 20,235,881 million, which dropped to Ksh. 17,232,015 million in 2014 and decreased from Ksh. 14,134,461 million in 2015, to Ksh. 12,832,642 million in 2016 (IRA, 2016). UAP group had a drop-in profit from KSH 1.67 billion in the year 2014, to KSH 896.6 million in the year 2015. BRITAM had a one billion shilling loss in the year 2015 after making profit of 2.5 billion in the year 2014 (IRC, 2016). By the year 2013, eight insurance companies had been put under receivership or collapsed. The measure of insurance penetration dropped by 2.93 percent when the GDP was at 25 percent (IRA 2014). This study therefore was motivated to explore capital structure and their contribution or failure in the industry.

Research objective of the study

To determine the influence of capital structure on financial performance of insurance firms listed at NSE.

LITERATURE REVIEW

Theoretical Literature Review

The study was anchored on Agency Theory (Jensen & Meckling, 1976) and supported by Pecking Order

Theory (Myers & Majluf, 1984), and M. M. Irrelevance Theory (Modigliani – Miller, 1958)

Agency Theory

Agency theory is a principle that is used to explain and resolve issues in the relationship between business principals and their agents. Most commonly, that relationship is the one between shareholders, as principals, and company executives, as agents. The theory postulates that firm's capital is determined by agency costs, which includes the costs for both debt and equity issue. The costs related to equity issue may include: the monitoring expenses of the principal (the equity holders), the bonding expenses of the agent (the managers), and reduced welfare for principal due to the divergence of agent's decisions from those which maximize the welfare of the principal. Besides, debt issue increases the owners and manager incentive to invest in high-risk projects that yield high returns to them but increase the likelihood of failure that the debt holders have to share if it is realized. If debt holders anticipate this, a higher premium will be required which in turns increase the costs of debt. The agency costs of debt include the opportunity costs caused by the impact of debt on the investment decisions of the firm; the monitoring and bond expenditures by both the bondholders and the owner-manager; and the costs associated with bankruptcy and reorganization (Hunsaker, 2019). Since both equity and debt incur agency costs, the optimal debt-equity ratio involves a trade-off between the two types of cost. Agency costs arise due to the conflicts of interest between shareholders and managers.

Jensen and Meckling (1976) introduced two types of conflicts: Shareholders-managers conflicts and Shareholder-bondholder conflicts.

Shareholders-managers conflicts

This kind of conflict stems from the separation of ownership and control. If managers do not completely own the firm, they can only capture a fraction of the gain earned from their value enhancement activities but they need to bear the entire costs of these activities.

Jensen (1986) argues that, instead of working under shareholders' interests to maximize firm's value, managers prefer to increase firm's size to enjoy the benefit of control. Managers have incentives to make their firms to grow beyond the optimal size and accept negative net present value (NPV) projects. The over-investment problem can be made worse by more free cash flow and less growth opportunities. Issuing debt helps to mitigate agency problems because debt commits firm to pay out cash to prevents managers from investing in negative NPV projects.

The shareholders or agents make decisions of transferring wealth from bondholders to shareholders. The bondholders are aware of the situations in which this wealth expropriation may occur and will demand a higher return on their debts to guard against this situation. The conflicts may be minimized by firms with high growth opportunities having a lower leverage and using a greater amount of long-term debt than firms in more mature industries. The issue of convertible debt or debt with warrants can serve as another way of mitigating the conflicts as shown by Jensen and Meckling (1976) because the convertible debt will have lower agency costs than plain debt.

Agency theory has also been criticized for its capacity as a theory. According to Perrow (1986), Agency theory "does not have a clear problem to which it offers a solution" and it "is hardly subject to empirical test since it rarely tries to explain actual events or make predictions" (Ghoshal, 2017). Perrow also questioned the possible utility and empirical relevance of the adverse selection and moral hazard problems for organizational analysis.

Another major line of criticism concentrates on the sufficiency of agency theory's conceptual framework. The framework is considered as being too simple or narrow for a theory. In particular, the issue that agency

theory seemingly ignores the existence and influence of the third parties, stakeholders or other competing principals outside the agency relationship under examination, has been a very common object for criticism (Shankman, 1999, p. 332). According to critics, the real world is more complex than agency theory would imply. Agency theory has been also criticized of the narrowness of its focus. It is argued, that in agency relationships, many explanations other than an agent's self-interest and opportunistic behavior for the failure to deliver high performance exist. Though, agency theory is very pragmatic and popular, it still suffers from various limitations and this has been documented by many authors like (Eisenhardt, 1989) & (Shleifer & Daily, 2003).

The theory assumes a contractual agreement between the principal and agent for a limited or unlimited future period, where the future is uncertain. The theory assumes that the contraction can eliminate the agency problem, but practically it faces many hindrances like information asymmetry, rationality, fraud and transaction cost. Shareholders' interest in the firm is only to maximize their return, but their role is limited in the firm. The roles of directors are only limited to monitor the managers and their further role is not clearly defined.

Pecking Order Theory

In this study, pecking order theory tends to elaborate the significant relationship between the firm capital structure and its financial performance. This theory asserts that the empirical facts of firms prefer using internal finance to external finance. Firms have the capacity to borrow money from external sources if they have limited resources to fund their investments. Hence, they will minimize additional extra costs by accessing funds from different source of finances. Basically, most investors would request for asymmetric information in case of a business failure (Lilienfeld-Toal & Ruenzi, 2014).

Pecking theory has the following order of financing hierarchy; internal source of funds, low risk debt financing and equity financing in their respective order. This theory has two key assumptions about financial managers. The first of these is the likelihood that a firm's managers know more about the company's current earnings and future growth opportunities than outside investors. The use of internal funds prevents managers from having to make public disclosures about the company's investment opportunities and potential profits to be realized from investing in them. The second assumption was that managers would act in the best interests of the company's existing shareholders. The managers may even forgo a positive – Net Present Value (NPV) project if it would require the issue of new equity, since this would give much of the project's value to new shareholders at the expense of the old shareholders (Myers & Majluf, 1984).

However, the theory has some limitations since it does not explain the influence of taxes, financial distress, security issuance costs, agency costs, or the set of investment opportunities available to a firm upon that firm's actual capital structure. It ignores the problems that can arise when a firm's managers accumulate so much financial slack that they become immune to market discipline.

The relevance of this study was that all firms need to expand their businesses at the cheapest of source of finance. The theory highlights the order of raising finances for firm operations. The pecking order theory is important because it signals the public how the company is performing. If a company finances itself internally, that means it has a strong financial base. If a company finances itself through debt, it is a signal that management is confident the company can meet its monthly obligations. If a company finances itself through issuing new stock, it is normally a negative signal, as the company thinks its stock is overvalued and it seeks to make money prior to its share price falling.

Modigliani Miller Irrelevance Theory

Modigliani – Miller (1958) theory is considered the greatest breakthrough in theory of optimal capital

structure. The theory specifies the financial decisions by firms that are irrelevant to the firm's value. According to Modigliani, there are four prepositions as follows: –

1. The value of a firm is the same regardless of whether it finances itself with debt or equity. The weighted average cost of capital is constant. The assumptions of Modigliani- Miller theorem are perfect and frictionless markets, no transaction costs, no default risk, no taxation, both firms and investors can borrow at the same interest rate; there is homogeneous expectation, homogeneous risk and equal access to all relevant information.
2. The rate of return on equity grows linearly with the debt ratio implying that the higher the debt-equity ratio the higher the expected return on equity.
3. The distribution of dividends does not change the firm's market value; it only changes the mix of Equity and Debt in the financing of the firm.
4. In order to decide an investment, a firm should expect a rate of return at least equal to cost of capital no matter where the finance would come from. Hence, the marginal cost of capital should be equal to the average cost of capital. The constant cost of capital is sometimes called the "hurdle rate" (the rate required for capital investment).

In summary the theory states that the value of a firm is invariant with respect to its leverage policy in an arbitrage-free market when there is no corporate income tax and no bankruptcy cost whether firm is financed through debt or equity, its value remains the same.

Haugen (1978) advanced the theory by introducing the issue of bankruptcy costs and their effect on the value of the indebted firm. These costs include liquidation fees, legal fees and reorganization costs, which would result from the firm going bankrupt. Hence, a firm with a higher debt would incur higher bankruptcy costs than one with less debt

Berens (2015) corporate finance researchers have long been puzzled by low corporate debt ratios given debt's corporate tax advantage. This article recognizes that firm value typically reflects a growing stream of earnings, while current debt reflects a non-growing stream of interest payments. The value of debt is therefore a distorted measure of corporate tax shielding. Even with very small debt-related costs, this may explain the observed magnitude and cross-sectional variation of debt ratios. Since this variation may be independent of tax shielding, debt ratios provide an inappropriate framework for empirically examining the trade-off theory of capital structure.

Shuetrim, Lowe & Morling (2019) noted flaws in the first proposition of the theorem and stated that the cash flows of the firm are divided between debt holders, equity holders and the government, and that the capital structure of the firm that maximizes its value will be the one that minimizes the portion of cash flows that go to the government in the form of taxes.

Some of the problems of MM approach are due to imperfect markets, transaction costs, floatation costs and uncertainty of future capital gains and the preference for current dividends. Perfect Capital Markets do not exist in the practical world. M-M theory is also criticized for the reason that it ignores the corporate taxation and personal taxation. It also ignores personal aspect of financing through retained earnings. In real world, corporate will not pay out the entire earnings in the form of dividends.

Empirical Literature Review

Capital structure and financial performance

Abor (2005) studied the relationship between the capital structure and profitability of 25 listed insurance firms on Ghana Stock Exchange (GSE) between 1998 and 2002. Regression analysis revealed that

profitable firms used more short-term debt and that long-term debt had a negative and significant correlation with return on equity.

The recommendation was that an appropriate mix of capital structure should be adopted in order to increase the profitability of insurance firms. The insurance firms should try to use internal sources of financing in order to increase their profitability and to avoid financial risks.

The gap is that the study was done in Ghana on only insurance firms quoted on the stock exchange. It differs from this study because the current study covered insurance firms that were in a different environment.

Taani, (2013), examined the relationship between Capital Structure and Firm financial Performance of 45 listed manufacturing firms at the Amman Stock Exchange in Jordan from 2005 to 2009. Multiple regression analysis was applied on financial performance such as Return on Assets and Net Profit Margin as well as Short-term debt to Total assets, Long term debt to Total assets and Total debt to Equity were independent variables as a measure of capital structure. The results indicated that there was a negative and insignificant relationship between Short-term debt and Total assets and also between Long-term debt and Total assets, as well as RoA and Net Profit Margin; while Total debt to Equity was positively related to RoA and negatively related to Net Profit Margin. Short-term debt to Total assets were significant using RoA while Long term debt to Total assets was also significant using Profit Margin. The study concludes that statistically, capital structure was not a major determinant of firm financial performance. It recommended that managers of manufacturing companies should exercise caution while choosing the amount of debt to finance their operations.

Ndirangu, (2008) researched on the Relationship between Capital Structure and Financial Performance of Insurance Companies in Kenya. He sought to establish the relationship between capital structure and financial performance of insurance companies in Kenya. To meet the objectives of the study, a descriptive research design was adopted. The study used secondary data collected from insurance firms through simple random sampling method for 4 years. Capital structure was measured by the debt/equity ratio from the 2006 to 2009. The data obtained from insurance companies for four years was analyzed by computing the financial ratios to ascertain the change in financial performance as a result of different capital structures. Data was presented using tables. Capital structure was found to be critical for any business organization due to the need of maximizing returns to various organizational components, and also because of the impact such a decision has on a firm's ability to deal with its competitive and volatile environment effectively. It was found that debt to equity ratio accounted for a smaller percentage of financial performance of all three types of insurance companies. There was a positive and weak relationship between capital structure and financial performance. Capital structure decision is critical for any business organization due to the need of maximizing returns to various organizational components, and also because of the impact such a decision has on a firm's ability to deal with its competitive and volatile environment effectively.

Conceptual Framework

The study had one Independent variable (Capital structure), and one Dependent variable (Financial performance). Business organizations exist for a variety of objectives the key one of which is profit maximization. Closely related to this objective is shareholder wealth maximization. Insurance firms are crucial in risk management for the overall health of an economy. Their going concern ensures the existence of other business entities in the wider economy.

The going concern aspect is depicted by financial performance as cash flows determine whether a business remains afloat or goes under. The dependent variable, financial performance, was captured in this study through two metrics; Return on Assets and Return on Equity. The level of financial performance Return on

Assets and Return on Equity. The level of financial performance of listed insurance firms in this study was determined by Independent variable, (capital structure).

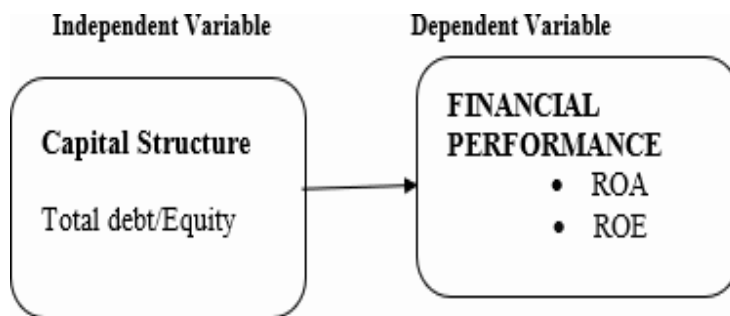


Figure 2.1 Conceptual Framework

METHODOLOGY

Research Philosophy

Research philosophy relates to the development of knowledge and the nature of that knowledge, and contains important assumptions about the way in which researchers view the world. There are two extreme philosophical views regarding knowledge and reality (schools of thought). These are Positivism (sometimes referred to as deduction research) and Phenomenology (also known as induction research). Phenomenology is a philosophy of science that focuses on the immediate experience. A phenomenology researcher starts from the unknown, is open and trusts experience. It describes things as they are and not as a researcher thinks they are. Phenomenological analysis is holistic rather than reductionist. They do not break down phenomena but study it as it is (Saunders et al., 2007).

Positivistic research is undertaken in a value-free way as the researcher is external to the process of data collection as there is little that can be done to alter the substance of the data collected (Saunders et al., 2007). This study was positivistic as listed firms are subjected to extensive disclosure requirement of audited financial statements. This confirms reliability of data which was quantitative and any other researcher using the same data within the same time period subjected to the same analysis technique would get the same results in an objective way.

Research Design

This study used longitudinal research design to analyze quantitative data spanning 10 years for a trend analysis. This was positivistic as the researcher did not manipulate the data from its secondary nature. The data was strictly subjected to inferential analysis capable of producing similar results on repetition thus omitting researcher bias of any kind.

Target Population of the Study

Population refers to the aggregation of elements from which the sample is selected (Rubin & Babbie, 2016). Target population represents the collection of cases the researcher is interested and which they intend to make generalizations (Sim & Wright, 2000). The study population is 54 insurance firms but this study targets all the 6 (six) insurance firms listed in Nairobi Securities Exchange. The duration of the study covered is 10 years from 2009 to 2018. The condensed sampling indicated in table 3.1 below. A period of ten years was selected because most NSE firms performed so poorly within this period causing a public outcry. In addition, ten years period was sufficient to measure any significant change.

Table 3. 1 : Target Population

S/No.	Listed Insurance Firms
1	Kenya Reinsurance Corporation
2	British – American Insurance Company
3	CIC Assurance Group of Companies
4	Liberty Kenya Holdings Limited
5	Sanlam Kenya Plc.
6	Jubilee Holdings Limited

Source: (NSE 2018)

Sampling and sample techniques

The study targeted six insurance firms listed in the NSE. No sampling was done for 6 listed insurance firms and thus the study conducted a census of all targeted 6 insurance firms listed at Nairobi Securities Exchange. The justification was on the basis that there were only a few firms which did not warrant sampling. This method approach increases confidence interval. Data collection through this method gives opportunity to the researcher to have an intensive study about a problem.

Data Collection Procedures and Research Instruments

The researcher used a document analysis guide to extract and compile the quantitative secondary data for the analysis. There are two types of panel data which include balanced and unbalanced panel data. The current study used balanced panel data. In a balanced panel data, the number of time periods, t , is the same for individuals' firms i . A combination of time series with longitudinal enhances the quality and quantity of data to levels that would otherwise be impossible to achieve with only one of the two dimensions (Gujarati & Porter, 2003). The data for both the variables in the study were extracted from the annual audited financial statements of the insurance firms listed in NSE covering the years from 2009 to 2018. The specific financial statements from which the data was extracted from included the income statement, statement of financial position and the notes to the accounts.

Data Analysis

The study adopted longitudinal panel data regression model. Panel data contain observations of multiple phenomena obtained over multiple time periods for the same firms or individuals (Hsiao, 2007). The data was preferred because it revealed changes at the individual firms' capital structure, established time order of variables and showed how relationships was emerged (Frees, 2004). Panel data was used because it allowed the control for variables that cannot observe or measure some cultural factors or difference in business practices across companies; variables that change over time but not across entities. This accounts for individual heterogeneity (Bryman & Cramer, 2012). In this case, a balanced panel is a set of data that includes the time series which contain equal measurement (Bryman & (Cramer, 2012). Panel data regression was chosen for a number of reasons: Firstly, panel data yielded more informative data, more variability and less collinearity among variables, more degree of freedom and more efficiency (Baltagi, 2005). Secondly, panel data is used to obtain consistent estimators in the presence of omitted variables (Wooldridge, 2005). Panel data sets was also able to recognize and estimate the effects that cannot be merely detected in pure cross- sections or pure time-series data (Baltagi, 2005).

Objective : To assess the influence of capital structure on financial performance of insurance firms listed in

the NSE.

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \epsilon_{it}$$

Measurement of Study Variables (Variable Operationalization)

Explanation of capital structure and financial performance along with their proxies are specified in table 3.1

Table 3. 2 Measurement of Variable

	Proxy	Formulae
Dependent Variable	Y	Return on Assets (ROA) = EBIT / Total Assets.
Financial performance		Return on Equity (ROE) = EBIT / Shareholder's
		Equity.
Independent variables		
Capital structure	X1	Total debt/Equity

RESULTS

Descriptive Statistics

The tables 4.1, and 4.2 below presents the descriptive results of the capital structure and financial performance of insurance firms listed in the NSE. Dependent variables were measured by the return on assets and return on equity and independent variables was measured by Capital Structure.

Financial Performance of listed insurance firms

Table 4.1 below, shows that ROA had a mean of 0.0614464 which implied that the insurance firms listed at the NSE over the study period registered about 6.14% ROA. This means that for every shilling in assets owned by the insurance companies, they earned Ksh 6.14 in profits. This is a good performance indicator against the 5% industry rate. The standard deviation is 0.1544019 larger than the mean which suggests more deviation from the mean of ROA over the study period of ten years. This shows stability in the returns on assets while minimum and maximum values are -0.3491999 and 0.7854605 respectively. This implies that there were some firms which made losses to approximately 35% while others made profit to the tune of 78.55% of ROA over ten-year study period.

Further, the table 4.1 shows that the mean value of ROE was 0.1145244. This implies that shareholder received 11.45% return on investment in shares that is quite impressive as compared to industries average of 6.2%. The minimum and maximum were -1.270951 and 0.4445283 respectively for the period of 10 years (2009 to 2018), this means that some shareholders did not receive return invested in equity due losses made by the respective firms. The standard deviation was 0.2199498 indicating considerable deviation around the mean.

Therefore, the positive of ROA and ROE indicated that the insurance firms listed at the NSE recorded an increase in financial performance in the period of 2009 to 2018.

Further, table 4.1 displays the descriptive results of dependent variables. The study established that financial performance of listed insurance firms was measured by using two dependent variables; Return on Assets and Return on Equity.

Table 4. 1 Descriptive Statistics for dependent variable.

Variable	Obs	Mean	Std. Dev.	Min	Max		
ROA			60		0.0614464	0.1544019	-0.3491999 0.7854605
ROE			60		0.1145244	0.2199498	-1.270951 0.4445283
Source: Research Data (2022)							
The study used Capital Structure in table 4.2 below.							
Table 4. 2 Descriptive Statistics for independent variable.							
Variable	Obs	Mean	Std. Dev.	Min		Max	
CS		60	3.145119	1.663448	0.564		6.671

Source: Research data (2022)

Capital structure had a mean value of 3.145119 with a minimum of 0.564 and maximum of 6.671. The standard deviation of capital structure was 1.663448. This implies that there was too much risk of financing the operations with debt capital and as a result caused financial risk (a situation where the company could not service its obligation).

Diagnostic Tests

Diagnostic tests were conducted before doing regression analysis based on the assumption of ordinary least squares method. There tests included normality, linearity, unit root test, ,, heteroscedasticity test and autocorrelation test.

Test for Normality

The data was subjected to normality tests by examining the skewness and kurtosis of the distribution. The results in table 4.3 below shows that the variables were normally distributed because the skewness values varying between -3 to + 3 (Mugenda & Mugenda, 2003). This falls within the acceptable range for the data normally distributed. In addition, the kurtosis values varied from -4 to +4 (Mugenda & Mugenda, 2003), which implies that the variables under study were normally distributed and not fit for further analysis.

Table 4. 3 Normality Test

Variable	Obs	Skewness	Kurtosis
ROA	60	0.14310	0.23000
ROE	60	0.14310	0.23000
Capital Structure	60	0.49820	0.47000

Source: Research data (2022)

Linearity test (Panel line plot for ROA and ROE).

The researcher conducted a panel line plots to establish the movement of the variables overtime.

Panel line plot for ROA and ROE



Source: Research data (2022)

Figure 4. 1 Panel line plot for ROA and ROE

1 = Kenya RE, 2 = Jubilee, 3 = BRITAM, 4= Liberty, 5= CIC, 6 = Sanlam

The panel line plot shows that ROE was higher than that of ROA for firm 1, firm 2, firm 4 and firm 5 while firm 3 and firm 6 fluctuated during the period of study. In 2018 there was a sharp drop for ROE. The decrease was attributed to the post-election violence of 2017 which spilt over to 2018. The line plot established that the response variable do not show wide variations in the long run and therefore, they depict mean variation. This is shown in the figure 4.1 above.

Pervan and Višić (2012), return on assets gives investors an idea of how effectively the company can convert the money invested into net income. The higher the ROE the better, because the company is earning more money on less investment.

De Wet & Du Toit (2007) Return on equity (ROE) is the measure of a company’s net income divided by its shareholders’ equity. ROE is a gauge of a corporation’s profitability and how efficiently it generates those profits. The higher the ROE, the better a company is at converting its equity financing into profits.

Unit Root Tests (Stationarity Test)

The panel data was subjected to unit root tests in order to find out stationary conditions.

The results in tables 4.4 and 4.5 below exhibit the unit root tests results for ROA and ROE based on the Levin-Lin-Chu unit-root test. The LLC was applied due to its applicability in a balanced panel. At the top of output table 4.5 summarizes the exact specification of the dataset. The Adjusted t* statistic is -1.9310 with a p-0.0267 for ROA while the Adjusted t* statistic is -6.6749 with a p-0.000 for ROE which are significantly less than the 5% significant level. Therefore, the null of both the panels contain unit roots is strongly rejected in favour of the alternative hypothesis that all variables are stationary.

Gujarati & Porter, (2003) a unit root test was conducted using the Levin-Lin-Chu test to establish whether

the variable was stationary or non-stationary. The reason of carrying out this test was to avoid spurious regression results being obtained by using non-stationary series. Results in Table 4.4 and 4.6 showed that all variable was stationary (i.e., absence of unit roots) at 5% level of significance. In conclusion, the study concludes that all the variables under consideration did not have unit roots because the p-values were less than 0.05 and all were statistically significant. This means that the results obtained were not spurious.

Table 4. 4 Levin-Lin-Chu unit-root tests

Levin-Lin-Chu unit-root test for ROA		
Ho: Panels contain unit roots	Number of panels = 1	
Ha: Panels are stationary	Number of periods = 10	
AR parameter: Common	Asymptotics: N/T \rightarrow 0	
Panel means: Included		
Time trend: Included		
ADF regressions: 1 lag		
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)		
	Statistic	p-value
Unadjusted t	-7.1540	
Adjusted t*	-1.9310	0.0267

Source: Researcher data 2022

Table 4. 5 Levin-Lin-Chu unit-root test for ROE

Ho: Panels contain unit roots	Number of panels = 1	
Ha: Panels are stationary	Number of periods = 10	
AR parameter: Common	Asymptotics: N/T \rightarrow 0	
Panel means: Included		
Time trend: Included		
ADF regressions: 1 lags average (chosen by AIC)		
LR variance: Bartlett kernel, 6.00 lags average (chosen by LLC)		
	Statistic	p-value
Unadjusted t	-9.9329	
Adjusted t*	-6.6749	0.0000

Source: Research data 2022

Heteroscedasticity Test

Breusch-Pagan/Cook-Weisberg test was used to test for heteroskedasticity. The null hypothesis in the test is that error terms have a constant variance (i.e., Homoskedasticity). The results in the Table 4.8 below indicate that the error terms are heteroskedastic, given that both p-values (ROA=0.000 and ROE=0.000) were less than the 5% significant level. That means that there was no Heteroskedasticity, the regression model does not violate the homoscedasticity assumption. Therefore, it means that the null hypothesis of the errors terms was homoscedastic and was not rejected because heteroskedasticity was not a problem in the data.

Table 4.6 Heteroscedasticity Test Results

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity		
Ho: Constant variance		
Ha: Heteroscedasticity		
Variable: fitted values	ROA	ROE
Pro>chi ² (1)	0	0
Chi ² (2)	0.7468	0.6914

Source: Research data (2022)

Auto-correlation Tests

The Durbin-Watson statistic lies in the range 0 – 4. A value of 2 or nearly 2 indicates that there is no first-order autocorrelation. An acceptable range is 1.50 – 2.50. Where successive error differences are small, Durbin-Watson is low (less than 1.50); this indicates the presence of positive autocorrelation.

The Durbin Watson test looks for a specific type of serial correlation i.e., first order correlation (the lag is 1 unit). The Hypotheses for the Durbin Watson test are:

H0 = first order autocorrelation does not exist.

H1 = first order autocorrelation exists.

The DW statistic *d* lies between 0 and 4.

d = 2 means no autocorrelation.

d < 2 means positive autocorrelation

2 < d ≤ 4 means negative autocorrelation

A general rule is that DW test statistic whose values range from 1.5 to 2.5 are usually acceptable. However, the values outside of this range cannot be acceptable. Values under 1 or more than 3 are a definite cause for trouble. Since the DW test figure falls within the acceptable range, it is concluded that there was serial autocorrelation.

Table 4.7 Auto-correlation Tests

Source	SS	df	MS		
				Number of obs =	60
Model	.163400501	5	.0326801	F (5, 54)	= 1.42
Residual	1.24315724	54	.02302143	Prob > F	= .2320
				R-squared	= 0.1162
				Adj R-squared	= 0.0343
Total	1.40655774	59	.023839962	Root MSE	= .15173
ROA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
CS	-.0332752	.0138454	-2.40	0.020	-.0610335 -.005516
Cons	-.1766564	.3269866	-0.54	0.591	-.832225 .4789123

Source: Research data (2022)

Source: Research data (2022)

Correlation is a statistical method used to assess a possible linear association between two continuous variables. The study subjected to Pearson’s correlation analysis for the insurance firms listed in NSE on the following variable structure on ROA and ROE.

Table 4.10 shows the correlation matrix of all the variables under the study.

The study found that capital structure had a weak positive but significantly correlated with return on assets ($r= 0.2784$, $p=0.0015$). This implies that an increase in Capital Structure would result to an increase in association with ROA. The findings also agreed with that of Kodongo (2014) whose study had weak a positive association between capital structure and financial performance of the panel evidence of listed firms in Kenya.

The study further found that capital structure had a weak positive but significantly associated with return on assets ($r= 0.0781$, $p= 0.0033$). This implies that an increase in Capital Structure would result to an increase in strength with ROE. The findings also agreed with that Abor (2014) whose study showed a positive correlation between capital structure and financial performance.

Table 4.8 Correlation Matrix for Listed Insurance Firms.

	ROA	ROE	CS
ROA	1.0000		
ROE	0.3893	1.0000	
	0.0021		
CS	0.2781	0.0781	1.0000
	0.0015	0.0033	

Source: Research data (2022)

Simple Regression Analysis of capital structure on ROA

The multiple regression analysis was carried out between firm characteristics; firm size, capital adequacy, claim costs and capital structure on the dependent variable; ROA. Rencher and Schaalje (2009), regression analysis is a statistical process of estimating the relationship among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent and one or more independent variables. More specifically, regression analysis helps researcher to understand how the typical value of the dependent variable changes when any one of the explanatory variables is varied, (Mugenda & Mugenda, 2010). Wan (2013) contends that regression analysis helps in generating an equation that describes the statistical relationship between one or more predictor variables and the response variable. The R squared was used to check how well the model fitted the data. The study was supported by coefficient of determination R square of 0.574. This means that independent variables explain 57.4% of the variations in the dependent variables.

There was a positive and significant relationship between capital structure and ROA ($\beta_0=0.0538$, $p=0.012$). This was supported by a calculated t-statistic of 12.21 that was larger than the critical t-statistic of 1.96. These findings agreed with that of Mahfoudh (2013), who found that capital structure was positively related to firm financial performance. These findings also agreed with that of Njoroge (2014) whose study indicated that capital structure was positively related to financial performance.

It was concluded that the debt had a positive effect on the performance of the insurance company. In

addition, Capital structure has a positive impact on the financial performance of insurance companies, which would result in an increase in the share of insurance companies, whereas a fall in the capital would lead to a lower financial performance of insurance firms.

The table for simple regression of the independent variable and dependent variable ROA of listed insurance firms in the NSE is as shown in Table 4.9

The regression model is indicated below;

$$Y = 0.042 + 0.538X_4$$

Where: Y = ROA (Return on Assets)

X = Capital structure

Table 4.9 Multiple Regression on ROA

ROA	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
Capital structure	0.538	0.446	12.21	0.012	0.015 0.002
Constant	0.042	0.053	0.792	0.005	0.071 0.138
R-squared:	0.574				
RMSE	50.2122				
Prob	0.000				

Source: Research data (2022)

Simple Regression Analysis of capital structure on ROE

The simple regression analysis was calculated between independent variable and dependent variable of insurance firms listed at NSE.

There was a positive and significant relationship between capital structure and ROE ($\beta = .083$, $p=0.009$). This was supported by a calculated t-statistic of 3.271 that is more than the critical t-statistic of 1.96. These findings agreed with that Hakima (2017) who found that capital structure was positive related to firm financial performance listed NSE.

The multiple regressions for the independent variables and dependent variable ROE of insurance firms listed in the NSE was as shown in Table 4.11 below.

The regression model is indicated below;

$$Y = 0.420 + 0.083X$$

Where: Y = ROE (Return on Equity)

X = Capital structure

Table 4.11 Simple Regression on ROE

ROE	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
Capital structure	0.083	0.009	3.271	0.001	0.028 0.001

Constant	0.420	0.062	0.530	0.003	0.092	0.528
R-squared:	0.829					
RMSE	45.130					
Prob	0.000					

SUMMARY OF FINDINGS

Introduction

This presents a summary of the actual findings of this study, sets out the relevant conclusions and makes recommendations for practice and suggestions for further research based on the findings. The study sought to establish the influence of firm characteristics on financial performance of insurance firms listed in the Nairobi Securities Exchange in Kenya. It established the relationship between capital structure and financial performance of insurance firms listed in the Nairobi Securities Exchange.

Findings indicated that there was a positive and significant relationship between capital structure and RoA ($\beta = 0.538$, $p=0.012$, calculated t-statistic of 12.21 that was higher than the critical t-statistic of 1.96). Similarly, there was a positive and significant relationship between Capital structure and RoE ($\beta 0.083$, $p=0.001$, calculated t- statistic of 3.271 that is larger than the critical t-statistic of 1.96). The study thus rejected the null hypothesis implying a positive and significant correlation between capital structure and financial performance of listed insurance firms at the NSE.

Conclusion

Resilience of business organizations in an economy rests on strong foundations of Insurance subsector. It is therefore prudent that listed insurance firms are kept in check through strong supervisory umbrella of Insurance Regulatory Authority. Cases of insurance firms going under such as Lake Star Insurance and Kenya National Assurance informed this study as they revealed a soft underbelly of risk laden financial institutions generally. Re-insurance as a factor in the insurance subsector is a strong macro prudential as well as micro prudential safety net. Huge debt can be a major dent in financial health of an insurance firm. Massive coordinated fake debt on an insurance firm are predictive in placing such a firm on statutory management. The Insurance Regulatory Authority has a huge task of enhancing its supervisory wing both onsite as well as off site the listed insurance firms.

Implications and Recommendations of the Study

Implications for Theory

Findings indicated that there was a positive and significant relationship between capital structure and RoA ($\beta = 0.538$, $p=0.012$, calculated t-statistic of 12.21 that was higher than the critical t-statistic of 1.96). Similarly, there was a positive and significant relationship between Capital structure and RoE ($\beta 0.083$, $p=0.001$, calculated t- statistic of 3.271 that is larger than the critical t-statistic of 1.96). The study thus rejected the null hypothesis implying a positive and significant correlation between capital structure and financial performance of listed insurance firms at the NSE. This is in agreement with both Agency theory and Pecking order theory as manager agents are obligated to make both business and strategic decisions impacting shareholder wealth maximization.

Implications for Management Policy and Practice

Findings from objective four indicated that there was a positive and significant relationship between capital

structure and both RoA and RoE. For management policy purposes, this study recommends optimal allocation of debt-equity capital mix as a factor of cost benefit analysis of tax shield on corporate interest payments.

Limitations of the Study

This study relied on quantitative data from published audited financial statement of the listed insurance firms. Published financial statements, unlike management accounts, are meant to portray a positive image to company publics. A mixed approach would have enriched the findings.

Recommendations for Future Studies

This study relied on quantitative data from Insurance Regulatory Authority data and Nairobi Securities Authority bank. Future studies could incorporate a mixed approach by including primary data captured from Claims Managers of Insurance firms.

In addition, the study relied on listed insurance firms due to their access to capital markets on the main investment wing of the Nairobi Securities Exchange. Future studies could target non listed insurance firms to capture their risk management strategies with restricted access to capital.

REFERENCES

1. Abor, J. (2005). The Effect of Capital Structure on Profitability: An Empirical Analysis of Listed Firms in Ghana. *The Journal of Risk Finance*, 6 (1), 438-445. <https://doi:10.1108/15265940510633505>
2. Abor, J. (2014). The effect of capital structure on profitability. *The Journal of Risk Finance*, 6 (5), 434 – 445.
3. Asimakopoulos, I. S. (2009). Determinants of Firm Profitability: Greek Evidence Using Panel Data, *Managerial Finance. Journal of Management*, 35(11), 930-939.
4. Baltagi, B. H., Bratberg, E., & Holmås, T. H. (2005). A panel data study of physicians' labor supply: the case of Norway. *Health Economics*, 14(10), 1035-1045.
5. Berens, J. L. & Cuny, C.J. (2015). The Capital Structure Puzzle Revisited. *The Review of Financial Studies*, 1(8), 1185–1208, <https://doi.org/10.1093/rfs/8.4.1185>.
6. Bryman, A. (2007). *Business Research Methods*, New York Oxford University Press Inc. New York.
7. Bryman, A. & Cramer, (2012). *Quantitative Data Analysis with SPSS Release for Windows.*, New York: Routledge.
8. Daily, C. M. (2003). Corporate Governance: Decades of Dialogue and Data. Introduction to Special Topic Forum. *Academy of Management Review*, vol. 28, No. 3.
9. De Wet & Du Toit (2007). Return on Equity: A Popular, But Flawed Measure of Corporate Financial Performance South African. *Journal of Business Management*, Vol. 38, No. 1, pp. 59-69, 2007 (Baumgartner, Strong & Hensley, 2002).
10. Eisenhardt, K. M. (1989). Agency Theory: An Assessment and Review. *Academy of Management Review*. vol.14, No.1
11. Field, A. (2009). *Discovering Statistics Using SPSS. 3rd Edition*, Sage Publications Ltd., London.
12. Frees, E. (2004). *Longitudinal and Panel Data: Analysis and Applications in the Social Sciences*. Cambridge University Press, New York.
13. Ghoshal, S. (2017). Bad Management Theories are Destroying Good Management Practices. *Academy of Management Learning & Education* vol. 4, No. 1.
14. Gujarati, (2007). The Threshold for Optimum Multicollinearity will be 0.8. VIF Lower than 10 is Appropriate.
15. Gujarati, D., & Porter, D. (2003). Multicollinearity: What happens if the regressors are correlated. *Basic econometrics*.

16. Haugen, R.A. & Senbet, L.W. (1978). The Insignificance of Bankruptcy Costs to the Theory of Optimal Capital Structure. *Journal of Finance*, 1978, vol. 33, issue 2, 383-9
17. Hsiao, C. (2007). Panel data analysis—advantages and challenges. *Test*, 16(1), 1-22.
18. Hunsaker, J. (1999). The role of debt and bankruptcy statutes in facilitating tacit collusion, *Managerial and Decision Economics*, John Wiley & Sons, Ltd., vol. 20(1), pp 9-24.
19. Hunsaker, J.R. (1999). How Technology Improves Team Effectiveness, GE Lixfield. *The Journal for Quality and Reliability Management*.
20. IRA, I. R. (2014). Annual Report. Nairobi: Insurance Regulatory Authority of Kenya,
21. Nairobi.
22. IRA, I. R. (2016). Annual Report. Nairobi: Insurance Regulatory Authority of Kenya,
23. Nairobi.
24. IRA, I. R. (2018). Annual Report. Nairobi: Insurance Regulatory Authority of Kenya, Nairobi.
25. Jensen, M. & Meckling (2006). Theory of the Business: Managerial B, Agency C and Ownership Structure. *Journal of Financial Economics*, 13: 305-360.
26. Kodongo, (2014). Capital Structure, Profitability and Firm Value: Panel Evidence of Listed Firms in Kenya. *International Journal of Finance and Accounting*. ISSN 2518-4113 (Online) vol.2, 4, (5) pp. 84 – 105.
27. Levin, & Rubin. (2009). *Statistics for Management (7 Ed.)*. New Delhi, India: Lakshmi Offset Printers.
28. Lilienfeld-Toal, U. V. & Ruenzi, S. (2014). CEO Ownership, Stock Market Performance, and Managerial Discretion. *Journal of Finance*, 69(3), 1013-1050.
29. Mahfoudh, I. M. (2018). Effect of selected Firms Characteristics on Financial Performance of Firms listed in the Agricultural Sector at the Nairobi Stock Exchange. *International Journal of Business management & Finance*, 1(39), 672-689.
30. Mahfoudh, I. M. (2013). Effect of selected Firms Characteristics on Financial Performance of Firms listed in the Agricultural Sector at the Nairobi Stock Exchange. *International Journal of Business management & Finance*, 1(39), 672-689.
31. Modigliani, F. and Miller, M. H. (1958). The Cost of Capital, Corporate Finance and the Theory of Investment. *American Economic Review*, 48, pp. 261 –297.
32. Modigliani, F. and Miller, M. H. (1963). Corporate Income Taxes and the Cost of Capital a correction. *American Economic Review*, 53, pp. 433 – 43.
33. Mugenda, & Mugenda, (2003). *Research Methods*. (2nd ed., Vol. Revised 2003). Nairobi: ACTS Press.
34. Myers, S.C. (2001). Capital Structure. *The Journal of Economic Perspectives*, Vol. 15, No. 2. pp. 81-102. <http://dx.doi.org/10.1257/jep.15.2.81>
35. Myer, & Majluf (1984). Corporate Financing and Investment Decision When Firms Have Information those Investors Do Not Have. *Journal of Financial Economics*, 13, 187-221.
36. Ndirangu, Nyamongo, & Esman (2013). Financial Innovations and Monetary Policy in Kenya. *Financial Innovations and Monetary Policy in Kenya*.
37. Njoroge, (2014). Assessment of County Internal Control System on Financial Accountability in Tana River County, Kenya. *Journal of Finance and Accounting* Volume 5||Issue 3||Page 111-132.
38. Perrow, C. (1986). *Complex Organizations: A Critical Essay* by Paperback.
39. Pervan, M. & Visic, J. (2012). Influence of Firm Size on its Business Success. *Croatian Operational Research Review*, 3, 213-215.
40. Pervan, M., Pervan, I. & Curak, M. (2017). The Influence of Age on Firm Performance: Evidence from the Croatian Food Industry. *Journal of Eastern Europe Research in Business and Economics*, 2(5), 23-43.
41. Rencher, & Schaalje., (2009). *Linear Models in Statistics*. ISBN 978-0-471-75498-5 (cloth) QA276.R425 2007 519.5035–dc22.
42. Rubin, A., & Babbie, E. R. (2016). *Empowerment series: Research methods for social work*. New York: Cengage Learning.

43. Saunders, M., Lewis, P. & Thornhill, A. (2007). *Research Methods for Business Students*, 4th Edition, Financial Times Prentice Hall, Edinburgh Gate, Harlow.
44. Sekaran, U., & Bougie, R. (2010). *Research Methods for Business. A Skill- Building Approaches* (5th Ed..
45. Shankman, N. A. (1999). Reframing the Debate between Agency and Stakeholder Theories of the Firm. *Journal of Business Ethics*, 19(4):319-334.
46. Sim, J., & Wright, C. (2000). *Research in health care: concepts, designs and methods*.
47. California: Nelson Thornes.
48. Shuetrim, Lowe & Morling (2019). The Determinants of Corporate Leverage: A Panel Data Analysis – *Reserve Bank of Australia, RBA Research Discussion Papers*.
49. Wooldridge, J. M. (2005). Fixed-effects and related estimators for correlated random-coefficient and treatment-effect panel data models. *Review of Economics and Statistics*, 87(2), 385-390.