

**REVISITING THE CAPITAL STRUCTURE THEORY: A TEST
OF THE PECKING ORDER AND THE STATIC TRADE-OFF
MODELS FOR FIRMS QUOTED AT THE NAIROBI STOCK
EXCHANGE**

BY

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**A MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE
DEGREE OF MASTER OF BUSINESS ADMINISTRATION, SCHOOL OF
BUSINESS, UNIVERSITY OF NAIROBI**

NOVEMBER, 2010

DECLARATION

This Management Research Project is my original work and has not been presented elsewhere for any other assessment or award.

Signed: 

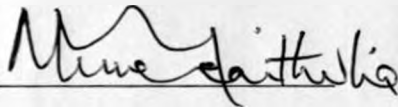
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REG. NO. D61/71614/2008

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ACKNOWLEDGEMENTS

In the monumental task of undertaking this study, several people have given me indispensable cooperation help and encouragement. I therefore take this opportunity to most sincerely express my gratitude to them all. The following however deserve a special mention: Mr. Munene M'Maithulia for skillful guidance, positive criticism and suggestions, selfless dedication and encouragement in making this project a reality. I will also not forget all the lecturers who made me realize my dream of being an MBA. Dr. Aduda, Ms Kithinji, Mr. Gichana, Mrs. Mary Kimonye, Mr. Odipo, Mr. Mirie Mwangi among others. You are all precious to me.

To my classmates, the MBA 2008, for the great time we shared and learnt together.

Finally, I offer my thanks to God for giving me strength, good health, a sound mind and patience to persevere it all. It is by Him and through Him that I have come this far.

DEDICATION

To my wife Wairimu and our children Njeri, Muthoni and Mbugua, for your understanding, support and encouragement when i stayed for many days away from home.

To my parents, Don-Bosco Mbugua and Jane Njeri Mbugua for your moral and material support that made my academic dream a reality.

God bless you all.

To almighty through whom all things are possible.

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ABSTRACT

The objective of this study was to simultaneously examine the pecking order and trade-off theories of capital structure and determine which of the theories guide capital structure choice for firms quoted at Nairobi stock exchange. The research design was causal design. The population of the study was the firms quoted in the Nairobi Stock Exchange between 2005-2009. At the time of the study there were 47. The data gathered was secondary data from income statements, statements of financial position and cash flow statements from annual reports filed with capital market authority (CMA). Data analysis was through regression analysis.

A simple and an extended pecking order models were employed to test the pecking order hypothesis, while a single model was used to test the trade off theory.

The study found out that the extended POM was more significant at 5% level in explaining change in debt while the simple model was not significant. Trade-off model was found to be insignificant at 5% level in explaining change in debt. The findings are interesting as they contradict the views held in financial literature that firms care about tax shield benefit derived from employing both debt and non- debt tax shield. It was surprising to find that a negative relationship exists between asset structure and change in debt and that Kenyan firms are not driven by nature of their assets in determining whether to borrow. The study recommends that other factors be included in analyzing the pecking order theory of firms other than internal funds deficiency for firms listed at NSE so as to improve the predicting power of the model. The study also recommends inclusion of dividend payment, changes in working capital and debt repayment as separate factors in explaining variations in debt in addition to being part of internal funds deficiency.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

One of the major tasks of financial managers is to determine how a company finances its projects. Block and Hirt (1992) argue that it's the responsibility of financial managers to obtain the best mix of financing alternatives. A financial manager should be able to determine whether finances are to be acquired by issue of bonds, convertible stock, equity or from long term borrowing from financial institution. Bonds, convertible stock preferred stock and common equity are collectively referred to as securities. These securities are usually sold to investors through a market called stock exchange like the Nairobi Stock Exchange. Nairobi Stock Exchange, hereafter (NSE) is a market that was established in 1954 for sale of securities. Currently the stock exchange has 47 quoted companies. It currently trade in shares, debentures corporate bonds and government bonds.

Capital structure can be viewed as the mix of various securities issued by a firm, Brealey and Myers, (1984). These securities include corporate bonds, preferred stock and common equity. It could also be viewed as the ratio of long term debt to equity or ratio of long term debt to firm's value, Short, Keasey and Duxbury, (2002).

Determination of the appropriate long-term source of finance is what capital structure decisions entail.

The basic contention in corporate finance is whether financial managers should issue debt or equity to maximize their firm's value. Equity refers retained earnings or shares

issued to shareholders through the stock market. Debt refers to long term bonds issued to outsiders or long-term finances borrowed from financial institutions.

Use of retained earnings is cheaper but is usually done at the expense of paying out dividends to shareholders. External equity has no financial distress but floatation costs make it expensive; besides, external equity also has high required rate of return as equity holders are the ones to suffer financial risk in case a company's performance go down. On the other hand, debt is deemed favourable due to tax deductibility of interest; but again, interest payments on debt are a fixed cost of a business which makes debt more risky. This logic makes the issue of capital structure a central problem in corporate finance. Brigham and Daves, (2001) posit that a firm's value is established by discounting its expected future cash flows at the firms weighted average cost of capital, (WACC). WACC depends on the proportion of debt and equity; as such capital structure has a definite influence on firm's value.

One of the unresolved issues in corporate finance is what actually determines the capital structure chosen by managers of various firms. Is capital structure choice guided by certain logical considerations by the financial managers or is it arrived at in a helter-skelter manner according to management discretion?

Several school of thought and studies have emerged on the subject of determination of capital structure of firms since Modigliani and Miller Paper of 1958. Academicians have been trying to find out whether a working theory on how companies should choose their capital structure can be developed. Some of the thoughts include; Miller, (1977), Jensen and Meckling, (1976) agency theory, Ross, (1977) signaling theory, Myers, (1984) pecking order and static trade of theories, Myers and Majluf, (1984) Asymmetric information theory and Friend and Lang, (1988)

The two contending theories in capital structure choice are the trade-off theory, (TOT) and the pecking order theory (POH). Trade-off theory, Myers, (1984) contend that in deciding the optimal capital structure. managers should try to balance the advantages of debt against the various disadvantages. The major advantage of debt is the tax deductibility of interest. Disadvantages of debt include the various costs associated with debt such as costs of bankruptcy, financial distress and agency costs. Pecking order theory contends that in choosing the source of financing, financial managers follow a pecking order; they give internal financing first priority. If internal finances are inadequate, they draw down the firms marketable securities, and then if funds are still needed, they can borrow through issue of debt then convertible stock and as a last result external equity. POH is based on the argument that managers prefer to use sources of funds that would not give a signal that their securities are over-valued which in turn would lower the price of their shares.

Empirical investigations on the two contending theories are vast. They were ignited by Shym-Sunder and Myers, (1999) who converted the POH and TOH into testable regression models. POH was presented by a model which assumed that new debts were issued once the internally generated funds were not sufficient to cover for acquisition of fixed assets, dividend, tax and repayment of loans. If pecking order is a plausible theory of choice of capital structure, a firm will issue new debt instead of equity to fund expansion. The TOT was represented by a model that assumed that changes in long term debt ratio are caused by a partial adjustment toward an optimal long-term debt ratio.

Subsequent to Shym-sunder and Myers models, other researchers have developed other models based on Shym- sunder and Myers model. On this line we have Hovakimian, Opler and Titman, (2001), Graham and Harvey, (1999), Fama and French, (2002) and Ahmed and Hisham, (2009) among others.

Ahmed and Hisham, (2009) developed models to test the trade off and pecking order theory for Malaysian listed firms. They heavily borrowed from, Shym-Sunder and Myers (1999) model especially for Pecking order theory. POH was tested via two models; one where dependent variable was debt and independent variable was internal funds deficiency. This model was based on the intuition that under POH, variations in net debt issues could be explained by DEF (internal funds deficiency), that is, when the internal funds were inadequate to meet a firm's financing needs, the firm issue debt due to information asymmetry problem. The other model regressed change in debt against dividend payment, capital expenditure, change in working capital, amount of repaid long term debt and cash flow from operations. A positive association was anticipated between change in debt and dividend payment, debt payment, change in working capital and acquisition of new assets while a negative relationship was expected between debt issuance and cash flows from operation. They also developed a trade off model where change in debt was modeled to be influenced by internal funds deficiency, asset structure, non-debt tax shield, growth and size.

1.2 STATEMENT OF THE PROBLEM

Most of the research on capital structure theories has been conducted in developed countries such as U.S and UK. Little has been done in developing countries like

Kenya especially as pertains the two contending hypotheses, namely POH and TOT. So far in Kenya, studies on capital structure have focused on the determinants of capital structure, and only one study specifically focused on testing a theory, that by Gachoki, (2005). Using regression analysis, he conducted a test of the pecking order hypothesis and found out that the theory could not adequately explain capital structure choice for firms quoted in Nairobi Stock Exchange and suggested further investigation into causes of capital structure choice.

Kamere, (1987) had investigated the determinants of capital structure and found out that level of interests rates, firms assets structure, firms tax advantage of debt and the maturity of debt were important factors in deciding a firm's capital structure. This indirectly indicated that firms followed the TOT as opposed to POH.

Odinga, (2003) conducted a research on relationship between capital structure and hypothesized influential variables such as tangibility of assets, firms growth, firms size and business risk. He found out that profitability and non debt tax shield were the most important variables in determining leverage together with individual firm specific variables; this indirectly suggested that both theories were relevant in capital structure choice. Besides,

Musili, (2005) conducted a survey to find out the factors that motivate managers of industrial firms when choosing their capital structure; he found out that industrial firms are likely to follow a financing hierarchy as opposed to a target debt.

Mutsotso, (2007) conducted a study on the influence of corporate tax rate on capital structure of firms quoted in the NSE. He identified a positive relationship between corporate tax rate and debt leverage ratios. This partially supported the TOM.

It is therefore clear that the findings from local researchers are conflicting. Gachoki, (2005) found that POH had no bearing on capital structure choice for quoted firms while Ondinga, (2003) and Musili (2005), indicated, albeit indirectly that POH was relevant. Others like Mutsotso, (2007) and Kamere, (1987) were in support of TOH. Besides TOT has not been tested by any researcher; this is supported by Mwangi, (2007) who reviewed the literature on capital structure and suggested several researchable issues in Kenya focusing on NSE; among them was the testing of the trade off theory of capital structure.

Another motivation for this study is that none of the studies have focused on testing the two theories at a go to find out which one of the two is more robust. Further, Gachoki's study was carried out five years ago and thus new insights about the subject are necessary as financial management is dynamic.

The aim of this study is therefore to shed more light on whether firms quoted at NSE follow the POH or TOT in their capital structure choice.

1.3 OBJECTIVE OF THE STUDY

The objective of this paper is therefore;

- a) To investigate whether or not internal funds deficiency is funded by an increase in debt in line with pecking order predictions for firms quoted at NSE.
- b) To investigate whether non-debt tax shield, expected growth, size, and asset structure have a significant effect on debt in line with static trade off predictions for firms quoted at NSE.

1.4 IMPORTANCE OF THE STUDY

The study will be of use to the following people:

Managers: These people are entrusted with the task of increasing the value of the firm and as pointed out earlier debt- equity decisions have a direct impact on firm's value. They will be able to discern the most popular method of capital structure choice and they will decide which theory to follow based on the popularity of the theory among other managers.

Investors: These people are concerned about where to best put their money. A revelation of how companies choose their capital structure will add into their understanding of the behavior of companies.

Academicians and researchers: This study will add to their wealth of knowledge on the area of capital structure.

Government; the study will provide information that could help the government plan well on macro-economic issues such as the liquidity of the market for funds.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter is organized as follows; section one introduces the concept of capital structure and review of capital structure theories, where various capital structure theories have been developed. These theories include MMs' theories, the agency theory, signaling theory, static trade-off theory, pecking order theory, asymmetric information theory, traditional theory and financial architecture. The next section discusses empirical tests of capital structure theories, followed by a conclusion and finally theoretical framework and schematic diagrams have been included.

2.2 REVIEW OF THEORIES ON CAPITAL STRUCTURE.

Modigliani and Miller (MM) paper of 1958 ignited a lot of interest on capital structure matters. Until 1958, capital structure theory consisted of loose assertions about investor behaviour rather than carefully constructed models which would be tested statistically. In finance, capital structure refers to the way a corporation finances its assets through some combination of equity, debt, or hybrid securities. Brealey and Myers (2003) define capital structure as the firm's mix of various securities

Long-term debt includes obligations that are not due to be repaid within the next 12 months. Such debt consists mostly of bonds or similar obligations, including a great variety of notes, capital lease obligations, and mortgage issues.

Preferred stock represents an equity (ownership) interest in the corporation, but one with claims ahead of the common stock, and normally with no rights to share in the increased worth of a company if it grows.

The securities that a firm can issue include Debt (debentures), different classes of shares and convertible stock. The guiding principle while doing this should be the impact the mix of securities have on the value of the firm. Debt levels adopted by a firm can impact positively or negatively on the value of the firm.

Brigham and Daves, (2001) and Brigham and Houston, (2004) contend that there exist a relationship between debt levels adopted by a firm and the firm's value. Titman and Grinblat, (2002) summarizes some positive and negative impacts of high debt levels. On the negative, they posit that high debt levels can make non-financial stakeholders to desist from doing business with the affected firm as such a firm can hurt them if it ran into financial difficulties. They also argue that firms adopting high debt ratios have a tendency to invest less, may be unable to attract the best managerial talents, may become less competitive, may lose market share, may tend to prefer short-term projects even when their net present value is low, may be inclined to substitute riskier investment projects to less risky ones and may have incentives to continue operating their firms even when their liquidation value exceed the going concern value.

On the positive side, Titman and Grinblat, (2002) argue that high debt levels can allow firms to commit to aggressive output policies hence becoming better competitors.

Still on the positive side, high debt levels can help solve the problem of free cash flows, Jensen, (1986).

The other advantage of debt is the tax deductibility of interest expense.

Lastly, high debt levels can pass a positive signal to the market. This is because highly levered firms are perceived by investors as having better investment opportunities.

Whether there is an optimal capital structure is an issue that has concerned many academicians.

2.2.1 TRADITIONAL THEORY

Traditional theory encompasses the generally accepted wisdom of investors, analysts and company management alike. The theory has nothing to do with the pre- MMs' views on capital structure. Traditional theory holds that there are both advantages and disadvantages of corporate gearing. It holds that at low levels of gearing, the advantages of debt outweigh disadvantages and so the market value of a company gradually rises, but after a while, the situation reverses and disadvantages start to outweigh advantages. Further gearing cause the company market value to decline.

The argument advanced by this view is that the advantage of debt is tax deductibility of interest while the disadvantage of gearing is the increase in financial risk borne by equity holders. This lead to equity holders to demand a higher expected return on their capital. Furthermore, very high gearing ratios make debt holders to suffer their own version of financial risk, making them to demand high interests from debt; raising the cost of debt Brealey and Myers, (2003). Traditional view has never rested on vigorous theoretical model as does MM hypothesis.

2.2.2 MMS' THINKING

Modigliani and Miller, (1958) (MM) in their famous proposition I argued that a firm cannot change the total value of its securities just by splitting its cash flows into different streams. Their contention was that a firm's value is determined by its real assets not by the securities it issues Brealey and Myers (2003).

However, their conclusion was arrived at after making some assumptions which have been a basis for criticism of their assertions. The assumptions they made were:

- a) Business risk can be measured by standard deviation of earnings before interest and tax and firms with the same degree of risk are said to be in a homogenous risk class.
- b) All present and prospective investors have identical estimates of the firms future earnings.
- c) Stocks and bonds are traded in perfect capital markets.
- d) Debt of firms and individuals is riskless so that interest rate on debt is the risk free rate.

MM (1958) used arbitrage proof to support their argument. Arbitrage is a process where investors increase their income without increasing their exposure to risk. They argued that if two companies were only different in the way they were financed and in their total market value, investors would sell shares of the higher valued firms, buy those of the lower valued firms and continue this process until the companies had exactly the same market value MM (1958). This result provides the base with which

to examine real world reasons why capital structure is relevant, that is, a company's value is affected by the capital structure it employs.

Durand, (1959) reacted to MMs' irrelevance theory and questioned the applicability of arbitrage process and the assumptions of a riskless world.

Following Durand's criticism MM (1963) corrected their 1958 position by recognizing the presence of taxes. They recognized that the value of the firm was dependent on the after tax net cash flows. Their proposition I was that value of a levered firm is equal to value of the unlevered firm in the same risk class plus the gain from leverage which is the value of the tax savings due to debt financing and which equal to corporate tax rate times amount of debt a firm uses, Brigham and Daves, (2004)

Their proposition II was that the cost of equity to a levered firm is equal to the cost of equity to an unlevered firm in the same risk class plus a risk premium whose size depends on the differential between the costs of equity and debt to an unlevered firm, the amount of financial leverage used and corporate tax rate, Brigham and Daves, (2004)

$$K_{SL} = K_{SU} + (K_{SU} - K_d) (I - T) (D/S)$$

K_{SL} = Cost of equity to a levered firm

K_{SU} = Cost of equity to unlevered firm

K_d = Cost of debt (interest rate in debt)

T = Tax rate

Since $(I - T)$ is less than 1, imposition of corporate taxes causes the cost of equity to rise at a slower rate than it did in the absence of taxes. This characteristic and the fact that taxes reduce the effective cost of debt by $(I-T)$ produce the proposition I result,

that is, increase in firms values as leverage increases. Firms values is maximized at 100% debt.

Miller, (1977) argued that MMs' studies in 1958 and 1963 ignored personal taxes and as such incorporated personal taxes. His conclusion was that deductibility of interest on debt from a company's income reduces the tax burden of the company but this advantage is offset by low required rate of return on equity which lowers the cost of equity, Miller, (1977). This is because income from equity is usually lowly taxed in most tax systems and as such investors demand a low return from equity.

This position was the same as the one of MM, 1958, where debt financing was argued to have no impact on a firm's value.

The assumptions on which MMs' theories were based have been questioned and challenged by various academicians. On this line we have Stiglitz, (1988) who questioned the risk class assumption, home made leverage, full information about returns and tax differential.

Ross, Westerfield and Jaffe, (1990) argue that MMS' propositions ignored costs of bankruptcy which increases with debt. They contend that obligation to pay principle and interest on debt puts pressure on the firms since failure to meet the obligation results in financial distress. Financial distress has been defined as the disruption of normal operating and financial conditions caused by impending insolvency, Emery, (1998). Brealey and Myers, (2003) observe that financial distress occurs when promises to creditors are broken or honoured with difficulties. They also argue that

sometimes financial distress lead to bankruptcy and at other times it means only that a firm “skates on thin ice.”

These arguments suggest that cost of financial distress should be factored in when deciding on capital structure.

The cost of financial distress offset the advantages of debt under certain circumstances. Costs of financial distress include both direct and indirect costs; Ross, Westerfield and Jaffe, (1989). Direct costs include attorney’s fees, administrative and accounting fees and fees to expert witnesses on event of trial. Indirect costs of bankruptcy include impaired ability to conduct business, firm get inclined to take larger risks than might otherwise be the case and stockholders have incentive to milk the property of the company thereby reducing the value of the firm.

2.2.3 AGENCY THEORY

Jensen and Meckling, (1976) introduced the aspect of agency costs. These costs arise because in the absence of any restrictions, a firm’s management would be tempted to take actions that would benefit stockholders at the expense of bondholders (Jensen and Meckling (1976).

Due to this, bondholders impose restrictions in the operations of a firm by way of covenants which hamper the corporation’s legitimate operation. Furthermore, the bondholders are forced to monitor the firm to ensure that the covenants are upheld. The monitoring costs are passed to stockholders in terms of higher cost of debt.

Covenants lead to loss in efficiency of operation of the firm. The cost efficiency and the monitoring costs are important type of agency costs which increases the cost of debt and reduces the value of equity thus reducing the advantages of debt.

Jensen and Mecking, (1976) posit that a firm should consider the agency costs of debt vis a vis the benefits of debt to determine the optimum debt. Optimum debt according to them will be the one where marginal agency costs of debt equal to marginal benefits of debt.

This came to be branded the agency theory of capital structure.

2.2.4 SIGNALLING THEORY

Ross (1977, p.24) argues that trade off models adopted by traditional theorists do not offer a satisfactory solution to financial structure choice. He posits that;

“...it’s difficult to specify exactly what the costs of bankruptcy are, particularly when it’s in the interest of all parties to simply reorganize the firm”.

Ross, (1977) also contend that MM’S theory implied that the market know the random return stream of the firm and value this stream to set the value of the firm. He posits that what is valued in the market place is the perceived stream of the firm. Borrowing from MM’s argument he stated that;

“...changes in financial structure can alter the market perception....by changing the financial structure, the firm changes its perceived risk class even though the actual risk class remains unchanged”.

Ross concluded that choice of capital structure signals information to the market and that the signals will be validated in a competitive market. The implication of this theory is that managers decide on the capital structure of their company in a way that a positive signal will be sent to the market so as to increase the firm's value. This is only achieved if management issues debt securities but in a way that the market will not perceive the issue as too large to invite possibilities of financial distress as this may pose a negative signal.

2.2.5 ASYMMETRIC INFORMATION THEORY

Myers and Majluf, (1984) work resulted in asymmetric information theory of capital structure.

They noted that in a world of asymmetric information corporations should issue new shares only.

- a) When they have extra-ordinary profitable investments that cannot be postponed, signaled to investors or financed by debt.
- b) If management think that the shares are overvalued

They argue that separation of ownership from professional management naturally creates asymmetric information. The net effect of asymmetric information is to motivate firms to maintain some reserve borrowing capacity which permits future investment opportunities to be financed by debt when internal funds are insufficient.

They also argue that slack has value because without it the firm is sometimes unwilling to issue stock and therefore passes up a good investment project. Slack does not allow the firm to take advantage of investors by issuing only when the stock is overvalued. "If the investors know that the firm doesn't have to issue to invest, then

an attempt to issue sends a strong pessimistic signal. This theory implies that optimal capital structure may not converge with that postulated by trade-off models because all the borrowing capacity may not be utilized by corporations despite existence of debt advantage. Corporations are likely to forego some borrowing so as to retain some slack.

2.2.6 FINANCIAL ARCHITECTURE

Myers, (1999,p. 133) argued that in so far as optimal capital structure is to be determined, one has first to consider financial architecture. In his own words, he notes;

“financial architecture comes first. Once financial architecture is determined capital structure is usually second order”.

Myers, (1999 p. 139) defines financial architecture as

“...the entire financial design of the business, including ownership (e.g. concentrated vs dispersed), the legal form of the organization (e.g. corporation vs limited life partnership) incentives, financing and allocation of risk”.

His argument suggest that there are other distinct architectures apart from the standard one assumed in corporate finance literature, that of public corporation with widely held shares and that the architecture adopted by a firm could influence a firms operations like in the choice of capital structure. A major component of financial architecture is ownership structure.

The inclusion of financial distress and agency costs to MM's models resulted to formulation of the trade-off theory.

2.2.7 STATIC TRADE OFF THEORY

This theory contend that the firm must try to balance the various costs of bankruptcy, financial distress and agency costs against the value of interest tax shields, Myers (1984).

According to this theory a firm is supposed to substitute debt for equity or equity for debt until the value of the firm is maximized. A value maximizing firm would equate benefit and cost at the margin, and operate at the top of the curve in Fig.1.

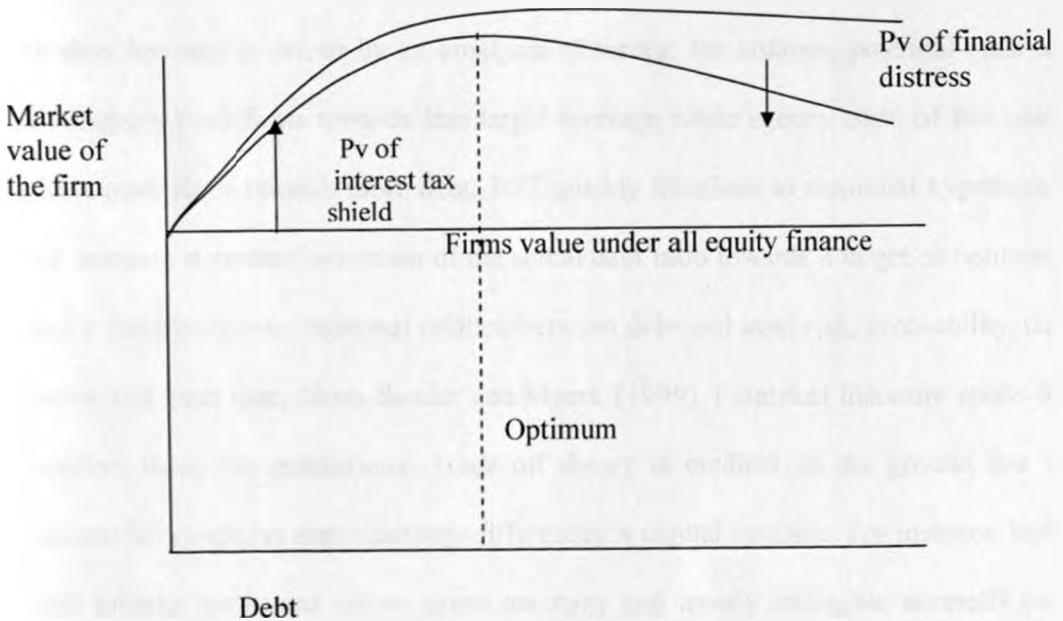


Figure 1: The Relationship between Debt and Value of the firm.

The curve would top out at relatively high debt ratios for safe, profitable firms with plenty of taxes to shield and assets whose values would escape damage in financial distress.

Trade off theory is premised on the argument that as debt levels are raised, both benefits and costs emerge. The major benefit is the tax shield arising from the fact that interest on debt is tax deductible and hence lowers the amount of taxes paid by a firm MM, (1963). The other benefit is the fact that debt acts to control agency problems between shareholders and managers by controlling free cash flows available to managers which they could use to satisfy their self interest Jensen, (1986). Free cash flow is cash flow in excess of that required to fund all projects that have positive NPV when discounted at the relevant cost of capital, Jensen, (1986).

Major costs are those associated with financial distress and the personal tax expense bondholders incur when they receive interest income, Miller, (1977). In trade off models leverage is driven by an amalgam of forces; for instance, potential costs of bankruptcy push firms towards less target leverage while agency costs of free cash flows push firms towards more debt. TOT quickly translates to empirical hypothesis, for instance it predicts reversion of the actual debt ratio towards a target or optimum and it predicts a cross sectional relation between debt and asset risk, profitability, tax status and asset type, Shym-Sunder and Myers, (1999). Empirical literature seems to confirm these two predictions. Trade off theory is credited on the ground that it successfully explains many industry differences in capital structure. For instance, high tech growth companies whose assets are risky and mostly intangible normally use relatively little debt. In addition, trade off theory also helps explain what kinds of companies “go private” in leveraged buy-outs (LBOs). Target companies for LBOs are usually mature, cash cow businesses with established markets for their products

but little in the way of high net present value (NPV) – growth opportunities, Brealy and Myers (2003). These companies ought to have high debt ratios.

However, a number of questions have been asked as to whether or not expected increase in tax shield benefits from employing debt finance may off-set the financial distress cost such as possible bankruptcy costs in the event of default, cash flow volatility and competitive threat if strained by cash.

Graham and Harvey, (2001) also questioned TOT on the basis that tax savings seem certain and large while bankruptcy costs seem to be negligible meaning that firms should be more highly levered than they are in real life. Myers, (1984) also argued that if the theory were a key force then tax variables should provide an important insight about optimum capital structure; he found tax effects to be fairly minor empirically. Lastly, the theory fails to explain why some of the most successful companies thrive with little debt, Brealey and Myers (2003). Besides empirical evidence suggest that public companies rarely make major shifts in capital structure just because of taxes Brealey and Myers (2003).

2.2.8 PECKING ORDER THEORY

This theory was coined by Myers (1984)

This theory contends that:

Firms prefer to finance with internally generated funds i.e. retained earnings and depreciation cash flows.

Firm's set target dividend payout ratios based on their expected future investment opportunities and their expected future cash flows.

Dividends are “sticky” in the short run – firms are reluctant to raise their dividend unless they are confident that the higher dividends can be maintained. Sticky dividends plus unpredictable fluctuations in profitability and investment opportunities mean that internally generated cash flows may be more or less than investment outlays. When firms choose to pay dividends they should consider the impact of this decisions on future borrowing since it would be undesirable to raise finances with new risky securities while postponement of dividend payment would have availed cheap finances for the company.

If the firm has more internal cash flow than is needed to cover its capital expenditure, then it will either invest in marketable securities, use funds to retire debt, increase dividends or repurchase stock.

If internal cash flows are insufficient to finance non-postponable new projects, it will first draw down its marketable securities portfolio, then go to external capital market, first issuing debt, then convertible bonds and then issue common stock as a last resort. He observed that there is a pecking order of financing which descends from internal funds, to debt, to external equity.

POH is founded on asymmetric information between managers and less informed outside investors. This is because managers have incentives to issue risky securities when they are over-priced. Investors are aware of this and therefore discount a firm’s new and existing securities when new issues are announced. Managers anticipate this price change and they may forego profitable investments if they must be financed with new risky securities, Fama and French, (2002).

Pecking order behavior arises if the costs of issuing new securities overwhelm other costs and benefits of debt. Fama and French, (2002). Financial costs associated with new issues include transaction costs and costs that arise because management has superior information about a firms prospects and the value of its risky securities Myers and Majluf, (1984)

Myers Pecking order theory effectively explains why most profitable firms borrow less – they do so because they do not need outside cash.

Less profitable firms issue debt because they do not have sufficient internal funds and because debt financing is first on the pecking order of external financing. Brealey and Myers, (2003). This hypothesis propose that only firms with low risk of financial distress should issue straight debt, and firms with moderate debt should issue hybrid securities while those with high risk should issue external equity. Another prediction of this model is that debt typically grows when investment exceeds retained earnings and falls when investment fall below retained earnings.

However, Pecking order theory does not explain inter industry differences in capital structure, for instance, debt ratios tend to be low in high tech high growth industries, even when the need for external capital is great. Brealey and Myers, (2003).

There are also mature, stable industries in which ample cash is not used to pay down debt, for instance electric utilities. Brealey and Myers (2003).

2.3 EMPIRICAL TEST OF CAPITAL STRUCTURE THEORIES.

Several authors have attempted to test the two main theories of capital structure and have come up with mixed results.

On this line we have Shyam - Sunder and Myers, (1999) tested trade off against pecking order models using regression models. His model for pecking order was based on the intuition that when a firm's internal cash flows are inadequate for its real investment and dividend commitments, the firm issue debt. Equity is never issued unless when the firm can only issue junk debt and costs of financial distress are high.

Trade off model was based on the intuition that changes in debt ratio are explained by deviations of the current debt ratio from target. The target was taken to be the mean of the debt ratio multiplied by total debt. They found support for both pecking order and static trade off theories but their result suggested greater confidence in the pecking order than in the target adjustment model.

Fama and French, (2002) tested the leverage predictions of the trade off and pecking order theories and found out that both theories had some relevance in capital structure choice and that both theories had some weaknesses; for instance they identified "one big scar on the trade off model,"-the negative relation between leverage and profitability and "one deep wound on the pecking order theory"-the large equity issues of small and low leveraged firms. However they couldn't establish which of the theories was more robust.

Brandley, Jarrel and Kim, (1984) also using regression analysis found support for the modern balancing (trade off model).

Cotei and Farhat, (2009) simultaneously examined the pecking order and trade off theories of capital structure to determine which one performs better for USA firms.

They concluded that the two theories are not mutually exclusive in determination of capital structure. In their own words they said,

“firms may strive for a target debt ratio range and within this range, the pecking order behaviour may describe incremental decisions or, over time, firms may switch between target adjustment and pecking order behaviour”.

Ahmed and Hisham, (2009) conducted a test of the trade off and POH for Malaysian listed firms by adopting Shym-Sunder and Myers models with slight modifications. For testing of pecking order, they held that change in debt could be explained by internal funds deficiency. On the same note they also held that internal funds deficiency resulted if dividend payment, repayment of long-term debt, change in working capital and capital expenditure exceeded cash flow from operations. They sought to find out the association between change in debt and the above variables. A positive relationship between change in debt, dividend payment, loan payment, change in working capital and acquisition of fixed assets was anticipated while a negative association was anticipated between change in debt and cash flows from operation. For the trade off theory, the test was whether there was a significant relationship between change in debt, internal funds deficiency, non-debt tax shield, asset structure, growth and size. They found the POH as more robust as compared to TOT in explaining capital structure choice.

In Kenya studies done so far have focused on testing of the determinants of capital structure for firms quoted at NSE without focusing on the two main theories, namely POH and TOT. For instance, Omondi, (1986), had used correlation coefficient to analyze the relationship between capital structure and the variables that have been

hypothesized in financial literature to influence capital structure. He concluded that turnover, growth, asset structure and age are the determinants of capital structure.

Odinga, (2003) conducted a study on the determinant of capital structure of companies listed at Nairobi stock exchange and concluded that profitability and non debt tax shield are the most significant variables in determining leverage. Odinga, (2003) also found out that influential variables also vary from company to company indicating that firms specific factors also play a role in determining capital structure.

The only study that focused on testing a theory was that of Gachoki, (2005)

Gachoki, (2005) using Shym-Sunder and Myers model conducted a test of the pecking order hypothesis and found out that the theory could not adequately explain capital structure choice for firms quoted in Nairobi Stock Exchange and suggested further investigation into causes of capital structure choice.

This study will adopt both Shym-Sunder and Myers and Ahmed and Hisham models to test the relevance of POH and TOH for firms quoted at NSE.

Pecking order model will take the following shape.

$$\Delta D_{it} = \alpha + \beta DEF_{it} + \varepsilon \text{ -Basic Pecking Order Model.}$$

$$\Delta D_{it} = \beta_0 + \beta_1 DIV_{it} + \beta_2 R_{it} + \beta_3 \Delta WC_{it} + \beta_4 X_{it} + \beta_5 CFO_{it} \text{ - Extended Pecking Order Model.}$$

The first hypothesis will be;

H1- financial managers feel unsafe to relinquish control of the firm to outsiders by issuing new securities, hence any internal funds deficiency is countered by issue of

debt securities rather than shares; therefore, a positive relationship is anticipated between issuance of new debt and internal funds deficiency.

The TOT takes the following shape:

$$\Delta D_{it} = \beta_0 + \beta_1 DEF + \beta_2 NDT S_{it-1} + \beta_3 SIZE_{it-1} + \beta_4 STRUCTURE_{it-1} + \beta_5 GROWTH_{it-1} + \varepsilon_{it}$$

Define; DEF - Internal Funds Deficiency = ΔD_{it} = change in new debt issued for firm i at period t

$$NDTS - \text{Non Debt Tax Shield} = \frac{\text{Depreciation}}{\text{Total Asset}}$$

$$STRUCTURE - \text{Asset Structure} = \frac{\text{Net Fixed Asset}}{\text{Total Equity} + \text{Total Liabilities}}$$

$$GROWTH - \frac{\text{Intangible Assets}}{\text{Total Asset}}$$

SIZE = Natural Logarithm of sales.

The following hypotheses are to be tested;

H2-firms having high non- debt tax shield will be less likely to employ new debt as one of the motivation of employing new debt is to obtain tax-shield benefit derived from debt financing but at the cost of financial distress. Therefore, firms having high non-debt tax shield will have lower debt as high debt would lead to financial distress.

H3-firms having higher tangible assets as part of their productive resources are likely to use more debt as this can be collateralized by the tangible assets.

H4-growth require significant effort in research and development. R and D require enormous amount of funding from internally and externally generated funds;

therefore, a positive association is anticipated between growth and issuance of new debt.

H5- size is used to control size effect that is usually observed in capital structure research. Employment of debt by larger firms serve as a disciplinary measure to reduce agency cost of debt. Therefore, a positive relationship is expected between firm size and issuance of of new debt.

2.4 CONCLUSION

Though several theories have been postulated to explain capital structure choice, only two theories have gained much focus when we consider empirical investigations. These are the POH and the TOT. The rest of the theories have not rested on vigorous testing. Most of the studies on these theories have been done in developing countries like the US and UK. Studies done in Kenya have focused on testing the determinants of capital structure with the exception of the study of Gachoki, (2005), which tested the pecking order theory for firms listed at NSE. Gachoki's study didn't find pecking order theory a significant determinant of capital structure choice for firms quoted at NSE. There is therefore a gap in knowledge as it's not clear what theory guides the choice of capital structure for firms quoted at NSE. Besides, local studies have not tested the trade off theory. In view of this, it becomes imperative to test the two theories to find out which of the theories best explains capital structure choice for firms quoted at NSE. This Study will adopt Shym-Sunder and Myers model where change in debt level is theorized to be explained by internal fund deficiency and Ahmed and Hishirm model where TOT is tested by assuming that change in debt is explained by internal fund deficiency, non-debt tax shield, asset structure, size and

growth. The aim of the study will be to shed more light on the theory that best explains capital structure choice for firms quoted at NSE.

2.5 THEORETICAL FRAMEWORK.

The dependent variable for POH is change in debt. This variable is attempted to be explained by internal funds deficiency (DEF). A positive relationship is anticipated between the two variables

Schematic diagram showing the relationship between change in debt and internal funds deficiency



Fig: 2

$$\Delta D_{it} = \alpha + \beta DEF_{it} + \varepsilon \text{ -Basic Pecking Order Model.}$$

$$\Delta D_{it} = \beta_0 + \beta_1 DIV_{it} + \beta_2 R_{it} + \beta_3 \Delta WC_{it} + \beta_4 X_{it} + \beta_5 CFO_{it} \text{ - Extended Pecking Order Model.}$$

Define;

- ΔD_{it} - Change in debt
- DEF - Internal Funds Deficiency
- DIV - Dividend payment
- ΔWC - Change in working capital
- X_{it} - Debt repayment
- R_{it} - Capital expenditure

CFO - Operating Cash flows

For the trade off theory, the dependent variable is still change in debt, (ΔD_{it}) which is attempted to be explained by several independent variables; namely; internal funds deficiency, (DEF), non-debt tax shield, (NDTS), ASSET STRUCTURE, GROWTH and SIZE in line with Ahmed and Hishirm (2009). A positive relationship is anticipated between STRUCTURE, GROWTH, SIZE and internal funds deficiency, (DEF) and change in debt, while a negative relationship is anticipated between change in debt and non debt tax shield.

Schematic diagram showing the relationship between debt, non debt shield, asset structures, growth and internal funds deficiency

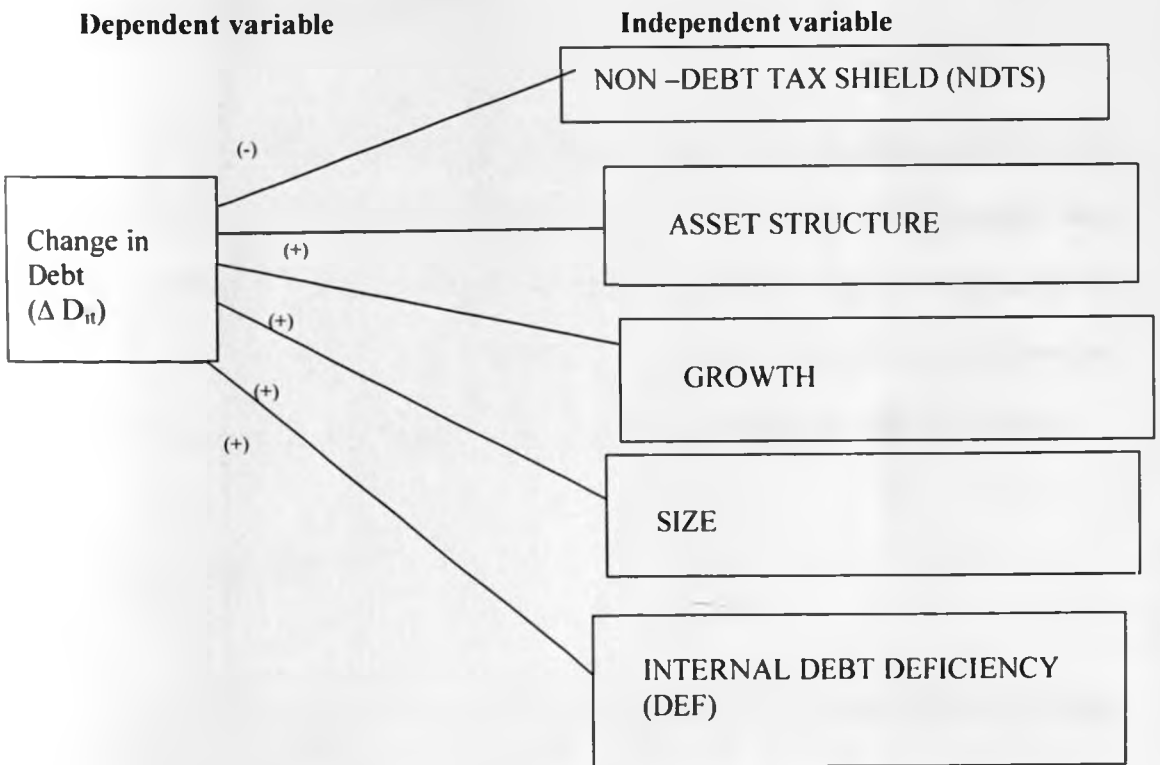


Fig: 3

$$\Delta D_{it} = \beta_0 + \beta_1 DEF + \beta_2 NDTS_{it-1} + \beta_3 SIZE_{it-1} + \beta_4 STRUCTURE_{it-1} + \beta_5 GROWTH_{it-1} + \varepsilon_{it}$$

(Trade off Model)

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter consists of the research design, the population and the sample to be adopted for the purpose of this study. It also consists of the variables of interest and how they will be measured. The section also contains the data analysis method to be adopted for the purpose of this study.

3.2 RESEARCH DESIGN

The research design will be causal design which seeks to explain existence of a relationship between change in debt and several independent variables; namely; non-debt tax shield, structure, growth, size and internal funds deficiency. This design has been preferred because it is easy to apply as it will entail collection of secondary data for listed firms which are readily available at the capital market authority, (CMA)

3.3 POPULATION

The population of the study will be the firms quoted in the Nairobi Stock Exchange in 2009. At current we have 47 firms.

3.4 SAMPLE.

From the population, a sample will be obtained for the period between 2005 and 2009. In line with Short, Keasey and Duxbury, (2002) firms in the financial sector, oil and gas will be excluded due to the different income measuring rules governing such companies as compared to those in the manufacturing and service sectors.

Besides capital structure of financial institutions are likely to be significantly different from non –financial institutions.

Firms will be included in the final sample if they have no gaps in data on the relevant fund-flow and balance sheet variables.

3.5 MEASUREMENT OF VARIABLES.

CHANGE IN DEBT(ΔD_{it})

For each firm, this variable is arrived at by deducting debt figure in year t-1 from debt figure in year t. The variable will take a value of 1 if a positive difference exists and 0 otherwise. Debt is defined as loans (including leasing and hire purchase).

INTERNAL FUNDS DEFICIENCY (DEF)

This variable is obtained by deducting dividend payment, capital expenditure, debt repayment and change in working capital from operating cash flows of year t. This variable assumes a value of 1 if the result is negative and 0 otherwise.

Capital expenditure is taken as the difference in fixed assets figures for year t and year t-1.

Debt repayment is got from fund flow statements for the year in question.

Change in working capital is obtained by subtracting working capital in year t-1 from working capital in t.

Working capital is defined as the current assets of year t minus the current liabilities of the same year.

Operating cash flows are cash flows from operations less tax and interest but before dividends payments for year t.

Dividends were taken as the proposed dividends for year t.

NON-DEBT TAX SHIELD (NDTS).

This variable is obtained by dividing depreciation of year t by total assets for the same year.

STRUCTURE

This variable is obtained by dividing the net fixed assets by total equity plus total liabilities of year t. Net fixed assets is defined as fixed assets less depreciation.

GROWTH

Growth is obtained by dividing intangible assets by total asset of year t.

FIRM SIZE

Firm size, LN SALES is measured as the natural log of totals sales of year t.

3.6 DATA ANALYSIS

Data will be collected from capital market authority and will be analyzed through regression analysis. SPSS package version 17 will be used to do the analysis. The following regressions will be run.

Regression of change in debt against internal funds deficiency.

$$\Delta D_{it} = \alpha + \beta DEF_{it} + \varepsilon$$

Regression of change in debt against dividend payment, capital expenditure, changes in working capital, debt repayment and operating cash flows.

$$\Delta D_{it} = \beta_0 + \beta_1 DIV_{it} + \beta_2 R_{it} + \beta_3 \Delta WC_{it} + \beta_4 X_{it} + \beta_5 CFO_{it}; \text{ where,}$$

Regression of change in debt against internal funds deficiency, non-debt tax shield, size, asset structure and growth.

$$\Delta D_{it} = \beta_0 + \beta_1 DEF_{it} + \beta_2 NDTS_{it-1} + \beta_3 SIZE_{it-1} + \beta_4 STRUCTURE_{it-1} + \beta_5 GROWTH_{it-1} + \varepsilon_{it}$$

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND PRESENTATION

4.1 INTRODUCTION

This chapter consists of analysis and findings of the study as set out in the research methodology. 20 companies were used and data about the variables were collected over a five year duration from 2005-2009. The data gathered was secondary data from balance sheets, income statements and cash flow statements. The data has been analyzed through regression analysis. The chapter concludes with critical analysis of the findings.

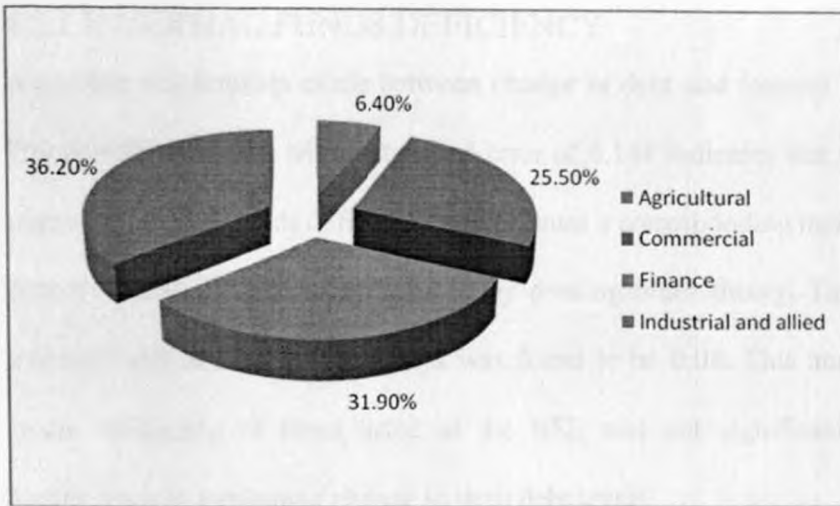
The study targeted 32 companies which form part of the listed companies at NSE. This was after exclusion of companies in the financial and investment sector and electricity, oil and gas as outlined in the methodology. This left me with 27 companies. 7 companies were eliminated due to lack of continuous data running for the 5 years. This left me with a final sample of 20 companies, which represent 74% of the targeted firms. The total number of quoted companies is 47 as of to-date.

Firms listed at the NSE are classified into Agricultural, Commercial and services, Finance and investment and Industrial and allied. The firms are constituted as follows:

Table 1: Classification of the NSE Listed Companies

Category	Frequency	Percentage
Agricultural	3	6.38%
Commercial and services	12	25.53%
Finance and Investment	15	31.91%
Industrial and allied	17	36.17%
Total	47	100.00%

Source: Author, 2010



Source: Author, 2010

Figure 4: Classification of the NSE Listed Companies

4.2 CHANGE IN DEBT AGAINST INTERNAL FUNDS DEFICIENCY

From regression of change in debt against internal funds deficiency it is observed from the general function shown here under,

$$\Delta D = \alpha + \beta DEF_i + \epsilon$$

The regression equation appears as follows;

$$\Delta D = 0.667 + 0.262DEF_i$$

Table 2: Change in Debt against Internal Funds Deficiency

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.667	.096		6.978	.000
	Internal Funds Deficiency	.262	.144	.314	1.813	.080

a. Dependent Variable: Change in debt

Source: Author, 2010

4.2.1 INTERNAL FUNDS DEFICIENCY

A positive relationship exists between change in debt and internal funds deficiency. The coefficient 0.262 with a standard error of 0.144 indicates that a unit increase in degree of internal funds deficiency would cause a corresponding increase in change in debt by 0.262. This is as anticipated by pecking order theory. The p-value for the internal fund deficiency coefficient was found to be 0.08. This implies that internal funds deficiency of firms listed at the NSE was not significant at 5% level of significance in explaining change in their debt levels.

The intercepts coefficient is 0.667 with standard error of 0.096. This implied that with no internal funds deficiency for listed firms at the NSE, changes in debt would be at constant level of 0.667.

Table 3: Internal Funds Deficiency

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.314 ^a	.099	.069	.40532
a. Predictors: (Constant), Internal Funds Deficiency				

Source: Author, 2010

The R² value is obtained as 0.099. This implies that only 9.9% of variations in debt are explained by internal funds deficiency. 90.1% of variations in debt for companies listed at the NSE are explained by other factors. The low R² calls for a robust check to find out whether the decomposed measure of DEF represented by debt repayment, dividend payment capital expenditure and changes in working capital explain the issuance of new debt.

Table 4 : Variations in Debt for Companies Listed

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.540	1	.540	3.288	.080 ^a
	Residual	4.929	18	.164		
	Total	5.469	19			
a. Predictors: (Constant), Internal Funds Deficiency						
b. Dependent Variable: Change in debt						

Source: Author, 2010

The p-value of 0.08 corresponding to F calc of 3.288 obtained from the ANOVA table indicated that the entire model was not significant at 5% level of significance in explaining changes in debt levels by companies in the stock exchange.

4.3 EXTENDED PECKING ORDER MODEL

From regression of debt against dividend payment, capital expenditure, changes in working capital, debt repayment and operating cash flows, it is observed from the general function shown here under,

$$\Delta D = \beta_0 + \beta_1 DIV_{it} + \beta_2 R_{it} + \beta_3 \Delta WC_{it} + \beta_4 X_{it} + \beta_5 CFO_{it}$$

The regression equation appears as follows;

$$\Delta D = -103017.66 + 0.486DIV_{it} + \beta_2 0.043 - 0.340\Delta WC_{it} + 0.537X_{it} - 0.066CFO_{it}$$

Table 4: Test of Capital Structure

Model		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-103017.657	53267.894		-1.934	.064
	Dividend payout	.486	.190	1.178	2.551	.017
	capital Expenditure	.043	.090	.111	.479	.636
	Change in WC	-.340	.085	-.998	-4.001	.000
	Debt Repayment	.537	.087	.566	6.201	.000
	Operating Cashflows	-.066	.094	-.324	-.701	.489
	a. Dependent Variable: Change in debt					

Source: Author, 2010

4.3.1 DIVIDEND PAYMENT

A positive relationship exists between change in debt and dividend payment. The coefficient 0.486 with a standard error of 0.190 indicates that a unit increase in dividend payment would cause a corresponding increase in change in debt by 0.486. The p-value for the dividend payment coefficient was found to be 0.017. This implied that dividends payment of firms listed at the NSE were significant at 5% level of significance in explaining change in their debt levels since it was less than 0.05.

4.3.2 CAPITAL EXPENDITURE

A positive relationship exists between change in debt and capital expenditure. The coefficient 0.043 with a standard error of 0.090 indicates that a unit increase in capital expenditure would cause a corresponding increase in change in debt by 0.043. The p-

value for the capital expenditure coefficient was found to be 0.636. This implied that capital expenditure of firms listed at the NSE was not significant at 5% level of significance in explaining change in their debt levels since it was greater than 0.05.

4.3.3 CHANGES IN WORKING CAPITAL

A negative relationship exists between change in debt and changes in working capital. The coefficient -0.340 with a standard error of 0.085 indicates that a unit increase in changes in working capital would cause a decrease in changes in debt by 0.340. The p-value for the dividend payment coefficient was found to be 0.000. This implied that change in working capital of firms listed at the NSE was significant at 5% level of significance in explaining change in their debt levels since it was less than 0.05.

4.3.4 DEBT REPAYMENT

A positive relationship exists between change in debt and debt repayment. The coefficient 0.537 with a standard error of 0.087 indicates that a unit increase in debt repayment would cause a corresponding increase in change in debt by 0.537. The p-value for the debt payment coefficient was found to be 0.000. This implied that debt payment of firms listed at the NSE was significant at 5% level of significance in explaining change in their debt levels since it was less than 0.05.

4.3.5 OPERATING CASH FLOWS

A negative relationship exists between change in debt and operating cash flows. The coefficient -0.066 with a standard error of 0.094 indicates that a unit increase in operating cash flows would cause a decrease in changes in debt by 0.066. The p-value for the operating cash flows coefficient was found to be 0.489. This implied that

operating cash flows of firms listed at the NSE were not significant at 5% level of significance in explaining change in their debt levels since it was greater than 0.05.

4.3.6 INTERNAL FUNDS DEFICIENCY INTERCEPT

The intercept's coefficient is -103017.657 with standard error of 53267.894. This implied that with no internal funds deficiency for listed firms at the NSE, changes in debt would be at constant level of 103017.657.

Table 5: Coefficient of Determination for Internal Funds Deficiency Intercept

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.968 ^a	.937	.925	2.43978E5
a. Predictors: (Constant), Operating Cash flows, Debt Repayment, Change in WC, capital Expenditure, Dividend payout				

Source: Author, 2010

The R^2 value is obtained as 0.937. This implies that 93.7% of variations in debt were explained by variations in dividend payment, capital expenditure, and changes in working capital, debt repayment and operating cash flows. 6.3% of variations in change in debt for companies listed at the NSE are explained by other factors.

Table 6: Internal Funds Deficiency Intercept

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.318E13	5	4.636E12	77.884	.000 ^a
	Residual	1.548E12	14	5.953E10		
	Total	2.473E13	19			
a. Predictors: (Constant), Operating Cashflows, Debt Repayment, Change in WC, capital Expenditure, Dividend payout						
b. Dependent Variable: Change in debt						

Source: Author, 2010

The p-value of 0.000 corresponding to F calc of 77.884 obtained from the Anova table indicated that the entire model was significant at 5% level of significance in explaining changes in debt levels by companies in the stock exchange. This implied that an extended pecking order model was more plausible in explaining change in debt than the simple model.

4.4 REGRESSION FOR TRADE-OFF THEORY

From regression of change in debt against internal funds deficiency, non-debt tax shield, size, asset structure and growth, it is observed from the general function shown here under,

$$\Delta D = \beta_0 + \beta_1 DEF + \beta_2 NDTS_{it-1} + \beta_4 Structure_{it-1} + \beta_5 Growth_{it-1} + \beta_3 Size_{it-1} + \varepsilon$$

The regression equation appears as follows;

$$\Delta D = 1.385 + 0.394DEF + 0.604NDTS_{it-1} - 0.45Structure_{it-1} - 0.995Growth_{it-1} - 0.06Size_{it-1}$$

Table 7: Trade-Off Theory

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.385	.344		4.028	.000
	Internal Funds Deficiency	.394	.165	.485	2.390	.024
	Non debt tax shield	.604	.482	.242	1.253	.221
	Asset Structure	-.450	.307	-.264	-1.466	.155
	Growth	-.995	5.673	-.559	-.175	.862
	Firm size	-.060	.032	-.357	-1.856	.075
	a. Dependent Variable: Change in debt					

Source: Author, 2010

4.4.1 INTERNAL FUNDS DEFICIENCY

A positive relationship exists between change in debt and internal funds deficiency.

The coefficient 0.394 with a standard error of 0.165 indicates that a unit increase in internal funds deficiency would cause a corresponding increase in change in debt by 0.394. The p-value for the internal funds deficiency coefficient was found to be 0.024.

This implied that internal funds deficiency of firms listed at the NSE was significant at 5% level of significance in explaining change in their debt levels since it was less than 0.05.

4.4.2 NON-DEBT TAX SHIELD

A positive relationship exists between change in debt and non-debt tax shield. The coefficient 0.604 with a standard error of 0.482 indicates that a unit increase in non-debt tax shield would cause a corresponding increase in change in debt by 0.604. The p-value for the non-debt tax shield coefficient was found to be 0.221. This implied that non-debt tax shield of firms listed at the NSE was not significant at 5% level of significance in explaining change in their debt levels since it was greater than 0.05.

4.4.3 ASSET STRUCTURE

A negative relationship exists between change in debt and asset structure. The coefficient -0.45 with a standard error of 0.307 indicates that a unit increase in asset structure would cause a decrease in changes in debt by 0.45. The p-value for the asset structure coefficient was found to be 0.155. This implied that asset structure of firms listed at the NSE was not significant at 5% level of significance in explaining change in their debt levels since it was greater than 0.05.

4.4.4 GROWTH

A negative relationship exists between change in debt and growth. The coefficient -0.995 with a standard error of 5.673 indicates that a unit increase in growth would cause a decrease in changes in debt by 0.995. The p-value for the growth coefficient was found to be 0.862. This implied that growth of firms listed at the NSE was not significant at 5% level of significance in explaining change in their debt levels since it was greater than 0.05.

4.4.5 CHANGE IN DEBT AND SIZE.

A negative relationship exists between change in debt and size. The coefficient -0.060 with a standard error of 0.032 indicates that a unit increase in size would cause a decrease in changes in debt by 0.060. The p-value for the size coefficient was found to be 0.075. This implied that size of firms listed at the NSE was not significant at 5% level of significance in explaining change in their debt levels since it was greater than 0.05

Table 8: Relationship between Change in Debt and Size

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.502 ^a	.252	.108	.397
a. Predictors: (Constant), Firm size, Asset Structure, Internal Funds Deficiency, Non debt tax shield, Growth				

Source: Author, 2010

The R^2 value is obtained as 0.252. This implies that 25.2% of variations in debt was explained by variations in internal funds deficiency, non-debt tax shield, size, asset structure and growth. 74.8% of variations in change in debt for companies listed at the NSE are explained by other factors.

Table 9: Variations in Change in Debt

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.378	5	.276	1.751	.158 ^a
	Residual	4.091	14	.157		
	Total	5.469	31			
a. Predictors: (Constant), Firm size, Asset Structure, Internal Funds Deficiency, Non debt tax shield, Growth						
b. Dependent Variable: Change in debt						

Source: Author, 2010

The p-value of 0.158 corresponding to F calc of 1.751 obtained from the Anova table indicated that the entire model was not significant at 5% level of significance in explaining changes in debt levels by companies in the stock exchange.

CHAPTER FIVE

5.0 SUMMARY OF FINDINGS, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter provides the summary of the findings from chapter four, and also it gives the conclusions, limitations and recommendations of the study based on the objectives of the study. The objectives of this study were to investigate whether or not internal funds deficiency is funded by an increase in debt in line with pecking order predictions for firms quoted at NSE, and whether non-debt tax shield, expected growth, size, and asset structure have a significant effect on debt in line with static trade off predictions for firms quoted at NSE. To achieve these objectives cross-sectional regression of POMs and TOM were ran to capture the market behavior in the light of pecking order predictions and trade of predictions.

The study used secondary data from CMA for 20 firms for a period running from 2005-2009.

5.2 SUMMARY OF THE FINDINGS

The analysis reveals that a positive relationship exists between change in debt and internal funds deficiency as according to the pecking order theory. In addition, internal funds deficiency of firms listed at the NSE is not significant at 5% level of significance in explaining change in their debt levels. Therefore, internal funds deficiency is not funded by an increase in debt in accordance with the simple pecking order model as it is not significant at 95% confidence level.

It was also observed that dividend payment; changes in working capital and debt repayment have a significant effect on changes in debt in line with pecking order theory of firms. On the other hand operating cash flows and capital expenditure do not have a significant effect.

Finally, it was observed that internal funds deficiency was significant in explaining variations in debt in line with static trade off predictions for firms quoted at NSE. However, non-debt tax shield, size, asset structure and growth had no significant effect on changes in debt. The entire model in line with static trade off predictions, as analysed using the anova model was deduced not to have a significant effect on firms listed at NSE.

5.3 CONCLUSIONS

The study concludes that simple pecking order model cannot explain change in debt as it is not significant at 95% confidence level. This is in line with Chirinko and Singha, (2000), who argued that Shym- Sunder and Myers “elegantly simple pecking order model” can generate misleading inferences when evaluating plausible patterns of external financing. They suggested that more determinants of capital structure be sought to make the model more plausible.

The extended pecking order model seems to explain change in debt as the entire model is significant at 95% level. From the extended model, dividend payment, changes in working capital and debt repayment have a significant effect on changes in debt in line with pecking order theory of firms while operating cash flows and capital expenditure do not have a significant effect on changes in debt for firms listed at the NSE.

Trade off model was deduced to be insignificant in explaining change in debt. Non-debt tax shield, size, asset structure and growth have no significant effect on changes in debt while internal funds deficiency was found to have significance in explaining debt issuance from the trade-off model. In sum, firms listed at Nairobi stock exchange tend to follow pecking order theory in their capital structure decisions but this can only be deduced from an extended pecking order model that include more variables. This study contradicts Gachoki, (2005) findings who found the pecking order model to be insignificant in explaining capital structure choice for firms quoted at NSE. This could be attributed to the fact that he used only the simple pecking order model.

5.4 LIMITATIONS OF THE STUDY

The following limitations were noted;

First only 20 companies were investigated out of a population of 47 companies.

Secondly, time series regressions of POMs and TOM could not be conducted due to small sample size defined by the period of study and incomplete data.

Equity issues were not included as a variable as suggested by Chrinko and Sangha, (2000) as they are a rarity in the NSE

Companies included in the sample are likely to be only big companies due to requirement that they be quoted for 5 years. This can bias the results.

5.5 RECOMMENDATIONS

The study recommends that other factors be included in analyzing the pecking order theory of firms other than internal funds deficiency for firms listed on NSE so that the model would explain at least 75% of variations in debt.

The study also recommends inclusion of dividend payment, changes in working capital and debt repayment as separate factors in explaining variations in debt in addition to being part of internal funds deficiency. These three factors were observed to be separately significant in explaining variations in debt. The study finally recommends an investigation into other factors significant in explaining variations in debt in line with static trade off predictions for firms quoted at NSE.

5.6 SUGGESTIONS FOR FURTHER STUDIES

The study recommends the following studies to be done in the Kenyan context;

A study on other factors which may have significant effect on changes in debt that are not captured by the trade off and pecking order models. This could include factors such as management ownership, family ownership or ownership by large external shareholders. This can be possible in future as corporate governance guidelines by CMA continue to be enforced against all companies so that data on the above variables become publicly available.

A test of the pecking order and trade off theories for listed firms using a survey.

A test of the trade off and pecking order theories for companies not listed at the stock exchange.

An investigation of factors influencing borrowing for small and medium enterprises.

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APPENDICES

APPENDIX I

COMPANIES QUOTED AT NAIROBI STOCK EXCHANGE

Agriculture

1. Rea Vipingo Ltd.
2. Sasini Tea & Coffee Ltd
3. Kakuzi Ltd

Commercial and Services

1. Access Kenya Group
2. Marshalls E.A. Ltd
3. Car & General Ltd
4. Hutchings Biemer Ltd. - **Suspended**
5. Kenya Airways Ltd.
6. CMC Holdings Ltd.
7. Uchumi Supermarkets Ltd. - **Suspended**
8. Nation Media Group Ltd
9. TPS (Serena) Ltd.
10. Scan Group Ltd
11. Standard Group Ltd
12. Safaricom Ltd.

Finance and Investment

1. Barclays Bank of Kenya Ltd.

2. CFC Stanbic Ltd.
3. Housing Finance Ltd
4. Centum Investment Ltd
5. Kenya Commercial Bank Ltd
6. National Bank of Kenya Ltd.
7. Pan Africa Insurance Holdings Co. Ltd
8. Diamond Trust Bank of Kenya Ltd.
9. Jubilee Insurance Co. Ltd
10. Standard Chartered Bank Ltd
11. NIC Bank Ltd
12. Equity Bank Ltd
13. Olympia Capital Holdings Ltd
14. The Co-operative Bank of Kenya Ltd.
15. Kenya Re-Insurance Ltd

Industrial and Allied

1. Kenya Power & Lighting C. Ltd
2. BOC Kenya Ltd
3. British American Tobacco Kenya Ltd
4. Carbacid Investments Ltd
5. E.A Cables Ltd
6. E.A Breweries Ltd
7. Sameer Africa Ltd
8. Kenya Oil Ltd
9. Mumias Sugar Company Ltd.

10. Unga Group Ltd

11. Bamburi Cement Ltd

12. Crown Berger (K) Ltd

13. E.A Portland Cement Co. Ltd

14. Kenya Power & Lighting Co. Ltd

15. Total Kenya Ltd.

16. Eveready East Africa Ltd

17. Kengen Ltd

APPENDIX II: DATA COLLECTION SHEET

Name of company _____

Year	Change in Debt	Interest Deficiency (DEF)	Change in Working Capital (\$ WC)	Dividend Payment (DIV)	Capital Expenditure	Debt Repayment	Non-Debt Tax Shields (NDS)	Asset Structure	Growth	Firm size
2005										
2006										
2007										
2008										
2009										

APPENDIX III: COMPANIES THAT WERE INVESTIGATED

1. Safaricom
2. Kenya Airways
3. Kakuzi
4. Rea Vipigo
5. Sasini
6. Scan group Ltd
7. Marshalls Ltd
8. Standard group Ltd
9. E.A Portland Ltd
10. E.A cables Ltd
11. Mumias Sugar
12. BAT
13. Athi Mining
14. Sameer
15. Unga
16. Bamburi
17. EABL
18. Nation
19. CMC
20. Everyday