

**DETERMINANTS OF CAPITAL STRUCTURE OF COMPANIES
QUOTED IN THE NAIROBI STOCK EXCHANGE**

BY

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Declaration

I Ruth Waithira Kuria hereby certify that this research paper is my original work and has not been submitted for a degree in any other university

Signed.....Date

Supervisor

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

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Dedication

I dedicate this paper to my wonderful family, my loving Mum Anastasia Njambi and my sibling James Gitau, Julia Wangari and Salome Wanjiku.

Abstract

Capital structure decisions are among the most important and crucial decisions for an business because of their effect on the value and cost of the company. This study examines the determinants of capital structure of companies listed at the NSE by investigating the extent to which firm characteristics affect the way firms in Kenya raise capital i.e. whether these decisions are According to the assumptions of the capital structure theories. The study uses secondary data from the published financial statements of the listed companies. This study adopts a multi-regression model for analysis with profitability, growth rate, size, taxation being used as the independent variables and debt to equity ratio as the proxy for capital structure. The sample comprised of non-financial firms listed at the NSE during the period 2003-2009.

Findings of the study find that, firm characteristics such as profitability and tangibility are significantly negatively related to leverage as also liquidity growth and taxation, but are insignificant. While firm risk was seen to have a significant positive relationship but is an insignificant one for dividend policy and non-debt tax shield, the explanatory power of the regression equation was about 17% and significant which indicates that the model construction is quite indicative.

The paper contributes to the literature in that it shows that the determinants of capital structure conform to those reported by other related studies in emerging markets as well as developed markets. The financing decisions of listed firms seem to support both the pecking order theory and static trade-off theory.

List of Abbreviations

EBIT	EARNINGS BEFORE INTEREST AND TAX
MM	MODIGILIANI AND MILLER
NI	NET INCOME
NOI	NET OPERATING INCOME
NSE	NAIROBI STOCK EXCHANGE
RONA	RETURN ON NET ASSETS
SME	SMALL AND MEDIUM ENTERPRISES
WACC	WEIGHTED AVERAGE COST OF CAPITAL

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CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Capital structure refers to the way a firm finances its assets through some combination of equity, debt, or hybrid securities. It then follows that the capital structure of a firm is a mix of debt and equity which a firm deems as appropriate to enhance its operations in the midst of several constraints it poses. The primary objective of capital structure decisions is to maximize the market value of the firm through an appropriate mix of long-term sources of funds. This mix, called the optimal capital structure, will minimize the firm's overall cost of capital. However, there are arguments about whether an optimal capital structure actually exists. The arguments focus on whether a firm can, in reality, affect its valuation and its cost of capital by varying the mixture of the funds used Besley and Brigham(2000), Ross et al.(2002).Also, it is important to examine the capital structure of companies because it affects company's real decisions about employment, production, and investment Harris and Raviv (1991).

Modern capital structure theory began The Modigliani-Miller Theorem, as proposed by Modigliani and Miller (1958), forms the basis for modern thinking on capital structure, though it is generally viewed as purely theoretical result since it assumes away many important factors in the capital structure decision. They derive conditions under which the capital structure choice is irrelevant to firm valuation, subsequent theoretical literatures have been advanced to show that a firm can influence its value and improve its future prospects therefore explain capital structure decisions. A rich theoretical literature has emerged that models firm's capital structure choice under different assumptions. Each theory presents a different explanation of corporate financing. For example, theories such as Trade -off Theory (Scott 1977) rely on traditional factors such as

tax advantage and potential bankruptcy cost of debt to which an optimal capital structure is assumed to exist. While Pecking Order Theory (Myers) uses the asymmetric information, it assumes hierarchical financing decisions where firms depend first on internal sources of financing and, if these are less than the investment requirements, the firm seeks external financing from debt as a second source, then equity as the last resort, or game theoretical framework in which debt or equity is used as a signaling mechanism or strategy tool.

The Agency theory assumes that debt presents fixed obligations (debt interests and principals to pay) that have to be met by the firm. These obligations are assumed to take over the firm's free cash flow (if exists), therefore prevents managers from over consuming the firm's financial resources.

It was recognized that the three theories are "conditional" in a sense that each works out under its own assumptions and propositions (Myers, 2001). That is, none of the three theories can give a complete picture of the practice of capital structure. This means that firms can pursue capital structure strategies that are conditional as well. That means that when the business conditions change, the financing decisions and strategies may change, moving from one theory to another.

Many of these theories have also been empirically tested, yet there is little consensus on how firms choose their capital structure and much remains to understand the link between theory and practice of capital structure

Some of the main studies that examined the determinants of the capital structure include Myers (1984), Titman and Wessels (1988), Harris and Raviv(1991), Rajan and Zingales (1995), Bevan and Danbolt (2000) Booth et al.(2001), Huang and Song (2002), Antonion et al., (2002), Caesar, and Holmes,(2003), Chen, (2004), Hall, et al., (2004) and Buferna et al., (2005).According to the

above studies, the main determinants of the capital structure are: size of the company, tangibility, profitability, growth opportunities, short-term debt and long-term debt. Both theoretical and empirical capital structure studies have generated many results that attempt to explain the determinants of capital structure. As a result of these studies, some broad categories of capital structure determinants have emerged.

Titman and Wessels (1988), and Harris and Raviv (1991), however, point out that the choice of suitable explanatory variables is potentially continuous. Titman and Wessels(1988) in their article determinants of capital structure took such attributes as asset structure, non-debt tax shields, growth uniqueness, industries classification size, earnings, volatility and profitability and found out that only uniqueness was highly significant. Harris and Raviv(1991) point out that the consensus among financial economists is that leverage increases with fixed costs, non-debt tax shield, investment opportunities and firm size, leverage decreases with volatility, advertising cost, the probability and uniqueness of the product. Moh'd et al (1998) in a study to examine the relationship between agency costs and ownership concentration on the capital structure indicated that the distribution of equity is important in explaining overall capital structure and the managers do reduce the level of debt as their own wealth is increasingly tied to the firm.

Corporate financing is built around the concept of target capital structure that balances various costs and benefits of debt and equity (Modigliani and Miller, 1963). But, Herbart et al. (2006) postulate that, if one determines optimal leverage by balancing the tax benefit of debt and bankruptcy costs, then both the benefits and costs should depend on macroeconomic conditions. The expected benefit of debt (tax benefit to be derived as a result of debt utilization and mitigation of agency conflicts between managers and

shareholders) depends on whether there is an economic expansion or recession since this has cash flow implications.

Further, expected costs of debt (bankruptcy costs and agency conflicts between bondholders and shareholders) depend on probability of default and loss given default both of which should depend on the current state of the economy (Harkbarth et al, 2006). An economic intuition indicates that, economy's business cycle phase should be an important determinant of capital structure decisions. Studies conducted by Fanelli and Keifman (2002) and Bebczuk (2000) have indicated that credit markets are markedly segmented in Argentina and that the volatility of the environment and external shocks affects firms capital structure decisions.

It could also be argued that if a firm's cash flow and value is sensitive to exchange rate fluctuations, then the firm may have to issue some of its debt in foreign currencies and also ascertain in which currency its cash flow will be denominated. Still at the macroeconomic level, Fanelli et al. (2002) noted that, there is a trade-off between the benefits of matching the duration of the two sides of the balance sheet and the increased currency risk taken because of higher mismatching in the currency denomination of assets and liabilities.

Empirical results indicate that the major trends in stock-bond correlation are determined primarily by uncertainty of expected inflation. Korajczyk and Levy (2000) found that a firm's choice of security issuance is dependent on macroeconomic conditions and firm-specific variables. They postulate that firms tend to time the issuance of securities to periods of favorable macroeconomic conditions.

Drobetz et al (2007) noted when ascertaining the impact of macroeconomic factors on the speed of adjustment towards target leverage that firms adjust faster in favorable macroeconomic conditions than under unfavorable conditions. This implies that when interest rates are low and the risk of disruptions in the global financial systems are negligible; firms' speed of adjustment towards target leverage is faster. Banerjee et al (2004) have also argued that economy-wide factors should impact the speed of capital structure adjustment (Loof, 2004).

Antoniou et al. (2002) find that the capital structure choice of a firm is not only affected by its own specific characteristics, but also by its surrounding environment such as the general health of the economy, the existence of a stock market as well as the size of the banking sector. Choe et al. (1993) argue that adverse selection costs vary counter-cyclically to explain the general increases in equity issues during expansion.

Harkbarth et al.(2006) document that macroeconomic conditions determine both the pace and the size of capital. Therefore, the timing of capital structure target should not only consider firm level characteristics, but due consideration should also be given to the state of the economy. Henderson et al. (2006) document that for debt issues a negative relationship between the level of interest rates and the quantity of long- and short-term debt issued (Graham and Harvey, 2001). In all of this, the direction of impact of macroeconomic factors on capital structure decisions of firms is not clear.

The Nairobi Stock Exchange

The Stock Exchange is a market that deals in the exchange of securities issued by publicly quoted companies and the Government.

The Nairobi Stock Exchange was formed in 1954 as a voluntary organization of stock brokers registered under the societies Act after getting clearance from the London Stock Exchange to recognize it as an overseas stock exchange. The NSE is now one of the most active capital markets in Africa in terms of trading volumes, it has grown over the years and has undergone reforms culminating to live trading in September 2006 eliminating the need of stock brokers sending dealers to the trading floor. The administration of the Nairobi Stock Exchange Limited is located on the 1st Floor, Nation Centre, Kimathi Street, Nairobi.

As a capital market institution, the Stock Exchange plays an important role in the process of economic development. It helps mobilize domestic savings thereby bringing about the reallocation of financial resources from dormant to active agents. Long-term investments are made liquid, as the transfer of securities between shareholders is facilitated. The Exchange has also enabled companies to engage local participation in their equity, thereby giving Kenyans a chance to own shares (NSE, 2007). Companies can also raise extra finance essential for expansion and development. To raise funds, a new issuer publishes a prospectus which gives all pertinent particulars about the operations and future prospects and states the price of the issue. A stock market also enhances the inflow of international capital. They can also be useful tools for privatization programmes. Development of the bond market is important in any market as makes financial and capital market more complete by generating market interest rates that reflect the opportunity cost of funds at each maturity. This is essential for efficient investment and

financing decisions. Moreover the existence of tradable instruments helps risk management.

Bonds are becoming increasingly active in Kenya, and the bond market at the Nairobi Stock Exchange (NSE) is proving a good place to raise medium to long term capital, according to a report by the African capital market news. The report said as in most African countries, the bond market is not well developed and has been dominated by government bonds and a few corporate bonds.

The Kenya Government is also keen to boost the bond market. In recent budget submissions, Finance Minister Uhuru Kenyatta reduced withholding tax from 15% to 10% on bonds with at least a 10-year maturity in order to encourage long-term investment. He also announced the reduction of listing fees to encourage more listings. CMA Chief Executive Officer is reported as saying: "A Bond Steering Committee to oversee the overall implementation of the establishment of an OTC market for bonds has been meeting in June and it is expected to put in place appropriate structural arrangements for the market for the bonds,"

A flourishing corporate bond market contributes to deepening of the capital market, is a source of fund for infrastructure and facilitates competition in the financial services. With developed bonds market banks can price debt more efficiently. These developments may result in changes in the capital structures of companies in Kenya

Currently the NSE is made up of 55 listed companies two of which are suspended and nineteen member firms (stock broking firms). (NSE, 2010). These members of the Nairobi Stock Exchange transact business mainly on the within Nairobi stock market, with a

limited proportion of business conducted in foreign securities through overseas agent stocks are first brought to the market and sold to investors. In the secondary market existing shares are traded among investors. (Ross, Westerfield and Jordan, 2000).

1.2 Statement of the Problem

The issue of finance has been identified as an immediate reason why businesses in developing countries fail to start or to progress. It is imperative for firms in developing countries to be able to finance their activities and grow over time if they are ever to play an increasing and predominant role in providing employment as well as income in terms of profits, dividends and wages to households. Following on from the pioneering work of Modigliani and Miller (1958) on capital structure, conflicting theories of capital structure have been developed. They are namely static trade-off, pecking order, and agency cost theories.

Each theory presents a different explanation of corporate financing. The trade-off theory is concerned with the trade-off between debt tax shields (or tax saving) and bankruptcy costs, according to which an optimal capital structure is assumed to exist. The pecking order theory assumes hierarchical financing decisions where firms depend first on internal sources of financing and, if these are less than the investment requirements, the firm seeks external financing from debt as a second source, then equity as the last resort. The agency cost theory assumes that debt presents fixed obligations (debt interests are payable to principals to pay) that have to be met by the firm. These obligations are assumed to take over the firm's free cash flow. How, therefore, prevents managers from over consuming the firm's financial resources.

It was recognized that the three theories are "conditional" in a sense that each works on under its own assumptions and propositions (Myers, 2001). That is, none of the three theories can give a complete picture of the practice of capital structure. This means that firms can pursue capital structure strategies that are conditional as well. Therefore, the interrelationships between and among the three theories of capital structure call for further examination which this paper seeks to find.

It was also found out that studies on the determinants of capital structure include selected determinants in a regression equation. The results in many cases turned out to be mixed. This is what Fama and French (2002) referred to as the two theories of capital structure (trade-off and pecking order) share many common predictions about the determinants of leverage.

Many empirical studies have tried to explain the factors that affect on capital structure choice. Most capital structure studies to date are based on data from developed countries. For example, Rajan and Zingales (1995) use data from the G-7 countries, Bevan and Danbolt (2000 and 2002) utilise data from the UK, Antoniou et al, (2002) analyse data from the UK, Germany, and France and Hall et al, (2004) used data from European SMEs.

There are few studies that provide evidence from developing countries, for example Booth et al, (2001) analyse data from ten developing countries (Brazil, Mexico, India, South Korea*, Jordan, Malaysia, Pakistan, Thailand, Turkey and Zimbabwe), Omet and Nobanee (2001) uses data from Jordan. Of the capital structure studies, some have used cross-country comparisons based on data from particular region. For example, Deesomsak et al, (2004) analyse data from the Asia Pacific region.

According to Agca and Mozumbar (2004), the conflicting nature of the existing evidence on the pecking order theory is due to the difference between financing practices of large and small firms and the skewness of firm size distribution

Though several studies have been conducted in Kenya on capital structure, these studies have had conflicting results. These studies include Odinga (2003) who finds that there is a significant negative relationship between profitability, non debt tax shield but an insignificant relationship of risk, growth and size with capital structure, Chonde (2005) finds high correlation between profitability and leverage and a weak negative relationship between size and leverage, Kiogora (2000) concludes that there is a negative relationship between the business risk of a company and leverage.

According to Kiogora (2000), companies within a sector have similar capital structure. Her findings indicate that there are differences in the capital structure among industry groupings and firms within a given sector tend to cluster towards some target equity/total asset ratio. Omondi (1996) clustered his sample companies by sector as classified at the NSE and found that the capital structures of firms on the sectoral basis are quite different which he arrived at by testing the following variables using correlation analysis (asset structure, profitability, interest rate changes, growth, age and ownership). He concluded that industrial class plays a significant role in capital structure. Ndirangu (1992) and Matibe (2005) show that there is a trend to avoid debt for companies without state interests. Ndirangu (1992) found that the risk of operation increases with the use of debt and therefore that capital mix is determined by the perceived risk as a result of debt. This suggests that despite MM (1963) hypothesis of increase of value of firms by use of debt

firms quoted on NSE still avoid debts. To mitigate this, Matibe (2005), suggests that lending institution should offer funds at reasonable rates that will attract corporate borrowers and even off shore borrowers who seem to have an even greater aversion to debt. Kamere (1987) some factors have more influence than others on capital structure. According to Jensen and Meckling (1976), the use of debt limits management's ability to reduce the firm value through incompetence or perquisite consumption. Hence, leverage results in maximization of the value of the firm.

Omondi (1986) examined listed companies between the periods 1987-1984. He studied the following variables; industry class, asset structure, profitability, interest changes, growth ownership structure found no relationship between size and capital structure. Kinyua (2001) investigating capital structure for small and medium enterprises concluded that there was negative relationship between profitability, growth, asset structure and capital structure but positive relationship for enterprise's age.

Due to the above conflicting results from Kenyan researchers in particular and the fact that Kenyan situation is very different from the developed world's situation where most of these studies have been carried out, there is need to conduct a research on the determinants of capital structure of firms listed on the Nairobi Stock exchange with the main goal of determining whether the three theories of the determinants of capital structure are applicable to companies in Kenya. Further, this study uses additional variables as compared to other studies conducted in Kenya. For example, in addition to variables used by Odinga, (2003), this study has used Dividend policy, age and tax attributes.

as used by various studies on the determinants of the capital structure (Saeed, 2007; Ramlall, 2009).

This study also, provides further evidence of the capital structure theories pertaining to developing countries and examines the explanatory power of capital structure theories (determinants) applicable to companies listed in the Nairobi stock exchange and how the managers of those companies choose appropriate amount of debt for their firms.

In the recent past, more and more companies have become listed and the bond market has gradually grown at the NSE. Therefore an opportunity for companies to have easy access to long-term capital. This further underlines the importance of research on the functioning and financing decisions of companies quoted at the NSE.

This study seeks to carry out an investigation on the determinants of capital structure of firms quoted at the Nairobi Stock Exchange using a multivariate regression analysis

1.3. Objectives of the Study

To investigate the determinants of capital structure of companies quoted at the Nairobi Stock Exchange (NSE).

1.5 Significance of the study

The findings and deductions of this study will be of interest to:

Academicians- the study will be a contribution to the literature on capital structure and will help them understand the determinants of capital structure;

The Management of Companies- the study will give them a deeper understanding of their capital structure and what factors determine their capital structure;

Investors both current and potential ones- this study will enable them have a better understanding of factors influencing the capital decisions of the companies they want to invest in hence informed decisions;.

The policy makers in government and regulatory bodies will be enlightened on what influences the various mix of finance in specific companies and the impact that their policies will have structure.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter summarizes a review of the relevant literature. This chapter reviews theories of capital structure and information from other researchers who have carried out their research in the same field of study. The specific areas covered here are; concept of capital structure, Theories on Capital Structure

2.3 Theories on Capital Structure

The theoretical principles underlying the capital structure, financing and lending choices of firms can be described either in terms of the following theories:

2.3.1. Static Trade-off Theory

According to this theory, a firm's optimal capital structure is viewed as determined by a trade-off of the costs and benefits of borrowing, holding the firm's assets and investment plans constant (Myers, 1984).

The static trade-off choice encompasses several aspects, including the exposure of the firm to bankruptcy and agency cost against tax benefits associated with debt use. Bankruptcy cost is a cost directly incurred when the perceived probability that the firm will default on financing is greater than zero. One of the bankruptcy costs is liquidation costs, which represents the loss of value as a result of liquidating the net assets of the firm. This liquidation cost reduces the proceeds to the lender, should the firm default on finance payments and become insolvent. Given the reduced proceeds, financiers will

adjust their cost of finance to firms in order to incorporate this potential loss of value. Firms will, therefore, incur higher finance costs due to the potential liquidation costs (Cassar and Holmes, 2003).

Another cost that is associated with the bankruptcy cost is distress cost. This is the cost a firm incurs if non-lending stakeholders believe that the firm will discontinue. If a business is perceived to be close to bankruptcy, customers may be less willing to buy goods and services due to the risk of a firm not being able to meet its warranty obligations. In addition, employees might be less inclined to work for the business and suppliers less likely to extend trade credit. These stakeholders' behaviour effectively reduces the value of the firm. Therefore, firms which have high distress cost would have incentives to decrease debt financing so as to lower these costs. Given these bankruptcy costs, the operating risk of the firm would also influence the capital structure choice of the firm because firms which have higher operating risk would be exposed to higher bankruptcy costs, making cost of debt financing greater for higher risk firms. Research has found that high growth firms often display similar financial and operating profiles (Hutchinson and Mengersen, 1989).

Debt financing may also lead to agency costs. Agency costs are the costs that arise as a result of a principal-stakeholder relationship, such as the relationship between equity-holders or managers of the firm and debt holders. Myers and Majluf (1984) showed that, given the incentive for the firm to benefit equity-holders at the expense of debt holders, debt-holders need to restrict and monitor the firm's behaviour. These contracting behaviours increase the cost of capital offered to the firm. Thus, firms with relatively

higher agency costs due to the inherent conflict between the firm and the debt-holders should have lower levels of outside debt financing and leverage. However in the studies of firms listed in Nairobi Stock Exchange, Nyaboga (2008) found an overall weak relationship between capital structure and agency cost

Firms also consider within the static trade-off framework, the tax benefits associated with the use of debt. This benefit is created as the interest payments associated with debt are tax deductible while payments associated with equity such as dividends are appropriated from profit. This tax effect encourages the use of debt by firms as more debt increases the after-tax proceeds to the owner. The theory among other things predicts a positive relationship between tax and leverage.

2.3.2 The Pecking Order theory

The pecking order theory suggests that firms have a particular preference order for capital used to finance their businesses (Myers, 1984). Owing to the presence of information asymmetries between the firm and potential financiers, the relative costs of finance vary between the financing choices. Where the funds provider is the firm's retained earnings, meaning more information than new equity holders, the new equity holders will expect a higher rate of return on capital invested resulting in the new equity finance being more costly to the firm than using existing internal funds. A similar argument can be provided between the retained earnings and new debt-holders. In addition, the greater the exposure to the risk associated with the information asymmetries for the various financing choices besides retained earnings, the higher the return of capital demanded by each source. Thus, the firm will prefer retained earnings financing to debt, short-term debt over long-term

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debt and debt over equity. An empirical study by Gachoki (2005) concludes that firms listed in the Nairobi Stock exchange do not follow the pecking theory of capital structure. Many theories have been advanced on what affects the value of the firm. Modigliani and Miller in their original proposition advocate that the relationship between the leverage and the cost of capital is explained by the Net Operating Income Approach. According to them, the market value of the firm is not affected by the changes in the capital structure. The market value is found out by capitalizing the net operating income at the overall, 01 weighted average cost of capital, which is a constant. They showed that a company's capital structure is irrelevant in a perfect financial market because investors can accept the company's decision or reverse its effect on their portfolio by borrowing or lending their own money without adding costs to them. A perfect financial market has no transaction costs or taxes, information is instantaneously and freely available to everyone, securities are infinitely divisible, and the market is competitive.

2.3.3. MM Theory

The Modigliani and Miller (1958), in their study of capital structure developed the capital structure irrelevance proposition. They assumed a perfect market (no transaction or bankruptcy costs; perfect information); firms and individuals can borrow at the same interest rate; no taxes; and investment decisions aren't affected by financing decisions.

MM made two findings under these conditions. The first proposition was that the value of a company is independent of its capital structure. The second proposition stated that the cost of equity for a leveraged firm is equal to the cost of equity for an unleveraged firm, plus an added premium for financial risk that is as leverage increases, while the





burden of individual risk is shifted between different investors, total risk is conserved and hence no extra value created.. Thus, MM's proposition 1 is identical to the Net Operating Income (NOI) hypothesis.

MM'S original work of 1958 assumed zero corporate tax. 5 years after, they published a second article, which included the effects of corporate tax. They concluded that leverage would increase a firm's value because interest on debt is a tax-deductible expense, and hence, more of a leveraged firms operating income flows through to investors.

In rejection to NI approach, MM argued that for two firms identical in all aspects except for their capital structures, cannot command different market values or have different cost of capital. Their opinion is that if these two firms have different market values, arbitrage will take place to enable investors to engage in personal or homemade leverage as against the corporate leverage to restore equilibrium in the market. In their summary, they said that the value of a levered firm is equal to the value of unlevered firm in the same risk class.

2.3.4. Agency Theory

Agency theory posits that there is a potential conflict of interest between the shareholder (principal) and the management (agent). Managers will pursue their own interests and these may not be congruent with the shareholders' interests.

Debt financing may also lead to agency costs. Agency costs are the costs that arise as a result of a principal-stakeholder relationship, such as the relationship between equity-holders or managers of the firm and debt holders. Myers and Majluf (1984) showed that, given the incentive for the firm to benefit equity-holders at the expense of debt holders,

debt-holders need to restrict and monitor the firm's behaviour. These contracting behaviours increase the cost of capital offered to the firm. Thus, firms with relatively higher agency costs due to the inherent conflict between the firm and the debt-holders should have lower levels of outside debt financing and leverage. However in the studies of firms listed in Nairobi Stock Exchange, Nyaboga (2008) found an overall weak relationship between capital structure and agency cost. Jensen and Meckling (1976) proposed that when a firm issues outside equity it creates agency costs that reduce the value of corporate assets. Jensen (1986) and Williamson (1988) consider debt as a disciplining mechanism to ensure that managers pay out profit than building their own empires. Under the agency hypothesis, high leverage reduces the agency costs and increases firm value by constraining managers to act more in the interest of shareholders. Higher leverage can mitigate conflicts between shareholders and managers concerning the choice of investments (Myers, 1977), the amount of risk to undertake (Jensen and Meckling, 1976), and the condition under which the firm is liquidated (Harris and Raviv, 1990).

2.4. Empirical Studies

Researches in Business Economics, have always analyzed the processes of economic value creation as their main field of studies. Starting from the work of Modigliani and Miller (1958), capital structure became one of the main elements in determining value. Important, and still in vogue, is the debate between the two main theoretical perspectives, the trade-off approach, and the pecking order approach (Myers, 1984, Myers and Majluf, 1984).

The controversy that has emerged in trying to verify the validity of these theories (Har and Raviv, 1991) has stimulated an attempt to find solutions that can "strengthen theoretical hypotheses and improve econometric models, also solve the difficulties found when trying to apply the theories to reality.

The Traditional approach to valuation and leverage assumes that there is an optimal capital structure and that the firm can increase its total valuation through a judicious mix of equity and debt. According to this approach the cost of capital declines and the value of the firm increases with leverage to a prudent debt level. After reaching the optimal point where the benefits from tax equal the costs of bankruptcy, the cost of capital increases and the value of the firm declines (Brealey and Myers, 2001). The cost of capital declines with leverage because debt capital is cheaper than equity capital within a reasonable, or acceptable limit of debt (Solomon 1963). According to a study by Myer (1984) at this point the value of the firm is maximized.

In the same thread, Solomon (1963) argues that a firm with certain structure of assets and that offers net operating earnings of given size and quality, and given a certain structure of rates in the capital markets, there should be some specific degrees of financial leverage at which the market value of the firm's security will be higher (or the cost of capital will be lower) than at other degrees of leverage.

Durand (1959) suggested The Net Income Approach in which the market value of a firm is not affected by the capital structure changes. The market value of the firm is ascertained by capitalizing the net operating income at the overall cost of capital which is constant.

The net Income approach is based on the assumptions that; the overall cost of capital remains constant for all degree of debt equity mix, the market capitalizes the value of firm as a whole thus the split between debt and equity is not important, the use of less costly debt funds increases the risk of shareholders and this causes the equity capitalization rate to increase. Thus, the advantage of debt is set off exactly by increase in equity capitalization rate; there are no corporate taxes and the cost of debt is constant. Under NOI approach since overall cost of capital is constant, therefore there is no optimal capital structure rather every capital structure is as good as any other and so every capital structure is optimal one.

If the Net Operating Income assumptions are true, then the capital structure decisions are unimportant (Gapenski et al, 1988.). However, in a world with corporate taxes, both the Net Income and the Net Operating Income approaches would indicate that the optimal capital structure calls for virtually a hundred per cent debt. (Gapenski & Eugene 1988).

Empirical results also indicate that the major trends in stock-bond correlation are determined primarily by uncertainty of expected inflation. Korajczyk and Levy (2000; found that a firm's choice of security issuance is dependent on macroeconomic conditions and firm-specific variables. They postulate that firms tend to time the issuance of securities to periods of favorable macroeconomic

Drobetz et al (2007) noted when ascertaining the impact of macroeconomic factors on the speed of adjustment towards target leverage that firms adjust faster in favorable macroeconomic conditions than under unfavorable conditions. This implies that when interest rates are low and the risk of disruptions in the global financial systems are

negligible; firms' speed of adjustment towards target leverage is faster. Banjee et al (2004) have also argued that economy-wide factors should impact the speed of capital structure adjustment (Loof, 2004).

Antoniou et al. (2002) find that the capital structure choice of a firm is not only affected by its own specific characteristics, but also by its surrounding environment such as general health of the economy, the existence of a stock market as well as the size of banking sector. Choe et al. (1993) argue that adverse selection costs vary counter-cyclically to explain the general increases in equity issues during expansion.

Harkbarth et al.(2006) document that macroeconomic conditions determine both the pace and the size of capital. Therefore, the timing of capital structure target should not only consider firm level characteristics, but due consideration should also be given to the state of the economy. Henderson et al. (2006) document that for debt issues a negative relationship between the level of interest rates and the quantity of long- and short-term debt issued (Graham and Harvey, 2001). In all of this, the direction of impact of macroeconomic factors on capital structure decisions of firms is not clear.

Though some studies have been conducted in Kenya about the determinants of capital structure, the results of the studies have been conflicting. According to Kiogora (2000), companies within a sector have similar capital structure. Her findings indicate that there are differences in the capital structure among industry groupings and firms within a given sector tend to cluster towards some target equity/total asset ratio. Omondi (1996) found that the capital structures of firms on the sectoral basis are quite different. He concluded that industrial class plays a significant role in capital structure.

Ndirangu (1992) and Matibe (2005) show that there is a trend to avoid debt for companies without state interests. Ndirangu (1992) found that the risk of operation increases with the use of debt. This suggests that despite MM (1963) hypothesis of increase of value of firms by use of debt, firms quoted on NSE still avoid debts. To mitigate this, Matibe (2005), suggests that lending institution should offer funds at reasonable rates that will attract corporate borrowers and even off shore borrowers who seem to have an even greater aversion to debt.

Kamere (1987) in his study, "factors that affect quoted companies" suggests that some factors have more influence in trying to understand the financing decisions of firms, the issue of firm size and how it relates to capital structure emerges.

Nyaboga(2008) investigated the relationship between capital structure and agency cost for companies listed in NSE, she found an overall weak relationshipbetween capital structure and agency cost but a positive relationship for high growth firms.

Orua (2009) analyzed the relationship between capital structure and financial performance in microfinance institutions in Kenya and found that institutions funded by external sources did not perform like institutions funded internally, this was due to interest cost paid by the firms.

2.5. Determinants of Capital Structure

Following from these theoretical standpoints, a number of empirical studies have identified firm-level characteristics that affect the capital structure of firms. Among these characteristics are age of the firm, size of the firm, asset structure, profitability, growth, firm risk, tax and ownership structure (Omondi 1996, Kiogora 2000). In the case of

SMEs, other heterodox factors such as industry, location of the firm, entrepreneur's educational background and gender, form of business, and export status of the firm may explain their capital structure.

2.5.1 Firm size

Smaller firms, may find it relatively more costly to resolve information asymmetries with lenders thus, may present lower debt ratios (Castanias, 1983). Size has been viewed as determinant of a firm's capital structure. Larger firms are more diversified and hence have lower variance of earnings, making them able to tolerate high debt ratios (Castanias 1983; Titman and Wessels, 1988; Wald, 1999). Lenders to larger firms are more likely to get repaid than lenders to smaller firms, reducing the agency costs associated with debt.

It is generally believed that there are economies of scale in bankruptcy costs: larger firms face lower unit costs of bankruptcy than smaller firms, as shown in Prasad et al. (2001).

Larger firms may be taken as evidence that these firms are less risky (Kim and Sorensen 1986). Cosh and Hughes (1994) add that if operational risk is inversely related to firm size, this should predispose smaller firms to use relatively less debt. Al-Sakran, 2001 Hovakimian et al., 2004) in their results suggest that smaller firms are more likely to use equity finance, while larger firms are more likely to issue debt rather than stock. In Ghanaian study, Aryeetey et al. (1994) found that smaller enterprises have greater problems with credit than larger firms. Their results showed that the success rate for larger firms applying for bank loans was higher than that of smaller firms.

In a study of six African countries, Bigsten et al. (2000) also showed that about 64% of micro firms, 42% of small firms and 21% of medium firms appear constrained, while thi

is only 10% for the large firms. According to Titman and Wessels (1988), small firms seem to use more short-term finance than their larger counterparts because smaller firms have higher transaction costs when they issue long-term debt or equity. They further add that such behaviour may cause a "small firm risk effect", by borrowing more short term. These types of firms will be more sensitive to temporary economic downturns than larger, longer-gearred firms.

2.5.2 Asset structure

Bradley et al. (1984) asserts that firms that invest heavily in tangible assets also have higher financial leverage since they borrow at lower interest rates if their debt is secured with such assets. The asset structure of a firm plays a significant role in determining its capital structure. The degree to which the firm's assets are tangible should result in the firm having greater liquidation value (Titman and Wessels, 1988; Harris and Ravin 1991). It is believed that debt may be more readily used if there are durable assets that serve as collateral (Wedig et al., 1988). By pledging the firm's assets as collateral, the costs associated with adverse selection and moral hazards are reduced. This will result in firms with assets that have greater liquidation value having relatively easier access to finance at lower cost, consequently leading to higher debt or outside financing in the capital structure.

In the case of small firms, the concession of collateral reduces the under-investment problem in the firms by increasing the probability of obtaining credit -functioning also as a management instrument in conflicts between entrepreneur and financiers, since the degree of the entrepreneurs' involvement in sharing business risk, by granting personal

collateral, is clearly evident. It is further suggested that bank financing will depend upon whether the lending can be secured by tangible assets (Storey 1994; Berger and Udell 1998). Kim and Sorensen (1986), however, found a significant and negative coefficient between depreciation expense as a percentage of total assets and financial leverage. Marsh (1982) maintains that firms with few fixed assets are more likely to issue equity. In a similar work, MacKie-Mason (1990) concluded that a high fraction of plant and equipment (tangible assets) in the asset base makes the debt choice more likely. Booth et al. (2001) suggest that the relationship between tangible fixed assets and debt financing is related to the maturity structure of the debt. In such a situation, the level of tangible fixed assets may help firms to obtain more long-term debt, but the agency problems may become more severe with the more tangible fixed assets, because the information revealed about future profit is less in these firms. If this is the case, then it is likely to find a negative relationship between tangible fixed assets and debt ratio.

2.5.3 Growth

Agency problems are likely to be more severe for growing firms, because they are more flexible in their choice of future investments. Thus, the expected growth rate should be negatively related to long-term leverage. Moreover, firms with high-growth opportunities provide a positive signal about the firm's future performance. Hence institutional investors prefer to invest in high-growth firms rather than lower ones. In addition, Hovakimian et al. (2004) suggest that high-growth firms may bring more capital gains to institutional investors than lower growth ones. This is because institutional investors, as taxpayers, would prefer to invest in capital-gain stocks to delay tax payments and to

avoid double taxation. Thus, a firm's growth opportunities are considered to be a positive signal for institutional investors. The study uses market-to-book ratio (MB) as an indicator of the growth opportunities of a firm.

2.5.4 Profitability

The relationship between firm profitability and capital structure can be explained by the pecking order theory (POT), which holds that firms prefer internal sources of finance to external sources. The order of the preference is from the one that is least sensitive (and least risky) to the one that is most sensitive (and most risky) that arise because of asymmetric information between corporate insiders and less well informed market participants (Myers, 1984). By this token, profitable firms with access to retained profits can rely on them as opposed to depending on outside sources (debt). Murinde et al. (2004) observe that retentions are the principal source of finance. Titman and Wessels (1988) and Barton et al. (1989) agree that firms with high profit rates, all things being equal, would maintain relatively lower debt ratios since they are able to generate such funds from internal sources.

2.5.5 Firm risk

The level of risk is said to be one of the primary determinants of a firm's capital structure (Kale et al., 1991). The tax shelter-bankruptcy cost theory of capital structure determines a firm's optimal leverage as a function of business risk (Castanias, 1983). Given agency and bankruptcy costs, there are incentives for the firm not to fully utilize the tax benefits of 100% debt within the static framework model. The more likely a firm is exposed to such costs, the greater their incentive to reduce their level of debt within its capital

structure. One firm variable that affects this exposure is the firm's operating risk; in that the more volatile the firm's earnings stream, the greater the chance of the firm defaulting and being exposed to such costs. According to Johnson (1997), firms with more volatile earnings growth may experience more situations in which cash flows are too low form debt service. Kim and Sorensen (1986) also observe that firms with a high degree of business risk have less capacity to sustain financial risks and thus use less debt. Despite the broad consensus that firm risk is an important determinant of corporate debt policy, empirical investigation has led to contradictory results. Esperan^a et al. (2003) found positive associations between firm risk and both long-term and short-term debt. on the other hand Lutomia(2002) conluded that there was no relationship between capital structure and systematic risk of its common stocks.

2.5.6 Taxation

Numerous empirical studies have explored the impact of taxation on corporate financing decisions in the major industrial countries. Some are concerned directly with tax policy for example: MacKie-Mason (1990), Shum (1996) and Graham (1999). MacKie-Mason (1990) studied the tax effect on corporate financing decisions and provided evidence of substantial tax effect on the choice between debt and equity. He concluded that changes in the marginal tax rate for any firm should affect financing decisions. Graham (1999) concluded that in general, taxes do affect corporate financial decisions, but the magnitude of the effect is mostly "not large".

2.5.7 Non debt tax shields

Other items other than interest expense contribute to a decrease in tax payments, DeAngelo and Masulis (1980) show that there are other alternative tax shields such as depreciation, research and development expenses, investment deductions, etc., that could substitute the fiscal role of debt. Empirically, this substitution effect is difficult to measure, as finding an accurate proxy for tax reduction that excludes the effect of economic depreciation and expenses is tedious (Titman and Wessels, 1998). Dammon and Senbet (1988) argue that there is also an income effect when investment decisions are made simultaneously with financing decisions. They suggest that increases in allowable investment-related tax shields due to changes in the corporate tax code are not necessarily associated with reduction in leverage at the individual firm level when investment is allowed to adjust optimally. They explain that the effect of such an increase depends critically on the trade off between the "substitution effect" advanced by DeAngelo and Masulis (1980) and the "income effect" associated with an increase in optimal investment.

2.5.8. Liquidity

Ozkan (2001) found a negative relationship between liquidity and leverage. A negative relationship is expected between liquidity and leverage in market-oriented economies because managers tend to prefer internal liquidity. When there is a close link between a company and its financier, information asymmetry is reduced to its minimum level and hence manager's appetite for internal liquidity becomes less important (Ghossan and Fadi, 2002). Liquid firms may also have impetus to pay out dividends regularly and this

may send out a positive signal. Jensen et al.,(1992) provided empirical evidence to suggest that greater dividends are associated with greater debt use. However, the reaction to dividend payments may send out negative signals to investors when there is a decline in a constant dividend payments or a reduction in the amount paid out. This eventually causes a decline in the price of firm's stock (Brigham and Houston, 2004).

2.5.9 Dividend policy

There is considerable debate on how dividend policy affects firm value. Some researchers believe that dividends increase shareholder wealth; Higher cash dividends is seen to reflect low capital demand, previous studies suggest a negative relationship between cash dividend and capital structure, others believe that dividends are irrelevant (Miller and Scholes, 1978), and still others believe that dividends decrease shareholder wealth (Litzenberger and Ramaswamy, 1979). Financial management research on financing policy decisions, including the dividend decision, considers investment as an exogenous variable, or at least as having a fixed, known distribution. One group of financial theorists (Martin, Petty, Keown, and Scott, 1991; Miller, 1986; and Miller and Modigliani, 1961) provides a hypothesis for dividend policy irrelevance.

Titman (1984) develops a model that hypothesizes a possible interaction between investment and financing decisions. His model suggests that equity holders have incentives to maximize the wealth of non-investor stakeholders in a firm. These stakeholders suffer costs in the event the firm liquidates and the firm may also bear some costs of uncertainty. Its customers may believe they will bear liquidation costs if the firm goes out of business, and they will discount the price they are willing to pay for its goods

and services to reflect these anticipated costs. Customers can thus use capital structure as one indicator of the future default potential of their vendors.

2.6. Conclusion

There have been various studies done on capital structure but few studies have been carried on the determinants of capital structure in Kenya and specifically on the relationship between firm size and capital structure. This chapter has reviewed the various theories and empirical studies done bringing out the contradicting views of the various researchers. .

Capital structure determinants are various depending on the nature of the firm, liquidity risk factor of the company, growth prospects, taxation and age of the firm. Some theories state that financing decisions follow a hierarchical order, while others state that firms have a target optimal ratio of debt to equity that they adjust their capital structure to achieve it. No study has been carried to highlight the relationship between firm size and capital structure of the companies quoted at the NSE. The study will address the knowledge gap on the relationship between firm size and capital structure of companies quoted at the Nairobi Stock Exchange and the determinants of capital structure of the companies quoted at NSE.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets to explain the population interest, the type secondary data used, source of data and the techniques of analysis used, thus its divided into research design, population of study. A study was done for the period between year 2003 and 2009 to establish what the determinants of capital structure are.

3.2 Research Design

The study adopted a causal design. The method is appropriate for the study as the study seeks to determine whether there is a relationship between variables identified and the capital structure of firms. In this case, the research problem is the investigation into the determinants of capital structure of the quoted companies.

3.3 The Population

The population of interest in this study comprised of the 55 currently listed companies on the Nairobi Stock Exchange to establish if a worthwhile relationship exist between capital structure and the factors identified as determining capital structure.

3.4 Sampling

The sample for this study focused on non- financial firms, this restriction was necessary because banks and insurance firms are highly leveraged and are also subjected to specific regulation concerning their capital structure. The study also include only those companies

that were listed throughout the years 2003-2009. Therefore the sample size for this study was 34 companies which met the criteria for selection.

3.5 Data collection

The study utilized secondary data obtained from the annual financial statements of companies quoted on the Nairobi Stock Exchange. Data used was collected from the individual companies website and from the NSE handbook.

3.6 Data analysis

The SPSS version 17 software was used to carry out the analysis of the data obtained. The study used seven independent variables. The researcher constructed a Regression model to analyze the reliance of leverage (the dependent variable) on the independent variables outlined below. Bryman (1998) states that regression has become one of the most widely used techniques in the analysis of such data. From the above the multiple regression variables will be:

3.6.1 Multiple Regression Variables

The study was based wholly on secondary data available from the published financial statements. These reports of the firms will be available from Nairobi Stock Exchange and other sources. The following information will be extracted from financial statement; The dependent variable is Leverage, which was calculated as the ratio of debt to equity ratios.

While the independent variables will be made up of;

- (1) Size, which will be measured by natural log of sales (ln sales).

- (2) Profitability, which will be measured by ratio of Earnings before Interest and Tax to total assets.
- (3) Growth of the firm will be measured by book value of assets less book value of equity divided by book value of assets (total assets- equity/ total assets)
- (4) Non-debt tax shield, which will be measured by depreciation divided by total assets.
- (5) Liquidity of the firm represented by ratio of current assets to current liabilities.
- (6) Asset structure measured by fixed assets/total assets
- (7) Dividend policy measured by cash dividend/stockholders equity
- (8) Firm risk -variance of the return on assets
- (9) Taxation - the ratio of tax paid to operating income for firm

3.6.2 Model

Data collected on the variables of interest within the period of study were analyzed through descriptive statistics. Further multiple regression and correlation analysis was used to explain the nature and significance of relationship between changes in the response variables (leverage) and change in the prediction variables (determinants) identified in the study. The regression model used is as shown below;

Equation 1: regression equation

$$Y = p_0 + p_1X_1 + p_2X_2 + p_3X_3 + p_4X_4 + p_5X_5 + p_6X_6 + p_7X_7 + p_8X_8 + p_9X_9 + p_{10}X_{10} + p_{11}X_{11} + e$$

Where Y= leverage

X1-X11= predictor variables where(independent variables),

X1=profitability

X2=growth

X3=size

X4= liquidity

X5=non-debt tax shield

X6=asset structure

X7= Firm's risk

X8=dividend policy

X9 = Tax

pi- p11 regression coefficients- define the amount by which Y is changed for every unit change in predictor variables.

The test was whether the independent variables (assets, size, profitability, growth, non-tax and liquidity) are capable of predicting leverage. The means for all the factors were calculated on an annual basis. Regression analysis was used to compute the significance of the relationship between capital structure and each respective factor.

CHAPTER FOUR: DATA ANALYSIS RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the results of data analysis and findings. Data of targeted listed companies was collected from published financial statements available at the Nairobi Stock Exchange. This was then used to compute the various ratios which constitute variables in this study. The variables were then entered into SPSS (V17). Data analysis was then conducted using regression analysis employing the fixed effect model of panel data analysis. Useful deductions were made with the aid of p-values, magnitude of t statistic, magnitude and sign of regression coefficients and the coefficient of determination (R-Square).

The chapter starts off by presenting summary of companies involved in the study. It then presents test of fixed effect of Segment and year on leverage. This is followed by regression analysis to determine the impact of various factors on leverage. The chapter concludes with a summary of findings and discussion.

4.2. Descriptive statistics

Size: Industrial and allied segment had the highest average size of 15.18 while Alternative market segment had the lowest size of 12.2 as measured by natural log of sales. The mean size was 14.44.

Profitability: again industrial and allied had the highest profitability (mean 0.12) while alternative had the lowest (mean 0.05). The overall mean was 0.10.

Liquidity: Alternative market segment had the highest liquidity (4.07) while commercial and services had the lowest (mean 1.33). The overall mean was 2.12.

Asset structure: The Agriculture market segment had the highest proportion of fixed assets to total assets (mean 0.77). The lowest was in the industrial and allied (mean 0.49). The overall mean was 0.56.

Dividend Policy: this was measured using dividend payout ratio. Industrial and allied had the highest mean ration (0.66) while agriculture had the lowest mean (0.02). The overall mean was 0.46.

Taxation: this ranged between 0.31 and 0.36 with a very small standard deviation of 0.16. Agriculture had the highest mean at 0.36 while industrial and allied had the lowest (0.31).

Risk: This was measured using variance of Return on Assets. Alternative segment had the highest average risk (mean 294.91) while Industrial and allied market segment had the lowest risk (mean 79.55). The overall risk among listed companies was 127.18.

Growth: Industrial and allied had the highest growth at 0.18 while alternative had the lowest at 0.05. The overall growth was 0.14.

Non-debt Tax Shield: this is measured by the ratio of fixed assets to total assets the overall NDTS .0395

Leverage: Commercial and services market segment had the highest leverage (mean 2.2) while agriculture had the lowest (mean 0.67). The overall leverage was 1.9.

Variable	Segment				Overall (across all seg	
	Alternative	Industrial and allied	Commercial & Services	Agriculture		
	Mean	Mean	Mean	Mean	Mean	Std. De^
Size	12.20	15.10	15.18	14.00	14.4493	
Profitability	.05	.12	.10	.08	.1005	
Liquidity	4.07	1.82	1.33	1.60	2.1208	
Asset structure	.71	.49	.51	.77	.5637	
Dividend policy	.39	.66	.28	.02	.4618	
Taxation	.33	.31	.34	.36	.3236	
risk	294.91	79.55	90.40	118.31	127.1789	22
Growth	.05	.18	.17	.12	.1432	
NDTS	.36	.37	.32	.29	.03945	
LEVERAGE	2.20	1.31	3.61	.67	1.9005	

Table 1: descriptive statistics

4.3 Fixed effects

Fixed-effects (FE) explore the relationship between predictor and outcome variables within an entity (in this case, Business segment). Each entity has its own individual characteristics that may or may not influence the predictor variables.

In examining FE this study utilizes the mixed models utility in SPSS. The results were as shown in the tables below.

4.3.1 Panel data analysis: Tests of fixed effect of Segment

The tables below present the results of fixed effect regression analysis. Business Segment does not have an impact on leverage (p-value 0.184). The next table shows a clearer view of the coefficients of segment dummies, all of which are not significant (p-values > 0.05). Thus it was concluded that capital structures is invariant across business segments among NSE listed companies.

Type III Tests of Fixed Effects ³				
Source	Numerator df	Denominator df	F	
Intercept	1	236	14.279	
Segment	3	236	1.628	

a. Dependent Variable: LEVERAGE.

Table 2: Type III tests of fixed Effects of business segment Results

Estimates of Fixed Effects ³							
Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Boun
Intercept	1.312054	.625510	236	2.098	.037	.079758	2.5443
[Segment=Agriculture]	-.641117	1.526850	236	-.420	.675	-3.649114	2.3668
[Segment=alternative]	.890981	1.175545	236	.758	.449	-1.424921	3.2068

[Segment=C S]	2.294882	. 1.149986	236	1.996	.047	.029334	4.5604
[Segments A]	0 ^a	0					

a. This parameter is set to zero because it is redundant.

b. Dependent Variable: LEVERAGE.

Table 3: Estimates of fixed effects

4.3.2 Panel data analysis: Tests of fixed effect of Year

The year for which the data is captured could also have some underlying factor affecting leverage e.g. new government policies. This study attempted to measure this fixed effect in the panel data. The results as shown in the two tables below show that year has no effect on leverage. Thus it is concluded that all variables of interest are time invariant hence OLS regression method can be applicable to the pooled data in determining the relation between leverage and its predictors.

Type III Tests of Fixed Effects ³				
Source	Numerator df	Denominator df	F	
Intercept	1	232	18.452	
Year	7	232.000	.959	

a. Dependent Variable: LEVERAGE.

Table 4: Type III tests of fixed Effects of year.

The table below shows the estimates of fixed effects of specific years for which data was used. Though year 2003 seems to have a very great effect as reflected by its estimate of 3.2, this effect is, however, not statistically significant ($P\text{-Value } 0.072 > 0.05$). The same applies to all other years under investigation. It was thus concluded that the data was time-invariant.

4.4 Regression analysis

A multivariate regression analysis of the form:

$$Y = p_0 + p_1X_1 + p_2X_2 + p_3X_3 + p_4X_4 + p_5X_5 + p_6X_6 + p_7X_7 + p_8X_8 + p_9X_9 + e$$

Was fitted to the pooled data (where y = leverage and X_i = Predictors).

The results were as shown below:

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.423 ^a	.179	.144	

a. Predictors: (Constant), risk, Asset structure, Taxation, Dividend policy, Liquidity, Growth, Profitability, Size

ANOVA ^b					
Model		Sum of Squares	df	Mean Square	F
1	Regression	1472.572	8	184.071	5.078
	Residual	6742.605	186	36.251	
	Total	8215.177	194		

a. Predictors: (Constant), risk, Asset structure, Taxation, Dividend policy, Liquidity, Growth, Profitability, Size

c. Dependent Variable: LEVERAGE

Table 5: Model Statistics

Coefficients ³					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	
1	(Constant)	1.667	4.245		.393
	Size	.368	.248	.119	1.479
	Profitability	-19.576	4.728	-.300	-4.141
	Growth	-.755	1.477	-.035	-.511
	Liquidity	-.133	.268	-.039	-.497
	Asset structure	-4.818	2.249	-.153	-2.143

Dividend policy	.247	.652	.026	.378
Taxation	-3.244	3.243	-.068	-1.000
risk	.008	.002	.282	4.135
NDTS	.721	.725	.466	.6461

a. Dependent Variable: LEVERAGE

Table 6:regression Analysis results

4.4.1.1 Discussion of output of the regression model

The regression model yielded an R-square of 0.179. This implies that the predictors onl) account for 17.9% of the variability in leverage. However, the ANOVA output shows tha this relation is significant (P-value 0.000). The next sub-sections examine each of the factors in greater detail.

4.4.1.2 Size

The coefficient estimate for size is positive (0.368), but not significant (p-value 0.141) This means that the larger the organization, the higher the leverage. Similar results were found by Attaullah and Safiullah (2007) in a similar study carried out among Pakistan: listed companies. The results, though not conclusive, are indicative that larger firms tenc to use equity more than smaller firms. This is very well in accordance with Titman anc Wessels' (1988) argument that larger firms are more diversified and have lesser chances of bankruptcy that should motivate the use of debt financing. Attaullah and Safiullah

(2007) points out that Trade off theory suggests that firm size should matter in deciding an optimal capital structure because bankruptcy costs constitute a small percentage of the total firm value for larger firms and greater percentage of the total firm value for smaller firms. As debt increases the chances of bankruptcy, hence smaller firms should have lower debt ratio. In conclusion, however, this study fails to find sufficient evidence to link debt level with size of the organization among Kenyan listed companies.

4.4.1.3 Profitability

Profitability has the highest coefficient (-19.58) which is also significant (p-value 0.000). The coefficient is negative implying that profitability has a negative relation with leverage. The more profitable a company is, the less likely it is to use debt. This could be attributed to the use of retained earnings as a financing option in place of debt among the profitable companies. This finding validates pecking order theory that companies will prefer internal to external funds. Similar results were posted by Frydenberg (2001) Kinyua(2005). It is thus concluded that profitability is the greatest determinant of capital structure among Kenyan listed companies.

4.4.1.4 Growth

Growth has a small negative coefficient (-0.755) which is not significant (p-value 0.61). though not significant, this finding is indicative of the negative relation between growth and leverage. More conclusive result in support of this was found by Titman and Wessels (1988); Barclay, et al. (1995) and Rajan and Zingales (1995). This phenomenon is often

attributed to the fact that growing firms have more options of choosing between safe and risky ventures. Managers, being agent to shareholders, will try to go for risky projects and increase return to shareholders. Creditors will be unwilling to give funds to such firms as they will bear more risk for the same return. To compensate for the additional risk in growth companies, creditors will demand risk premium. Facing extra cost of debt, growing firms will use less debt and more equity. However, for this study, no conclusive prove is adduced to support the hypothesis that growth is negatively related with debt.

4.4.1.5 Liquidity

Liquidity has a negative relation with leverage (coefficient -0.133), but this relation is not statistically significant (p-value 0.620). Ozkan (2001) found a significant negative relationship between liquidity and leverage. A negative relationship is expected between liquidity and leverage in market-oriented economies because managers tend to prefer internal liquidity. This study however, fails to establish this relation conclusively. As such it was concluded that liquidity has no effect on leverage among Kenyan listed companies.

4.4.1.6 Asset structure

Asset structure often referred to as tangibility has a negative relationship with leverage (Coefficient -4.82). This relation was found to be significant at the 5% significance level (p-value 0.033). this result contradicts the static trade-off and agency theory and is also in contrast to an earlier finding by Rajan and Zingales (1995), Attaullah and Safiullah

(2007) who found that asset structure has significant positive relationship with leverage. However, this results somehow agree with the pecking order which argues that firms with less tangibility tend to finance their investments with external financing and they ought to prefer debt over equity, similar results to those found in the present study were found by Shah and Hijazi,(2004), Kinyua(2005) for short term debt. This relation means that the greater the proportion of fixed assets to total assets, the lower the debt. This seems to go against the norm. However, as can be seen from the R-square, this model only explains 17% of the variability in leverage implying that there exist many other factors which could have a potentially overriding effect on amount of leverage.

4.4.1.7 Dividend policy

Dividend policy was measured by dividend payout ratio which is a proportion obtained by dividing dividends per share by earnings per share. The regression analysis shows that dividend policy has a positive but insignificant relationship with leverage (Coefficient 0.247, p-value 0.706). This means that dividend policy does not have any statistically significant impact on leverage among NSE listed companies. This finding is similar to previous studies Kehar (2004).

4.4.1.8 Taxation

To an extent, tax is believed to be an incentive to the usage of debt as a means of financing. This is because interest on debt is an allowable expense in the computation of

tax. This is however balanced off by bankruptcy costs which could result due to excessive debt.

However, the results of this study showed a non-significant negative correlation between the proportion of tax to operating income and leverage.

4.4.1.9 Non-Debt Tax Shield

Non debt tax shield displays a positive relation with financial leverage and found statistically insignificant. This positive relation verifies that firms with high non debt tax shield use more debt than equity. This evidence is consistent with Static trade-off theory for only short term debts. From our results, we claim that both Static trade-off theory and Pecking order theory are partially accepted among the listed companies.

4.4.1.10 Risk

Risk as measured by the variance of return on assets was found to have a significant positive relationship with leverage (coefficient 0.008, p-value 0.000). This means that the higher the variability in return on assets the greater the debt. This goes against expectation since the greater the variability in return on assets, the higher the premium charged by creditors which is expected to make debt more expensive and less attractive.

CHAPTER FIVE : SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary and Conclusion

This report has analyzed the seven years data of listed firms in NSE 2003-2009, using a multi-variate regression model. Foremost intention was to test if listed firms Kenya follow any capital structure theory during the period 2003-2009. To measure this explanatory attributes were selected that are most accredited in academic and literary sphere of corporate capital structure. Afterwards these attributes were used in a regression model to answer the proposed question.

Three capital structure theories: Static trade-off theory, Pecking order theory and Agency cost theory were reviewed find out which one explains better the financial behavior of our sample firms. All these theories possess different traits to explain the corporate capital structure. Static trade-off theory suggests that optimal capital structure is a trade off between net tax benefit of debt financing and bankruptcy costs. Firms with high tangible assets will be in a position to provide collateral for debts, so these firms can raise more debt. Larger and high profitable firms maintain their high debt ratio, while firms with high growth rate use less debt financing. Pecking order theory states that firms prefer internal financing to external financing and risky debt to equity due to information asymmetries between insiders and outsiders of firm. Agency cost theory illustrates the financial behavior of firms in context of agent and principal relationship.

Results of this study show that asset structure has significant relationship with financial leverage. It shows that asset structure has a negative influence on firm's financial

decisions. This association is consistent with extended form of Pecking order theory of capital structure that deals with debt in context of short term and long term financing. While Static trade-off theory and Agency cost theory are not supported by our result. Size displays a positive but insignificant relation with financial leverage and therefore not a determinant of corporate financing patterns. However the results indicate that larger firms among the listed companies maintain high leverage ratios. Size's association with financial leverage supports Static trade-off theory and Agency cost theory but contradicts with Pecking order theory.

Negative relation between growth and leverage also found out not to be an important determinant of firm's financial behavior. In Kenya, listed firms with high growth rate use less debt financing. This negative relation between growth and financial leverage supports the findings of Titman and Wessels (1998). This can be explained that managers of these companies will go for risky project in which creditor will demand for risk premium.

For profitability, the study attained an inverse relation that supports Pecking order theory but opposes to Static trade-off theory. The results suggest that firms that are more profitable do not often finance their investments by debt source.

Non debt tax shield displays a positive relation with financial leverage and found statistically insignificant. This positive relation verifies that firms with high non debt tax shield use more debt than equity. This evidence is consistent with Static trade-off theory for only short term debts. Dividend policy as measured by the dividend pay-out ratio

indicate a positive but insignificant relationship this suggests that dividend policy does not explain the variations in leverage and so does taxation and liquidity.

5.2 Conclusions

From these results, profitability and asset structure can be said be the determinants of capital structure and that Pecking order theory are partially accepted among the listed companies.

5.3 Limitations of the Study

The study considered only considered firm specific characteristics and did not consider other external factors that could affect the financing decisions of a company.

There was also limitation of time as it was carried out as part requirement for the award of Master of business administration degree; the limited timeframe limited the scope for wider research. The study was further limited by lack of finances.

However the study concentrated on listed companies since information is easily accessible out the research across all the companies listed in the Nairobi Stock exchange which enabled generalization of the study findings.

5.4 Recommendations for Further Studies

The study has investigated the determinants of capital structure of companies quoted at the Nairobi Stock Exchange (NSE). Majority of the institutions in Kenya are in the private sectors which differ in their way of management and have different settings all together. This warrants the need for another study which would ensure generalization of the study findings for all the institutions in Kenya and hence pave way for new policies. The study therefore recommends another study be done with an aim to investigate the

determinants of capital structures in the private sector in Kenya which would consider institutions such as insurance companies, banks, broadcasting companies and telecommunication industry among others.

In future work, it would be appropriate to focus on following aspects:

- Differentiating between long term and short term debts.
- Ownership structure should be considered.
- Macro economic factors should be included, for instance non debt tax shield could be adjusted for inflation to find out the actual economic depreciation.

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APPENDIX: LIST OF COMPANIES

1	KAKUZI LTD
2	REA VIPINGO
3	SASINI LTD
4	CAR & GENERAL
5	CMC HOLDINGS
6	KENYA AIRWAYS
7	MARSHALLS E.A
8	NATION MEDIA GROUP
9	STANDARD GROUP
10	TPSE
11	CENTUM INVESTMENT COMPANY LIMITED
12	ATHI RIVER MINING
13	BAMBURI CEMENT COMPANY
14	BAT KENYA
15	BOC KENYA
16	CROWN BERGER
17	OLYMPIA CAPITAL
18	EAST AFRICA CABLES
19	EAST AFRICA PORTLAND CEMENT COMPANY
20	EABL
21	EVEREADY EAST AFRICA
22	SAMEER AFRICA
23	KENOL\KOBIL
24	MUMIAS SUGAR COMPANY
25	KPLC
26	KENGEN
27	TOTAL KENYA
28	UNGA GROUP
29	CITY TRUST
30	EAAGADS
31	KAPCHORUA TEA
32	LIMURU TEA KENYA
33	WILLIAMSON TEA KENYA

**DETERMINANTS OF CAPITAL STRUCTURE OF COMPANIES
QUOTED IN THE NAIROBI STOCK EXCHANGE**

BY

KURIA RUTH WAITHIRA

D61/70666/2008

**MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL
FULFILMENT OF THE REQUIREMENT OF THE DEGREE OF
MASTER OF BUSINESS ADMINISTRATION (MBA)**

SCHOOL OF BUSINESS

UNIVERSITY OF NAIROBI

NOVEMBER 2010

Declaration

I Ruth Waithira Kuria hereby certify that this research paper is my original work and has not been submitted for a degree in any other university

Signed. Date

Supervisor

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

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Dedication

I dedicate this paper to my wonderful family, my loving Mum Anastasia Njambi and my siblings James Gitau, Julia Wangari and Salome Wanjiku.

Abstract

Capital structure decisions are among the most important and crucial decisions for any business because of their effect on the value and cost of the company. This study examines the determinants of capital structure of companies listed at the NSE by investigating the extent to which firm characteristics affect the way firms in Kenya raise capital i.e. whether these decisions are According to the assumptions of the capital structure theories. The study uses secondary data from the published financial statements of the listed companies. This study adopts a multi-regression model for analysis with profitability, growth rate, size, taxation being used as the independent variables and debt to equity ratio as the proxy for capital structure. The sample comprised of non-financial firms listed at the NSE during the period 2003-2009.

Findings of the study find that, firm characteristics such as profitability and tangibility are significantly negatively related to leverage as also liquidity growth and taxation, but are insignificant. While firm risk was seen to have a significant positive relationship but an insignificant one for dividend policy and non-debt tax shield, the explanatory powers of the regression equation was about 17%nd significant which indicate that the model construction is quite indicative.

The paper contributes to the literature in that it shows that the determinants of capital structure conform to those reported by other related studies in emerging markets as well as developed markets. The financing decisions of listed firms seem to support both the pecking order theory and static trade-off theory.

List of Abbreviations

EBIT	EARNINGS BEFORE INTEREST AND TAX
MM	MODIGILIANI AND MILLER
NI	NET INCOME
NOI	NET OPERATING INCOME
NSE	NAIROBI STOCK EXCHANGE
RONA	RETURN ON NET ASSETS
SME	SMALL AND MEDIUM ENTERPRISES
WACC	WEIGHTED AVERAGE COST OF CAPITAL

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CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Capital structure refers to the way a firm finances its assets through some combination of equity, debt, or hybrid securities. It then follows that the capital structure of a firm is a mix of debt and equity which a firm deems as appropriate to enhance its operations in the midst of several constraints it poses. The primary objective of capital structure decisions is to maximize the market value of the firm through an appropriate mix of long-term sources of funds. This mix, called the optimal capital structure, will minimize the firm's overall cost of capital. However, there are arguments about whether an optimal capital structure actually exists. The arguments focus on whether a firm can, in reality, affect its valuation and its cost of capital by varying the mixture of the funds used Besley and Brigham(2000), Ross et al.(2002).Also, it is important to examine the capital structure of companies because it affects company's real decisions about employment, production, and investment Harris and Raviv (1991).

Modern capital structure theory began The Modigliani-Miller Theorem, as proposed by Modigliani and Miller (1958), forms the basis for modern thinking on capital structure, though it is generally viewed as purely theoretical result since it assumes away many important factors in the capital structure decision. They derive conditions under which the capital structure choice is irrelevant to firm valuation, subsequent theoretical literatures have been advanced to show that a firm can influence its value and improve its future prospects therefore explain capital structure decisions. A rich theoretical literature has emerged that models firm's capital structure choice under different assumptions. Each theory presents a different explanation of corporate financing. For example, theories such as Trade -off Theory (Scott 1977) rely on traditional factors such as

tax advantage and potential bankruptcy cost of debt to which an optimal capital structure is assumed to exist. While Pecking Order Theory (Myers) uses the asymmetric information, it assumes hierarchal financing decisions where firms depend first on internal sources of financing and, if these are less than the investment requirements, the firm seeks external financing from debt as a second source, then equity as the last resort, or game theoretical framework in which debt or equity is used as a signaling mechanism or strategy tool.

The Agency theory assumes that debt presents fixed obligations (debt interests and principals to pay) that have to be met by the firm. These obligations are assumed to take over the firm's free cash flow (if exists), therefore prevents managers from over consuming the firm's financial resources.

It was recognized that the three theories are "conditional" in a sense that each works out under its own assumptions and propositions (Myers, 2001). That is, none of the three theories can give a complete picture of the practice of capital structure. This means that firms can pursue capital structure strategies that are conditional as well. That means that when the business conditions change, the financing decisions and strategies may change, moving from one theory to another.

Many of these theories have also been empirically tested, yet there is little consensus on how firms choose their capital structure and much remains to understand the link between theory and practice of capital structure

Some of the main studies that examined the determinants of the capital structure include Myers (1984), Titman and Wessels (1988), Harris and Raviv(1991), Rajan and Zingales (1995), Bevan and Danbolt (2000) Booth et al.(2001), Huang and Song (2002), Antonion et al., (2002), Caesar, and Holmes,(2003), Chen, (2004), Hall, et al., (2004) and Buferna et al., (2005).According to the

above studies, the main determinants of the capital structure are: size of the company, tangibility, profitability, growth opportunities, short-term debt and long-term debt. Both theoretical and empirical capital structure studies have generated many results that attempt to explain the determinants of capital structure. As a result of these studies, some broad categories of capital structure determinants have emerged.

Titman and Wessels (1988), and Harris and Raviv (1991), however, point out that the choice of suitable explanatory variables is potentially continuous. Titman and Wessels (1988) in their article determinants of capital structure took such attributes as asset structure, non-debt tax shields, growth uniqueness, industries classification size, earnings, volatility and profitability and found out that only uniqueness was highly significant. Harris and Raviv (1991) point out that the consensus among financial economists is that leverage increases with fixed costs, non-debt tax shield, investment opportunities and firm size, leverage decreases with volatility, advertising cost, the probability and uniqueness of the product. Moh'd et al. (1998) in a study to examine the relationship between agency costs and ownership concentration on the capital structure indicated that the distribution of equity is important in explaining overall capital structure and the managers do reduce the level of debt as their own wealth is increasingly tied to the firm.

Corporate financing is built around the concept of target capital structure that balances various costs and benefits of debt and equity (Modigliani and Miller, 1963). But, Herbart et al. (2006) postulate that, if one determines optimal leverage by balancing the tax benefit of debt and bankruptcy costs, then both the benefits and costs should depend on macroeconomic conditions. The expected benefit of debt (tax benefit to be derived as a result of debt utilization and mitigation of agency conflicts between managers and

shareholders) depends on whether there is an economic expansion or recession since this has cash flow implications.

Further, expected costs of debt (bankruptcy costs and agency conflicts between bondholders and shareholders) depend on probability of default and loss given default both of which should depend on the current state of the economy (Harkbarth et al, 2006). An economic intuition indicates that, economy's business cycle phase should be an important determinant of capital structure decisions. Studies conducted by Fanelli and Keifman (2002) and Bebczuk (2000) have indicated that credit markets are markedly segmented in Argentina and that the volatility of the environment and external shocks affects firms capital structure decisions.

It could also be argued that if a firm's cash flow and value is sensitive to exchange rate fluctuations, then the firm may have to issue some of its debt in foreign currencies and also ascertain in which currency its cash flow will be denominated. Still at the macroeconomic level, Fanelli et al. (2002) noted that, there is a trade-off between the benefits of matching the duration of the two sides of the balance sheet and the increased currency risk taken because of higher mismatching in the currency denomination of assets and liabilities.

Empirical results indicate that the major trends in stock-bond correlation are determined primarily by uncertainty of expected inflation. Korajczyk and Levy (2000) found that a firm's choice of security issuance is dependent on macroeconomic conditions and firm-specific variables. They postulate that firms tend to time the issuance of securities to periods of favorable macroeconomic conditions.

Drobetz et al (2007) noted when ascertaining the impact of macroeconomic factors on the speed of adjustment towards target leverage that firms adjust faster in favorable macroeconomic conditions than under unfavorable conditions. This implies that when interest rates are low and the risk of disruptions in the global financial systems are negligible; firms' speed of adjustment towards target leverage is faster. Banjeree et al (2004) have also argued that economy-wide factors should impact the speed of capital structure adjustment (Loof, 2004).

Antoniou et al. (2002) find that the capital structure choice of a firm is not only affected by its own specific characteristics, but also by its surrounding environment such as general health of the economy, the existence of a stock market as well as the size of banking sector. Choe et al. (1993) argue that adverse selection costs vary counter-cyclically to explain the general increases in equity issues during expansion.

Harkbarth et al.(2006) document that macroeconomic conditions determine both the pace and the size of capital. Therefore, the timing of capital structure target should not only consider firm level characteristics, but due consideration should also be given to the state of the economy. Henderson et al. (2006) document that for debt issues a negative relationship between the level of interest rates and the quantity of long- and short-term debt issued (Graham and Harvey, 2001). In all of this, the direction of impact of macroeconomic factors on capital structure decisions of firms is not clear.

The Nairobi Stock Exchange

The Stock Exchange is a market that deals in the exchange of securities issued by publicly quoted companies and the Government.

The Nairobi Stock Exchange was formed in 1954 as a voluntary organization of stock brokers registered under the societies Act after getting clearance from the London Stock Exchange to recognize it as an overseas stock exchange. The NSE is now one of the most active capital markets in Africa in terms of trading volumes, it has grown over the years and has undergone reforms culminating to live trading in September 2006 eliminating the need of stock brokers sending dealers to the trading floor. The administration of the Nairobi Stock Exchange Limited is located on the 1st Floor, Nation Centre, Kimathi Street, Nairobi.

As a capital market institution, the Stock Exchange plays an important role in the process of economic development. It helps mobilize domestic savings thereby bringing about the reallocation of financial resources from dormant to active agents. Long-term investments are made liquid, as the transfer of securities between shareholders is facilitated. The Exchange has also enabled companies to engage local participation in their equity, thereby giving Kenyans a chance to own shares (NSE, 2007). Companies can also raise extra finance essential for expansion and development. To raise funds, a new issuer publishes a prospectus which gives all pertinent particulars about the operations and future prospects and states the price of the issue. A stock market also enhances the inflow of international capital. They can also be useful tools for privatization programmes. Development of the bond market is important in any market as makes financial and capital market more complete by generating market interest rates that reflect the opportunity cost of funds at each maturity. This is essential for efficient investment and

financing decisions. Moreover the existence of tradable instruments helps risk management.

Bonds are becoming increasingly active in Kenya, and the bond market at the Nairobi Stock Exchange (NSE) is proving a good place to raise medium to long term capital, according to a report by the African capital market news. The report said as in most African countries, the bond market is not well developed and has been dominated by government bonds and a few corporate bonds.

The Kenya Government is also keen to boost the bond market. In recent budget submissions, Finance Minister Uhuru Kenyatta reduced withholding tax from 15% to 10% on bonds with at least a 10-year maturity in order to encourage long-term investment. He also announced the reduction of listing fees to encourage more listings. CMA Chief Executive Officer is reported as saying: "A Bond Steering Committee to oversee the overall implementation of the establishment of an OTC market for bonds has been meeting in June and it is expected to put in place appropriate structural arrangements for the market for the bonds,"

A flourishing corporate bond market contributes to deepening of the capital market, is a source of fund for infrastructure and facilitates competition in the financial services. With developed bonds market banks can price debt more efficiently. These developments may result in changes in the capital structures of companies in Kenya

Currently the NSE is made up of 55 listed companies two of which are suspended and nineteen member firms (stock broking firms). (NSE, 2010). These members of the Nairobi Stock Exchange transact business mainly on the within Nairobi stock market, with a

limited proportion of business conducted in foreign securities through overseas agents, stocks are first brought to the market and sold to investors. In the secondary market, existing shares are traded among investors. (Ross, Wasterfield and Jordan, 2000).

1.2 Statement of the Problem

The issue of finance has been identified as an immediate reason why businesses in developing countries fail to start or to progress. It is imperative for firms in developing countries to be able to finance their activities and grow over time if they are ever to play an increasing and predominant role in providing employment as well as income in terms of profits, dividends and wages to households. Following on from the pioneering work of Modigliani and Miller (1958) on capital structure, conflicting theories of capital structure have been developed. They are namely static trade-off, pecking order, and agency cost theories.

Each theory presents a different explanation of corporate financing. The trade-off theory is concerned with the trade-off between debt tax shields (or tax saving) and bankruptcy costs, according to which an optimal capital structure is assumed to exist. The pecking order theory assumes hierarchal financing decisions where firms depend first on internal sources of financing and, if these are less than the investment requirements, the firm seeks external financing from debt as a second source, then equity as the last resort. The agency cost theory assumes that debt presents fixed obligations (debt interests and principals to pay) that have to be met by the firm. These obligations are assumed to take over the firm's free cash flow, therefore preventing managers from over consuming the firm's financial resources.

It was recognized that the three theories are "conditional" in a sense that each works out under its own assumptions and propositions (Myers, 2001). That is, none of the three theories can give a complete picture of the practice of capital structure. This means that firms can pursue capital structure strategies that are conditional as well. Therefore, the interrelationships between and among the three theories of capital structure call for further examination which this paper seeks to find.

It was also found out that studies on the determinants of capital structure include selected determinants in a regression equation. The results in many cases turned out to be mixed. This is what Fama and French (2002) referred to as the two theories of capital structure (trade-off and pecking order) share many common predictions about the determinants of leverage.

Many empirical studies have tried to explain the factors that affect on capital structure's choice. Most capital structure studies to date are based on data from developed countries. For example, Rajan and Zingales (1995) use data from the G-7 countries, Bevan and Danbolt (2000 and 2002) utilise data from the UK, Antoniou et al, (2002) analyse data from the UK, Germany, and France and Hall et al, (2004) used data from European SMEs.

There are few studies that provide evidence from developing countries, for example Booth et al, (2001) analyse data from ten developing countries (Brazil, Mexico, India, South Korea, Jordan, Malaysia, Pakistan, Thailand, Turkey and Zimbabwe), Omet and Nobanee (2001) uses data from Jordan. Of the capital structure studies, some have used cross-country comparisons based on data from particular region. For example, Deesomsak et al, (2004) analyse data from the Asia Pacific region.

According to Agca and Mozumbar (2004), the conflicting nature of the existing evidence on the pecking order theory is due to the difference between financing practices of large and small firms and the skewness of firm size distribution

Though several studies have been conducted in Kenya on capital structure, these studies have had conflicting results. These studies include Odinga (2003) who finds that there is a significant negative relationship between profitability, non debt tax shield but an insignificant relationship of risk, growth and size with capital structure, Chonde (2005) finds high correlation between profitability and leverage and a weak negative relationship between size and leverage, Kiogora (2000) concludes that there is a negative relationship between the business risk of a company and leverage.

According to Kiogora (2000), companies within a sector have similar capital structure. Her findings indicate that there are differences in the capital structure among industry groupings and firms within a given sector tend to cluster towards some target equity/total asset ratio. Omondi (1996) clustered his sample companies by sector as classified at the NSE and found that the capital structures of firms on the sectoral basis are quite different which he arrived at by testing the following variables using correlation analysis(asset structure, profitability, interest rate changes, growth, age and ownership). He concluded that industrial class plays a significant role in capital structure. Ndirangu (1992) and Matibe (2005) show that there is a trend to avoid debt for companies without state interests. Ndirangu (1992) found that the risk of operation increases with the use of debt and therefore that capital mix is determined by the perceived risk as a result of debt. This suggests that despite MM (1963) hypothesis of increase of value of firms by use of debt,

firms quoted on NSE still avoid debts. To mitigate this, Matibe (2005), suggests that lending institution should offer funds at reasonable rates that will attract corporate borrowers and even off shore borrowers who seem to have an even greater aversion to debt. Kamere (1987) some factors have more influence than others on capital structure. According to Jensen and Meckling (1976), the use of debt limits management's ability to reduce the firm value through incompetence or perquisite consumption. Hence, leverage results in maximization of the value of the firm.

Omondi (1986) examined listed companies between the periods 1987-1984. He studied the following variables; industry class, asset structure, profitability, interest changes, growth ownership structure found no relationship between size and capital structure. Kinyua (2005) investigating capital structure for small and medium enterprises concluded that there was a negative relationship between profitability, growth, asset structure and capital structure but a positive relationship for enterprise's age.

Due to the above conflicting results from Kenyan researchers in particular and the fact that Kenyan situation is very different from the developed world's situation where most of these studies have been carried out, there is need to conduct a research on the determinants of capital structure of firms listed on the Nairobi Stock exchange with the main goal of determining whether the three theories of the determinants of capital structure are applicable to companies in Kenya. Further, this study uses additional variables as compare to other studies conducted in Kenya. For example, in addition to variables used by Odinga, (2003), this study has used Dividend policy, age and taxation

as used by various studies on the determinants of the capital structure(Saeed,2007;Ramlall,2009).

This study also, provides further evidence of the capital structure theories pertaining to developing countries and examines the explanatory power of capital structure theories (determinants) applicable to companies listed in the Nairobi stock exchange and how the managers of the those companies choose appropriate amount of debt for their firms.

In the recent past, more and more companies have become listed and the bond market has gradually grown at the NSE. Therefore an opportunity for companies to have easy access to long-term capital. This further underlines the importance of research on the functioning and financing decisions of companies quoted at the NSE.

This study seeks to carry out an investigation on the determinants of capital structure of firms quoted at the Nairobi Stock Exchange using a multivariate regression analysis

1.3. Objectives of the Study

To investigate the determinants of capital structure of companies quoted at the Nairobi Stock Exchange (NSE).

1.5 Significance of the study

The findings and deductions of this study will be of interest to:

Academicians- the study will be a contribution to the literature on capital structure and will help them understand the determinants of capital structure;

The Management of Companies- the study will give them a deeper understanding of their capital structure and what factors determine their capital structure;

Investors both current and potential ones- this study will enable them have a better understanding of factors influencing the capital decisions of the companies they want to invest in hence informed decisions;.

The policy makers in government and regulatory bodies will be enlightened on what influences the various mix of finance in specific companies and the impact that their policies will have structure.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter summarizes a review of the relevant literature. This chapter reviews theories of capital structure and information from other researchers who have carried out their research in the same field of study. The specific areas covered here are; concept of capital structure, Theories on Capital Structure

2.3 Theories on Capital Structure

The theoretical principles underlying the capital structure, financing and lending choices of firms can be described either in terms of the following theories:

2.3.1. Static Trade-off Theory

According to this theory, a firm's optimal capital structure is viewed as determined by a trade-off of the costs and benefits of borrowing, holding the firm's assets and investment plans constant (Myers, 1984).

The static trade-off choice encompasses several aspects, including the exposure of the firm to bankruptcy and agency cost against tax benefits associated with debt use. Bankruptcy cost is a cost directly incurred when the perceived probability that the firm will default on financing is greater than zero. One of the bankruptcy costs is liquidation costs, which represents the loss of value as a result of liquidating the net assets of the firm. This liquidation cost reduces the proceeds to the lender, should the firm default on finance payments and become insolvent. Given the reduced proceeds, financiers will

adjust their cost of finance to firms in order to incorporate this potential loss of value. Firms will, therefore, incur higher finance costs due to the potential liquidation costs (Cassar and Holmes, 2003).

Another cost that is associated with the bankruptcy cost is distress cost. This is the cost a firm incurs if non-lending stakeholders believe that the firm will discontinue. If a business is perceived to be close to bankruptcy, customers may be less willing to buy goods and services due to the risk of a firm not being able to meet its warranty obligations. In addition, employees might be less inclined to work for the business and suppliers less likely to extend trade credit. These stakeholders' behaviour effectively reduces the value of the firm. Therefore, firms which have high distress cost would have incentives to decrease debt financing so as to lower these costs. Given these bankruptcy costs, the operating risk of the firm would also influence the capital structure choice of the firm because firms which have higher operating risk would be exposed to higher bankruptcy costs, making cost of debt financing greater for higher risk firms. Research has found that high growth firms often display similar financial and operating profiles (Hutchinson and Mengersen, 1989).

Debt financing may also lead to agency costs. Agency costs are the costs that arise as a result of a principal-stakeholder relationship, such as the relationship between equity-holders or managers of the firm and debt holders. Myers and Majluf (1984) showed that, given the incentive for the firm to benefit equity-holders at the expense of debt holders, debt-holders need to restrict and monitor the firm's behaviour. These contracting behaviours increase the cost of capital offered to the firm. Thus, firms with relatively

higher agency costs due to the inherent conflict between the firm and the debt-holders should have lower levels of outside debt financing and leverage. However in the studies of firms listed in Nairobi Stock Exchange, Nyaboga (2008) found an overall weak relationship between capital structure and agency cost

Firms also consider within the static trade-off framework, the tax benefits associated with the use of debt. This benefit is created as the interest payments associated with debt are tax deductible while payments associated with equity such as dividends are appropriated from profit. This tax effect encourages the use of debt by firms as more debt increases the after-tax proceeds to the owner. The theory among other things predicts a positive relationship between tax and leverage.

2.3.2 The Pecking Order theory

The pecking order theory suggests that firms have a particular preference order for capital used to finance their businesses (Myers, 1984). Owing to the presence of information asymmetries between the firm and potential financiers, the relative costs of finance vary between the financing choices. Where the funds provider is the firm's retained earnings, meaning more information than new equity holders, the new equity holders will expect a higher rate of return on capital invested resulting in the new equity finance being more costly to the firm than using existing internal funds. A similar argument can be provided between the retained earnings and new debt-holders. In addition, the greater the exposure to the risk associated with the information asymmetries for the various financing choices besides retained earnings, the higher the return of capital demanded by each source. Thus, the firm will prefer retained earnings financing to debt, short-term debt over long-term

debt and debt over equity. An empirical study by Gachoki (2005) concludes that firms listed in the Nairobi Stock exchange do not follow the pecking theory of capital structure. Many theories have been advanced on what affects the value of the firm. Modigliani and Miller in their original proposition advocate that the relationship between the leverage and the cost of capital is explained by the Net Operating Income Approach. According to them, the market value of the firm is not affected by the changes in the capital structure. The market value is found out by capitalizing the net operating income at the overall, or weighted average cost of capital, which is a constant. They showed that a company's capital structure is irrelevant in a perfect financial market because investors can accept the company's decision or reverse its effect on their portfolio by borrowing or lending their own money without adding costs to them. A perfect financial market has no transaction costs or taxes, information is instantaneously and freely available to everyone, securities are infinitely divisible, and the market is competitive.

2.3.3. MM Theory

The Modigliani and Miller (1958), in their study of capital structure developed the capital structure irrelevance proposition. They assumed a perfect market (no transaction or bankruptcy costs; perfect information); firms and individuals can borrow at the same interest rate; no taxes; and investment decisions aren't affected by financing decisions.

MM made two findings under these conditions. The first proposition was that the value of a company is independent of its capital structure. The second proposition stated that the cost of equity for a leveraged firm is equal to the cost of equity for an unleveraged firm, plus an added premium for financial risk that is as leverage increases, while the

burden of individual risk is shifted between different investors, total risk is conserved and hence no extra value created.. Thus, MM's proposition 1 is identical to the Net Operating Income (NOI) hypothesis.

MM's original work of 1958 assumed zero corporate tax. 5 years after, they published a second article, which included the effects of corporate tax. They concluded that leverage would increase a firm's value because interest on debt is a tax-deductible expense, and hence, more of a leveraged firms operating income flows through to investors.

In rejection to NI approach, MM argued that for two firms identical in all aspects except for their capital structures, cannot command different market values or have different cost of capital. Their opinion is that if these two firms have different market values, arbitrage will take place to enable investors to engage in personal or homemade leverage as against the corporate leverage to restore equilibrium in the market. In their summary, they said that the value of a levered firm is equal to the value of unlevered firm in the same risk class.

2.3.4. Agency Theory

Agency theory posits that there is a potential conflict of interest between the shareholder (principal) and the management (agent). Managers will pursue their own interests and these may not be congruent with the shareholders' interests.

Debt financing may also lead to agency costs. Agency costs are the costs that arise as a result of a principal-stakeholder relationship, such as the relationship between equity-holders or managers of the firm and debt holders. Myers and Majluf (1984) showed that, given the incentive for the firm to benefit equity-holders at the expense of debt holders,

debt-holders need to restrict and monitor the firm's behaviour. These contracting behaviours increase the cost of capital offered to the firm. Thus, firms with relatively higher agency costs due to the inherent conflict between the firm and the debt-holders should have lower levels of outside debt financing and leverage. However in the studies of firms listed in Nairobi Stock Exchange, Nyaboga (2008) found an overall weak relationship between capital structure and agency cost. Jensen and Meckling (1976) proposed that when a firm issues outside equity it creates agency costs that reduce the value of corporate assets. Jensen (1986) and Williamson (1988) consider debt as a disciplining mechanism to ensure that managers pay out profit than building their own empires. Under the agency hypothesis, high leverage reduces the agency costs and increases firm value by constraining managers to act more in the interest of shareholders. Higher leverage can mitigate conflicts between shareholders and managers concerning the choice of investments (Myers, 1977), the amount of risk to undertake (Jensen and Meckling, 1976), and the condition under which the firm is liquidated (Harris and Raviv, 1990).

2.4. Empirical Studies

Researches in Business Economics, have always analyzed the processes of economic value creation as their main field of studies. Starting from the work of Modigliani and Miller (1958), capital structure became one of the main elements in determining value. Important, and still in vogue, is the debate between the two main theoretical perspectives, the trade-off approach, and the pecking order approach (Myers, 1984, Myers and Majluf, 1984).

The controversy that has emerged in trying to verify the validity of these theories (Harris and Raviv, 1991) has stimulated an attempt to find solutions that can "strengthen" theoretical hypotheses and improve econometric models, also solve the difficulties found when trying to apply the theories to reality.

The Traditional approach to valuation and leverage assumes that there is an optimal capital structure and that the firm can increase its total valuation through a judicious mix of equity and debt. According to this approach the cost of capital declines and the value of the firm increases with leverage to a prudent debt level. After reaching the optimum point where the benefits from tax equal the costs of bankruptcy, the cost of capital increases and the value of the firm declines (Brealey and Myers, 2001). The cost of capital declines with leverage because debt capital is cheaper than equity capital within a reasonable, or acceptable limit of debt (Solomon 1963). According to a study by Myers (1984) at this point the value of the firm is maximized.

In the same thread, Solomon (1963) argues that a firm with certain structure of assets and that offers net operating earnings of given size and quality, and given a certain structure of rates in the capital markets, there should be some specific degrees of financial leverage at which the market value of the firm's security will be higher (or the cost of capital will be lower) than at other degrees of leverage.

Durand (1959) suggested The Net Income Approach in which the market value of the firm is not affected by the capital structure changes. The market value of the firm is ascertained by capitalizing the net operating income at the overall cost of capital which is constant.

The net Income approach is based on the assumptions that; the overall cost of capital remains constant for all degree of debt equity mix, the market capitalizes the value of firm as a whole thus the split between debt and equity is not important, the use of less costly debt funds increases the risk of shareholders and this causes the equity capitalization rate to increase. Thus, the advantage of debt is set off exactly by increase in equity capitalization rate; there are no corporate taxes and the cost of debt is constant. Under NOI approach since overall cost of capital is constant, therefore there is no optimal capital structure rather every capital structure is as good as any other and so every capital structure is optimal one.

If the Net Operating Income assumptions are true, then the capital structure decisions are unimportant (Gapenski et al, 1988.). However, in a world with corporate taxes, both the Net Income and the Net Operating Income approaches would indicate that the optimal capital structure calls for virtually a hundred per cent debt. (Gapenski & Eugene 1988).

Empirical results also indicate that the major trends in stock-bond correlation are determined primarily by uncertainty of expected inflation. Korajczyk and Levy (2000) found that a firm's choice of security issuance is dependent on macroeconomic conditions and firm-specific variables. They postulate that firms tend to time the issuance of securities to periods of favorable macroeconomic

Drobetz et al (2007) noted when ascertaining the impact of macroeconomic factors on the speed of adjustment towards target leverage that firms adjust faster in favorable macroeconomic conditions than under unfavorable conditions. This implies that when interest rates are low and the risk of disruptions in the global financial systems are

negligible; firms' speed of adjustment towards target leverage is faster. Banjee et al (2004) have also argued that economy-wide factors should impact the speed of capital structure adjustment (Loof, 2004).

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Though some studies have been conducted in Kenya about the determinants of capital structure, the results of the studies have been conflicting. According to Kiogora (2000), companies within a sector have similar capital structure. Her findings indicate that there are differences in the capital structure among industry groupings and firms within a given sector tend to cluster towards some target equity/total asset ratio. Omondi (1996) found that the capital structures of firms on the sectoral basis are quite different. He concluded that industrial class plays a significant role in capital structure.

Ndirangu (1992) and Matibe (2005) show that there is a trend to avoid debt for companies without state interests. Ndirangu (1992) found that the risk of operation increases with the use of debt. This suggests that despite MM (1963) hypothesis of increase of value of firms by use of debt, firms quoted on NSE still avoid debts. To mitigate this, Matibe (2005), suggests that lending institution should offer funds at reasonable rates that will attract corporate borrowers and even off shore borrowers who seem to have an even greater aversion to debt.

Kamere (1987) in his study, "factors that affect quoted companies" suggests that some factors have more influence in trying to understand the financing decisions of firms, the issue of firm size and how it relates to capital structure emerges.

Nyaboga(2008) investigated the relationship between capital structure and agency cost for companies listed in NSE, she found an overall weak relationshipbetween capital structure and agency cost but a positive relationship for high growth firms.

Orua (2009) analyzed the relationship between capital structure and financial performance in microfinance institutions in Kenya and found that institutions funded by external sources did not perform like institutions funded internally, this was due to interest cost paid by the firms.

2.5. Determinants of Capital Structure

Following from these theoretical standpoints, a number of empirical studies have identified firm-level characteristics that affect the capital structure of firms. Among these characteristics are age of the firm, size of the firm, asset structure, profitability, growth, firm risk, tax and ownership structure (Omondi 1996, Kiogora 2000). In the case of

SMEs, other heterodox factors such as industry, location of the firm, entrepreneur's educational background and gender, form of business, and export status of the firm may explain their capital structure.

2.5.1 Firm size

Smaller firms, may find it relatively more costly to resolve information asymmetries with lenders thus, may present lower debt ratios (Castanias, 1983). Size has been viewed as a determinant of a firm's capital structure. Larger firms are more diversified and hence have lower variance of earnings, making them able to tolerate high debt ratios (Castanias, 1983; Titman and Wessels, 1988; Wald, 1999). Lenders to larger firms are more likely to get repaid than lenders to smaller firms, reducing the agency costs associated with debt.

It is generally believed that there are economies of scale in bankruptcy costs: larger firms face lower unit costs of bankruptcy than smaller firms, as shown in Prasad et al. (2001).

Larger firms may be taken as evidence that these firms are less risky (Kim and Sorensen, 1986). Cosh and Hughes (1994) add that if operational risk is inversely related to firm size, this should predispose smaller firms to use relatively less debt. Al-Sakran, 2001, Hovakimian et al., 2004) in their results suggest that smaller firms are more likely to use equity finance, while larger firms are more likely to issue debt rather than stock. In a Ghanaian study, Aryeetey et al. (1994) found that smaller enterprises have greater problems with credit than larger firms. Their results showed that the success rate for large firms applying for bank loans was higher than that of smaller firms.

In a study of six African countries, Bigsten et al. (2000) also showed that about 64% of micro firms, 42% of small firms and 21% of medium firms appear constrained, while this

is only 10% for the large firms. According to Titman and Wessels (1988), small firms seem to use more short-term finance than their larger counterparts because smaller firms have higher transaction costs when they issue long-term debt or equity. They further add that such behaviour may cause a "small firm risk effect", by borrowing more short term. These types of firms will be more sensitive to temporary economic downturns than larger, longer-gearred firms.

2.5.2 Asset structure

Bradley et al. (1984) asserts that firms that invest heavily in tangible assets also have higher financial leverage since they borrow at lower interest rates if their debt is secured with such assets. The asset structure of a firm plays a significant role in determining its capital structure. The degree to which the firm's assets are tangible should result in the firm having greater liquidation value (Titman and Wessels, 1988; Harris and Raviv, 1991). It is believed that debt may be more readily used if there are durable assets to serve as collateral (Wedig et al., 1988). By pledging the firm's assets as collateral, the costs associated with adverse selection and moral hazards are reduced. This will result in firms with assets that have greater liquidation value having relatively easier access to finance at lower cost, consequently leading to higher debt or outside financing in their capital structure.

In the case of small firms, the concession of collateral reduces the under-investment problem in the firms by increasing the probability of obtaining credit -functioning also as a management instrument in conflicts between entrepreneur and financiers, since the degree of the entrepreneurs' involvement in sharing business risk, by granting personal

collateral, is clearly evident. It is further suggested that bank financing will depend upon whether the lending can be secured by tangible assets (Storey 1994; Berger and Udell 1998). Kim and Sorensen (1986), however, found a significant and negative coefficient between depreciation expense as a percentage of total assets and financial leverage. Marsh (1982) maintains that firms with few fixed assets are more likely to issue equity. In a similar work, MacKie-Mason (1990) concluded that a high fraction of plant and equipment (tangible assets) in the asset base makes the debt choice more likely. Booth et al. (2001) suggest that the relationship between tangible fixed assets and debt financing is related to the maturity structure of the debt. In such a situation, the level of tangible fixed assets may help firms to obtain more long-term debt, but the agency problems may become more severe with the more tangible fixed assets, because the information revealed about future profit is less in these firms. If this is the case, then it is likely to find a negative relationship between tangible fixed assets and debt ratio.

2.5.3 Growth

Agency problems are likely to be more severe for growing firms, because they are more flexible in their choice of future investments. Thus, the expected growth rate should be negatively related to long-term leverage. Moreover, firms with high-growth opportunities provide a positive signal about the firm's future performance. Hence institutional investors prefer to invest in high-growth firms rather than lower ones. In addition, Hovakimian et al. (2004) suggest that high-growth firms may bring more capital gains to institutional investors than lower growth ones. This is because institutional investors, as taxpayers, would prefer to invest in capital-gain stocks to delay tax payments and to

avoid double taxation. Thus, a firm's growth opportunities are considered to be a positive signal for institutional investors. The study uses market-to-book ratio (MB) as an indicator of the growth opportunities of a firm.

2.5.4 Profitability

The relationship between firm profitability and capital structure can be explained by the pecking order theory (POT), which holds that firms prefer internal sources of finance to external sources. The order of the preference is from the one that is least sensitive (and least risky) to the one that is most sensitive (and most risky) that arise because of asymmetric information between corporate insiders and less well informed market participants (Myers, 1984). By this token, profitable firms with access to retained profits can rely on them as opposed to depending on outside sources (debt). Murinde et al. (2004) observe that retentions are the principal source of finance. Titman and Wessels (1988) and Barton et al. (1989) agree that firms with high profit rates, all things being equal, would maintain relatively lower debt ratios since they are able to generate such funds from internal sources.

2.5.5 Firm risk

The level of risk is said to be one of the primary determinants of a firm's capital structure (Kale et al., 1991). The tax shelter-bankruptcy cost theory of capital structure determines a firm's optimal leverage as a function of business risk (Castanias, 1983). Given agency and bankruptcy costs, there are incentives for the firm not to fully utilize the tax benefits of 100% debt within the static framework model. The more likely a firm is exposed to such costs, the greater their incentive to reduce their level of debt within its capital

structure. One firm variable that affects this exposure is the firm's operating risk; in that the more volatile the firm's earnings stream, the greater the chance of the firm defaulting and being exposed to such costs. According to Johnson (1997), firms with more volatile earnings growth may experience more situations in which cash flows are too low form debt service. Kim and Sorensen (1986) also observe that firms with a high degree of business risk have less capacity to sustain financial risks and thus use less debt. Despite the broad consensus that firm risk is an important determinant of corporate debt policy, empirical investigation has led to contradictory results. Esperan^a et al. (2003) found positive associations between firm risk and both long-term and short-term debt. on the other hand Lutomia(2002) concluded that there was no relationship between capital structure and systematic risk of its common stocks.

2.5.6 Taxation

Numerous empirical studies have explored the impact of taxation on corporate financing decisions in the major industrial countries. Some are concerned directly with tax policy for example: MacKie-Mason (1990), Shum (1996) and Graham (1999). MacKie-Mason (1990) studied the tax effect on corporate financing decisions and provided evidence of substantial tax effect on the choice between debt and equity. He concluded that changes in the marginal tax rate for any firm should affect financing decisions. Graham (1999) concluded that in general, taxes do affect corporate financial decisions, but the magnitude of the effect is mostly "not large".

2.5.7 Non debt tax shields

Other items other than interest expense contribute to a decrease in tax payments, DeAngelo and Masulis (1980) show that there are other alternative tax shields such as depreciation, research and development expenses, investment deductions, etc., that could substitute the fiscal role of debt. Empirically, this substitution effect is difficult to measure, as finding an accurate proxy for tax reduction that excludes the effect of economic depreciation and expenses is tedious (Titman and Wessels, 1998). Dammon and Senbet (1988) argue that there is also an income effect when investment decisions are made simultaneously with financing decisions. They suggest that increases in allowable investment-related tax shields due to changes in the corporate tax code are not necessarily associated with reduction in leverage at the individual firm level when investment is allowed to adjust optimally. They explain that the effect of such an increase depends critically on the trade off between the "substitution effect" advanced by DeAngelo and Masulis (1980) and the "income effect" associated with an increase in optimal investment.

2.5.8. Liquidity

Ozkan (2001) found a negative relationship between liquidity and leverage. A negative relationship is expected between liquidity and leverage in market-oriented economies because managers tend to prefer internal liquidity. When there is a close link between a company and its financier, information asymmetry is reduced to its minimum level and hence manager's appetite for internal liquidity becomes less important (Ghossan and Fadi, 2002). Liquid firms may also have impetus to pay out dividends regularly and this

may send out a positive signal. Jensen et al.,(1992) provided empirical evidence to suggest that greater dividends are associated with greater debt use. However, the reaction to dividend payments may send out negative signals to investors when there is a decline in a constant dividend payments or a reduction in the amount paid out. This eventually causes a decline in the price of firm's stock (Brigham and Houston, 2004).

2.5.9 Dividend policy

There is considerable debate on how dividend policy affects firm value. Some researchers believe that dividends increase shareholder wealth; Higher cash dividends is seen to reflect low capital demand, previous studies suggest a negative relationship between cash dividend and capital structure, others believe that dividends are irrelevant (Miller and Scholes, 1978), and still others believe that dividends decrease shareholder wealth (Litzenberger and Ramaswamy, 1979). Financial management research on financing policy decisions, including the dividend decision, considers investment as an exogenous variable, or at least as having a fixed, known distribution. One group of financial theorists (Martin, Petty, Keown, and Scott, 1991; Miller, 1986; and Miller and Modigliani, 1961) provides a hypothesis for dividend policy irrelevance.

Titman (1984) develops a model that hypothesizes a possible interaction between investment and financing decisions. His model suggests that equity holders have incentives to maximize the wealth of non-investor stakeholders in a firm. These stakeholders suffer costs in the event the firm liquidates and the firm may also bear some costs of uncertainty. Its customers may believe they will bear liquidation costs if the firm goes out of business, and they will discount the price they are willing to pay for its goods

and services to reflect these anticipated costs. Customers can thus use capital structure as one indicator of the future default potential of their vendors.

2.6. Conclusion

There have been various studies done on capital structure but few studies have been carried on the determinants of capital structure in Kenya and specifically on the relationship between firm size and capital structure. This chapter has reviewed the various theories and empirical studies done bringing out the contradicting views of the various researchers. .

Capital structure determinants are various depending on the nature of the firm, liquidity, risk factor of the company, growth prospects, taxation and age of the firm. Some theories state that financing decisions follow a hierarchical order, while others state that firms have a target optimal ratio of debt to equity that they adjust their capital structure to achieve it. No study has been carried to highlight the relationship between firm size and capital structure of the companies quoted at the NSE. The study will address the knowledge gap on the relationship between firm size and capital structure of companies quoted at the Nairobi Stock Exchange and the determinants of capital structure of the companies quoted at NSE.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets to explain the population interest, the type secondary data used, source of data and the techniques of analysis used, thus its divided into research design, population of study. A study was done for the period between year 2003 and 2009 to establish what the determinants of capital structure are.

3.2 Research Design

The study adopted a causal design. The method is appropriate for the study as the study seeks to determine whether there is a relationship between variables identified and the capital structure of firms. In this case, the research problem is the investigation into the determinants of capital structure of the quoted companies.

3.3 The Population

The population of interest in this study comprised of the 55 currently listed companies on the Nairobi Stock Exchange to establish if a worthwhile relationship exist between capital structure and the factors identified as determining capital structure.

3.4 Sampling

The sample for this study focused on non- financial firms, this restriction was necessary because banks and insurance firms are highly leveraged and are also subjected to specific regulation concerning their capital structure. The study also include only those companies

that were listed throughout the years 2003-2009. Therefore the sample size for this study was 34 companies which met the criteria for selection.

3.5 Data collection

The study utilized secondary data obtained from the annual financial statements of companies quoted on the Nairobi Stock Exchange. Data used was collected from the individual companies website and from the NSE handbook.

3.6 Data analysis

The SPSS version 17 software was used to carry out the analysis of the data obtained. The study used seven independent variables. The researcher constructed a Regression model to analyze the reliance of leverage (the dependent variable) on the independent variables outlined below. Bryman (1998) states that regression has become one of the most widely used techniques in the analysis such data. From the above the multiple regressions variables will be:

3.6.1 Multiple Regression Variables

The study was based wholly on secondary data available from the published financial statements. These reports of the firms will be available from Nairobi Stock Exchange and other sources. The following information will be extracted from financial statement;

The dependent variable is Leverage, which was calculated as the ratio of debt to equity ratios.

While the independent variables will be made up of;

- (1) Size, which will be measured by natural log of sales (ln sales).

- (2) Profitability, which will be measured by ratio of Earnings before Interest and Tax to total assets.
- (3) Growth of the firm will be measured by book value of assets less book value of equity divided by book value of assets (total assets- equity/ total assets)
- (4) Non-debt tax shield, which will be measured by depreciation divided by total assets.
- (5) Liquidity of the firm represented by ratio of current assets to current liabilities.
- (6) Asset structure measured by fixed assets/total assets
- (7) Dividend policy measured by cash dividend/stockholders equity
- (8) Firm risk -variance of the return on assets
- (9) Taxation - the ratio of tax paid to operating income for firm

3.6.2 Model

Data collected on the variables of interest within the period of study were analyzed through descriptive statistics. Further multiple regression and correlation analysis was used to explain the nature and significance of relationship between changes in the response variables (leverage) and change in the prediction variables (determinants) identified in the study. The regression model used is as shown below;

Equation 1: regression equation

$$Y = p_0 + p_1X_1 + p_2X_2 + p_3X_3 + p_4X_4 + p_5X_5 + p_6X_6 + p_7X_7 + p_8X_8 + p_9X_9 + p_{10}X_{10} + p_{11}X_{11} + e$$

Where Y= leverage

X1-X11= predictor variables where(independent variables),

X1=profitability

X2=growth

X3=size

X4= liquidity

X5=non-debt tax shield

X6=asset structure

X7= Firm's risk

X8=dividend policy

X9 = Tax

pi- p11 regression coefficients- define the amount by which Y is changed for every unit change in predictor variables.

The test was whether the independent variables (assets, size, profitability, growth, non-tax and liquidity) are capable of predicting leverage. The means for all the factors were calculated on an annual basis. Regression analysis was used to compute the significance of the relationship between capital structure and each respective factor.

CHAPTER FOUR: DATA ANALYSIS RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the results of data analysis and findings. Data of targeted listed companies was collected from published financial statements available at the Nairobi Stock Exchange. This was then used to compute the various ratios which constitute variables in this study. The variables were then entered into SPSS (V17). Data analysis was then conducted using regression analysis employing the fixed effect model of panel data analysis. Useful deductions were made with the aid of p-values, magnitude of t-statistic, magnitude and sign of regression coefficients and the coefficient of determination (R-Square).

The chapter starts off by presenting summary of companies involved in the study. It then presents test of fixed effect of Segment and year on leverage. This is followed by regression analysis to determine the impact of various factors on leverage. The chapter concludes with a summary of findings and discussion.

4.2. Descriptive statistics

Size: Industrial and allied segment had the highest average size of 15.18 while Alternative market segment had the lowest size of 12.2 as measured by natural log of sales. The mean size was 14.44.

Profitability: again industrial and allied had the highest profitability (mean 0.12) while alternative had the lowest (mean 0.05). The overall mean was 0.10.

Liquidity: Alternative market segment had the highest liquidity (4.07) while commercial and services had the lowest (mean 1.33). The overall mean was 2.12.

Asset structure: The Agriculture market segment had the highest proportion of fixed assets to total assets (mean 0.77). The lowest was in the industrial and allied (mean 0.49). The overall mean was 0.56.

Dividend Policy: this was measured using dividend payout ratio. Industrial and allied had the highest mean ratio (0.66) while agriculture had the lowest mean (0.02). The overall mean was 0.46.

Taxation: this ranged between 0.31 and 0.36 with a very small standard deviation of 0.16. Agriculture had the highest mean at 0.36 while industrial and allied had the lowest (0.31).

Risk: This was measured using variance of Return on Assets. Alternative segment had the highest average risk (mean 294.91) while Industrial and allied market segment had the lowest risk (mean 79.55). The overall risk among listed companies was 127.18.

Growth: Industrial and allied had the highest growth at 0.18 while alternative had the lowest at 0.05. The overall growth was 0.14.

Non-debt Tax Shield: this is measured by the ratio of fixed assets to total assets the overall NDTS .0395

Leverage: Commercial and services market segment had the highest leverage (mean 2.2) while agriculture had the lowest (mean 0.67). The overall leverage was 1.9.

Variable	Segment				Overall (across all segments)	
	Alternative	Industrial and allied	Commercial & Services	Agriculture		
	Mean	Mean	Mean	Mean	Mean	Std. Deviation
Size	12.20	15.10	15.18	14.00	14.4493	1.99880
Profitability	.05	.12	.10	.08	.1005	.10030
Liquidity	4.07	1.82	1.33	1.60	2.1208	1.81147
Asset structure	.71	.49	.51	.77	.5637	.20236
Dividend policy	.39	.66	.28	.02	.4618	.77594
Taxation	.33	.31	.34	.36	.3236	.16158
risk	294.91	79.55	90.40	118.31	127.1789	222.59124
Growth	.05	.18	.17	.12	.1432	.29803
NDTS	.36	.37	.32	.29	.03945	0.0311
LEVERAGE	2.20	1.31	3.61	.67	1.9005	6.85034

Table 1: descriptive statistics

4.3 Fixed effects

Fixed-effects (FE) explore the relationship between predictor and outcome variables within an entity (in this case, Business segment). Each entity has its own individual characteristics that may or may not influence the predictor variables.

In examining FE this study utilizes the mixed models utility in SPSS. The results were as shown in the tables below.

4.3.1 Panel data analysis: Tests of fixed effect of Segment

The tables below present the results of fixed effect regression analysis. Business Segment does not have an impact on leverage (p-value 0.184). The next table shows a clearer view of the coefficients of segment dummies, all of which are not significant (p-values > 0.05). Thus it was concluded that capital structures is invariant across business segments among NSE listed companies.

Type III Tests of Fixed Effects ³				
Source	Numerator df	Denominator df	F	Sig.
Intercept	1	236	14.279	.00
Segment	3	236	1.628	.18

a. Dependent Variable: LEVERAGE.

Table 2: Type III tests of fixed Effects of business segment Results

Estimates of Fixed Effects ³							
Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	1.312054	.625510	236	2.098	.037	.079758	2.544350
[Segment=Agriculture]	-.641117	1.526850	236	-.420	.675	-3.649114	2.366881
[Segment=alternative]	.890981	1.175545	236	.758	.449	-1.424921	3.206883

[Segment=C S]	2.294882	. 1.149986	236	1.996	.047	.029334	4.560431
[Segments A]	0 ^a	0					

a. This parameter is set to zero because it is redundant.

b. Dependent Variable: LEVERAGE.

Table 3: Estimates of fixed effects

4.3.2 Panel data analysis: Tests of fixed effect of Year

The year for which the data is captured could also have some underlying factor affecting leverage e.g. new government policies. This study attempted to measure this fixed effect in the panel data. The results as shown in the two tables below show that year has no effect on leverage. Thus it is concluded that all variables of interest are time invariant hence OLS regression method can be applicable to the pooled data in determining the relation between leverage and its predictors.

Type III Tests of Fixed Effects ³				
Source	Numerator df	Denominator df	F	Sig.
Intercept	1	232	18.452	.000
Year	7	232.000	.959	.462

a. Dependent Variable: LEVERAGE.

Table 4: Type III tests of fixed Effects of year.

The table below shows the estimates of fixed effects of specific years for which data was used. Though year 2003 seems to have a very great effect as reflected by its estimate of 3.2, this effect is, however, not statistically significant (P-Value $0.072 > 0.05$). The same applies to all other years under investigation. It was thus concluded that the data was time-invariant.

4.4 Regression analysis

A multivariate regression analysis of the form:

$Y = p_0 + p_1X_1 + p_2X_2 + p_3X_3 + p_4X_4 + p_5X_5 + p_6X_6 + p_7X_7 + p_8X_8 + p_9X_9 + e$

Was fitted to the pooled data (where y = leverage and Xi = Predictors).

The results were as shown below:

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.423 ^a	.179	.144	6.02084

a. Predictors: (Constant), risk, Asset structure, Taxation, Dividend policy, Liquidity, Growth, Profitability, Size

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1472.572	8	184.071	5.078	.000 ^a
	Residual	6742.605	186	36.251		
	Total	8215.177	194			

a. Predictors: (Constant), risk, Asset structure, Taxation, Dividend policy, Liquidity, Growth, Profitability, Size

c. Dependent Variable: LEVERAGE

Table 5: Model Statistics

Coefficients ³						
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.667	4.245		.393	.695
	Size	.368	.248	.119	1.479	.141
	Profitability	-19.576	4.728	-.300	-4.141	.000
	Growth	-.755	1.477	-.035	-.511	.610
	Liquidity	-.133	.268	-.039	-.497	.620
	Asset structure	-4.818	2.249	-.153	-2.143	.033

Dividend policy	.247	.652	.026	.378	.706
Taxation	-3.244	3.243	-.068	-1.000	.318
risk	.008	.002	.282	4.135	.000
NDTS	.721	.725	.466	.6461	.52

a. Dependent Variable: LEVERAGE

Table 6:regression Analysis results

4.4.1.1 Discussion of output of the regression model

The regression model yielded an R-square of 0.179. This implies that the predictors only account for 17.9% of the variability in leverage. However, the ANOVA output shows that this relation is significant (P-value 0.000). The next sub-sections examine each of the factors in greater detail.

4.4.1.2 Size

The coefficient estimate for size is positive (0.368), but not significant (p-value 0.141). This means that the larger the organization, the higher the leverage. Similar results were found by Attaullah and Safiullah (2007) in a similar study carried out among Pakistani listed companies. The results, though not conclusive, are indicative that larger firms tend to use equity more than smaller firms. This is very well in accordance with Titman and Wessels' (1988) argument that larger firms are more diversified and have lesser chances of bankruptcy that should motivate the use of debt financing. Attaullah and Safiullah

(2007) points out that Trade off theory suggests that firm size should matter in deciding an optimal capital structure because bankruptcy costs constitute a small percentage of the total firm value for larger firms and greater percentage of the total firm value for smaller firms. As debt increases the chances of bankruptcy, hence smaller firms should have lower debt ratio. In conclusion, however, this study fails to find sufficient evidence to link debt level with size of the organization among Kenyan listed companies.

4.4.1.3 Profitability

Profitability has the highest coefficient (-19.58) which is also significant (p-value 0.000). The coefficient is negative implying that profitability has a negative relation with leverage. The more profitable a company is, the less likely it is to use debt. This could be attributed to the use of retained earnings as a financing option in place of debt among the profitable companies. This finding validates pecking order theory that companies will prefer internal to external funds. Similar results were posted by Frydenberg (2001) Kinyua(2005). It is thus concluded that profitability is the greatest determinant of capital structure among Kenyan listed companies.

4.4.1.4 Growth

Growth has a small negative coefficient (-0.755) which is not significant (p-value 0.61). though not significant, this finding is indicative of the negative relation between growth and leverage. More conclusive result in support of this was found by Titman and Wessels (1988); Barclay, et al. (1995) and Rajan and Zingales (1995). This phenomenon is often

attributed to the fact that growing firms have more options of choosing between safe and risky ventures. Managers, being agent to shareholders, will try to go for risky projects and increase return to shareholders. Creditors will be unwilling to give funds to such firms as they will bear more risk for the same return. To compensate for the additional risk in growth companies, creditors will demand risk premium. Facing extra cost of debt, growing firms will use less debt and more equity. However, for this study, no conclusive prove is adduced to support the hypothesis that growth is negatively related with debt.

4.4.1.5 Liquidity

Liquidity has a negative relation with leverage (coefficient -0.133), but this relation is not statistically significant (p-value 0.620). Ozkan (2001) found a significant negative relationship between liquidity and leverage. A negative relationship is expected between liquidity and leverage in market-oriented economies because managers tend to prefer internal liquidity. This study however, fails to establish this relation conclusively. As such it was concluded that liquidity has no effect on leverage among Kenyan listed companies.

4.4.1.6 Asset structure

Asset structure often referred to as tangibility has a negative relationship with leverage (Coefficient -4.82). This relation was found to be significant at the 5% significance level (p-value 0.033). this result contradicts the static trade-off and agency theory and is also in contrast to an earlier finding by Rajan and Zingales (1995), Attaullah and Safiullah

(2007) who found that asset structure has significant positive relationship with leverage. However, this results somehow agree with the pecking order which argues that firms with less tangibility tend to finance their investments with external financing and they ought to prefer debt over equity, similar results to those found in the present study were found by Shah and Hijazi,(2004), Kinyua(2005) for short term debt. This relation means that the greater the proportion of fixed assets to total assets, the lower the debt. This seems to go against the norm. However, as can be seen from the R-square, this model only explains 17% of the variability in leverage implying that there exist many other factors which could have a potentially overriding effect on amount of leverage.

4.4.1.7 Dividend policy

Dividend policy was measured by dividend payout ratio which is a proportion obtained by dividing dividends per share by earnings per share. The regression analysis shows that dividend policy has a positive but insignificant relationship with leverage (Coefficient 0.247, p-value 0.706). This means that dividend policy does not have any statistically significant impact on leverage among NSE listed companies. This finding is similar to previous studies Kehar (2004).

4.4.1.8 Taxation

To an extent, tax is believed to be an incentive to the usage of debt as a means of financing. This is because interest on debt is an allowable expense in the computation of

tax. This is however balanced off by bankruptcy costs which could result due to excessive debt.

However, the results of this study showed a non-significant negative correlation between the proportion of tax to operating income and leverage.

4.4.1.9 Non-Debt Tax Shield

Non debt tax shield displays a positive relation with financial leverage and found statistically insignificant. This positive relation verifies that firms with high non debt tax shield use more debt than equity. This evidence is consistent with Static trade-off theory for only short term debts. From our results, we claim that both Static trade-off theory and Pecking order theory are partially accepted among the listed companies.

4.4.1.10 Risk

Risk as measured by the variance of return on assets was found to have a significant positive relationship with leverage (coefficient 0.008, p-value 0.000). This means that the higher the variability in return on assets the greater the debt. This goes against expectation since the greater the variability in return on assets, the higher the premium charged by creditors which is expected to make debt more expensive and less attractive.

CHAPTER FIVE : SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary and Conclusion

This report has analyzed the seven years data of listed firms in NSE 2003-2009, using a multi-variate regression model. Foremost intention was to test if listed firms Kenya follow any capital structure theory during the period 2003-2009. To measure this explanatory attributes were selected that are most accredited in academic and literacy sphere of corporate capital structure. Afterwards these attributes were used in a regression model to answer the proposed question.

Three capital structure theories: Static trade-off theory, Pecking order theory and Agency cost theory were reviewed find out which one explains better the financial behavior of our sample firms. All these theories possess different traits to explain the corporate capital structure. Static trade-off theory suggests that optimal capital structure is a trade off between net tax benefit of debt financing and bankruptcy costs. Firms with high tangible assets will be in a position to provide collateral for debts, so these firms can raise more debt. Larger and high profitable firms maintain their high debt ratio, while firms with high growth rate use less debt financing. Pecking order theory states that firms prefer internal financing to external financing and risky debt to equity due to information asymmetries between insiders and outsiders of firm. Agency cost theory illustrates the financial behavior of firms in context of agent and principal relationship.

Results of this study show that asset structure has significant relationship with financial leverage. It shows that asset structure has a negative influence on firm's financial

decisions. This association is consistent with extended form of Pecking order theory of capital structure that deals with debt in context of short term and long term financing.

While Static trade-off theory and Agency cost theory are not supported by our result.

Size displays a positive but insignificant relation with financial leverage and therefore not a determinant of corporate financing patterns. However the results indicate that larger firms among the listed companies maintain high leverage ratios. Size's association with financial leverage supports Static trade-off theory and Agency cost theory but contradicts with Pecking order theory.

Negative relation between growth and leverage also found out not to be an important determinant of firm's financial behavior. In Kenya, listed firms with high growth rate use less debt financing. This negative relation between growth and financial leverage supports the findings of Titman and Wessels (1998). This can be explained that managers of this companies will go for risky project in which creditor will demand for risk premium

For profitability, the study attained an inverse relation that supports Pecking order theory but opposes to Static trade-off theory. The results suggest that firms that are more profitable do not often finance their investments by debt source.

Non debt tax shield displays a positive relation with financial leverage and found statistically insignificant. This positive relation verifies that firms with high non debt tax shield use more debt than equity. This evidence is consistent with Static trade-off theory for only short term debts. Dividend policy as measured by the dividend pay-out ratio

indicate a positive but insignificant relationship this suggests that dividend policy does not explain the variations in leverage and so does taxation and liquidity.

5.2 Conclusions

From these results, profitability and asset structure can be said be the determinants of capital structure and that Pecking order theory are partially accepted among the listed companies.

5.3 Limitations of the Study

The study considered only considered firm specific characteristics and did not consider other external factors that could affect the financing decisions of a company.

There was also limitation of time as it was carried out as part requirement for the award of Master of business administration degree; the limited timeframe limited the scope for wider research. The study was further limited by lack of finances.

However the study concentrated on listed companies since information is easily accessible out the research across all the companies listed in the Nairobi Stock exchange which enabled generalization of the study findings.

5.4 Recommendations for Further Studies

The study has investigated the determinants of capital structure of companies quoted at the Nairobi Stock Exchange (NSE). Majority of the institutions in Kenya are in the private sectors which differ in their way of management and have different settings all together. This warrants the need for another study which would ensure generalization of the study findings for all the institutions in Kenya and hence pave way for new policies. The study therefore recommends another study be done with an aim to investigate the

determinants of capital structures in the private sector in Kenya which would consider institutions such as insurance companies, banks, broadcasting companies and telecommunication industry among others.

In future work, it would be appropriate to focus on following aspects:

- Differentiating between long term and short term debts.
- Ownership structure should be considered.
- Macro economic factors should be included, for instance non debt tax shield could be adjusted for inflation to find out the actual economic depreciation.

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APPENDIX: LIST OF COMPANIES

1	KAKUZI LTD
2	REA VIPINGO
3	SASINI LTD
4	CAR & GENERAL
5	CMC HOLDINGS
6	KENYA AIRWAYS
7	MARSHALLS E.A
8	NATION MEDIA GROUP
9	STANDARD GROUP
10	TPSE
11	CENTUM INVESTMENT COMPANY LIMITED
12	ATHI RIVER MINING
13	BAMBURI CEMENT COMPANY
14	BAT KENYA
15	BOC KENYA
16	CROWN BERGER
17	OLYMPIA CAPITAL
18	EAST AFRICA CABLES
19	EAST AFRICA PORTLAND CEMENT COMPANY
20	EABL
21	EVEREADY EAST AFRICA
22	SAMEER AFRICA
23	KENOL\KOBIL
24	MUMIAS SUGAR COMPANY
25	KPLC
26	KENGEN
27	TOTAL KENYA
28	UNGA GROUP
29	CITY TRUST
30	EAAGADS
31	KAPCHORUA TEA
32	LIMURU TEA KENYA
33	WILLIAMSON TEA KENYA