

**THE EFFECT OF CORPORATE DIVERSIFICATION ON CAPITAL
STRUCTURE OF FIRMS LISTED IN THE NAIROBI SECURITIES
EXCHANGE**

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**A RESEARCH PROJECT PRESENTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTERS OF BUSINESS
ADMINISTRATION DEGREE, SCHOOL OF BUSINESS-UNIVERSITY OF
NAIROBI.**

OCTOBER 2015

DECLARATION

This Research Project is my original work and has not been submitted for examination in any other university. The work referred has been acknowledged by:

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ACKNOWLEDGMENT

I would like to acknowledge God the Almighty for enabling me complete this project. I am thankful for the spirit of understanding, diligence, patience and good health as I undertook this project.

I extend my sincere gratitude to my supervisor, Dr. Duncan Elly Ochieng, for offering his expertise and unrelenting guidance throughout the project. Indeed it has been a long journey, with a successful ending. I have gained in terms of intellectual knowledge and skills of facing the world with an open mind.

Lastly, I wish to thank all my friends and colleagues for their words of encouragement and support throughout the project. It is my prayer that God will reward you accordingly.

DEDICATION

I dedicate this project to my parents for their passionate love for education, my uncle John Mburu who has relentlessly put enormous effort to see me succeed in life and my younger brother Chris Kigochi. It is my commitment to inspire my siblings, cousins and friends to achieve even more in their endeavours.

ABSTRACT

Firms have to constantly review their strategies for them to remain competitive in the changing environment. Diversification is thus almost inevitable for firms with new entrants into the market threatening existing firms. This study thus sought to find out the effect of corporate diversification on a firm's financial decisions. There have been mixed propositions as to whether diversification leads to value addition of a firm or it destroys a firm's worth. The researcher targeted 44 non-financial firms, but the actual study focused on 35 firms which represented 80 percent of the target population for the period 2010 to 2014. The data was mainly from annual financial reports of respective companies. The annual reports were obtained from the firms' websites, Capital Markets Authority and other relevant publications. Multiple regression and bivariate correlation were used to analyze the data. Diversification was measured using specialization ratio, calculated as a ratio of annual revenue from the core segment of a firm to its total annual revenue. The adjusted R^2 value was 0.07, which meant that only 7 percent of variations in leverage for listed firms were explained by the variations in the model's independent variable and control variables. The study found that diversification and tangibility of assets had a weak positive relationship with leverage. The relationship between leverage and diversification, and leverage and tangibility was not statistically significant. Firm size and profitability had statistically significant relationship with leverage. Firm size had a weak positive association with leverage, whereas profitability had a weak negative association with leverage. In summary, corporate diversification had a weak positive relationship with leverage. Further research should be carried out on the effect of related and unrelated diversification on a firm's capital structure. A study on other factors affecting capital structure of a firm should also be carried out.

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LIST OF ABBREVIATIONS

CDS	-	Central Depository System
CMA	-	Capital market Authority
DIVE	-	Diversification
LEVE	-	Leverage
NDTS	-	Non-Debt Tax Shields
NSE	-	Nairobi Securities Exchange
POT	-	Pecking Order Theory
PROF	-	Profitability
R & D	-	Research and development
SPSS	-	Statistical Package for Social Science
TANG	-	Tangible
US	-	United States of America
VIF	-	Variance Inflation Factor

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

To understand how firms in developing countries finance their operations, it is necessary to examine the determinants of their financing or capital structure decisions. Company financing decisions involve a wide range of policy issues. At the macro level, they have implications for capital market development, interest rate and security price determination, and regulation. At the micro level, such decisions affect capital structure, corporate governance and company development (Green, Murinde and Suppakitjarak, 2002).

Diversification has been studied mainly in relation to firm value. A majority of authors argue that diversified firms need greater leverage to maximize firm value (Singh et.al., 2003). There are vices that are associated with diversification with the risk of conglomerates value threatened with discounting as opposed to firms that stick to their primary core activities (Servaes, 1996). The decline in value is associated with an increase in the number of segments generating agency problems (Hyland and Diltz, 2002). Conversely, diversification offers firms financing and investment advantages. Diversified firms are able to transfer scarce capital among divisions to finance some projects at the expense of others (Matsusaka & Nanda, 2002).

1.1.1 Corporate Diversification

Corporate diversification is the process by which a firm expands from its core business into other product markets (Gluck, 1985). Corporate diversification can be approached from different perspectives. Hill (1985) in expounding market power perspective suggests that diversified firms will thrive at the expense of non-diversified firms not because they are any more efficient but because they have access to conglomerate power.

The agency view emphasizes the way a firm's manager may reap at the expense of the shareholder. Ueng and Wells (2001) provide empirical evidences that the combination of lower incentive ratio and more diversified acquisition instead of the focused acquisition produces the lowest return. Thus, their study supports the assumption that manager of an acquiring firm may pursue personal wealth maximization rather than shareholder wealth maximization. Managers who pursue their wealth maximization might also knowingly undertake value-decreasing investment. Resource view on the other hand argues that firms diversify in response to excess capacity in productive factors called resources (Penrose, 1959). They include factors the firm has purchased in the market, services the firm has created from those factors and special knowledge the firm has accumulated over time.

Corporate diversification is measured using the specialization ratio which is defined as the ratio of the firm's annual revenues from its largest discrete, product-market activity to its total revenues (Rumelt, 1974). In the diversification literature, specialization ratio has gained popularity in measuring diversification due to its ease in calculation and understanding. Logic of the specialization ratio method reflects the importance of the firm's core product market to that of the rest of the firm (Rumelt,1974,1982).

In Rumelt's study, he classifies firms into three groups; single product groups with $SR \geq 0.95$; moderately diversified firms with SR values between $0.95 < SR \leq 0.7$, this group includes dominant relatedly and unrelatedly diversified firms; the highly diversified firms have $SR < 0.7$ and includes conglomerates relatedly constrained and relatedly – linked firms. Thus, firms are moderately diversified if their sales from the dominant business lie between 95% and 70%, whilst highly diversified firms sales from dominant business are below 70%.

1.1.2 Capital Structure

Capital structure basically refers to a firm's financial framework. Predominantly, it is the mix of debt and equity capital maintained by a firm. It is also seen as a mixture of a long term sources of funds and equity shares including reserves and surpluses of an enterprise (Booth, Aivazian, Demirguc-Kunt & Maksimovic, 2001). Capital structure is viewed as the composition of all the securities the firm issues in order to finance its operations. It is thus the way a firm combines equity and debt to gain the maximum value. The value of a firm is therefore defined as the market value of debt plus the market value of equity (Ross et al., 2009).

The proportion of debt to equity is a strategic choice of corporate managers. An optimal capital structure is usually defined as one that will minimize a firm's cost of capital, while maximizing shareholder's wealth (Niu, 2008). Capital structure decision is thus vital, as any misjudgment regarding the making of financial decision of any activity would lead to financial distress, liquidation or bankruptcy.

1.1.3 Corporate Diversification and Capital Structure

Corporate diversification is still a concept not largely explored by many authors. Weston (1970) proposes that resources could be allocated more efficiently within an organisation than in capital markets, thus diversified firms would be more efficient than non-diversified firms. Rumelt (1982) found out that conglomerates have significantly lower profitability in comparison to more focused firms.

Lewellen (1971) however argues that combining businesses with imperfectly correlated streams of cashflows provides a coinsurance effect which creates more debt capacity. Thus, while diversification may destroy value and profitability, its effect may be partially offset by an increased debt capacity and resulting tax shields. Li and Li (1996) reemphasize the concept by arguing "the combination of diversification with low leverage leads to overinvestment."

Matsusaka (2001) refers to diversification as the process by which firms search for new uses of their organizational capabilities. A number of firms in the NSE have diversified; for example firms in the telecommunication industry have diversified to include some banking aspects; some firms in the banking industry have incorporated telecommunication services and investment banking; with some agricultural firms and investment firms having incorporated energy production in their businesses.

This serves to show the appreciation of corporate diversification amongst firms listed in the NSE. By analyzing balance sheets of firms listed in the NSE, most firms have both equity and debt in their capital structure. A large number of the firms have more equity than debt in their capital structure (Nairobi Security Exchange Handbook, 2013).

1.1.4 Nairobi Securities Exchange

The Nairobi Securities Exchange, which was formed in 1954 as a voluntary organization of stockbrokers, is now one of the most active capital markets in Africa. The market has experienced both growth and instability in the past. In 1972 for example, growth of the market halted with oil crisis introducing inflationary strain to the economy. The government of Kenya realized the need to design and implement policy reforms to foster sustainable economic development (NSE Market Fact File, 2008).

Currently there are 61 companies listed on the NSE under its 11 segments. The segments include Banking (12), Agricultural (7), Commercial and Services (9), Telecommunication and Technology (1), Automobiles and Accessories (4), Insurance (6), Investment (3), manufacturing and Allied (9), Construction and Allied (5) and Energy and Petroleum (5). The NSE is the principal securities exchange of Kenya and it is licensed and regulated by the Capital Markets authority (CMA). Firms in the NSE have mainly used product and geographic diversification strategies to sustain themselves in the existing market.

1.2 Research Problem

Firms have to constantly review their strategies for them to remain competitive in the changing environment. Diversification is thus almost inevitable for firms; with new entrants into the market threatening existing firms. There are two types of diversification related and unrelated which have different effects on the capital structure of firms. A related diversification strategy is associated with lower debt usage and has a negative influence on leverage. Unrelated diversity is associated with high debt usage and is positively related with debt. The effect of diversification strategy thus faces mixed reactions from scholars. Rushin (2006) argues that it is unclear if diversification adds value to an organisation as opposed to a firm that adopts a more focused strategy.

Related diversifiers exemplify higher results in their economic growth. Lubatkin (1987) has however suggested that single product models or unrelated diversification can be more advantageous than related diversification. Scholars in support of unrelated diversification argue that there exists imperfect correlation between the cash flows of divisions or projects reducing the risk of default and increasing the firm's collateral resulting in greater access to credit (Lewellen, 1971). This effect is called "cross-pledging" by Tirole (2006), meaning that firms can use income they receive from a successful project as collateral for the financing of another provided they are independent projects.

Most firms that are listed in Nairobi securities exchange have shown a keen interest on diversification of unrelated businesses of their investment in order to boost their returns. Some listed firms have diversified their portfolios into new asset classes to boost returns and reduce risk; the asset classes they are turning to are often illiquid (Ngugi, 2005). Mwangi (2013) found that agent banking was highly useful as a diversifying strategy among listed NSE banks, as banks used agent banks to expand geographical coverage and promote their products and services. Koech (2013) found that there was a very weak correlation between corporate diversification returns and leverage for the listed firms at the Nairobi Securities Exchange. As such there are mixed reactions as to the effect of corporate diversification on capital structure amongst listed firms at the NSE.

Local studies have been carried out attempting to investigate the effect of diversification on various firms. According to Ngugi (2008) the main determinants of capital structure behaviour of firms listed in the NSE are information asymmetries, non-debt tax shields and local capital markets infrastructure. Mwindi (2003) did an analysis of the implication of unrelated diversification strategy by the major oil companies in Kenya and found out that diversification concept as used in most retail networks of oil companies lend itself more to enhancing customer satisfaction. As observed, scanty research has been carried out investigating the relationship between corporate diversification and capital structure. The study thus seeks to answer the question; what is the relationship between corporate diversification and capital structure of firms listed in the NSE?

1.3 Research Objectives

The objective of this study was to establish the effect of corporate diversification on capital structure of firms listed at the Nairobi Securities Exchange.

1.4 Value of the Study

The study sought to carry out an independent analysis between corporate diversification and capital structure of firms. This is beneficial to managers in formulation and implementation of corporate strategies that seek to have the optimal capital structure.

Researchers are to benefit from additional knowledge generated by the study. It has generated factual information and data which can be used by scholars to form the basis of their study in furthering the research on corporate diversification and capital structure.

The study also supports the already existing theories on corporate diversification and capital structure.

Capital market regulators have gained information on how manager`s strategies affect a firm`s financing. The regulators are thus able to value firms favorably for both the investors and household savers. They are also able to come up with policies for full disclosure of private information so as to avoid misvaluation problem.

Financial analysts engage in lots of forecasting and stock recommendations. They gain useful insights from this research on the various determinants of capital structure and thus able to advise investors accordingly. They are also able to analyse the effects of various managers` strategies and uncover any ulterior motive unfavorable to investors.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the work of other scholars and researchers relating to corporate diversification effect on capital structure. Focus is on the theories of diversification and how it consequently affects capital structure and the theoretical foundations that inform the current study.

2.2 Theoretical Review

There are three theories that try to support the effect of corporate diversification on capital structure choices. They include the Coinsurance Effect, Resource Based View and the Transaction Cost Approach.

2.2.1 The Co-insurance Effect

Lewellen (1971) states that combining businesses with imperfectly correlated cash flows provides a reduction in operating risk thereby enhancing corporate debt capacity. Fatemi (1984) also provides evidence on the risk-reduction effect of international diversification. By comparing a portfolio of multinational firms with a portfolio of purely domestic firms, he finds that corporate international diversification reduces systematic risk.

Singh (2003) argues that, if the co-insurance effect enhances debt capacity and results in increased debt usage for product-diversified firms, it would be reasonable to expect a similar impact for geographically diversified firms, when geographic diversification occurs across political boundaries with imperfectly correlated cash flow streams.

Apostu (2010) argues that diversification provides coinsurance effect which has positive relation with firm debt capacity more especially because it reduces the risk of fluctuations amongst a firm`s revenues and profits. Firms using unrelated diversification strategy have greater lack of correlation and thus experience intense coinsurance effect, and more debt capacity.

2.2.2 Resource Based View

Resource based theory takes a firm as a collection of sticky and imperfectly imitable resources or capabilities which enable it to successfully compete against other firms (Barney 1991).Resource based firm theory is a strategic theory about how a firm can exploit the resources to achieve its economic goals or sustainable competence advantages over its rivals. As such provided a firm has idle capacity which it can utilize to make more money, such a firm will diversify.

Silverman (1999) find that firms with broad resource bases tend to diversify, and they tend to diversify into industry that have similar R&D, advertising and capital expenditure intensities to those of the firm`s existing businesses, and firms tend to enter the markets where the resources requirements match their resource capabilities. Therefore, resource based theory helps us understand why firms expand, and why a firm chooses a specific diversification strategy over another.

2.2.3 The Transaction Cost Argument

The transaction cost approach deals with the governance of contractual relations in transactions between two parties (Williamson, 1988). This theory shows the relationship existent between type of diversification chosen by a firm and its likely choice of capital. Firms using unrelated diversification strategy tend to have a capital structure that has more debt as opposed to firms applying related diversification. One explanation is the use of general assets by firms employing unrelated diversification strategy which retain their value in case of liquidation.

Apostu (2010) suggests that the type of diversification adopted by a firm depends on the nature of unutilized resources that leads firms to diversify. Since the type of assets employed by a firm influence financial decisions it is possible to establish a relationship between capital structure and the diversification strategy using transactions costs theory. Most scholars argue of the existence of a positive relationship between leverage and firm diversification strategy.

2.3 Determinants of Capital Structure

Empirical studies on capital structure determinants build on a list of variables likely to affect capital structure choices which include; diversification, firm size, profitability, tangible assets and non-debt tax shields.

2.3.1 Diversification

Diversification can improve debt capacity, reduce the chances of bankruptcy by going into new product/ markets (Lewellen, 1971), and improve asset deployment and profitability. Skills developed in one business transferred to other businesses, can increase labor and capital productivity. Raphael and Livnat (1988) using market based risk measures found that firm`s trade off the reduction in operating risk due to diversification with increased financial leverage, and thus the systematic risk remains the same. It documents that firms reduce their operating risk by diversification and increase financial leverage to take advantage of tax benefits.

A diversified firm can transfer funds from a cash surplus unit to a cash deficit unit without taxes or transaction costs (Bhide, 1993). As a result of the coinsurance effect, resource view and transaction cost effect, diversification becomes attractive to investors and debt capacity is thus significantly enhanced. Low and Chen (2004) in their study, emphasized that product diversification is positively related to financial leverage, indicating that such diversification allows corporations to reduce their risks enabling them to carry higher debt levels.

2.3.2 Firm Size

Firm size defines the extent to which firms can access credit markets to get loans. Firm size can be measured using total assets, total assets to book value, average level of total assets and average level of sales (Ferri and Jones, 1979).

If there are returns to scale in the costs of issuing securities, larger firms might change their leverage more readily than smaller firms. Larger firms can diversify their investment projects on a broader basis thus their financial distress risk can be considered to be lower. The trade off theory suggests a positive relation between size and leverage (Sbeiti, 2010).

Titman and Wessels (1988) have opined that small size is likely to worsen the information asymmetry between the small firm shareholders, managers and potential capital lenders. As a result, the cost of debt may be higher for SME`s than for large firms. Ang, et al. (1982) argue that bankruptcy costs are relatively higher for small companies, because large firms show more stability and hold more diversified portfolios of assets. Kaijage and Elly (2014) conclude the existence a positive relationship between firm size and total and long-term debt on one side, and a negative relationship between firm size and short-term debt on the other.

2.3.3 Profitability

The relationship between firm profitability and capital structure can be explained by the pecking order theory (POT), which holds that firms prefer internal sources of finance to external sources. The order of the preference is from the one that is least sensitive (and least risky) to the one that is most sensitive (and most risky) that arise because of asymmetric information between corporate insiders and less well-informed market participants (Myers, 1984). By this token, profitable firms with access to retained profits can rely on them as opposed to depending on outside sources (debt).

Profitability is measured as the ratio of earnings before tax to total assets. Rajan and Zingales (1995) use earnings before interest, taxes, and depreciation while Booth et al (2001) use the return on assets defined by the earnings before tax. The relationship between leverage and profitability is indeterminate.

Profitable firms have lower expected costs of financial distress and thus have easy access to the debt market. Kaijage and Elly (2014) argue that contrary to the norm, profitable small and medium enterprises tend to use retentions as the principle source of funds as opposed to debt. This proposition contradicts the conventional theory that the cost of debt is usually lower than the cost of equity. A possible explanation is the risk associated with small firms that makes debt capital costlier.

2.3.4 Tangible Assets

This is viewed as the palpability of assets in the balance sheet and measures the proportion of firm's fixed assets. The type of assets owned by a firm affects its capital structure choice (Chang, Lee & Lee, 2008). Tangible assets, which retain high liquidation value, serve as debt security. However, if tangible assets are illiquid, firms have a lower debt capacity. Frank and Goyal (2005), measure tangibility as fixed assets to total assets and expect a positive relationship as firms with a greater percentage of total assets composed of tangible assets are more likely to have a higher capacity to raise debt.

Jensen and Meckling (1976) argue that shareholders of levered companies are inclined to overinvest, which intensifies the classical conflict of interests between stockholders and debt holders. If a firm has a high proportion of long term physical assets, leverage can be secured against these assets. However, in this situation the corporate manager would be restricted to using debt funds for specific projects. Harris and Raviv (1991) conclude that high tangibility of assets may increase the liquidation value of a firm and improves the guarantee of repayment, reducing the risk to debtors.

2.4 Review of Empirical Evidence

Rumelt (1974) investigated the effect of diversification on capital structure for a sample of 249 US firms. He found out that for firms developing a strategy of unrelated diversification had the highest debt ratio. Barton and Gordon (1988) propose that corporate strategy perspective may provide a behavioral basis for understanding the capital structure of large US firms. Their study also revealed that firms developing a strategy of unrelated diversification had the highest debt ratio.

Kochhar and Hitt (1998) also explored the linkage between the characteristics of a firm's diversification strategy and its capital structure. They find that equity financing is preferred for related diversification and debt financing for unrelated diversification. Their explanation is that related diversification introduces more specific assets whereas unrelated diversification adds assets less specific to the firm.

Alonso (2003) studied the effect of diversification strategy on firm capital structure using a panel data analysis for a sample of 480 Spanish manufacturing firms during the period 1991-1994. Using four alternative measures of capital structure and two different proxies of diversification strategies (the Herfindahl and the Entropy index of total product diversification) and after controlling for firm characteristics such as firm size, intangible assets and firm profitability, he finds no significant relationship between capital structure and the degree of firm diversification.

Nyangoro (2003) studied the determinants of capital structure. He used conditional quantile regression in analyzing the distributional differences of debt ratios across firms in different quantiles. He concluded that some variables affect capital structure, for example, the increase in size of the firm leads to firms shifting from long term to short term debt, while asset tangibility leads to a shift from short term to long term debt by the firm. The effect of tax on capital structure is only significant at lower quantiles and only for total debt ratios. Firms at higher debt quantiles use non-debt tax shields other than tax rate to determine their capital structure.

La Rocca et.al. (2009) extended prior analyses on financial policy and diversification by examining the relationship between capital structure and diversification over a period of twenty seven years. Their sample consisted of a panel made up of 180 Italian firms (76 listed) evaluated in the period from 1980 to 2006.

Using a target adjusted model estimated by the Generalized Method of Moments (GMM) approach, they show that total diversification is negatively related to debt ratios. Furthermore, their analysis indicated that the degree of relatedness between business segments is important in the relationship between diversification and capital structure. They find that a related-diversification strategy, which is based on business synergies and resource sharing, has a negative influence on leverage. By contrast, unrelated diversity, which is based on financial synergies, has a positive effect on debt. In addition they find that the diversification structure significantly influenced the speed at which firms adjusted their leverage ratios.

Qureshi (2012) carried out a study to investigate the nature of relationship existent between diversification, capital structure and profitability in Pakistan. The study was on a sample of 74 companies listed in the Karachi Stock Exchange from 2000 to 2009. Two dimensions of diversification were considered product and geographic diversification. The results supported the coinsurance and the transaction cost theory; firms having product and geographic diversification were found to have greater amount of debt as compared to the non-diversified firms. Product diversification positively affected profitability, with the diversified firms earning more on average.

Nyanamba, Nyangweso and Omari, (2013) did a research on the factors that determine the capital structure of micro-enterprises. Their research targeted 200 active micro-enterprises within Kisii town. Using simple random design they identified the 80 (40%) micro enterprises for study. They found out that some determinants of capital structure seemed to be more significant as compared to others. The greatest determinants identified were: access to capital markets, size of the business, and profitability of the business and lender's attitude towards the firm.

2.5 Summary of the Literature Review

Authors such as Rumelt (1974), Barton and Gordon (1988) conclude that debt capacity is highest in unrelated diversified firms. Kochhar and Hitt (1998) conclude that equity financing is preferred for related diversification and debt financing for unrelated diversification. Alonso (2003), on the other hand, finds no significant relationship between capital structure and the degree of firm diversification. This shows the inconclusive nature of the effect of diversification on capital structure indicating the existence of a knowledge gap.

Many of the studies that have been carried out are from developed countries whose institutions effect on diversification differs with those of developing countries. There is no conclusive information as to which is the optimal capital mix a firm should adopt. There is also no published information in Kenya on the effect of diversification on capital structure of listed firms in Kenya. This study seeks to address the existent gap by trying to establish the effect of diversification on the growth of listed companies in the NSE

CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research design and the methodology of the study; it highlights a full description of the research design, the research variables and provides a broad view of the description and selection of the population. The research instruments, data collection techniques and data analysis procedure have also been pointed out.

3.2 Research Design

Research design refers to the way the study is designed, that is the method used to carry out the research (Mugenda & Mugenda, 2003). Descriptive study was conducted by collecting quantitative data. Observation which is a method of viewing and recording data was used.

3.3 Population

The research drew population from all companies listed on the Nairobi Securities Exchange as at 31st December, 2014. The researcher targeted 44 non-financial firms, as shown in appendix 2, after excluding 17 companies, which operated in the financial sector. The financial firms were excluded because their capital structure was controlled by the regulators.

3.4 Data Collection

The study was based on secondary data. The annual financial data for listed firms for the period 2010-2014 from the Nairobi Securities Exchange, Capital Markets Authority and respective companies' websites as well as their official publications. The financial data collected for each firm was on: Debt (long-term debt and short-term), total equity, total revenues, revenues from each segment, total assets, net fixed assets, and net income.

3.5 Data Analysis

The regression analysis technique was employed to explore the relationship between diversification and leverage decisions by firms after controlling for some control variables selected from prior studies that influences the leverage decisions of the firm. They included firm size (SIZE), profitability (PROF), and tangible assets (TANG). Diversification was treated as the independent variable in this study. Managers could control the extent of desired diversification and capital structure was the dependent variable. Data was categorized, ordered and summarized to obtain answers to the research question.

3.5.1 Model Specification and Operationalization of Variables

In this study diversification was measured using specialization ratio while leverage was measured by debt equity ratio. Specialization Ratio (SR) was calculated to classify listed firms into three, single product firms ($SR > 0.95$), moderate diversified firms ($0.75 \leq SR < 0.95$) and highly diversified firms ($SR < 0.75$). Debt - Equity ratio was used to indicate the leverage of the firms.

The researcher used a multiple regression model to analyze the variables that explain the determinants of capital structure. The dependent variable in the regression model was Leverage (LEV) while the independent variables included diversification, size, profitability, and tangibility.

$$LEVE_{it} = \alpha_i + \beta_1 DIVE_{it} + \beta_2 SIZE + \beta_3 PROF + \beta_4 TANG + \epsilon_{it}$$

Where:

LEVE - means leverage

DIVE - means diversification

SIZE - means size

PROF - means profitability

TANG - means tangibility of assets

$\beta_1, \beta_2, \beta_3, \beta_4$, as its coefficients which were to be estimated

α_i stands for intercept

ϵ_{it} stands for error term

Table 3.1 Operationalization of Study Variables

Variable	Indicator	Measure	Adapted From
Dependent Capital structure	Leverage	Debt equity ratio	Rajendran & Madabhushi, 2009
Independent Diversification	Specialisation ratio	Annual Revenues (Core segment) to total revenues	Rumelt,1974
Control Variables Size		LNTA ^U – Natural logarithm of total assets	Alonso, 2003
Profitability		Earnings before tax to total assets	Booth et al.,2000
Tangibility		Net fixed assets to total assets	Chakraborty, 2010

3.5.2 Tests of Significance

To examine whether capital structure was significant among the three categories of firms (single product firms, moderate diversified firms and highly diversified firms) t-test was used at 5 percent level of significance.

CHAPTER FOUR:

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter details the research findings presented by descriptive statistics and tables. The regression model and correlation statistics are also presented in this chapter. The study population targeted 44 listed firms, out of which 35 firms (80 percent) as shown in appendix II, whose complete data was available were studied. The data was analyzed to answer the research question which was to establish the relationship between corporate diversification and capital structure of firms listed at the Nairobi Securities Exchange.

4.2 Descriptive Statistics

The table one below shows descriptive statistics on leverage, diversification, size, profitability and tangibility that were the study variables.

Table 4.1: Descriptive Statistics on Leverage, Diversification, Size, Profitability and Tangibility

		Leverage	Diversification	Size	Profitability	Tangibility
N	Statistic	175	175	175	175	175
Range	Statistic	4.27	.91	7.44	1.34	.96
Minimum	Statistic	.00	.09	11.90	-.63	.03
Maximum	Statistic	4.27	1.00	19.34	.71	.99
Mean	Statistic	.61	.97	15.72	.11	.63
Std. Deviation	Statistic	.77	.077	1.53	.16	.26

4.2.1 Leverage

In the 5 year study period, the maximum debt equity ratio was at 4.27 and the minimum was at zero. Some firms had zero debt equity ratios in 2010 and 2011 meaning that the firms' total assets were being financed by shareholders' capital. The standard deviation of leverage as per table one, was at 0.77 indicating a small variation from the mean of 0.61. Over the 5 year study period, firms with debt equity ratio of more than 0.5 on average were represented by 32 percent. This meant that 68 percent of firms listed in the NSE had little debt in their capital structure with some being wholly financed by equity.

A majority of the firms had a declining trend with leverage over the five years. One firm, for example, began with a debt equity ratio of 0.44 in 2010 and ended with a debt equity ratio of 0.30 in 2014. The firm was generally a focused firm with a diversification ratio of 1. Some firms exemplified the positive theoretical relationship expected between leverage and diversification. One such firm began with 0.08 leverage in 2010 and ended with 0.73 in 2014. Diversification for the firm was also on the increase over the five years. Some firms had relatively stable debt equity ratio of more than 1 in the 5 year period. These firms were highly leveraged.

4.2.2 Diversification

Diversification which was measured using specialization ratio showed that on average a majority of firms listed at the NSE were diversified. Single product model firms had a maximum specialization ratio of 1 with the highly diversified firms having a value of 0.09. The most diversified firm over the five year period had a specialization ratio of 0.09. Several firms had their specialization ratio in the 5 year period being 1 indicating that these firms were highly focused in their core activities.

In 2010, a total of twenty three firms (66 percent) had a specialization ratio of 1, which would indicate that only 34 percent of the firms were diversified. However, in the year 2014, only eight firms (23 percent) were still relying on single products. A total of twenty seven firms representing 77 percent had diversified. The most diversified firm in 2010 and 2011 had a ratio 0.9 and 0.91 respectively. In 2012, the level of diversification increased with the most diversified firm having a ratio of 0.86. The diversification trend continued until 2014 with the highly diversified firm having a ratio of 0.09.

4.2.3 Size

To measure firm size, natural logarithm of total assets was used. In the five year study period, the average firm size was 15. Firms with a size of 17 and above formed a small percentage of 14 percent from year 2010 to 2012, 25 percent and 20 percent in 2013 and 2014 respectively.

These big firms had on average a specialization ratio of 1 meaning that the firms were highly specialized. In terms of leverage for the firms with a value of 17 and above, only 66 percent of the firms had a leverage ratio of 0.5 and above and 34 percent had a leverage ratio of less than 0.5.

Small sized firms were generally poorly leveraged over the five year period; a small number of firms however had a leverage ratio being above 1. This was contrary to the proposition that small firms are poorly leveraged (Kaijage and Elly, 2014). The smallest firm had a ratio of 11.65 in year 2014, while the largest firm had a natural logarithm of 19.33. The standard deviation was at 1.56 which portrayed a huge variance from the mean of 15.67.

4.2.4 Profitability

Profitability was measured using net income of a firm and standardized using total assets. The most profitable firms with a profitability ratio of 0.25 and above accounted for 13 percent. An analysis of the 13 percent most profitable firms showed that only 17 percent of the firms had leverage of 0.5 and above. This meant that 83 percent of the (13 percent most profitable firms) relied on very little leverage. Thus the effect of profitability on leverage is indeterminate. The least leveraged firm had a ratio of 0 which meant that such a firm was wholly financed by shareholder`s equity.

The findings of the study showed that 92 percent of the 13 percent most profitable firms had a specialization ratio of 1 and the remainder 8 percent was moderately diversified. The most profitable firm had a ratio of 0.71 over the five year study period, with the least profitable firm having a ratio of -0.6. The mean profitable rate over the five year study period was at 0.11. A majority of the NSE firms were profitable with an average profitability of 0.11. The standard deviation of profitability was at 0.16 which meant that only a few firms had huge profitable difference with the mean.

4.2.5 Tangibility

Tangibility was measured by net fixed assets to total assets of a firm. Firms with high tangibility of assets were expected to have more leverage due to the security provision of their assets. A majority of firms with high tangibility had high leverage ratios, with a few having no debt. One firm had a tangibility ratio of 0.98 and 0.88 in 2010 and 2011 with zero leverage ratio in the two years.

This meant that contrary to the expected positive relationship between tangibility and leverage, this firm did not use its tangibility to determine its leverage and diversification. Over the five year study period, the most tangible firm had a ratio of 0.99 while the least tangible firm had a ratio of 0.03. The least tangible firm had no leverage towards its capital which could be explained by the fact that low asset tangibility meant the firm was unattractive to debt holders.

The mean tangibility was at 0.63 while the standard deviation was at 0.26. The standard deviation indicated a 26 percent difference with the mean tangibility of firms. Therefore, there existed a huge variation between firms with high tangibility and firms with low tangibility.

4.3 Diagnostics Tests

Collinearity test is conducted using tolerance and variance inflation factor. Tolerance measures the percentage of variance in the independent variable that is not accounted for by the other independent variables. Tolerance values higher than 0.1 are favorable. VIF indicates the degree to which the standard errors are inflated due to the levels of collinearity.

Table 4.2a: Multicollinearity Test Profitability, Tangibility and Size with Diversification

		Model		
		1		
		Profitability	Tangibility	Size
Collinearity	Tolerance	.999	.918	.918
Statistics	VIF	1.001	1.090	1.089

a. Dependent Variable: Diversification

Table 4.2a above, showed that profitability, tangibility and size did not have any multicollinearity with diversification. The tolerance levels for profitability, tangibility and size were all 0.9 and above. This meant that only a small percentage of profitability and size could be accounted for by diversification.

Table 4.2b : Multicollinearity Test Profitability, Tangibility and Diversification with Size

		Model		
		1		
		Profitability	Tangibility	Diversification
Collinearity	Tolerance	.996	.996	.993
Statistics	VIF	1.004	1.004	1.007

a. Dependent Variable: Size

From table 4.2b above, there were no multicollinearity issues between profitability, tangibility, and diversification with size. The degrees of inflation of the standard errors of profitability, tangibility and diversification were considerably low, with large tolerance values for the three variables.

Table 4.2c : Multicollinearity Test Profitability, Tangibility and Diversification with Tangibility

		Model		
		1		
		Profitability	Size	Diversification
Collinearity	Tolerance	.997	.999	.996
Statistics	VIF	1.003	1.001	1.005

a. Dependent Variable: Tangibility

Table 4.2c above indicated that profitability, size and diversification did not have any multicollinearity with tangibility. The VIF ratios were less than three meaning multicollinearity between variables did not exist. The tolerance level for profitability, size and diversification were high above 0.9 meaning only a small percentage of their variations could be explained by tangibility.

Table 4.2d : Multicollinearity Test Size, Diversification and Tangibility with Profitability

		Model		
		1		
		Size	Diversification	Tangibility
Collinearity	Tolerance	.918	.996	.916
Statistics	VIF	1.089	1.004	1.092

a. Dependent Variable: Profitability

Table 4.2d also showed the inexistence of multicollinearity between size, diversification, and tangibility with profitability. The tolerance values for size, diversification and tangibility were all above 0.1 meaning that only a small percentage of the variables could be explained by profitability.

Table 4.3 Durbin Watson`s Test: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.303 ^a	.092	.070	.74342	.881

a. Predictors: (Constant), Tangibility, Profitability, Diversification, Size

b. Dependent Variable: Leverage

Table 4.3 above, shows the Durbin Watson`s test which normally checks if there is autocorrelation in the residuals from a statistical regression analysis. The Durbin Watson value was 0.881 which indicated the presence of a weak positive autocorrelation in the sample. The adjusted R^2 indicated that only 7 percent of the variations in the dependent variable could be explained by the variations in the independent variables.

Table 4.4a Tests of Normality :Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Leverage	175	100.0%	0	0.0%	175	100.0%
Diversification	175	100.0%	0	0.0%	175	100.0%
Size	175	100.0%	0	0.0%	175	100.0%
Profitability	175	100.0%	0	0.0%	175	100.0%
Tangibility	175	100.0%	0	0.0%	175	100.0%

The table 4.5a above serves to show that there was no variable that was left out in carrying the normality tests.

Table 4.4b Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Leverage	.255	175	.000	.723	175	.000
Diversification	.370	175	.000	.310	175	.000
Size	.067	175	.054	.990	175	.241
Profitability	.154	175	.000	.870	175	.000
Tangibility	.245	175	.000	.416	175	.000

a. Lilliefors Significance Correction

From table 4.4b above, leverage, diversification, profitability and tangibility were significant with sigma`s of 0.000 which were less than 0.05. The data for leverage, diversification, profitability and tangibility was not normally distributed. Size had a sigma of 0.54 using Kolmogorov test and a 0.24 sigma using Shapiro-Wilk test. Size was not statistically significant. Data from size as a variable was normally distributed.

4.4 Relationship between Study Variables

In statistics it is generally accepted that the following can be used to measure effect size.

Effect size: if $v = +/-0.5$ it is large, $+/-0.3$ it is medium, and $+/-0.1$ it is small.

Table 4.5: Correlation Matrix on Relationship between Study Variables

		Leverage	Diversification	Size	Profitability	Tangibility
Leverage	Pearson correlation	1				
Diversification	Pearson correlation	0.025	1			
Size	Pearson correlation	.185*	-.037	1		
Profitability	Pearson correlation	-.210**	.056	.005	1	
Tangibility	Pearson correlation	.144	-.059	.286**	.027	1

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

For the 5 year study period, leverage was positively correlated with diversification, size and tangibility of assets with scores of r as follows $r=0.025$; $r=0.185$ and $r=0.144$ respectively. Leverage had a weak positive association with size but statistically significant at 95 percent level of confidence. There was also a weak negative association between leverage and profitability represented by $r = -0.210$, the relationship however was statistically significant at 95 percent level of confidence.

Diversification had a weak positive association with profitability and leverage with an r value of 0.056 and 0.25 respectively. It was however, negatively correlated with size and tangibility at -0.037 and -0.059 respectively. The effect of size, tangibility, profitability and leverage on diversification was small as the values were both below ± 0.3 . This meant that an increase in diversification of a firm led to a small effect increase in a firm's profitability and leverage. An increase in diversification however led to a small decreasing effect on a firm's size and tangibility of assets.

Firm size was positively correlated to a firm's profitability, tangibility and leverage. The respective Pearson's r correlations were at 0.005, 0.286 and 0.185. There was a weak negative association between firm size and diversification with an r of -0.37. Leverage had a weak positive relationship with size which was statistically significant at 95 percent level of confidence.

Tangibility on the other hand, had a weak positive association with size which was statistically significant at 95 percent level of confidence. Firm size had a small effect on a firm's profitability, tangibility and leverage, however it had a medium effect on diversification.

A weak positive association existed between profitability and tangibility, profitability and diversification, profitability and size at $r=0.27$; $r=0.056$ and $r=0.005$ respectively. The r value of profitability with leverage was -0.210 which meant that profitability caused a small negative effect on leverage. The relationship between profitability and leverage was however significant at 95 percent level of confidence. Profitability had an r value of 0.005 with size. Profitability thus had a small effect on firm size.

Tangibility of assets correlated positively with leverage, size and profitability at $r=0.144$, $r=0.286$ and $r=0.27$ respectively. Tangibility had a weak positive association with leverage, size and profitability. The relationship between tangibility and size was however significant $r=0.286$, at 95 percent level of confidence. A weak negative association existed between tangibility and diversification with $r=-0.059$. An increase in a firm's tangible assets meant a small decline in a firm's diversification.

4.5 Corporate Diversification and Capital Structure

In the study a multiple regression model was used to predict the relationship between capital structure and the hypothesized factors determining it for NSE firms listed in Kenya. The adjusted (R^2) value was 0.07 ; meaning that 7 percent of variations in leverage for NSE listed firms was explained by variations in the model's independent variable and control variables. This was summarized in the following Table 3 below.

Table 4.6a Regression statistics: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.303 ^a	.092	.070	.74342

a. Predictors: (Constant), Tangibility, Profitability, Diversification, Size

Table 4.6b : ANOVAa

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	9.467	4	2.367	4.282	.003 ^b
Residual	93.954	170	.553		
Total	103.421	174			

a. Dependent Variable: Leverage

b. Predictors: (Constant), Tangibility, Profitability, Diversification, Size

Table 4.6c: Regression Coefficientsa

Model	Unstandardized Coefficients		Standardized Coefficients	T	P Value	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	-1.203	.939		-1.281	.202	-3.056	.650
Diversification	.494	.738	.049	.669	.504	-.962	1.949
Size	.079	.038	.158	2.065	.040	.003	.155
Profitability	-1.021	.345	-.217	-2.958	.004	-1.702	-.340
Tangibility	.325	.231	.108	1.411	.160	-.130	.780

a. Dependent Variable: Leverage

From the regression table 3a to 3c above, the study model would translate to;

$$\text{LEVE}_{it} = -1.203 + 0.049 \text{ DIVE} + 0.158 \text{ SIZE} - 0.217 \text{ PROF} + 0.108 \text{ TANG} + 0.74$$

Where:

LEVE=Leverage

DIVE=Diversification

SIZE=Size

PROF=Profitability

TANG=Tangibility

From the regression coefficients in Table 3c above, the constant for the leverage model was -1.203 given that all other factors were held constant and the error term was 0.939. Diversification, size and tangibility had positive beta coefficients which meant that an increase in any of the variables led to a corresponding increase in leverage. The profitability variable had a negative coefficient of -0.217. This meant that profitability was inversely correlated to leverage for the NSE listed firms. Any increase in profitability led to a negative increase in leverage.

At 5 percent level of significance or 95 percent level of confidence; $P=0.05$. Profitability and size were statistically significant with leverage at P values of 0.004 and 0.04 respectively. Their P values were less than 0.05. Diversification and tangibility however, had no statistical significance with leverage as shown by their P values of 0.5 and 0.16 respectively.

From the above findings, leverage was on the decline for most firms from 2010 to 2014. Out of the 35 firms studied, 52 percent employed less debt over the 5 year study period and were more diversified; 11 percent of the firms used more debt in their capital structure and diversified further. A small number which formed 17 percent took up more debt but remained single product firms while 20 percent used less debt and still remained focused firms. Thus a majority of the NSE firms that were diversified increased their leverage.

CHAPTER FIVE:

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, the highlights of the study findings and the recommendations thereof. The conclusions were in quest to addressing the research objective of establishing the effect of diversification on capital structure of firms listed at the NSE. It also highlights the limitations of the study and suggestions for further research.

5.2 Summary of Findings

By use of descriptive statistics, the research sought to establish the relationship between corporate diversification and capital structure of firms listed in the Nairobi Securities Exchange. The study involved 35 firms whose data was collected from the year 2010 to 2014. The data was mainly from annual financial reports of respective companies. The annual reports were obtained from the firms' websites, Capital Markets Authority and other relevant publications.

Diversification of NSE firms for the period 2010 – 2014, had a weak positive relationship with leverage with a beta coefficient of 0.049 and a Pearson's correlation r of 0.025. This was inconsistent with the co-insurance effect theory which argued that a firm with imperfectly correlated cash flow would tend to assume more debt in its capital structure.

According to the study, 52 percent of the NSE firms used less debt and were more diversified with only 11 percent of the firms taking up more debt for diversification purposes. Firms therefore choose to use other internal sources of capital consistent with Myers (1984) pecking order theory where firms prefer to use internal sources of funds before external finance.

Firm size and leverage had a weak positive relationship with a beta coefficient of 0.158 and a correlation matrix of 0.185. From the study, only 11 percent of NSE firms used more debt to diversify. Out of the 11 percent, 1 percent was represented by small sized firms whilst the 99 percent were large firms. This is consistent with the trade off theory by Sbeiti (2010) which suggests a positive relationship between size and leverage. Thus the bigger the firm the lower the financial distress risks compared to small sized firms.

Profitability had a weak negative association with leverage with a beta of -0.217. The relationship between profitability and leverage was significant at $r = -0.210$. This means that an increase in profitability led to a decrease in leverage. Most scholars found the relationship between profitability and leverage as being indeterminate. According to Myers (1984) firms prefer least sensitive and least risky sources of capital before using most sensitive and more risky funds. Profitable firms have access to retained profits and could rely on them as opposed to debt.

Tangibility on the hand had a weak positive relationship with leverage with a beta coefficient of 0.108. This meant that an increase in tangible assets led to a small increase in a firm`s leverage. Firm size and tangibility of assets had a positive relationship which was significant at 95 percent confidence level, with an $r=0.286$. Large firms with a natural logarithm of total assets of 17 and above, for the 5 year study period, had high leverage usage with 66 percent having a leverage of more than 0.5.

Analyses show that a majority of the large firms were highly specialized and performed better than diversified firms. This could imply that management of firms that develop through diversification are not very effective at utilizing their assets to generate profit or may not be efficiently utilizing shareholder`s funds. The finding supports the proposition of Peter and Waterman (1982) that successful companies are those that stick to the knitting; meaning firms that choose to do what they are good at and concentrate on perfecting it.

Multiple regression and bivariate correlation were used to analyze the data. Diversification was measured using Specialization Ratio, calculated as a ratio of annual revenue from the core segment of a firm to its total annual revenue. The lowest ratio was 0.09 indicating high level of diversification, as the core business of the firm contributed to only 9 percent of its total revenue. The study showed that in 2010, 34 percent of NSE firms were diversified; the percentage however rose to 77 percent by 2014. Firms with a specialization ratio of 1 were highly focused firms with a percentage of 66 percent in 2010 and 23 percent in 2014.

A test of multicollinearity between the study independent variables was carried out which showed the inexistence of multicollinearity amongst diversification, size, profitability and tangibility. The normality tests that were carried out showed that only size had a normal distribution. Data for leverage, diversification, profitability and tangibility did not follow a continuum hence there was no normal distribution for the variables.

5.3 Conclusions

The research findings showed that on average firms listed at the NSE were diversified. There existed a weak positive relationship between diversification and capital structure of NSE listed firms. The effect of diversification had an adjusted R^2 of 0.07. This meant that 7 percent of a firm's leverage could be explained by diversification and the control variables in the study. Thus, other than diversification, there were other factors that had a greater impact on a firm's capital structure.

Firm size and tangibility of assets were positively related with diversification. The bigger a firm was the more tangible assets it had and the better chances it had of being leveraged. The smaller a firm was, the fewer tangible assets it had and the less chances it had of being leveraged. This was consistent with Titman and Wessels (1988) who argued that small firms are likely to worsen the information asymmetry between small firm shareholders and managers, thus these firms were viewed as risky by investors.

Profitability was the only variable that had a weak negative relationship with leverage. This is because shareholders of a firm evaluate the various sources of capital before they diversify. Decisions of whether to diversify or specialize and utilize leverage are not based on profitability alone. Firm owners have the discretion of making capital financing decisions.

According to Kaijage and Elly (2014), profitable small and medium term enterprises tend to use retentions as their principle sources of funds contrary to the cheap sources of funds such as debt. This demonstrates the indeterminate nature of profitability of firms on a firm's diversification strategy.

5.4 Recommendations

Company financing decisions involve a lot of policy issues. The results of the study have significant policy implications on the firm, industry and macro levels. The study found out that more of NSE firms used less leverage for diversification purposes. Thus the government should regulate the financial sector through various monetary and fiscal policies to reduce the cost of borrowing. The high interest rate in Kenya is an impediment to the growth and diversification of firms.

The study found out that large firms were more leveraged than small - sized firms due to the stability and less financial distress risk associated with large firms. Firm size was however positively related with long-term debt and negatively related with short term debt.

Thus to improve the leverage of small sized firms, managers should concentrate on using more of current liabilities to finance assets. The CMA should create redeemable short-term financing products in addition to corporate bonds to be traded in the stock market. This will be beneficial to small sized firms as they will be able to access finance easily and diversify.

In theory firms that used diversification to develop, were expected to be have more leverage in their capital structure than non-diversified firms. This was in accordance to the co-insurance effect generated by the imperfectly correlated cash flows. In practice most firms used less debt to diversify. The CMA should come up with policies that cheapen the external sources of finance for firms to access capital easily and reduce the information asymmetries between shareholders and managers of firms.

5.5 Limitations of the Study

From the study, one cannot conclude that corporate diversification affects leverage beyond the commonly accepted capital structure determinants. The insignificant results obtained may be attributed to limited observation sample used in the study as a consequence of the difficulty of finding data on corporate diversification for NSE listed firms. The study did not focus on the various effects of diversification strategies; related and unrelated, on capital structure but rather looked at the effect of diversification in totality. There was also an assumption that corporate diversification and capital structure had a linear relationship which may not necessarily be the case.

The study was based on secondary data collected from audited financial statements and respective firm websites`. Thus if there are any misstatements or errors arising from the financial statements, then the study is limited to such errors. The study looked at four elements that influence capital structure decisions; however, there are more factors that affect the gearing level of a firm which would need to be studied in future.

5.6 Suggestions for further Research

La Rocca et.al. (2009) suggested an interesting direction for future empirical studies would be to study the combined effect of international and product diversification, according to the degree of relatedness of product segments on capital structure decisions. Future research could measure corporate diversification in a different manner. The use of Entropy Index (EI) in measuring diversification could be valuable in drawing more meaningful and comprehensive results.

A study on the diversification strategies both related and unrelated should be carried out to find out the impact of these strategies on the capital structure of a firm. Other determinants of capital structure such as firm performance and non-debt tax shields should be studied to find out if they have significant effect on capital structure decisions of firms listed in the NSE.

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APPENDICES:

APPENDIX 1: DATA COLLECTION SHEET

No.	Company	Year	Leve	Dive	Size	Prof	Tang
1	KAKUZI	2010	0.28247	0.99279	14.85752	0.19705	0.85471
		2011	0.25733	0.98034	15.05856	0.26545	0.76242
		2012	0.22292	0.94993	15.04681	0.16575	0.68139
		2013	0.22945	0.94124	15.08818	0.06703	0.71334
		2014	0.23295	0.94880	15.11843	0.06326	0.72727
2	KAPCHORUA	2010	0.32560	1.00000	13.89738	0.11014	0.75570
		2011	0.40118	1.00000	14.07488	0.20708	0.76711
		2012	0.32847	1.00000	14.22497	0.07475	0.80392
		2013	0.33210	0.99814	14.38867	0.06198	0.76622
		2014	0.31534	0.98308	14.43236	0.03678	0.71729
3	LIMURU TEA	2010	0.23282	1.00000	11.89893	0.70919	0.46957
		2011	0.24077	1.00000	12.13218	0.32219	0.48937
		2012	0.27752	1.00000	12.64267	0.47376	0.61153
		2013	0.28593	1.00000	12.22747	0.20338	0.63850
		2014	0.28029	1.00000	12.23851	0.01006	0.55992
4	REA VIPINGO PLANTATIONS	2010	0.28417	1.00000	14.05466	0.08181	0.88219
		2011	0.26867	1.00000	14.43797	0.36428	0.74837
		2012	0.22733	1.00000	14.56628	0.26210	0.70662
		2013	0.84291	0.95364	14.65908	0.28019	0.62015
		2014	0.91708	0.94640	14.72570	0.21362	0.61694
5	SASINI	2010	0.31603	1.00000	15.96039	0.11635	0.91703
		2011	0.31298	1.00000	15.99915	0.05072	0.92569
		2012	0.29728	1.00000	15.93626	-0.01489	0.93712
		2013	0.41853	0.95264	16.01876	0.01750	0.85697
		2014	0.23171	0.09198	16.51885	0.00414	0.91660
6	WILLIAMSON TEA	2010	0.26213	1.00000	15.29261	0.27927	0.77602
		2011	0.25148	1.00000	15.49174	0.24202	0.69331
		2012	0.25904	1.00000	15.64425	0.18688	0.77032
		2013	0.24358	1.00000	15.80136	0.15864	0.73292
		2014	0.23886	1.00000	15.92170	0.00877	0.70827
7	CAR & GENERAL	2010	1.02543	0.99828	15.16910	0.08503	0.30825
		2011	1.03114	0.99712	15.53151	0.07693	0.37292
	CAR & GENERAL	2012	1.01246	0.99504	15.55692	0.06214	0.40457
		2013	1.75597	0.99809	15.74724	0.06650	0.39308
		2014	1.32983	0.99298	15.91387	0.05155	0.38352

8	CMC HOLDINGS	2010	0.07778	0.98716	16.37716	0.03139	0.18852
		2011	0.08384	0.98151	16.49510	-0.01243	0.15573
		2012	0.11847	0.98365	16.50116	0.00718	0.19769
		2013	1.10679	0.99119	16.32497	0.01625	0.23652
		2014	0.72912	0.96485	16.60019	0.01967	0.21526
9	MASHALLS	2010	3.19325	1.00000	13.64369	-0.40934	0.65984
		2011	0.00000	1.00000	13.70341	0.20303	0.45144
		2012	0.00128	1.00000	12.88062	-0.42159	0.94235
		2013	0.82600	0.93807	13.15215	-0.21360	0.71420
		2014	1.15985	0.90824	13.31122	-0.00411	0.69974
10	EXPRESS KENYA	2010	1.03391	1.00000	13.96618	-0.02416	0.67241
		2011	1.30119	1.00000	13.35210	-0.36413	0.56795
		2012	0.68502	1.00000	12.97531	0.03018	0.77410
		2013	1.42059	0.85815	13.08263	-0.00353	0.78524
		2014	1.65206	0.84455	13.07720	-0.15993	0.84302
11	KENYA AIRWAYS	2010	1.63771	1.00000	17.83014	0.04821	0.95091
		2011	1.44260	1.00000	17.85026	0.08849	0.97509
		2012	1.33141	1.00000	17.83368	0.03860	0.96541
		2013	2.93060	1.00000	18.62501	0.08825	0.76679
		2014	4.26611	1.00000	18.81715	0.03270	0.80064
12	LONGHORN	2010	0.07647	0.99108	13.16734	0.05240	0.27353
		2011	0.02389	0.99721	13.47253	0.30025	0.25748
		2012	0.00000	0.98759	13.40253	-0.03922	0.03289
		2013	0.83837	0.99334	13.43720	0.22091	0.29298
		2014	0.83021	0.99550	13.52453	0.19695	0.26582
13	NATION MEDIA GROUP	2010	0.00000	1.00000	15.50599	0.39590	0.53455
		2011	0.02662	1.00000	15.65374	0.31928	0.47112
		2012	0.01873	1.00000	15.82516	0.46974	0.45964
		2013	0.01024	0.80431	16.25299	0.31344	0.31244
		2014	0.00660	0.80991	16.29576	0.30341	0.61745
14	SCAN GROUP	2010	0.05342	0.98483	15.89613	0.10468	0.11131
		2011	0.07748	0.98718	15.95439	0.15078	0.08445
		2012	0.07308	0.98725	15.97272	0.12664	0.10540
		2013	0.04410	0.98258	16.36062	0.04908	0.17926
		2014	0.03529	0.98467	16.40208	0.07250	0.17773
15	STANDARD MEDIA GROUP	2010	0.44564	1.00000	14.63543	0.19982	0.85305
		2011	0.40124	1.00000	14.65610	0.10014	0.95980
		2012	0.31508	1.00000	14.68381	0.11136	0.94562
		2013	0.32260	1.00000	15.24162	0.07224	0.60514
		2014	0.30378	1.00000	15.22692	0.07950	0.63649

16	TPS EASTERN AFRICA	2010	0.36935	1.00000	16.14427	0.06750	0.93395
		2011	0.43119	1.00000	16.25930	0.07408	0.93057
		2012	0.39806	1.00000	16.25930	0.06265	0.99021
		2013	0.28059	0.93524	16.41833	0.05597	0.84461
		2014	0.26468	0.95643	16.44488	0.01587	0.94976
17	UCHUMI HOLDINGS	2010	0.20803	1.00000	14.90055	0.14637	0.62816
		2011	0.08045	1.00000	15.00959	0.15599	0.62491
		2012	0.03022	1.00000	15.02380	0.12048	0.75816
		2013	0.06837	0.94040	15.53354	0.08718	0.69045
		2014	0.05283	0.91623	15.74483	0.06576	0.67313
18	ARM CEMENT	2010	1.71135	1.00000	16.40766	0.08332	0.92263
		2011	1.63758	1.00000	16.63646	0.08116	0.95850
		2012	1.87202	1.00000	16.83351	0.08754	0.92990
		2013	1.51101	0.98162	17.20683	0.06733	0.76945
		2014	1.21614	0.96541	17.42406	0.05467	0.77770
19	BAMBURI CEMENT	2010	0.19495	0.97788	17.32125	0.22711	0.61379
		2011	0.05092	0.99877	17.32712	0.25270	0.60134
		2012	1.67396	0.86542	17.57759	0.16674	0.61750
		2013	0.17534	0.98625	17.42737	0.14894	0.72839
		2014	0.17044	0.99041	17.34428	0.17021	0.74661
20	CROWN PAINTS KENYA	2010	0.08668	0.97107	14.49473	0.08593	0.24959
		2011	0.08640	0.95544	14.56945	0.09436	0.30397
		2012	0.04026	0.96881	14.63011	0.09927	0.29625
		2013	0.01096	0.98403	14.89577	0.11321	0.02617
		2014	0.00366	0.97665	15.16431	0.03932	0.25596
21	EA CABLES	2010	0.38854	1.00000	14.95305	0.08292	0.87294
		2011	0.28361	1.00000	14.88666	0.15923	0.88584
		2012	0.27056	1.00000	15.12827	0.20268	0.86567
		2013	0.32500	0.99012	15.73831	0.08558	0.47165
		2014	0.48641	0.98260	15.88104	0.06432	0.51242
22	E.A. PORTLANDS CEMENT	2010	0.78926	1.00000	16.30354	-0.02813	0.75812
		2011	1.00436	1.00000	16.42048	-0.00880	0.76557
		2012	1.44154	1.00000	16.46105	-0.06030	0.81758
		2013	0.74383	0.98901	16.59642	-0.08798	0.77674
		2014	0.82037	0.97113	16.57027	0.02378	0.78851
23	KENGEN LTD	2010	1.03595	1.00000	18.78252	0.01731	0.81978
		2011	1.15701	1.00000	18.82439	0.02438	0.94469
		2012	1.11067	1.00000	18.81369	0.02731	0.95081
		2013	1.31212	0.93909	19.05553	0.02134	0.86682

		2014	1.93326	0.93201	19.33779	0.01662	0.88957
24	KENOL KOBIL LIMITED	2010	0.02536	1.00000	16.25729	0.24677	0.37930
		2011	0.13130	1.00000	16.39422	0.37434	0.44221
		2012	0.13926	1.00000	16.46479	-0.63382	0.51919
		2013	0.10735	0.98698	17.15205	0.02005	0.31079
		2014	0.03898	0.98882	16.99002	0.06359	0.35238
25	TOTAL KENYA	2010	0.38674	1.00000	16.40213	0.10451	0.77240
		2011	0.32851	1.00000	16.31821	0.00474	0.80711
		2012	0.06023	1.00000	16.52672	-0.00427	0.64012
		2013	0.07263	0.99674	17.50399	0.05213	0.24877
		2014	0.07246	0.99681	17.29804	0.06994	0.30790
26	CENTUM	2010	0.00000	1.00000	15.87681	0.13757	0.98509
		2011	0.00000	1.00000	16.07303	0.24002	0.88914
		2012	0.09959	1.00000	16.23225	0.12192	0.98502
		2013	0.38630	1.00000	16.75795	0.17129	0.76589
		2014	0.28981	1.00000	16.84066	0.19476	0.81621
27	TRANSCENTURY LIMITED	2010	0.63692	0.89720	16.23468	0.05612	0.63559
		2011	1.21608	0.91348	16.92565	0.03876	0.57812
		2012	1.13498	0.90642	16.89952	0.05614	0.65624
		2013	0.05013	0.90308	16.98689	0.03601	0.63154
		2014	0.12865	0.96859	16.78406	-0.10862	0.57692
28	BOC	2010	0.32761	0.97345	14.51851	0.05678	0.36586
		2011	0.36751	0.97855	14.41259	0.11831	0.35513
		2012	0.36756	0.95802	14.50341	0.14410	0.30254
		2013	0.26831	0.86433	14.78367	0.11712	0.53989
		2014	0.31658	0.94082	14.64856	0.12085	0.48566
29	BRITISH AMERICAN TOBACCO	2010	0.37162	0.99122	16.22440	0.24480	0.56802
		2011	0.31158	0.98974	16.43659	0.32610	0.49240
		2012	0.28542	0.98620	16.53526	0.31327	0.53021
		2013	0.22940	1.00000	16.13839	0.53601	0.82979
		2014	0.22013	1.00000	16.21975	0.55059	0.83839
30	CARBACID INVESTMENTS LTD	2010	0.11737	1.00000	14.18404	0.30302	0.77964
		2011	0.15465	1.00000	14.34277	0.22087	0.78846
		2012	0.12699	1.00000	14.43751	0.28746	0.73738
		2013	0.04594	0.89249	14.60597	0.28783	0.59532
		2014	0.07221	0.87587	14.74498	0.23578	0.61286
31	EAST AFRICAN BREWERIES	2010	0.11440	0.98367	17.09394	0.47366	0.78614

		2011	0.27116	0.98935	17.34217	0.36045	0.97615
		2012	2.68299	0.88567	17.41355	0.41759	0.87883
		2013	3.50155	1.00000	17.48233	0.28407	0.79519
		2014	3.01737	1.00000	17.57808	0.24168	0.82225
32	EVEREADY	2010	1.96437	0.99731	13.99435	0.01233	0.21109
		2011	2.63955	0.99643	13.83228	-0.17033	0.27849
		2012	2.29260	0.99141	13.95591	0.05989	0.23871
		2013	1.00000	1.00000	13.75555	0.06383	0.27376
		2014	1.00000	1.00000	13.74300	0.26666	0.17924
33	MUMIAS SUGAR	2010	3.71344	1.00000	16.51228	0.14697	0.78116
		2011	0.39644	1.00000	16.80953	0.13256	0.82220
		2012	0.37878	1.00000	16.89188	0.08137	0.93308
		2013	0.41029	0.94983	17.12174	-0.08147	0.74122
		2014	0.21483	0.95312	16.97519	-0.14451	0.81525
34	UNGA GROUP	2010	0.50516	1.00000	15.43775	0.04663	0.32473
		2011	0.52443	1.00000	15.55754	0.07726	0.02843
		2012	0.60690	1.00000	15.67341	0.05432	0.27540
		2013	1.07102	1.00000	15.93380	0.07963	0.29833
		2014	0.46347	0.96114	15.89827	0.07073	0.31662
35	SAFARICOM LIMITED	2010	0.12801	1.00000	18.21673	0.25710	0.86206
		2011	0.18102	1.00000	18.33897	0.19925	0.86526
		2012	0.20357	1.00000	18.42771	0.17248	0.83693
		2013	0.14950	0.97637	18.45508	0.24590	0.89145
		2014	0.05593	0.98786	18.48158	0.32917	0.90646

APPENDIX 2: LIST OF LISTED NON- FINANCIAL FIRMS AS AT DEC 2014

1. Eaagads Ltd
2. Kakuzi Ltd
3. Kapchorua Tea Co. Ltd
4. The Limuru Tea Co. Ltd
5. Rea Vipingo Plantations Ltd
6. Sasini Ltd
7. Williamson Tea Kenya Ltd
8. Car & General (K) Ltd
9. CMC Holdings Ltd
10. Marshalls (E.A.) Ltd
11. Sameer Africa Ltd
12. Express Kenya Ltd
13. Hutchings Biemer Ltd
14. Kenya Airways Ltd
15. Longhorn Kenya Ltd
16. Nation Media Group Ltd
17. Scangroup Ltd
18. Standard Group Ltd
19. TPS Eastern Africa Ltd
20. Uchumi Supermarket Ltd
21. ARM Cement Ltd
22. Bamburi Cement Ltd
23. Crown Paints Kenya Ltd
24. E.A.Cables Ltd
25. E.A.Portland Cement Co. Ltd
26. KenGen Co. Ltd
27. KenolKobil Ltd
28. Kenya Power & Lighting Co Ltd
29. Total Kenya Ltd
30. Umeme Ltd
31. Centum Investment Co Ltd
32. Olympia Capital Holdings Ltd
33. Trans-Century Ltd
34. A.Baumann & Co Ltd
35. B.O.C Kenya Ltd
36. British American Tobacco Kenya
37. Carbacid Investments Ltd
38. East African Breweries Ltd
39. Eveready East Africa Ltd
40. Kenya Orchards Ltd
41. Mumias Sugar Co. Ltd
42. Unga Group Ltd
43. Safaricom Ltd
44. Home Afrika Ltd