

**THE RELATIONSHIP BETWEEN CORPORATE  
FINANCIAL PERFORMANCE AND FINANCIAL  
LEVERAGE FOR NON-FINANCIAL FIRMS LISTED  
AT THE NAIROBI SECURITIES EXCHANGE**

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THE REQUIREMENTS FOR MASTERS OF BUSINESS  
ADMINISTRATION**

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## **DECLARATION**

This research project is my original work and has never been presented for an award of diploma or a degree in this or any other university.

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This research project has been submitted for examination with my approval as the supervisor.

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Who can fathom your majesty, providence, love and kindness for in your own time, you bring dreams and desires to pass and bestow to your beloved honour and a crown of glory, to you my Father, shepherd and savior be glory and praise for ever.

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Last and by no means least, is the University, for offering a flexible training program which did fit with my other engagements.

## **DEDICATION**

This master of business in administration (MBA) project is devoted to my two sons, Samuel and Joel, whom I am very proud of and whom I seek to mentor to emulate their father and all well-meaning people for their own success and to madam Tabby, the principal manager of our home for creating an environment that enhances individual and family excellence.

## ABSTRACT

We all engage in investment activities in the hope that by so doing we will increase our wealth. Financial performance of a firm is driven by operating decisions such as use of debt aimed at efficient and effective use of its assets to increase profits. Divergent opinion has risen as to the impact of debt on financial performance of corporations with some practitioners and researchers holding that use of moderate debt will increase profitability while others have argued that debt is irrelevant to firm performance. Worldwide empirical studies have returned varied results as to whether a relationship exists amid leverage and financial performance. Recent studies undertaken in Kenya using data from the NSE have registered positive, negative and no relationship. A question therefore arises, why the difference? Employing a causal study design, for the period between 2006 and 2015 and focusing on different levels of profitability for Kenyan listed non-financial firms, utilizing secondary quantitative data and a sample of 31 firms, the study set to establish the relationship amid corporate financial performance and leverage. Three groups; the highly profitable, the moderately profitable and the least profitable comprising firms ranked based on their average return on equity over the study period represented the different levels of profitability. The research finds that the highly profitable firms at the NSE ascribe to a tradeoff model, and that firms can accrue benefits by employing debt which the managers for these firms deliberately seek to utilize until an optimal leverage is attained. For the highly profitable firms, contradictory results (positive and negative relations) may be observed in studies undertaken between 2006 and 2009 and between 2010 and 2015. This is because as revealed by trend analysis, profitability peaked at about 2009 and 2010 and declined thereafter to 2015. Wrong conclusions may be arrived at for the highly profitable firms at the NSE if literature is applied that indicates that characteristics of firms that prescribe to a pecking order include high profitable, low relative debt, negative relationship amid corporate financial performance and leverage. The study recommends exclusion of the least profitable firms at the NSE from capital structure studies as they largely don't pay income taxes and hence have no tax shield to benefit from.

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## **ABBREVIATIONS**

<b>CFP</b>	-	Corporate Financial Performance
<b>GDP</b>	-	Gross domestic product
<b>MM</b>	-	Modigliani and Miller
<b>NSE</b>	-	Nairobi Securities Exchange
<b>ROA</b>	-	Return on asset
<b>ROE</b>	-	Return on equity
<b>WACC</b>	-	Weighted average cost of capital

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of Study

Since Modigliani and Miller (MM) through their pivotal work in 1958 gave a divergent opinion, the debate on what impact debt has on the firm's value ranges on for over half a century yet without convergence of opinion. On the one side, some financial practitioners and researchers hold the view that moderate debt increases the profitability of the firm.

Various theories on capital structure; the tradeoff, free cash flow concept, and the traditional view have arisen to support this view point. Modigliani and Miller, (1963) after factoring in taxes also support the view that debt impacts firm value and its profitability. Consequently, there is a difference between the value of the unlevered firms to those of the levered firms with the latter being higher all else held constant. This view point posits that firms in their choices of capital structure aim at an optimal target leverage which maximizes firm's value. These theories predict a positive relationship existing amid profitability and leverage. However, observation indicates existence of many creditworthy firms working at minimal leverage for long period of time (Myers, 1984).

On the other side, others argue that leverage is irrelevant to the firm's profitability and its value. The MM (1958) seminal work on capital structure irrelevance, insinuated that the value of the firm is governed by the earning capability and risk of the firm's asset but is invariant to its capital structure.

Experience has shown that the share prices and hence value of the firms change whenever firms issue equity securities (Myers, 1984). Under certain economic conditions, leverage increases financial risk occasioning a decreased firm performance. Empirical studies on how corporate performance is related to leverage undertaken worldwide including Kenya for both

developed and developing countries have not helped the situation but have returned mixed results.

Further, the studies have shown that firms do not equally enjoy the debt benefits but the magnitude of the debt benefits vary across firms depending on the firm's financial characteristics of its assets, earnings, growth opportunities and shareholders profile. In spite of the foregoing, the proposition that the use of moderate debt would improve financial performance and maximize the value of the firm and thereby accrue additional benefits to its owners remains attractive today. In addition, by selecting between levered firms, investors will better their returns. For these reasons and so long as the debate as to the validity of benefits of debt and its effect on the firm value lingers unresolved, research on the subject remains appropriate.

### **1.1.1 Corporate Financial Performance**

A firm's financial performance denotes the extent to which its financial objectives have been met. It is a measure of how efficient a firm has employed its assets in its core business to generate income. In addition, it is a term applied to the process of measuring in monetary terms how business activities of an entity have been conducted over a time period with a focus to the past or planned, cost efficiency, management responsibility or accountability. It is also generally used to measure a firm's comprehensive financial wellbeing for a specific time period. Financial performance may be impacted by operating decisions when the firm's assets are used effectively to increase the firm's profit. Use of debt is one type of decisions that a company might make to increase its assets in order to generate more profits (Kimani, 2012).

According to Boaventura, Silva, & Bandeira-de-Mello (2012) survey measurements, accounting, and market information have been used to measure Corporate Financial Performance (CFP). They in addition clarify that the market method indicates the extent in

which the owners are satisfied; accounting mirrors the internal efficiency; and the survey measurements provides a subjective overview of the firm's financial performance. Empirical studies whose objective is to measure CFP have used different types of variables including return on equity, sales growth, return on sales, return on assets and Tobin's Q.

### **1.1.2 Leverage**

Firms may supplement the shareholders equity by employing debt. Additional financing requirements may therefore be achieved by increasing the owners' claim through issuing of ordinary shares or use of retained earnings or by increasing creditors claim through borrowing. Electing to utilize both equity and debt culminates into a firm's capital structure. The ratio between equity and debt is signified by the term capital structure. Leverage refers to the debt component in a firm's capital structure (Pandey, 2009).

Relationship between capital structure and the firm's capability to service the interests of its different stakeholders has given eminence to leverage. The manner in which the firm's capital structure is formed impacts its governance and subsequently the flexibility a company has in passing critical decisions (Jensen, 1986).

Financial leverage is the portion of the firm's capital financed with debt (Ward & Price, 2006). It follows that highly indebted firms have higher leverage in their capital structure. It in addition reflects the proportion of capital shareholders and creditors have contributed. Leverage could also be viewed as that portion of a firm's fixed costs which exposes the firm to risks. Financial leverage which indicates a measure of financial risk, refers to a long term financing with fixed financing charges on the company's assets. High financial leverage means high financial risk and inherently high capital cost to the firm. Capital structure according to Firer, Ross, Westerfield & Jordan (2004) implies the relative amount of equity and debt utilized by the firm to finance its operational activities.

Leverage is measured using various ratios. Within the capital structure of the firm, the ratios indicate the ability of the firm to satisfy the interests of its various stakeholders and to quantify debt the firm has. The financial statements provide information used to derive the ratios which mainly focus on the firm's stockholders' equity and liabilities to debtholders. In addition, they are used to assess the ability of the firm to service its fixed payments associated with its debts. Harris and Artur (1991) cautioned that different outcomes and hence likely divergent interpretations could be encountered when different measures of leverage are used. Unlike the markets leverage that fluctuates very frequently, book leverage is favored as a measure of leverage (Myers, 1977).

### **1.1.3 Corporate Performance and Leverage**

Debate on whether there exists a relationship amid leverage and profitability ranges on both at theoretical and empirical levels with various practitioners and researchers holding to divergent views while empirical results have returned mixed results locally and internationally, for developed and developing countries.

The tradeoff theory, one of the most popular theories on the subject, posits that there is a positive relationship amid a firm's profitability and its financial leverage. Consequently, managers consciously set a leverage target that maximizes the firm value and continuously work towards achieving it or reverting to it. One of its main predictions is that, profitable companies are more indebted since these firms are motivated to benefit from tax shield afforded by deductibility of debt interest payments. Myers (1984) faults this point of view and points out that against the expectation of the trade-off theory that profit seeking firms would not overlook debt related benefits if the risk of distress was minor, observations reveal existence of many creditworthy and high profit making firms working at low leverage for

prolonged duration. He points out that often the minimum debt has been associated with the highest profit making firms.

The pecking order theory, the other leading but seeming contradictory theory to the trade-off theory, argues that managers don't consider the level of debt in the planning of their profit or firm value maximization. The theory asserts that managers would exhaust internal funds before opting for external funds and would prioritize debt as source of choice and only as a last result will they procure new equity. Its key prediction is that if a firm has a lot of profitable assets, the firm will have a lower leverage and higher dividend payout. Within an industry, for a firm's debt and its profitability, pecking order hypothesis is credited with explanation power for the negative relationship between them. However, it cannot fully for different industries explain the difference between their capital structures (Pandey, 2009). Small firms have been observed to deviate from its proposed pecking order (Fama & French, 2000).

#### **1.1.4 The Nairobi Securities Exchange (NSE)**

The NSE which was established in 1954 and registered under the Companies Act in 1991, is an organized financial market where various securities of listed firms are issued, bought and sold by individual and institutions both local and foreign through the services of stockbrokers or dealers. The Exchange is the fourth-largest in the sub-Saharan Africa's. It focuses in the exchange of securities issued by the Government and listed firms. It's mandated to provide a trading platform for listed securities while at the same time overseeing its member.

The NSE provides the main hub for trading in the secondary market. It provides a trading floor which though available is not commonly in use after being replaced by the automated trading system. Through a wide area network (WAN), members trade at the comfort of their offices. The system is efficient, transparent and can handle large volumes of transactions at the same time.



The Capital Markets Authority licenses and regulates NSE. Stock exchange is a market. Delivery and settlement is done scriptless via an electronic Central Depository System (CDS). Trading is facilitated through an Automated Trading System (ATS) that matches orders automatically. NSE enlists members who undertake trading on behalf of investors. The membership is drawn from investment banks, stockbrokers and dealers.

## **1.2 Research Problem**

In the modern times, efficient allocation of capital is the most important finance decision (Pandey, 2009). The investment decision entails the decision to set aside the firms' capital to acquire long term assets. This decision has considerable importance to the firms since it tends to govern their value by influencing their profitability, growth and risk. It is made in tandem with the financing decision which primarily involves the choice as to what ratio of debt to equity will be employed. The decision to choose between equity and debt is aimed at finding the appropriate capital mix that will optimize the shareholders' wealth. The financing decision influences the shareholders return and risk. Consequently, capital structure choices may affect the profitability of the firm and therefore its market capitalization. In line with the financial goals of a firm, the financing decision must be scrutinized based on its effect on the firm's value and its profitability.

The debate on the relationship amid corporate performance and the level of leverage ranges both at theoretical and empirical levels with various practitioners and researchers holding divergent views while empirical results have returned mixed results locally and internationally, for developed and developing countries (Frank & Goyal, 2009). Throughout literature, attention has been direct at existence of an ideal capital structure and as well as if the use of debt is relevant to the value of the firm (Atwi, Mills, & Zhao, 2012). Several conditional

theories have been developed around the subject of debt equity choice. However, there is none that is universal (Myers, 2001).

The two leading theories of capital structure choice but considered alternative and competing, the pecking order hypothesis and tradeoff theory have been found to be inadequate in some instances. Graham (2000) states that “Paradoxically, large, liquid, profitable firms with low expected distress costs use debt conservatively.” Likewise and against the predictions of tradeoff theory, high profit making firms have been observed to employ minimal debt. Although, through the pecking order hypothesis, the negative relationship amid profitability and debt within an industry can be explained, the theory cannot be wholly relied on to explain the capital structure difference between industries (Pandey, 2009). It has further been observed that small firms don’t ascribe to its proposed pecking order (Fama & French, 2000).

Various studies undertaken in Kenya about the same period using data from the NSE have reached contradictory outcomes leaving consumers of such information confused. Oluwagbemiga (2013), Kiprop, (2014), Kulati, (2014) say a positive relationship exists amid the corporate financial performance and the firm’s leverage and advocates that firms seek strategic partners and replace equity with debt. Kodongo, Mokoteli, and Maina (2014) say there seems to be no relationship and hence imply there is no advantage for employing debt while Mbugua (2012), Mule and Mukras (2015) say there is a negative relationship and attributes the poor financial performance of Kenyan listed firms to over financing with debt. Kale (2014) established that for NSE 20 index firms, a negative relation existed amid corporate performance and leverage. All these studies have been undertaken at about the same time using data from the NSE. Why then the different outcomes? And again, if the most profitable firms as implied by literature (Graham, 2000) and empirical study (Kale, 2014) don’t influence the relationship observed amid performance and leverage, what does?

Considerations by most empirical studies have assumed that firms in a market subscribes to the same paradigm (pecking order or tradeoff, positive or negative relationship) and hence have grouped all firms together in the studies. Kale (2014) has contended against this approach arguing that since some firms perform better than others in financial management and profitability the practice may lead to wrong conclusions.

The foregoing requires further investigations. Contrary to documented observations, do highly profitable firms at the Nairobi Security Exchange prescribe to a tradeoff capital choice model exhibiting a relationship that is positive amid corporate financial performance and financial leverage as reported by Oluwagbemiga (2013), Kiprop, (2014) and Kulati, (2014)? In addition, at the Nairobi Securities Exchange, could the highly profitable firms subscribe to a different paradigm (pecking order or tradeoff, positive or negative relationship) from that of loss making and low to moderately profitable firms? Focusing only on non-financial firms at the NSE, the objective of this study was to establish the relationship for different levels of profitability amid corporate financial performance and leverage.

### **1.3 Objective of the Study**

The author's goal in undertaking this study was to establish for different levels of corporate profitability, the relationship amid corporate performance and leverage for non-financial firms at the NSE.

### **1.4 Significance of the Study**

Investment decisions are significant because they have a tendency to govern a firm's value by influencing its risk, profitability and growth (Pandey, 2009). Every investment decision is accompanied by a financing decision and therefore financing decisions are significant as they influence shareholders return and risk. Consequently, capital structure may affect firm value.

In Kenya, limited and contradictory research exists on what is the effect leverage has on the profitability of a firm. The study will contribute knowledge in this area. Its outcome will inform capital structure policy of firms and provide a guide to managers in the design of their firms' capital structure with the aim of maximizing value for their shareholders. The study will in addition, assist investors in the selection of firms for their portfolio as well as contribute information which will be a basis for further research.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This section established the theoretical framework used in the study. Literature review is carried out first followed by the outcomes of empirical studies undertaken both in Kenya and elsewhere.

### **2.2 Theoretical Review**

This section reviews the theoretical framework for the study.

#### **2.2.1 Traditional Capital Structure View**

This view finds relevance where the expected return on equity is relatively greater than the debt cost and where moderate debt is employed. It holds that a careful mix of equity and debt may improve the profitability and therefore the firm's value (Pandey, 2009). Traditional view is founded on the fact that the firm's value is equivalent to the ratio of future cash flows and the firm's cost of capital alternatively called the weighted average cost of capital of the firm (WACC).

For a case where debt is cheaper, increasing debt result in lowering the capital cost to the firm and thus increases the firm's value. The WACC declines because the more expensive equity is replaced by cheaper debt. However, as debt increases further, risk to the investors and creditors equally increases and hence they require higher returns as compensation for their increased risk. At low debt level, the increase in risk premiums with debt is outweighed by the benefits of debt. At higher level of debt, the premiums required by investors to compensate them for higher risk outweighs the benefits accruing from increased debt. The theory supposes that firm's lowest capital cost coincides with an optimum leverage.

### **2.2.2 Modigliani and Miller (MM) Irrelevance Hypothesis**

MM (1958) expressing their disagreement to the traditional view, argued that an ideal market void of transaction and taxes costs, a firm's cost of capital and its market capitalization is insensitive to the changes in the capital structure of the firm.

MM proposes that the way the assets are financed is of no consequence to the firm's value which according to them is hinged on the risk and earnings of its assets (Mule & Mukras, 2015). They expound that use of cheaper debt would increase investors risk exposure who would consequently require higher premium as compensation. Thus the firms WACC remains constant. In their article, Modigliani and Miller (1963) after taking to account the effect of deductibility of interest charges in tax computation, show that the firm performance will increase with debt and that unlevered and a levered firms will have different value with the former being greater (Pandey, 2009).

The MM proposition today comprises a significant segment of finance theory and is extensively acknowledged (Scott, 1976). However, the hypothesis suffers major shortcoming by its assumption of an ideal stock market (Pandey, 2009).

Myers (2001) points to one of the MM theory major flaws. He argues, as regards debt tax benefits, there is a general agreement that a compelling incentive exists for corporations to borrow debt. Under the MM environment, there should be evidence that corporations are borrowing aggressively to take advantage of the tax shield benefit. Ultimately no organization would be paying taxes. This is however not the case in real life. He attributes the deviation from the MM hypothesis to costs associated with aggressive borrowing and which leads to existence of a tradeoff model of capital structure.

### **2.2.3 Trade-Off Theory**

A distinctive capital structure is predicted by the tradeoff theory for every firm (DeAngelo & Masulis, 1980). An ideal capital structure is envisaged under the tradeoff theory by factoring failures of the capital markets overlooked by the MM. An ideal capital structure is assumed to be dictated by a tradeoff between the benefits and costs of employing debt. Debt is perceived to bear interest tax shields but also increase risk and cost of bankruptcy. In tradeoff theory, the entity is depicted as matching the value of these gains and losses (Myers, 1984).

The tradeoff model point to benefits associated with debt which the firm deliberately seeks to utilize until an ideal capital structure is attained. These benefits accrue because the debt interest charges are deducted before tax computation. Consequently, the theory advocates for moderate debt (Myers 2001). The theory postulates that companies will take additional debt until the incremental debt benefits just outweighs the increase in cost of financing distress.

Myers (1984) finds a flaw with the theory and points out that many high profit making firms with excellent credit rating have been observed to operate at leverage that are low for years despite the theories prediction that such firm will not overlook the benefit of debt when the prospects of financial distress were minor. He points out that consistently, the greater number of high profit making firms were found to have the least leverage. This gives rise to alternative pecking order theory. It is generally agreed that bankruptcy costs on their own are too minor to offset the value of tax shields (Ju, Parrino, Poteshman, & Weisbach 2005). Consequently, some aspects of agency costs are incorporated into financial analysis on the benefit of debt (Miller, 1977).

## **2.2.4 Pecking order Theory**

The hypothesis advanced by Myers (1984) and Myers and Majluf (1984) is considered an alternative and competing theory of capital structure. This model postulates a hierarchy of financing choices which a firm makes that is influenced by information asymmetry. The hypothesis contend that managers are in favor of internal financing as compared to external, and where internal funds are insufficient, debt financing is given first priority to equity financing (Hsu, Chiang, & Liao, 2013).

The theory insinuates that if its securities are overpriced, firms will exploit private corporate information within their organization to issue unsafe securities. Investors aware of this likely managers' action, they discount the prices of the firm's existing and new stocks. Managers may forfeit profitable investments if they anticipate the investors will discount their stocks' prices and especially if the only available source of financing is proceeds from issuing new securities. Managers hence choose to finance investments by deploying retained earnings or and with debt to avoid making this type of distorted resolutions. These choices are influenced by the fact that information asymmetry problem does not exists for retained earnings and is minimal for debt with insignificant risk (Fama & French, 2000). This theory indicates that the key considerations made by managers in making their financing choices are debt costs, flexibility, and ease of availability.

Unlike in the tradeoff theory, for pecking order, managers do not have a target capital structure which they seek to attain over time as a way to maximize their returns. Following a systematic order, the theory postulates that managers will finance their investment using retained earnings, debt and lastly new equity.

Within an industry, for a firm's debt and its profitability, pecking order hypothesis is credited with explanation power for the negative relationship between them. However, it is unreliable



for different industries to explain the difference between their capital structures (Pandey, 2009) as well as that for small firms (Fama & French, 2000).

### **2.2.5 Agency- cost Theory**

This theory is founded on the concept of “separation of ownership and control” where the owners (principals) engage agents (different persons apart from themselves) to perform certain services on their behalf. The agency cost is a sum of bonding expenditures, monitoring and residual losses (Jensen & Meckling, 1976). Jensen and Meckling (1976) allude to the fact that the manner in which the agency costs for a corporation arises impacts the firm’s capital structure. The team exhibited that as the claims by managers on the firms outcome reduces, the managers will tend to appropriate larger amounts of the corporation resources in the form of perquisite. Further, the managers’ incentive to devote significant effort for profit making ventures fall and avoid investments that puts high personal sacrifice which in effect results in the firm underperforming.

The agency view emphasizes the effect capital structure financial claims has upon the incentive and behavior of the decision makers that determine the income stream. Jensen and Meckling (1976) suggest two potential conflict areas; that between owners and creditors and the owners and managers. In circumstances where operations are profitable and the firm can afford to service its debt including its investment schedule, there exists a likelihood that managers will consume perquisites and not invest in activities that will result to maximizing the firm’s profitability. The manager only realizes merely a portion of the profit yet bearing all the cost if they do not capitalize in personal welfare.

Jensen (1986) also argues that because debt compels the firm to use cash, it shrinks the free cash flow manager can use in self-interest activities. Choosing to employ debt consequently mitigates the conflicts between shareholders and managers and therefore it is reckoned as a

benefit of debt financing. The agency cost theory divides to three prong concepts; the free cash flow, information asymmetry and market timing.

## **2.3 Determinants of Firm profitability**

The following are some of the determinants of profitability for firms.

### **2.3.1 Performance**

The Modigliani and Miller irrelevance hypothesis (1958) insinuates that the way the assets of a firm are financed is irrelevant as it relates to the firm's value which according to them is hinged on the risk and earnings of its assets. The tradeoff theory suggests that highly profitable firms, because they have larger tax benefits prospects should have more debt. The agency hypothesis advocates that due to the disciplinary nature of debt, high profit making firms should have more debt. However, internal funds are given priority according to the pecking order hypothesis and therefore high profit making firms should have less leverage. Empirical studies [Fama and French (2000), Rajan and Zingales (1995)] indicates little growth opportunities for highly profitable firms will lead to lower debt.

### **2.3.2 Volatility**

Business risk (volatility) increases the chances of financial distress. Therefore tradeoff theory envisages that high volatility would result to less debt. In their study, Bradley, Jarrell and Kim (1984) established the fact that business risk is an important determinant of leverage and has an inverse relation to leverage.

### **2.3.3 Tangibility**

It is easier for third parties to value tangible assets than intangible. Large tangible asset base within a firm reduces its anticipated distress costs. Furthermore, it makes it hard for firm

owners to tradeoff low risk with riskier assets. This is because managers will be less inclined to invest in riskier products if the debtholders are able to sell the assets of the firm if the project fails (Scott, 1977). The lower the anticipated distress cost, the fewer agency problems that are related to debt. It is predicted that a positive relation exists amid leverage and tangibility (Frank & Goyal, 2009).

Moral hazard contributes to agency cost in the case where firms opt for higher risk investments once the debt is issued thereby transferring wealth to shareholders from debt providers (Jensen & Meckling, 1976). Creditors view large tangible asset base positively because they can be used to guarantee debt thereby reducing the creditor's risk exposure to debt related agency costs.

#### **2.3.4 Non-debt tax shield**

Non-debt tax shields may be considered as an alternative to the tax shield arising from debt financing (DeAngelo & Masulis, 1980). Consequently, non-debt tax shield enables a firm to have lower debt. Bradley, Jarrell, & Kim (1984) established that non-debt tax shield was positively related to leverage.

#### **2.3.5 Tax**

The impact that tax has to the firm's value gave birth to the original MM (1963) article. Most practitioners and researchers hold that tax shield is vital to firms' capital structure. The amount of tax shield is dependent on a firm's tax rate. For this reason, according to tradeoff theory projections, profitable firms with high tax rates will employ more debt.

#### **2.3.6 Dividend payout ratio**

Myers (1984) observed that security prices respond to unexpected dividend changes indicating that dividends have information content. This observation dates back at least to 1961. Miller

and Rock (1985) developed a model of dividend policy under information asymmetry. They concluded that if the amount of external financing and investment is held constant, the cash dividend paid by the corporation reveals its operating cash flow. Fama and French (2000) established a negative relationship amid dividend payout and leverage.

### **2.3.7 Growth opportunities**

Growth amplifies the costs of financial distress. However, it decreases the problems of free cash flow but aggravates agency cost debt related problems (Frank & Goyal, 2009). The tradeoff model envisages that leverage will reduce with growth while the pecking order hypothesis infers that firms with a large profile of profitable investments should accrue more debt over time and therefore predicts a positive relationship with growth. The agency cost perspective infers less free cash flows with growth and thus a positive relationship growth. However, growth increases the conflict between stock and debt holders particularly for a firm having low profitability (risky debt) but higher growth opportunities. For this case, managers have a motivation to invest in high risk investments. Shareholders would benefit from the investment if the projects yield a better return than debt would cost them, but there is no liability for the shareholder to pay if the project fails.

The ratio of market capitalization to book value of the asset is often employed as proxy for growth opportunity. If decisions to capital structure are influenced by market timing, a higher market to book ratio reduces the portion of debt while managers will exploit equity overpricing by issuing new equity. Firms with high growth opportunities may enjoy a greater variety of investment choices (Myers, 1977). However, should these firms require additional equity to realize those opportunities in the future, a highly indebted firm may forfeit those opportunities since taking the opportunities will be tantamount to transferring wealth to debtholders from stockholders.

### **2.3.8 Size**

Large firms that have diversified investments are exposed to lower debt default risk (Warner, 1977). Moreover, old firms have better standing in the marketplace and are exposed to less agency costs (Frank & Goyal, 2009). Large firms may benefit from economies of scale if they were to procure long term debt and may take advantage of market position to effectively bargaining with their creditors. Tradeoff projects that leverage is positively related to firm size. Large firms have less information asymmetry problems according to pecking order hypothesis and should have less limitation in acquiring new equity. In addition, large firms have opportunity to retain larger sums of earnings which should lead to less leverage.

## **2.4 Empirical Studies**

Fama and French (2000) tested what dividend and debt predictions would arise from pecking order as well as the tradeoff models. Using annual samples of more than 3000 firms for the period 1965 to 1999, they jointly examined the mean reversion of leverage, the short term response of debt and dividends, target leverage to changes in earning and investment.

The area of focus was the predictions of the two models on how dividend payout and leverage ratio vary with investment opportunities and profitability. The study used the ratio of pre-interest after tax earnings versus assets and pre-interest versus total assets at yearend as proxies for profitability. Market to book value, growth of assets to assets, research and development to assets and natural logarithm of book assets were in addition used as proxies for non-debt tax shield, growth opportunities and volatility respectively. The study excluded financial and utility firms that are highly regulated because their financial decision may be biased.

The team found that the two models agreed on many of the predictions. However, they observed prediction by the tradeoff model that large profitable firms will have high leverage to

be contrary to empirical data. They also found that small low average growth firms offered large equity issue contrary to pecking order prediction. They observed that a negative relationship existed amid investment opportunities and leverage while a positive relationship existed amid leverage and size of the firm as well as a positive relationship amid dividend payout and size of the firm. For high non-debt tax shield firms, they also reported lower leverage.

Oluwagbemiga (2013) focusing on NSE Listed firms, for the period 2008 to 2012 investigated whether firm value is related to capital structure. Excluding investment, financial and insurance firms considered unique due to their regulatory regime, the study sampled 35 firms from a population of 61 firms. Secondary data extracted from audited annual financial statement was used.

Descriptive and regression analyses was utilized to examine if amid the key variables there existed any relationship. The proxy used in the study for the value of the firm was log profitability, debt to equity ratio, log total assets, ratio of current asset to current liability and book value over market capitalization for capital structure, size, liquidity and growth opportunities respectively. A positive relationship was established amid firm size, growth opportunity, capital structure and liquidity and firm value. The conclusion of the study was that firms employed higher debt than equity. The study concluded that to bring about improved firms value, Kenyan firms should increase their debt level.

Kodongo, Mokoteli and Maina (2014) focusing on NSE listed firms, for the period between 2002 and 2011, examined if there existed a relationship amid profitability, firm value and capital structure. The study considered a sample numbering 29 firms from a population comprising 63 firms. The sample excluded firms within the financial and insurance sectors which are highly regulated and firms whose available data was perceived inadequate. The

study used ROE, ROA as proxy for performance, Tobin Q as proxy for firm value, the total debt equity ratio, long term debt to equity and debt to asset ratio as proxies for capital structure. The study controlled for tangibility, economy growth opportunities, firm size and the rate of growth in sales.

The study found leverage significantly and negatively affected the profitability of listed firms in Kenya. Using Tobin Q as a measure, a relationship could not be established amid firm value and leverage. This outcome was true for large and small size companies. Firm size, sales growth, and tangibility were found to be significant predictors of profitability. The researchers took special note of the fact that profitability had a consistent negative relationship with tangibility. Size of the firm and sales growth were found to be important influences for small companies and drove their firm value. In contrast, for large firms, the authors found that the same variables did not appear to have effect on firm value.

Mwangi, Mwakua and Misimbei (2014) for the period 2006 to 2012, focusing on Kenyan listed but non-financial firms, explored whether a relation existed amid financial performance and capital structure. The study considered 42 listed firms and secondary data was used extracted from annual financial statements. ROA and ROE were used to measure performance, long term debt leverage and total current liability over total assets, log of total assets (proxy for size) total current assets divided by total assets ratio, and gross domestic product (GDP) index growth rate were used as additional independent variables.

As measured by ROA and ROE, this study established that there existed a significant but negative relationship amid performance and leverage and impressed upon firms to minimize their dependence on debt.

Considering Kenyan listed firms, Mule and Mukras (2015) for the period 2007 to 2011 examined if performance is related to leverage. The team employed annual data for a sample

comprising 47 firms out of a population of 58 that were listed at the end of 2012. Some firms were excluded for lack of data for the entire period. Various panel procedures and multiple regressions were used for analyses. ROE, ROA and Tobin Q were used as proxies for financial performance, and total debt to asset ratio (proxy for leverage) ownership structure and tangibility were used as independent variables (predictors).

Using ROA and Tobin's Q as measures of performance, the team found that performance was significantly but inversely related to leverage. It was further established that financial leverage affected performance negatively but insignificantly as measured by ROE. Using Tobin's Q as a measure of performance, tangibility and ownership concentration were found to be significant factors of performance. The authors conclude that as measured by ROA and Tobin's Q and Tobin's Q respectively, leverage and ownership concentration were negative predictor of financial performance while tangibility a significant and positive predictor of performance as measured by ROE and Tobin's Q.

## **2.5 Summary of Literature Review**

Financing decision accompanies the investment decision. It involves the choice as to what ratio of debt to equity will be employed. The decision as to the amount of debt and equity to form capital structure is aimed at establishing the ideal mix that will optimize the shareholders' wealth. For this reason, the study of capital structure endeavors to describe financing options utilized by firms to finance their investments and right mix of debt and equity (Myers, 2001). Throughout literature, attention has been direct at existence of an ideal capital structure and as well as if the use of debt is relevant to the value of the firm (Atwi, Mills, & Zhao, 2012).

Despite the fact that key stakeholders have extensive examined how capital structure and profitability are related, no consensus have been reached as to how performance is affected by debt. The four major theories advanced on the subject both individually and collectively, do



not provide exhaustive explanation on capital structure choices made by firms. The MM hypothesis contrary to reality project that debt should replace equity 100% in order to harness the full benefits availed by tax shield. The trade-off theory on its part fails to match observations where a reasonably large number of profitable firms don't seem to have more leverage as the theory predicts while small firms with more investment opportunities don't seem to subscribe to the pecking order. Empirical studies have also returned mixed results (positive, negative or none).

Three studies undertaken in Kenya about the same period using data from the NSE have reached contradictory outcomes. Oluwagbemiga (2013) says a positive relationship exists amid leverage and firm value and suggests that Kenya firms increase their debt portion. Kodongo, Mokoteli, and Maina (2014) says there seems to be no relationship and hence imply there is no advantage for employing debt while Mule and Mukras (2015) say there exists a negative relationship and associates poor financial performance of Kenyan firms to over financing with debt. Consumers of information arising from these studies would obviously be left confused. Such a situation requires further research to resolve the matter.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

The chapter outlines the research methodology that the author employed to undertake this project. Research methodology is defined as a framework within which the facts are examined so that their meaning is revealed more clearly. The methodology of this research included the research design, population to be studied and the sampling strategy, data sources and data collection, and how data were analyzed. Data to be collected was for the period of 10 years from 2006 to 2015.

### **3.2 Research Design**

The research used a causal design. Causal studies try to uncover the influence that a variable has on others and explain certain results which are obtained (Cooper & Schindler, 2014). The research design was aimed at exploring for different level of profitability, if there existed a relationship amid performance and leverage for listed non-financial firms in Kenya.

### **3.3 Population and Sampling**

As at 31<sup>st</sup> December 2015, there were 64 firms listed at the NSE. The study sample included 31 firms as shown in appendix 1 that had been continuously listed for a ten year period between Year 2006 and 2015. The study omitted a total of thirty three(33) firms comprising financial companies (banks, investment and insurance) because their leverage is highly dependent on regulation and new or companies that had delisted or had been suspended on account of having inadequate financial information.

### 3.4 Data Collection

The research utilized secondary quantitative data. Number of issued shares, debt owed by the firms, total, fixed and current assets, debt interest expense, dividend paid out, net income and current liabilities owed by the firms in the sample were extracted from annual audited financial reports. Security prices were obtained from NSE.

### 3.5 Data Analysis

Three groups representing three levels of financial performance; the highly profitable, the moderately profitable and the least profitable were used in data analysis. The groups (appendix 1) were formed by ranking the firms based on their average annual return on equity over the study period. The data was analyzed using trend, descriptive statistic, correlation and regression analyses in order to establish if there existed a relationship amid corporate financial performance and leverage for each of the market segment. Microsoft Excel data analysis and Statistical Package for Social science (SPSS) software were employed to aid in the analysis.

#### 3.5.1 Conceptual Models

To reveal the relationship amid corporate financial performance and financial leverage for each of the market segment, regression of the following models were undertaken:

$$TQ = a + \beta_1 \frac{TD}{A} + \beta_2 RoA + \beta_3 Ln(A) + \beta_4 \frac{dA}{A} + \beta_5 \frac{Div}{P} + \beta_6 \frac{FA}{A} + \beta_7 Liq + \beta_8 EPS + \varepsilon \quad \text{eq.1}$$

$$RoE = a + \beta_1 \frac{TD}{A} + \beta_2 Ln(A) + \beta_3 \frac{dA}{A} + \beta_4 \frac{Div}{P} + \beta_5 \frac{FA}{A} + \beta_6 Liq + \beta_7 EPS + \varepsilon \quad \text{eq. 2}$$

$$RoA = a + \beta_1 \frac{TD}{A} + \beta_2 Ln(A) + \beta_3 \frac{dA}{A} + \beta_4 \frac{Div}{P} + \beta_5 \frac{FA}{A} + \beta_6 Liq + \beta_7 EPS + \varepsilon \quad \text{eq. 3}$$

Where:

$\alpha, \beta_1, \beta_2, \dots, \beta_i$  represents regression coefficients, TQ represents Tobin Q calculated as the ratio of summation of market capitalization and debt to sum of book value of assets for the firm. The market capitalization was computed as the multiplication product between stock market price of each firm and the number of shares. The value of debt was computed as the book value of total debt. Tobin Q together with ROE and ROA were proxies for corporate financial performance.

TD/A was the ratio between total book debt value and total assets. Debt to asset ratio was the proxy for leverage. ROE representing the return on equity was computed as the ratio of net income and outstanding number of shares. ROA represented the ratio of profits before tax and total assets for each of the firms. Natural logarithm of book asset ( $\ln(A_t)$ ) was used to measure volatility of earnings. Growth was computed as the difference between assets for previous year and year in question divided by assets. Growth of assets was used as proxy for growth opportunity.

Dividend payout ratio was used as proxy for dividend. It was measured as a ratio of dividend paid out (Div) and the net income after tax (P). Fixed assets (FA) to total book assets (A) ratio was used as proxy for tangibility. The liquidity was measured as current assets to current liability ratio. Earnings per share were measured by annual profit divided by outstanding shares.  $\varepsilon$  represents the residual component of the regression model.

## CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

### 4.1 Introduction

Key study findings and outcomes of the various analyses including trend, descriptive statistics, correlation and regression undertaken in the study are enumerated in this chapter. The outcomes are for three levels of performance; the highly profitable, the moderately profitable and the least profitable. Of the 31 sampled firms (appendix 1), 10, 10, and 11 made up the highly profitable, the moderately profitable and the least profitable levels respectively.

### 4.2 Trend Analysis

The use of debt in the place of equity as a basis for maximizing shareholders wealth forms the drive in capital structure choices. Over the study period, the study sought to analyze trend on how much equity and debt the various groups of firm representing the three different levels of performance utilized and how the financial mix trended with the three corporate financial performance variable used in the study. Table 1, 2 and 3 and figures 1, 2, 3, 4, 5 and 6 presents the finding.

Table 1: Trend analysis for the highly profitable firms

Category	year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Highly Profitable	Equity (Kshs trillion)	63	77	95	107	126	140	137	152	163	182
	Debt (Kshs trillion)	10	13	17	18	20	23	49	57	55	52
	Equity/ debt ratio	6.1	5.8	5.6	5.8	6.3	6.2	2.8	2.7	3.0	3.5
	Equity change	1.0	1.2	1.5	1.7	2.0	2.2	2.2	2.4	2.6	2.9
	Debt change	1.0	1.3	1.7	1.8	1.9	2.2	4.7	5.5	5.3	5.1
	Average Tobin Q	5.6	4.4	3.2	3.4	3.7	2.5	3.4	3.5	3.9	3.4
	Average ROE	0.29	0.32	0.28	0.50	0.28	0.26	0.36	0.27	0.25	0.19
	Average ROA	0.26	0.22	0.30	0.31	0.32	0.28	0.31	0.25	0.23	0.21

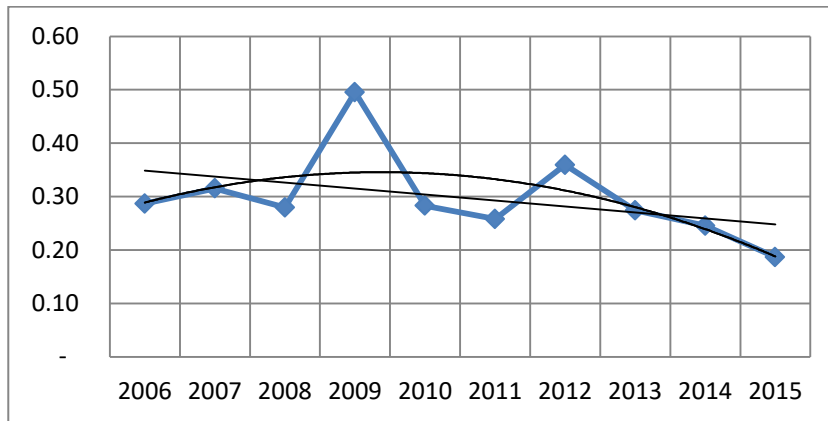


Figure 1: Average ROE for highly profitable firms

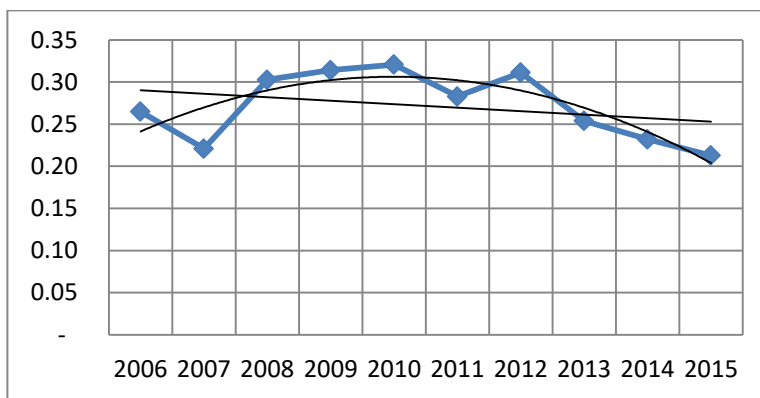


Figure 2: Average ROA for highly profitable firms

In 2006, the highly profitable firms in total employed Kshs. 63 trillion equity and Kshs. 10 trillion debt equaling a 6.1 equity to debt ratio. Over the period of the study, equity increased by 2.9 times while debt increased by 5 times resulting to reduction in the equity/debt ratio to 3.5. During this same period ROE increased from an average of 29% peaking at 50% in 2009 and reducing to 19% in 2015. Further ROA also increased from 26% in 2006 peaked at 32% in 2010 and reduced to 21% in 2015. Trend analyses indicate that both ROE and ROA tended to decrease when a linear trend is assumed. However, the data seems to better fit a polynomial trend as shown in figures 1 and 2. Tobin Q reduced for the first three years from 5.6 to 3.32 and seems to average about 3.4 for the rest of the period.

Table 2: Trend analysis for the moderately profitable firms

Category	year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Moderately profitable	Equity (Kshs trillion)	75	103	122	122	128	141	153	165	178	266
	Debt (Kshs trillion)	32	32	66	66	99	121	119	154	241	293
	Equity/ debt ratio	2.3	3.2	1.8	1.8	1.3	1.2	1.3	1.1	0.7	0.9
	Equity Change	1.0	1.4	1.6	1.6	1.7	1.9	2.0	2.2	2.4	3.5
	Debt Change	1.0	1.0	2.1	2.1	3.1	3.8	3.7	4.8	7.5	9.1
	Average Tobin Q	3.4	2.8	1.8	1.5	1.0	1.2	1.2	1.1	1.2	0.9
	Average ROE	0.10	0.14	0.12	0.13	0.12	0.12	0.09	0.10	0.08	0.11
	Average ROA	0.09	0.11	0.10	0.10	0.10	0.10	0.12	0.07	0.07	0.05

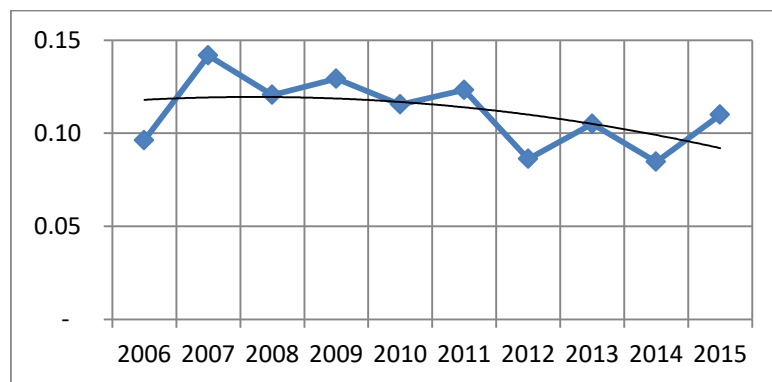


Figure 3: Average ROE for moderately profitable firms

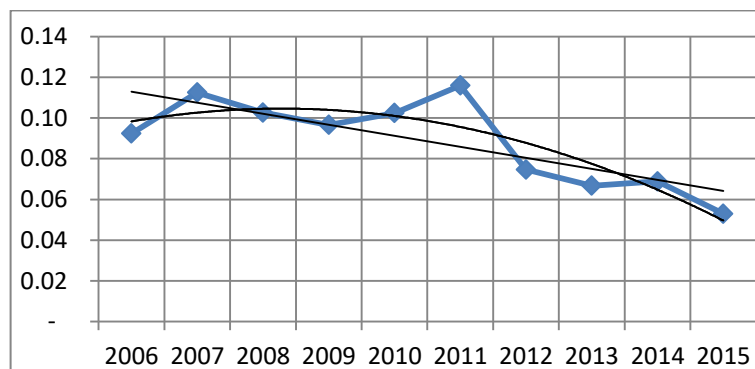


Figure 4: Average ROA for moderately profitable firms

In 2006, the moderately profitable firms in total employed Kshs. 45 trillion equity and Kshs. 32 trillion debt equaling a 1.4 equity to debt ratio. Over the period of the study, equity increased by 5.9 times while debt increased by 9 times resulting to reduction in the equity/debt ratio to

0.9. The data for ROE and ROA tended to increase peaking at about 2009 and thereafter reduced. Trend analyses indicate that both ROE and ROA tended to decrease when a linear trend is assumed. Tobin Q reduced for the first five years from 3.4 in 2006 to 1.1 in 2010 and seemed to average about 1.2 for the rest of the period.

Table 3: Trend analysis for the least profitable firms

Category	year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Least Profitable	Equity (Kshs trillion)	33	39	51	42	53	59	55	68	69	37
	Debt (Kshs trillion)	41	43	37	41	44	48	46	81	104	157
	Equity/debt ratio	0.81	0.91	1.38	1.04	1.20	1.23	1.18	0.84	0.66	0.24
	Equity change	1.0	1.2	1.5	1.3	1.6	1.8	1.7	2.0	2.1	1.1
	Debt change	1.0	1.0	0.9	1.0	1.1	1.2	1.1	2.0	2.5	3.8
	Average Tobin Q	3.43	1.62	1.11	0.93	0.94	0.76	0.70	0.75	1.00	1.41
	Average ROE	0.16	0.12	0.00	(0.19)	(0.13)	(0.03)	(0.06)	(0.02)	(0.11)	(0.49)
	Average ROA	0.17	0.13	0.09	0.10	0.07	0.05	0.00	0.01	(0.03)	(0.01)

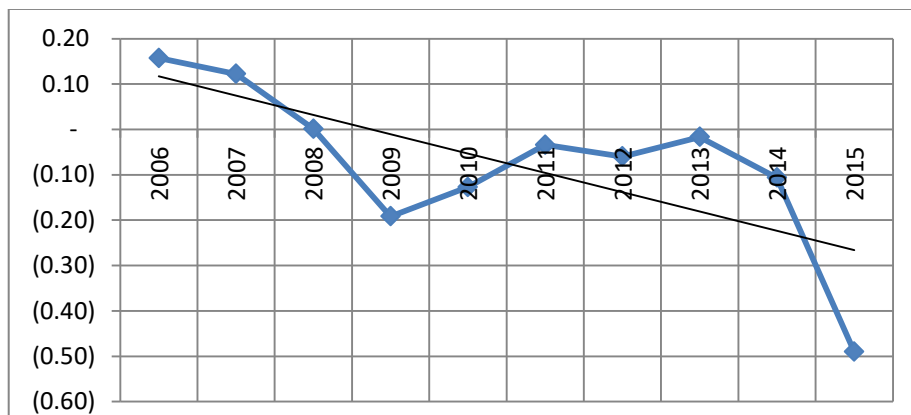


Figure 5: Average ROE for least profitable firms



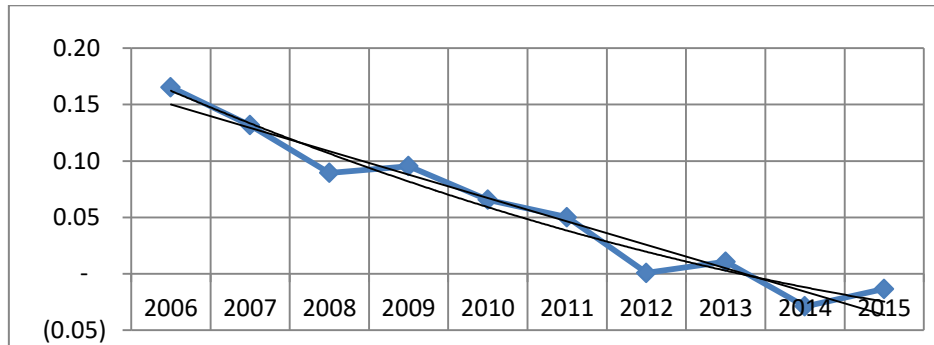


Figure 6: Average ROA for least profitable firms

In 2006, the least profitable firms in total employed Kshs. 33 trillion equity and Kshs. 41 trillion debt equaling a 0.8 equity to debt ratio. Over the period of the study, equity increased peaking at 2.1 times in 2014 and thereafter reducing to 1.1 in 2015. On the other hand debt remained almost constant for first seven year but rapidly increased by 3.8 times in the last three years. Equity/debt ratio has increased gradually to 1.23 times in 2011 and sharply decreased in the last three years to 0.24. During this same period the firms on average have remained loss making except for the first two years (2006 and 2007). The average ROE decreased from an average of 16% in 2006 to -ve 49% in 2015. Further, ROA also decreased from 17% in 2006 to -ve 1% in 2015. Trend analyses indicate that both ROE and ROA tended to decrease when a linear trend is assumed. Tobin Q reduced from 2.3 in 2006 to a low of 0.67 in 2012 and has rapidly increased in the last three years to 1.45 by 2015.

In general the three set of group of firms employed comparable total debt and equity at the start of the study that is Kshs 73, 77 and 74 trillion respectively. However, over the study period they grew at different rate. The highly profitable group of firms grew on average about 3.2, the moderately profitable firms about 5.2 times while the least profitable firms grew by about 2.6.

Comparatively, the highly profitable group of firms employed the least debt with an average equity to debt ratio of about 4.8 followed by the moderately profitable firms at an average of 1.6 and trailed by the least profitable group of firms at an average of 0.95. The import of this is that for the highly profitable group of firms on average they employed only Kshs 0.21 debt for every shilling of equity employed. On the other hand the moderately profitable firms employed Kshs 0.64 debt for every shilling of equity invested while the least profitable group of firms employed Kshs 1.05.

### 4.3 Descriptive Statistics

Tables 4, 5, and 6 respectively display the summary of the result of descriptive statistical analyses for the highly, moderately and the least profitable levels of performance.

Table 4: Descriptive statistics for the highly profitable firms

	Tobin Q	Total debt / Assets	Ln(Asset)	Change of assets /Total assets	Fixed assets /Total asset	Dividend / Profit	Liquidity	Earnings per share	ROE	ROA
Mean	3.66	0.14	15.59	0.15	0.49	0.62	3.30	10.07	0.27	0.30
Median	3.08	0.03	15.69	0.10	0.45	0.59	1.68	8.08	0.25	0.25
Standard Deviation	2.03	0.20	1.76	0.20	0.34	0.51	4.20	13.38	0.16	0.29
Kurtosis	(0.62)	7.47	0.60	8.13	(0.81)	15.37	7.24	12.01	(0.14)	28.24
Skewness	0.57	2.46	(0.77)	2.49	0.29	3.10	2.65	3.03	0.37	4.32
Minimum	0.91	-	10.67	(0.30)	0.01	-	0.49	(2.95)	(0.11)	(0.24)
Maximum	9.22	1.03	18.47	1.00	1.23	3.63	23.13	84.90	0.71	2.38
Count	98	98	98	98	98	98	98	98	98	98

Table 5: Descriptive statistics for the moderately profitable firms

	Tobin Q	Total debt / Assets	Ln(Asset)	Change of assets /total assets	Fixed assets/ Asset	Dividend / Profit	Liquidity	Earnings per share	ROE	ROA
Mean	1.63	0.18	15.89	0.13	0.39	0.56	1.91	9.13	0.09	0.11
Median	0.92	0.16	15.61	0.13	0.32	0.18	1.41	4.26	0.08	0.11
Standard Deviation	2.81	0.16	1.27	0.16	0.21	2.63	1.55	18.40	0.06	0.09
Kurtosis	35.35	(0.72)	0.05	8.48	(0.86)	94.91	9.53	13.26	1.14	5.15
Skewness	5.52	0.55	0.82	1.63	0.71	9.65	3.00	3.42	0.52	0.51
Minimum	0.18	-	14.11	(0.23)	0.13	-	0.38	(23.77)	(0.04)	(0.17)
Maximum	22.44	0.57	19.43	1.00	0.84	26.21	8.58	97.46	0.27	0.52
Count	99	99	99	99	99	99	99	99	99	99

Table 6: Descriptive statistics for the least profitable firms

	Tobin Q	Total debt / Assets	Ln(Asset)	Change of assets /Total assets	Fixed assets /Total asset	Dividend / Profit	Liquidity	Earnings per share	ROE	ROA
Mean	1.20	0.34	15.71	0.07	0.57	0.32	1.40	0.57	0.05	(0.06)
Median	0.94	0.24	15.73	0.06	0.54	0.13	1.26	0.94	0.08	0.07
Standard Deviation	1.27	0.34	1.87	0.32	0.40	0.87	0.87	4.98	0.17	0.48
Kurtosis	35.25	1.73	(0.84)	4.54	6.41	41.20	2.34	6.89	6.01	13.46
Skewness	5.23	1.37	0.15	(0.60)	1.87	6.24	1.32	(1.76)	(1.46)	(3.42)
Minimum	0.06	(0.24)	12.58	(1.10)	0.02	-	0.06	(23.95)	(0.75)	(2.60)
Maximum	10.95	1.46	19.65	1.00	2.61	6.28	4.71	12.61	0.48	0.56
Count	105	105	105	105	105	105	105	105	105	105

The three tables 4, 5 and 6 shows that mean Tobin Q for highly, moderately and least profitable levels are 3.66, 1.63 and 1.2 respectively. The data indicates that the mean Tobin Q value for the highly profitable firms is about twice as high as that for the moderately and three times more than that of the least profitable group of firms. Tobin's Q is a parameter that measures the firms combines market and book values. Values of Tobin Q below or above 1 respectively stand for book value higher or lower than the market capitalization as well as under or over valuation of the firm's security (Mule & Mukras, 2015).

Further the table shows that on average the highly, moderately and least profitable group of firms finance about 14%, 18% and 34% of their investment with debt. Unexpectedly, the least profitable group of firms have the highest average leverage exceeding the highest and

moderately profitable group of firms by about 2.5 and 2 time respectively. In addition, the tables shows that on average the highly, moderately and least profitable groups of firms have earned about 10, 9 and 0.6 shillings per share respectively. In comparison, the average return on equity over the study period for the same group of firms is 30%, 11% and –ve 6%. The data shows that the highly profitable group of firms on average give 62% of the profit they make as dividend while the moderately profitable firms give about 56% while the least profitable group of firms give 32% of the profit. The data also shows that highly profitable group of firms on average maintain a current asset to current liability (liquidity) ratio of 3.6 which is higher than for the moderately and least profitable group of firms which retain 1.9 and 1.4 respectively. The data also indicate that the highly profitable group of firms have higher growth opportunity (change of asset to asset ratio) at a rate of 0.15 than for the moderately and least profitable groups of firms at a rate of 0.13 and 0.07 respectively. From the data there seems to be no difference between the group of firms for earning variability (15.6, 15.9 and 15.7) and tangibility (0.49, 0.39 and 0.57).

#### **4.4 Correlation Analysis**

Tables 7, 8 and 9 respectively display the correlation analyses for the highly, moderately and the least profitable levels of performance. Correlation analysis is undertaken to assess the strength of association among variables and generate values between -1 and +1. The two values stand for a correlation between two variables whose association is either perfectly negative or positive respectively. Correlation coefficients approximating these extreme numbers represent robust associations. However, should the correlation values be near 0, there is very weak association between the variables and if the coefficient is 0, there is no association. The correlation studies are primarily employed to assess the association's direction and magnitude.

Table 7: Correlation matrix for the highly profitable firms

	Tobin Q	Total debt / Assets	Ln(Asset)	Change of Asset / Total assets	Fixed assets / Asset	Dividend / Profit	Liquidity	Earnings per share	ROE	ROA
Tobin Q	1.00									
Total debt/Assets	0.08	1.00								
Ln(Asset)	0.03	0.30	1.00							
Change of Asset / Total assets	0.16	(0.04)	(0.06)	1.00						
Fixed assets / Asset	0.07	0.47	0.67	(0.12)	1.00					
Dividend /Profit	0.22	(0.08)	(0.03)	(0.28)	0.05	1.00				
Liquidity	(0.21)	(0.36)	(0.51)	(0.04)	(0.40)	(0.03)	1.00			
Earnings per share	0.18	(0.14)	(0.24)	0.08	(0.06)	0.09	0.33	1.00		
ROE	0.53	0.14	0.16	0.15	0.40	0.13	(0.02)	0.60	1.00	
ROA	0.41	0.28	0.11	0.07	0.19	0.05	(0.11)	0.26	0.57	1.00

Table 8: Correlation matrix for the moderately profitable firms

	Tobin Q	Total debt / Assets	Ln(Asset)	Change of Asset / Total assets	Fixed assets / Asset	Dividend / Profit	Liquidity	Earnings per share	ROE	ROA
Tobin Q	1.00									
Total debt/Assets	0.12	1.00								
Ln(Asset)	0.25	0.45	1.00							
Change of Asset / Total assets	0.04	0.31	0.11	1.00						
Fixed assets / Asset	0.32	0.58	0.56	0.13	1.00					
Dividend /Profit	(0.04)	0.06	0.02	(0.07)	0.04	1.00				
Liquidity	(0.13)	(0.49)	(0.26)	(0.21)	(0.38)	(0.05)	1.00			
Earnings per share	(0.13)	(0.27)	(0.12)	0.12	(0.25)	(0.11)	0.26	1.00		
ROE	(0.06)	(0.19)	(0.43)	0.11	(0.22)	(0.22)	0.04	0.43	1.00	
ROA	0.03	0.02	(0.09)	0.24	0.03	(0.28)	(0.04)	0.52	0.57	1.00

Table 9: Correlation matrix for the least profitable firms

	Tobin Q	Total debt / Assets	Ln(Asset)	Change of Asset / Total assets	Fixed assets / Asset	Dividend / Profit	Liquidity	Earnings per share	ROE	ROA
Tobin Q	1.00									
Total debt/Assets	0.01	1.00								
Ln(Asset)	(0.18)	(0.06)	1.00							
Change of Asset / Total assets	0.29	(0.21)	0.19	1.00						
Fixed assets / Asset	(0.15)	0.35	0.11	(0.45)	1.00					
Dividend /Profit	0.06	(0.13)	0.08	0.01	(0.06)	1.00				
Liquidity	0.12	(0.34)	0.11	0.27	(0.38)	0.33	1.00			
Earnings per share	(0.01)	(0.17)	0.20	0.22	(0.03)	0.11	0.20	1.00		
ROE	0.21	(0.12)	0.09	0.39	(0.49)	0.10	0.35	0.51	1.00	
ROA	0.03	(0.30)	0.15	0.12	(0.17)	0.10	0.29	0.68	0.56	1.00

The correlation coefficient between Tobin Q and leverage for the highly profitable firms registered at 0.08 shows a positive but very weak relationship. Kale (2014) records a comparable figure of 0.066, Kodongo, and Mokoteli, and Maina (2014) registered a figure of 0.1049 while Mule and Mukras (2015) established a slightly higher figure of 0.3494. The correlation coefficient for the moderately profitable firms was 0.12 and that for the least profitable firms 0.08. This generally shows that relationship amid Tobin Q and leverage is a fairly weak one.

The magnitude of the coefficient correlation between ROE, ROA for all levels of performance seems to be in the same range as those recorded by Kale (2014), Kodongo, and Mokoteli, and Maina (2014) and Mule and Mukras (2015). All data shows fairly weak relationship amid the depended variables and leverage.

#### 4.5 Regression Analysis

Regression analysis used to estimate the relationships among variables is a statistical process. The purpose of the analysis is to predict an outcome (value of depended variable) based on

historical data (dependent and independent) by relating dependent variables to independent variables. A coefficient of determination also known as R-squared is also computed. R-squared is a statistical measure indicating how close the data is to the fitted regression line. Ideally, as R-squared approaches 1, the better the regression line fits the data. P-value is also computed. P values measures how likely is the effect observed in your sample data if the null hypothesis is true. Low P values indicate how sample data is increasingly unlikely with a true null. A significance level of P- value less than 0.05 was adopted for this study. This study adopted Tobin Q, ROE and ROA as dependent variables while leverage (total debt to assets) was taken as the independent variable. To control for other effects, earning per share, earning variability, growth opportunity, liquidity, dividend payout and tangibility were also included as independent variables. Equations 1, 2 and 3 represent the regression models for the study. The regression models were analyzed for the three levels of performance for the period 2006 to 2015. Tables 10, 11 and 12 show the results of the regression analyses for the three level of performance.

Table 10: Regression analysis results for the highly profitable firms

Variable	Tobin Q Model (Eq. 1)				ROE Model (Eq. 2)				ROA Model (Eq. 3)			
	Coeff.	Std. Error	t Stat	P-value	Coeff.	Std. Error	t Stat	P-value	Coeff.	Std. Error	t Stat	P-value
Intercept	3.18	2.07	1.54	0.13	(0.03)	0.36	(0.08)	0.94	0.03	0.14	0.23	0.82
Total debt/Assets	0.46	0.94	0.49	0.62	0.40	0.16	2.46	0.02	0.02	0.06	0.30	0.77
Ln(Asset)	(0.06)	0.14	(0.45)	0.65	0.01	0.02	0.49	0.63	0.00	0.01	0.17	0.87
Change of assets / Total assets	0.60	0.86	0.70	0.49	0.11	0.14	0.74	0.46	0.15	0.06	2.53	0.01
Fixed assets/Asset	(2.13)	0.78	(2.73)	0.01	0.01	0.12	0.07	0.95	0.20	0.05	4.12	0.00
Div/Profit	0.70	0.34	2.05	0.04	0.03	0.06	0.59	0.56	0.03	0.02	1.46	0.15
Liquidity	(0.12)	0.05	(2.48)	0.01	(0.01)	0.01	(0.65)	0.52	(0.00)	0.00	(0.45)	0.66
Earnings per share	(0.04)	0.02	(2.31)	0.02	0.01	0.00	3.14	0.00	0.01	0.00	8.42	0.00
ROA	9.89	1.53	6.46	0.00	-	-	-	-	-	-	-	-
Multiple R	0.671				0.433				0.770			
R Square	0.451				0.187				0.592			
Adjusted R Square	0.401				0.124				0.561			
Standard Error	1.572				0.270				0.108			
Observations	98				98				-			

The results shows that for the highly profitable group of firms, using ROE as a measure, leverage is positively and significantly related to performance with a coefficient of regression value ( $\beta$ ) of 0.4 and a P-value of 0.02. However, using ROA and Tobin Q as measures of performance, the results further shows that leverage is positively but insignificantly related to corporate performance with regression coefficients and P-Values of 0.19, 0.007 and 0.847, 0.918 respectively. In addition, for the highly profitable firms, earning per share ( $\beta = -0.040$ ), tangibility as proxied by fixed assets to total asset ratio ( $\beta = -2.13$ ) and liquidity ( $\beta = -0.12$ ) are significant negative predictors of financial performance as measured using Tobin Q while dividend payout ( $\beta = 0.7$ ) and ROA ( $\beta = 9.89$ ) are significant positive predictor of performance as measured by the same performance measure. For the same category of performance level, growth opportunity ( $\beta = 0.15$ ), tangibility ( $\beta = 0.2$ ) and earnings per share ( $\beta = 0.1$ ), as measured by ROA, are significant positive predictors of performance. Using ROE as a measure, earnings per share and performance also show a negative and significant association. The coefficient values for R-squared for Tobin Q, ROE and ROA are 0.45, 0.19 and 0.59 respectively. This means that the model for ROA provides a better fit of the data followed by Tobin Q.



Table 11: Regression analysis results for the moderately profitable firms

Variable	Tobin Q Model (Eq. 1)				ROE Model (Eq. 2)				ROA Model (Eq. 3)			
	Coeff.	Std. Error	t Stat	P-value	Coeff.	Std. Error	t Stat	P-value	Coeff.	Std. Error	t Stat	P-value
Intercept	(6.04)	4.75	(1.27)	0.21	0.29	0.10	2.86	0.01	0.42	0.07	6.20	0.00
Total debt/Assets	(2.91)	2.35	(1.24)	0.22	0.04	0.06	0.75	0.46	0.00	0.04	0.05	0.96
Ln(Asset)	0.40	0.30	1.33	0.19	(0.01)	0.01	(2.15)	0.03	(0.02)	0.00	(4.75)	0.00
Change of assets / Total assets	0.50	1.90	0.26	0.79	0.05	0.05	1.14	0.26	0.02	0.03	0.59	0.56
Fixed assets/Asset	4.14	1.83	2.27	0.03	0.08	0.05	1.75	0.08	0.02	0.03	0.77	0.44
Div /Profit	(0.03)	0.11	(0.32)	0.75	(0.01)	0.00	(2.76)	0.01	(0.00)	0.00	(2.16)	0.03
Liquidity	(0.03)	0.21	(0.15)	0.88	(0.01)	0.01	(1.24)	0.22	(0.01)	0.00	(1.55)	0.12
Earnings per share	(0.02)	0.02	(1.02)	0.31	0.00	0.00	6.44	0.00	0.00	0.00	4.63	0.00
ROA	4.65	6.09	0.76	0.45	-	-	-	-	-	-	-	-
Multiple R	0.371				0.643				0.632			
R Square	0.138				0.414				0.400			
Adjusted R Square	0.061				0.369				0.353			
Standard Error	2.726				0.069				0.047			
Observations	99				99				99			

Using ROE ( $\beta = 0.04$ ) and ROA ( $\beta = 0.00$ ) as measures of performance, the data shows that for the moderately profitable firms, leverage and performance are positively but insignificantly related. However, using Tobin Q ( $\beta = -2.91$ ) as measure of performance, leverage is negatively but insignificantly related to performance. In addition, using Tobin Q as a measure, tangibility is positively and significantly related to performance. Earning variability ( $\beta = -0.01$ ) and dividend payout ( $\beta = -0.01$ ) as measured by ROE, are negatively and significantly related to performance while earning variability ( $\beta = -0.02$ ) and liquidity as measured by ROA, are negatively and significantly related to performance. Earnings per share ( $\beta = 0.00$ ) is significantly related to both ROE and ROA. R-squared values for Tobin Q, ROE and ROA are 0.138, 0.414 and 0.400 respectively. This means that ROE and ROA better predict performance based on the independent variables adopted for the study.

Table 12: Regression analysis results for the least profitable firms

Variable	Tobin Q Model (Eq. 1)				ROE Model (Eq. 2)				ROA Model (Eq. 3)			
	Coeff.	Std. Error	t Stat	P-value	Coeff.	Std. Error	t Stat	P-value	Coeff.	Std. Error	t Stat	P-value
Intercept	3.36	1.05	3.22	0.00	(0.18)	0.30	(0.61)	0.54	0.04	0.10	0.39	0.70
Total debt/Assets	0.15	0.39	0.38	0.71	(0.19)	0.11	(1.71)	0.09	0.09	0.04	2.34	0.02
Ln(Asset)	(0.18)	0.07	(2.65)	0.01	0.01	0.02	0.61	0.54	0.00	0.01	0.42	0.68
Change of assets / Total assets	1.37	0.44	3.11	0.00	(0.24)	0.12	(1.93)	0.06	0.04	0.04	0.96	0.34
Fixed assets/Asset	0.47	0.42	1.13	0.26	(0.16)	0.10	(1.56)	0.12	(0.19)	0.04	(5.12)	0.00
Div/Profit	0.10	0.14	0.67	0.51	(0.02)	0.04	(0.46)	0.65	0.00	0.01	0.05	0.96
Liquidity	0.07	0.16	0.44	0.66	0.06	0.05	1.25	0.22	0.02	0.02	1.34	0.18
Earnings per share	(0.04)	0.03	(1.34)	0.18	0.06	0.01	9.00	0.00	0.02	0.00	6.29	0.00
ROA	1.82	1.02	1.78	0.08	-	-	-	-	-	-	-	-
Multiple R	0.430				0.729				0.717			
R Square	0.185				0.531				0.514			
Adjusted R Square	0.117				0.497				0.479			
Standard Error	1.195				0.338				0.119			
Observations	105				105				105			

Using ROA as a measure, the least profitable group of firms reveal significant positive relationship amid performance and leverage with a regression coefficient of 0.09 and a P-value of 0.02, an insignificant but positive relationship ( $\beta = 0.15$ ) as measured through Tobin Q besides an insignificant but negative relationship (-0.19) as measured by ROE. Tangibility (-0.19) is a negative but significant predictor of performance as measured ROA while earnings per share is a positive significant predictor. Earnings variability ( $\beta = -0.18$ ) is a negative but significant predictor of performance as measured through Tobin Q while growth opportunity ( $\beta = 1.37$ ) is a significant positive predictor. Earnings per share ( $\beta = 0.06$ ) is a positive significant predictor of performance for this class of firms as measure by ROE. Respective R squared values for Tobin Q, ROE and ROA are 0.185, 0.531 and 0.514. Again we find ROE and ROA have better data fit that Tobin Q.

## 4.5 Discussion of Research Findings

Theory and empirical studies have presented contradictory (tradeoff or pecking order) and mixed results (negative or positive) as to whether there existed the relationship amid performance and leverage. Of great concern is that empirical studies carried in Kenya about the same period have returned both a positive and negative relationship. Literature (Graham, 2000) has implied that the firms which are highly profitable take the least debt and prescribe to a negative (pecking order) relationship. Kale (2014) reported that NSE 20 Share Index firms purported to be most profitable at the NSE have a negative relationship and prescribe to a pecking order model. A question hence has arisen that if the most profitable firms in Kenya don't influence a positive relationship amid performance and leverage, what does?

The objective of this study was to find out whether for different level of profitability there existed a relationship amid financial performance and financial leverage for non-financial firms at the NSE. To achieve this, return on assets, Tobin Q and return on equity were selected as depended variables and measures of performance. Three levels of profitability were selected; the highly, moderately and least profitable level of performance. Thirty one (31) firms which have consistently listed at the NSE were sampled. Based on the average annual profitability over the study period, the firms were divided into three levels of performance. Ten (10) firms whose return on equity exceeded 16% formed the highly profitable performance level. Ten (10) other firms whose return on equity ranged between 6.5% and 16% formed the moderately profitable level of performance and eleven (11) whose return on equity was below 6.5% formed the least profitable level of performance.

The characteristics of the highly profitable group of firms besides having the highest ROE averaging 30%, and ROA averaging 27%, they also have the highest average earnings per share averaging Kshs 10 per share, market capitalization (Tobin Q) of 3.66, growth opportunity

of 15%, dividend payout of 62% and liquidity averaging 3.3. However, this group of firms has the least leverage averaging about 14%. This observation that the most profitable firms take the least debt is in line with literature where the most profitable firms that have everything in their favour, i.e. large tax liability incentive, lower possibility of financial distress and attractive balance sheet to attract lower financing cost have the least debt (Myers, 2014 and Graham, 2000). In literature, this pattern of behavior has been attributed to pecking order paradigm and has been used to question the validity of the tradeoff model. Following this line of thought, one would be right to conclude that the highly profitable firms at the NSE prescribe to a pecking order model of capital choice.

The rate of return on assets and equity trend analyses for the highly profitable group of firms present a very interesting pattern. Debt for this group of firms increased five folds over the study time. On the other hand ROE and ROA tend to increase peaking at about 2009, 2010 and 2011 period and although debt continued to increase, the ROE and ROA declined thereafter. The pattern would infer a relation that is positive amid leverage and performance before the peak and a negative one thereafter. This pattern is typical of a tradeoff paradigm where use of debt provides an ideal level of debt where benefits of debt is maximized. It further implies that studies that have considered data after the peak may have reported a negative relationship amid performance and financial leverage while authors that considered data before peak may have reported a positive relation.

The data provides evidence that firms at times may operate at suboptimal levels by employing debt at levels that erode their profitability. This in addition puts to question the conclusion by many that negative relationship (Mbugua (2012), Mule and Mukras (2015) and Kale (2014)) amid performance and leverage adduce to a pecking order paradigm for the Kenyan firms. From the trending analysis, it may be concluded that the highly profitable group of firms at the

Nairobi Security Exchange prescribe to a tradeoff model, that their currently level of debt exceeds the optimal level that would accrue debt benefit to them. Mule and Mukras (2015) and Kale (2014) come to the same conclusion. It therefore means that these set of firms may benefit by reducing their debt or by injecting additional equity to improve on their debt equity ratio. Table 1 indicates that managers of these firms have come to this realization and have commence reduction of debt as evidenced by debt reduction for last two years (2014 and 2015) of the study.

Correlation analyses for the highly profitable group of firms indicate that all the three dependent variables have a positive relationship with leverage. Unlike this study, Kiprop (2014), Kulati (2014), Kodongo, and Mokoteli, and Maina (2014), who found a positive relationship, Kale (2014) and Mule and Mukras (2015) established a negative relationship. The depended variables display a fairly weak relationship with leverage. Using ROE, Tobin Q and ROA as measures of performance, the study results shows that for the highly profitable group of firms, leverage is a positive predictor of corporate performance except that the relationship is only significant as measured by ROE. For this case an increase of leverage by 10% would result to increase of ROE of 4%.

The characteristics of the moderately profitable group of firms include ROE averaging 11%, and ROA averaging 9%, earnings per share averaging Kshs. 9 per share, market capitalization (Tobin Q) of 1.63, growth opportunity of 13%, dividend payout of 56% and liquidity averaging 1.9. However, this group of firms has a higher leverage than the highly profitable firms averaging about 18%. This observation is not consistent with theory. Capital structure choices for wealth maximization predict that firms with less tax liability to redeem take less debt. On the contrary trend analysis has indicated that this moderately profitable set of firms were most aggressive in taking debt over the study period having increased its debt portfolio by 9 times

compare with the highly profitable firms that increased their debt by 5 times within the period of the study. Although trend analysis indicates that at the earlier period (2006 – 2009) profitability slightly responded to debt increase peaking at about 2009, the managers did not respond to declining profitability with increase in debt. Illogically, rather than reduce the debt level, managers increased their debt level by five times the level it was in 2009 (Kshs. 66 trillion). This may be interpreted that either the managers are insensitive to concept of profit maximization or that the managers borrowed predominantly for other reasons. For these firms it would be difficult to accurately differential the effect of use of debt to reap on tax shield and use of debt for other operational needs.

The characteristics of the least profitable group of firms include ROE averaging –ve 6%, and ROA averaging 5%, earning per share averaging Kshs 0.6 per share, market capitalization (Tobin Q) of 1.2, growth opportunity of 7%, dividend payout of 32% and liquidity averaging 1.4. However, this group of firms has the highest leverage averaging about 34%. This observation is not consistent with theory. Capital structure choices for wealth maximization predict firms with very low or negative profitability will avoid debt. This is because there is no benefit to be accrued from interest expenses deductibility unless the firm is paying taxes. Loss making firms don't pay taxes and hence don't qualify for debt tax benefits. In addition, debt imposes regular and enforceable fixed principle and interest payments on the organization constraining the financial situation of the organization further if it is in financial distress. On the contrary, dividend expenses to shareholders if equity was solely used to finance the organization may be avoided during financial difficulties. For this reason, theory predicts that low profit making or loss making firms should have minimal debt on its capital structure. The very high debt observed for this class of firms can only be attributed to other explanations but not capital structure theory. More misleading is that regression analysis results show significant relationship amid leverage and performance.

The parameters (Tobin Q, ROE and ROA) used to measure performance are not unique in measuring debt tax benefit arising from interest expenses deductibility and hence tax deduction. Inclusion of these firms in any capital structure studies is very likely to lead to incorrect conclusions. Trend analysis for the least profitable group of firms also poses key questions. The leverage, and debt equity ratio remains almost constant for the first seven years. However, the average ROA for the group of firms reduced steadily (figure 6). The significance of this information is that there are other factors besides leverage that had greater impact on the firm's performance than leverage.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter provides a summary of the main findings, conclusions drawn from the study and make recommendations and suggestions for further research.

### **5.2 Summary of Findings**

Focusing on non-financial firms listed at the NSE, this study sought to establish whether for different level of profitability, corporate financial performance was related to financial leverage. To achieve this, return on assets, Tobin Q and return on equity were selected to be depended variables and measures of performance. Three levels of profitability were selected; the highly, moderately and least profitable level of performance. Thirty one (31) firms which have consistently listed at the NSE over the study period between 2006 and 2015 were sampled. Based on the average annual profitability over the study period, the firms were divided into three levels of performance. Ten (10) firms whose return on equity exceeded 16% formed the highly profitable performance level. Ten (10) other firms whose return on equity ranged between 6.5% and 16% formed the moderately profitable level of performance and eleven (11) whose return on equity was below 6.5% formed the least profitable level of performance.

The characteristics of the highly profitable group of firms besides having the highest ROE averaging 30%, and ROA averaging 27%, they also had the highest average earning pers share averaging Kshs 10 per share, market capitalization (Tobin Q) of 3.66, growth opportunity of 15%, dividend payout of 22% and liquidity averaging 3.3. However, this group of firms had the least leverage averaging about 14%. Although the highly profitable firms had the least



leverage which according to literature would imply a pecking order model, correlation and regression analyses return a positive relationship amid corporate financial performance as measured using Tobin Q, ROE and ROA and leverage suggesting a tradeoff model for this set of firms. Trend analyses on ROE and ROA revealed that profitability increased with increase in debt peaking at about 2009, 2010 and 2011 period and although debt continued to increase, the ROE and ROA declined thereafter. In response managers responded by reducing debt for the last two years (2014 and 2015) of the study. The behavior of managers indicated that they were profit seeking by use of debt. This observation is consistent with tradeoff theory.

The characteristics of the moderately profitable group of firms include ROE averaging 11%, and ROA averaging 9%, earnings per share averaging Kshs. 9 per share, market capitalization (Tobin Q) of 1.63, growth opportunity of 13%, dividend payout of 56% and liquidity averaging 1.9. Contrary to theoretical expectation, these set of firms were found to have a higher leverage than the highly profitable firms even though they had less tax liability to redeem through debt employment. Illogically, managers were found to have significantly increased debt at a point where the firms were suffering declining profitability. This inconsistency in behavior may mean that debt within this set of firms may be predominantly aimed at addressing other operational challenges than profit maximization by tax reduction through deductibility of interest expenses. It is on record that long before income tax was introduced, debt financing was common (Frank & Goyal, 2008). Although weak and insignificant, correlation and regression analyses indicate existence of a relation amid performance and leverage for this set of firms.

The characteristics of the least profitable group of firms include ROE averaging -ve 6%, and RoA averaging 5%, earnings per share averaging Kshs 0.6 per share, market capitalization (Tobin Q) of 1.2, growth opportunity of 7%, dividend payout of 32% and liquidity averaging

1.4. These firms were found to be generally loss making and therefore not eligible for paying tax. As such they generally are disqualified from tax benefits arising from use of debt. Oddly, the firms had the highest leverage 2.5 and 2 times higher than the highly and moderately profitable. These observations mean that the firms failed a fundamental test for inclusion in a study of this nature. The inherent assumption in the study of capital structure is that firms have tax liabilities to meet. Ironically, using ROA as a measure of performance, the firms indicated a significant relationship amid performance and leverage. The inclusion of these firms in any study of capital structure theory may lead to wrong conclusions.

### **5.3 Conclusions**

From the research findings, it can be concluded that the highly profitable firms at the NSE ascribe to a tradeoff model, and that leverage offers benefits within capital structure which the managers for these firms deliberately seek to utilize until an ideal capital structure is attained. This conclusion is supported by trend, correlation and regression analyses and managers' behavior in use of debt.

Contradictory results (positive and negative relations) for the highly profitable firms may be observed in studies undertaken between 2006 and 2009 and between 2010 and 2015. This is because trend analysis indicated profitability peaked about 2009 and 2010 and declined thereafter to 2015. For this reason, studies undertaken before 2009 and 2010 may indicate a positive relation amid performance and leverage while studies undertaken later may indicate a negative relationship.

A wrong conclusion may be drawn for the highly profitable firms at the NSE if researchers assumed as is common in literature that firms exhibiting high profitability, least debt and negative relations amid performance and leverage ascribe to pecking order model.

The inclusion of moderately profitable firms in a study of the effect or relationship amid leverage and performance is questionable. This is because trend analysis and behavior of managers do not support the use of debt solely for reason of wealth maximization but there is overwhelming evidence that for this set of firms, debt may be predominantly used for other reasons other than to benefit from debt tax shield. Since it is on record that debt had existed before introduction of income tax, the use of debt predominantly for other reasons may lead to misleading conclusions for capital structure studies.

The data for the least profitable firms for the period of this research is completely incompatible with the very first principles of the research i.e. availability of tax liability that acts as a motivation to employ debt in order to profit from reduced tax expenses. For the greater part of the research these firms made losses and hence had no tax to redeem. The firms therefore are ineligible to qualify for inclusion in wealth maximization studies through capital structure choices. In addition, their performance seems to suffer from other extraneous factors even when debt remained constant. Furthermore, correlation and regression analyses lead to conclusion that a significant relation exists amid performance and leverage. By this study's nature, this conclusion would be misleading.

#### **5.4 Limitations of the Study**

The findings of this study are limited to companies that had traded consistently at the NSE for a 10 year period that the study covered, that is, 2006 to 2015. Only 31 firms were found to fit this criterion. It therefore follows that the results of this study are not necessarily representative of the entire population of listed and non-listed companies.

The study required dividing the limited number of sample firms in order to carry out the study as structured. The number for each group became very small and hence the number of observations. This may have affected the stability of data.

The study used secondary data sources which are at times prone to manipulations to suit specific needs and as such may be limited to the extent of accuracy. The use of audited reports may have cured or reduced this problem.

The financial reporting format has changed over time within individual companies and across all the companies. This necessitated computing some of the data to achieve consistency. However, this effort may also have introduced errors.

The predictive power of the dependent and independent variables used was observed to be fairly low. Additional variables could have been included to improve the predictive power of the regression models used in the study.

## **5.5 Recommendations**

The research has indicated that there exist financial benefits arising from debt tax shield for the highly profitable firms at the NSE and risk of degradation of profits if the optimal debt is exceeded. Managers and investors should factor this fact in their capital structure and security portfolio design.

Researchers should carefully evaluate the eligibility of moderately profitable firms for inclusion in capital structure research. This research shows that this set of firms may be employing debt predominantly for other reason and may influence results leading to wrong conclusions.

Researcher should consider excluding from their studies least profitable firms at the NSE as there characteristics are incompatible with capital structure studies.

Researchers should be careful when interpreting research findings for studies using NSE data for period between 2006 and about 2010 and between 2011 and 2015. The studies may register contradicting results. Conclusions that negative relationship amid performance and leverage for Kenyan firms at NSE imply pecking order is suspicious and should be scrutinized carefully.

## **5.6 Suggestions for Further Research**

In order to authoritatively prove that the highly profitable firms prescribe to a tradeoff model, the study should be repeated for the highly profitable firms but in this case consider independently data for the period 2006 to 2009 and 2012 to 2015 i.e. before peak and after the peak and consider the outcome.

The moderately profitable group of firms requires further study. The incentive of replacing equity with debt is so as to reap benefits arising from tax shield. The study revealed that these set of firms over the study period had the most aggressive debt uptake despite the fact that their profitability was suffering in the process.

Control variables chosen for the study seems to result to relative lower power of prediction. The study may be repeated with other control variables.

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## APPENDICES

### Appendix I: Sampled Companies

	Category	Firm Name	Average ROE
1	Highly Profitable	East African breweries Limited	58.3%
2	Highly Profitable	Nation Media	55.5%
3	Highly Profitable	BAT Kenya	41.8%
4	Highly Profitable	Safaricom	27.4%
5	Highly Profitable	Limuru Tea	25.8%
6	Highly Profitable	Scangroup	21.9%
7	Highly Profitable	Bamburi	20.9%
8	Highly Profitable	Carbacid	20.4%
9	Highly Profitable	EA Cables	17.5%
10	Highly Profitable	Standard Group	16.3%
11	Moderately Profitable	Kakuzi	14.7%
12	Moderately Profitable	Car & General	14.2%
13	Moderately Profitable	ARM Cement	13.8%
14	Moderately Profitable	BOC Gases	12.3%
15	Moderately Profitable	Kenya Power	10.6%
16	Moderately Profitable	East African Portland	8.8%
17	Moderately Profitable	Unga	8.8%
18	Moderately Profitable	Crown Berger	8.3%
19	Moderately Profitable	Total	7.5%
20	Moderately Profitable	Williamson Tea	6.8%
21	Least Profitable	Sasini	6.5%
22	Least Profitable	TPS EA	6.3%

23	Least Profitable	KenGen	5.0%
24	Least Profitable	Kenol Kobil	4.8%
25	Least Profitable	Sameer	4.6%
26	Least Profitable	KQ	4.0%
27	Least Profitable	Mumias	-1.0%
28	Least Profitable	Express Kenya	-1.9%
29	Least Profitable	Eveready EA	-2.4%
30	Least Profitable	Mashalls	-41.1%
31	Least Profitable	Uchumi	-42.5%