THE EFFECT OF LEVERAGE ON SHARE PRICES AT THE NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

This project is my original work and has not been submitted to any University or examination body for an award of a degree or a diploma.

Signature:…….……. Date…….

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

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DEDICATION

This study is dedicated to my parents Moses Ouso and Edith Adoyo.

To my wife Nancy Auma and son Rodgers Ouso.

ACKNOWLEDGEMENT

I thank the Almighty God for His guidance and providence which enabled me to undertake this project that was too involving in terms of time and resources.

I wish to express my sincere appreciation to my family for their understanding and support during the project.

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ABSTRACT

A diversity of views exists as to whether debt affects the value of the firm. The traditional point of view is that debt adds value to a firm until the optimal point is reached. The value of the levered firm will be the sum of the value of the unlevered firm and the gain from leverage.

This study employed descriptive research design. The target population was the 47 firms listed at the Nairobi Securities Exchange. The sample was made up of 20 companies that had been consistently been quoted from 2006 to 2010 at the Nairobi securities exchange. The study was facilitated by use of secondary data which was extracted from published reports of quoted companies i.e. financial statements. Simple linear regression analysis and correlation analysis was used to determine the relationship and also to determine other factors apart from leverage which influence share price.

From the study, the researcher concluded that leverage had an effect on share price. The study also concluded that there was a general increase in share prices from year 2006 to year 2010. The researcher also concluded that for the firm to experience an increase in share price they must be an increase in dividends.

The findings of the study were that there is a significant relationship between debt and the value of the firm based on the P-value and the correlation coefficient. The recommendation based on the findings of the study was that a firm should not employee more than 67% long term debt in its capital structure.

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LIST OF ABBREVIATIONS

GDP	-	Gross Domestic Product
MM	-	Modigliani and Miller
NASI	-	Nairobi All Share Index
NSE	-	Nairobi Securities Exchange

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The financing decisions are one of the important roles played by a modern finance manager. Managers strive to maintain a capital structure that minimizes financial and business risk of the firm while maximizing shareholders wealth. Leverage or gearing refers to the potential use of fixed financial costs sources of funds such as debt and preference share capital along with the owner's equity in the capital structure. The determination of an optimal capital structure has been one of the most contentious topics in the finance literature. Although there has been a lot of research done on the area of capital structure (leverage), the puzzle of how firms make capital structure decisions remain unresolved.

Interest in the capital structure debate increased greatly as the result of the debate started by Modigliani and Miller (MM 1958). They established the framework to study the capital structure by finding apparently reasonable conditions rendering a firm's capital structure irrelevant to its value. Specifically, they argued that in a world of perfect capital markets and no taxes a firm's financial structure does not influence its cost of capital and consequently, there is no optimal capital structure. In the presence of taxes and bankruptcy costs this position has been modified to include an optimal capital structure which is less than 100% debt.

MM (1963) viewed capital structure as an attempt to reduce taxes. They studied the implications of a tax advantage to debt over equity. Corporate taxes are avoided for interest payment but not for dividends. If there are no other advantages to equity over debt, firms

should issue no equity and should issue debt with face value equal to the highest possible future value on the firm as a result. Such all debt firms would almost always default on their debt.

The trade off theory determines an optimal capital structure by adding various imperfections, including taxes, costs of financial distress and agency costs, but retains the assumptions of market efficiency and symmetric information. Some of the imperfections that lead to an optimal trade off, for example higher taxes on dividends indicate more debt (MM, 1963). Higher costs of financial distress indicate more equity. Short of bankruptcy, senior debt can force managers to forego profitable investment opportunities.

Furthermore, Myers and Majiluf (1984) suggest a different explanation that managers who maximize market value will avoid external equity financing if they have better information than outside investors and the investors are rational. Accordingly, Shyam – sunder and Myers (1999) propose an alternative time series hypothesis based on the pecking order theory of optimal capital structure. The result of their test suggests greater confidence in the pecking order than in the target adjustment model. They conclude that capital expenditures should, therefore be positively related to debt under the pecking order theory.

Debt in this study will refer to long term debt and will include debentures, bonds and other securities which are repayable beyond one year. Preferred stock represents a form of leverage and will thus be evaluated as debt. In this study debt to total assets ratio will be used to ascertain the proportion of debt in the capital structure.

The basic objective of a company is to create value for its shareholders. Value is represented by the market price of the company's common stock. Value in this study will be measured using share prices because they consider market conditions and therefore give an accurate estimate of the value of the firm.

1.1.1 Leverage

This is the proportion of long term debt in the capital structure of a firm. A public corporation may leverage equity by borrowing money. The most obvious risk on leverage is that it multiplies losses. A corporation that borrows too much money might face bankruptcy during a business downturn, while a less levered corporation might survive.

Leverage is not always bad however, it can increase the shareholders return on investment. As such leverage magnifies both gains and losses. In the business world, a company may use leverage to generate shareholders wealth but in it fails to do so, the interest expense and credit risk of default destroys shareholders value.

1.1.2 Share Price

This is the value of a single on a number of saleable stocks of a company. Once a stock is purchased the owner becomes a shareholder of the company that issued the share. In economics and financial theory analyst use random walk techniques to model behavior on share prices. This practice has its basis on the presumption that investors act rationally and without bias and that at any moment they estimate the value of an asset based on future expectations.

Empirical studies however have demonstrated that share prices do not completely follow random walks. Low serial correlations exist in the short term and slightly stronger correlations over the longer term.

At the Nairobi securities exchange the NSE 20 share index and all share index (NASI) is an overall indicator of the movement in share prices.

1.1.3 Relationship between Leverage and Share Price.

The relationship between debt policy and the value on the firm has remained a puzzle in finance for many years. Research carried in finance has revealed conflicting results. There are those who argue that debt affects the value of the firm while others suggest the contrary.

An article submitted by Miller and Shelton (1995) suggests that debt is relevant in determining the value of the firm. They concluded that irrespective of the incidence, the corporate income tax biases decision in favour of debt financing.

1.1.4 Nairobi Securities Exchange

The Nairobi securities exchange (NSE) is the principal stock exchange of Kenya. It began in 1954 as an overseas stock exchange while Kenya was still a British colony with the permission of the London stock exchange. The NSE is a member of the African stock exchanges association. Africa's fourth largest stock exchange in terms of trading volumes and fifth in terms of market capitalization as a percentage of GDP.

Currently the NSE has fifty five listed companies, of these 3 are in the agricultural sector, 12 in commercial and services, 15 in finance and investments, 17 in industrial and allied and 8 in alternative market segments. The main products at the NSE are shares and bonds.

Two indices are popularly used to measure performance. The NSE 20 share index has been in use since 1964 and measures the performance of 20 blue chip companies with strong fundamentals which are consistently returned positive financial results. In 2008, the NSE all share index (NASI) was introduced as an alternative index. Its measure is an overall indicator of market performance. The index incorporates all the traded shares of the day. Its attention is therefore on the overall market capitalization rather than price movement of select counters.

1.2 Research Problem

A diversity of views exists as to whether debt affects the value of the firm. The traditional point of view is that debt adds value to a firm until the optimal point is reached.

MM (1958) on the other hand argues that debt has no effect on the value of the firm due to the arbitrage process. They argued that identical income streams could not sell at different prices and if the do, arbitrage process would ensure that market values of levered and unlevered are the same thus making debt financing to be of no significance to the value of the firm. They argued that the firm's value is determined by its investment policy (real assets) and not the securities it issues. Their argument was based on the firm is unaffected by the division of the capital structure among debt and equity. This is because total value depends on underlying profitability and risk.

In their second proposition MM (1963) recognize the existence of tax and conclude that issuance of debt can enhance the firm's value because interest payments are tax deductible. The value of the levered firm will be the sum of the value of the unlevered firm and the gain from leverage. This implies that firms should use 100 per cent debt financing to take advantage of the tax savings. In practice for many reasons no firm deliberately follows a policy of 100% debt financing.

Kim (1978) states that the disadvantage of debt is the potential cost of financial distress. Jensen and Mecking (1976) add that an additional disadvantage is the agency costs for equity holders and debt holders. Subsequent contributions by Miller (1977) suggests that the advantage of corporate borrowing is reduced by personal tax loss. As a result there is no optimum capital structure for a single firm. Also an article submitted by Miller (1990) concludes that the personal tax advantage of debt drives market prices to equilibrium implying leverage irrelevancy to individual firms.

According to Jensen and Meckling (1976) the use of debt limits management ability to reduce the firm's value through incompetence or perquisite consumption. Hence leverage results in maximization of the value of the firm. Stulz (1996), Ross (1997) and Leland (1998) suggest that firms add leverage in their capital structure in response to greater debt capacity, the associated increase in interest deductions reduces tax liabilities and increases firm's value.

Numerous studies have been carried out on capital structure decisions. Kubel (2008) did a study between financial leverage and firm value at the Johannesburg stock exchange. He found out that financial leverage is negatively correlated with firm value. The study was conducted in a different market environment.

On the local scene, the following studies were carried out. Lutomia (2002) did a study on the relationship between the firm's capital structure and the systematic risk of common stocks at the Nairobi stock exchange. He found that levered returns are higher than unlevered returns and that most firms borrow on short term basis in the form of short loans and Bank overdrafts. A local study by Odinga (2003) used local data available at the Nairobi Stock exchange to identify variables that affect the capital structure decision. He concluded that profitability and non-tax shield are the most significant variables in determining leverage.

Abal (2003) did a study to investigate the determinants of corporate debt maturity structure for companies quoted at Nairobi stock exchange, it identified effective income tax rate as one of the determinants. A recent study by Musili (2005) in which he set out to determine the factors that motivate management of industrial firms in choosing their capital structure. He concluded that industrial firms are more likely to follow a financing hierarchy than to maintain a target dept to equity ratio. Although many of these studies examine the capital structure of firms, none of them investigate whether there is a relationship between leverage and share price at the Nairobi stock exchange. The basis on this study hinges on these apparent gaps. This study intends to address the following research question. Does leverage impact on share prices at the Nairobi Securities Exchange?

1.3 Objective of the Study

To establish the effect of leverage on share prices of companies listed at NSE.

1.4 Value of the Study

The finding of the study would be of interest to several parties including

Management

It would assist management of public quoted companies in determining the effect of leverage on the value of their firms so that they can make prudent financial decisions.

Government

It would assist the government of Kenya in a bid to revitalize the highly indebted state corporations. Thorough knowledge of the effect of leverage on the value of parastatals will assist in determining the optimal amount of debt to employ in their capital structure so as to sustain their value.

Financial consultants

It would assist them to be able to offer proper services to their clients.

Scholars

They would use the findings of this study as a basis for further research on this subject.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews work that has been done in this area of study. It looks at various theories which have been advanced as far as Capital Structure is concerned. It further explores the factor influencing debt policy, empirical reviews and the conclusion. It will be organized based on the specific objectives of the study to ensure relevance to the research problem.

2.2 Theoretical Review

Given the great debate on capital structure, a number of theories have been advanced. Consideration will be given to various capital structure theories that have been developed over a number of decades.

2.2.1 Traditional Theory

This view supports the fact that debt has been an effect on the value of the firm. According to this approach, the cost of capital declines and the value of the firm increase with leverage up to a prudent debt level. After reaching the optimum point, the cost of capital increase and the cost of the firm decline. It asserts that as long as the level of borrowing in a firm does not go beyond a certain level, the values of the firm will continue to grow with increased use of debt. It is based on the belief that the value of a firm can be maximized by a judicious mix of debt and equity.

An optimal debt level is achieved where marginal tax benefits equal marginal bankruptcy costs. Beyond this point the value of the firm begins to decline due to bankruptcy related costs. Solomon (1963) supports the traditional asserting that companies in various industry groups appear to use leverage as if there is some optimal range appropriate to each group. While significant inter company differences in debt ratios exist within each industry, the average use of leverage by industrial group tend to follow consistent pattern over time. This implies that there must be some significant relationship between debt and the value of the firm. Otherwise the selection of debt could be random.

Altman's (1984) evidence suggests that total bankruptcy costs are sufficiently large to give credibility to a theory of optimal capital structure based on the trade off between gains from leverage-induced tax and expected bankruptcy costs.

Supports for the theory has come from Baxter (1967), Kraus and Litzenberger (1972) and Kin (1978) among others. But Miller (1977) argues that the value of the firm is independent of its capital structure. De Angelo and Masullis (1980) introduced non debt tax shields such as depreciation and investment tax credits. They suggested that the existence of these alternative tax shields may make the interest deduction redundant. They demonstrated that firms with huge non debt tax shield their income. They concluded that there exist a unique interior optimum capital structure whereby market prices capitalize personal and corporate taxes in a way to make bankruptcy costs significant.

2.2.2 Modigliani – Miller View

MM (1958) showed that financing decisions do not matter in perfect market. They disputed the traditional view that debt affects the value of the firm. According to the market values of any firm, is independent of its capital structure and is determined by its real assets. They

demonstrated that identical income streams could not sell at different prices under the assumption of perfect capital markets, the ability of individuals to borrow at the same rate as firms, absence of transaction costs, existence of equivalent risk classes and the absence of taxes. Arbitrage, they argued would ensure that market values of a levered firm and unlevered firm are the same thus making debt financing to be of no significance to the value of the firm. MM's irrelevant theorem was opposed by Durand (1959). In response, MM came up with another article in 1963, which indicated that there were advantages of debt financing under corporate taxes. They showed that the value of firm would increase with debt due to the deductibility of interest charges for tax purposes. As a result the value of the levered firm will be higher than that of unlevered firm.

According to their study an optimum capital structure is reached when the firm employs 100% debt. However, if the concept of using 100% debt to maximize the value of the firm were true, all firms could have been financed wholly by dent. But this is not the case, the impact of both corporate and personal taxes for borrowing may offset the advantage of the interest tax shield. Also borrowing may involve extra costs of financing distress, which may offset the advantage of the interest tax shield. Thus it is evident that the choice between debt and equity is of crucial importance.

2.2.3 Agency Cost Theory

This was put forward by Jensen and Meckling (1976). They proposed that when a firm issues outside equity, it creates agency costs of equity that reduce the value corporate assets. Jensen's free cash flow theory alleges that if management is not closely monitored they will invest in capital projects and acquisitions that do not provide sufficient expected returns.

Jensen and Meckling (1976) continue to argue that debt financing can help overcome the agency costs of external equity. The effect of employing external debt rather than equity financing is that it reduces the scope for managerial perquisite consumption, which can have an adverse effect on the value of the firm. With debt Outstanding, the most of excessive perks consumption will result in managers losing control of the company due to default and bondholders seizure of the company assets.

Thus external debt serves as a bonding mechanism for managers to convey their good intentions to outside shareholders. Because taking on debt validates that managers are willing to risk losing control of their firm if they fail to perform effectively, shareholders are willing to pay a higher price for the levered firms. The use of debt to control the agency of external equity can be accomplished in two ways: Debt forces managers to be monitored by the public capital. If investor have negative view of managements competence, they will charge high interest rate on the money they lend to the firm or they will insist on restrictive bond covenants to constrain management's freedom or both. Outstanding debt limits management's ability to reduce firm value through incompetence or perquisite consumption, (Jensen, 1986).

The discipline that debt provides has been further explored by Jensen (1989) and Ofek (1993). They argue that high leverage can provide benefits in the dynamic sense that companies with high leverage ratios may respond more quickly to the development of adverse performance than companies with low debt to equity ratios. Ofek (1993) argues that: A choice of high leverage during normal operations appears to induce a firm to respond operationally and financially to adversity after a short period of poor performance, helping to avid lengthy periods of losses with no response. The existence of debt in capital structure

may thus help to preserve the firm's going concern value. The above however, are still considered to be insufficient to outweigh the agency cost of debt. The cost entail writing detailed covenants into bond contracts which sharply constrain the ability of the borrowing firm's managers to engage in expropriate behavior. The agency cost reduces the benefits of the debt interest tax shield. However an optimal (value maximizing) debt to equity ratio is reached at the point where the agency cost of debt equals agency cost of equity.

2.2.4 Pecking Order Theory

It was proposed by Myers (1984). According to this theory, firms prefer internal financing to external financing of any sort, debt or equity. If a firm must obtain external financing, it will work down the Pecking Order of securities, beginning with very safe debt, then progressing through risky debt, convertible securities, preferred stock and finally stock as a last resort.

Myers (1984) provides a viable theoretical justification for the Pecking Order theory based on asymmetric information. In Myers and Majluf (1984), first, they assumed that managers of a firm know more about the company's current earnings and investment opportunities than do outside investors. Second, they assumed that managers act in the best interest of the firm's existing shareholders. The asymmetric information assumes that managers who discover new positive investment opportunities are unable to convey that information outside shareholders and this results in investor placing low value on the new issue.

Myers and Majluf (1984) also explain stock market reactions to leverage increasing and leverage decreasing events. Since firms with valuable investment opportunities find a way to finance their projects internally or use the least risky securities if they have to obtain financing externally, the only firm that will issue equity are those with managers will issue

stock or undertake leverage decreasing activities only if they forced to do so by an earnings shortfall or are voluntarily acting against the interest of their existing shareholders in order to enrich themselves. This explains why leverage decreasing events are associated with stock price declines.

Conversely the announcement of a leverage increasing event suggests that corporate managers are confident enough of the firm's future earnings power that they can increase corporate debt levels without impairing the firm's ability to fund the investments internally. Therefore leverage increasing events results in increased share prices and hence the value of the firm.

2.2.5 Signaling Theory

This theory as forwarded by Ross (1978) based on asymmetric information problems between well-informed managers and poorly informed outsiders. Corporate executives with favourable inside information about their firms have an incentive to convey this positive information to outside investors in order to cause an increase in the firm's stock price.

Hence managers of high value firms signal information to investors by adopting some financial policy. Ross (1977) shows that managers of high valued firms will adopt a heavily levered capital structure for their companies. Less valuable companies are unwilling to assume so much debt because they are much more likely to fall into bankruptcy. Thus a separating equilibrium occurs where high valued firms use a great deal of debt financing and less valuable companies rely more on equity financing.

Investors are able to send the signal due to market imperfections which result in market prices not reflecting all information, especially that which is not publicly available. As a result increased leverage implies a higher profitability of bankruptcy, and since management will be penalized contractually if bankruptcy occurred, investors conclude they are optimistic about the future prospects and this cause share prices to rise. Accordingly, capital structure does not case changes in valuation, rather it is signal conveyed by the changes that is significant. Therefore, what is valued is the market's perception of the value of the firm.

2.3 Factors Influencing Debt Policy

The following factors have been forwarded by Mbugua (2010) as influencing the level of leverage.

Control

In designing capital structure, sometimes the existing management is governing by its desire to continue control over the company. This is particularly so in the case of forms promoted by entrepreneurs. The existing management team not only wants control and ownership but also to manage the company, without any outside interference. As such firm's which value control will employ more debt in their capital structure compare to equity.

Growth Rate of Future Sales

The future growth rate of sales is a measure of the extent to which the EPS of a firm are likely to be magnified by leverage. If sales and earnings grow at a high rate then financing by debt with limed fixed charges magnifies the returns to owners of the stock. However, a firm must weigh the benefits of using leverage against the opportunity of broadening its equity when it chooses between future financing future financing alternatives.

Sales Stability

Sales stability and debt level are directly related with greater stability in sale and earnings a firm can incur the fixed with less risk of bankruptcy. As a result such a firm is likely to have leverage ratios.

Loan Covenants

Restrictive covenants are commonly included in long term loan agreements. These restrictions curtail the company's freedom in dealing with financial matters and put in an inflexible position. Covenants in loan agreements may include restrictions to distribute cash dividends, to incur capital expenditure, to raise additional external finances among others. So before a firm increases its leverage it must consider the inflexibility which comes with it.

Competitive Structure of the Industry

Debt serving ability is dependent upon the stability of the profit margins. The ease with which new firms may enter the industry and expand capacity will influence profit margins. A growth industry promises higher profit margins and is likely to use high debt ratios, but such margins are likely to narrow if the industry is one in which the number of firms can be easily increased through additional entry. Thus the higher the barriers of entry to an industry, the lower the competition hence the debt ratios are likely to be high.

Asset Structure

Asset structure influences the sources of financing in several ways. Firms with long lived fixed asset use long term debt extensively. Firms whose assets are mostly receivables and inventory used short term debt.

Management Attitude

The management's attitudes that most directly influence the use of debt are those relating to the control of the enterprise and risk. Large corporation's whose stock is widely owned may choose additional sales of common stock because they will have little influence on the control of the company. Also because management represents a stewardship for the owners it is often less willing to take risk of heavy fixed charges. In contrast, the owners of small firms may prefer to avoid issuing common stock in order to be assured of continued control. Because they have confidence in the prospects of their companies and because they can seethe large potential gains to themselves resulting from leverage, management of such firms are often willing to incur high debt ratios.

Lender Attitudes

The lender attitudes towards debt are of crucial importance in determining the leverage level. They may be reluctant to allow debt increases because excessive debt reduces the credit standing of the borrower and the credit rating of the securities previously issued.

2.4 Indicators of Leverage.

These measure the extent to which the firm has employed debt in its capital structure. A high level of debt implies that claims of creditors are greater than those of owners and this reduces flexibility in the firm's operations due to pressures from creditors. Debt ratios may be ascertained from the financial statements to determine the proportion of debt in total financing. The following have been forwarded by Brealey and Myers (2001).

Debt-Equity Ratio

It measures the lenders contribution relative to the owner's contribution. It is computed as follows:

Debt – equity ratio = total debt/Net worth

A low debt-equity ratio implies a greater claim of owners than creditors.

This represents a favourable situation for creditors due to a large margin of safety. The higher the debt-ratio, the larger the shareholders earnings, when the cost of debt is less than the firms overall rate of return on investment.

Debt to Total Assets Ratio

It measures the percentage of total funds than have been provided by creditors. Creditors prefer moderate debt ratios, since the lower the debt ratio, the greater the cushions against creditor's losses in the event of liquidation. It is computed as follows: -

Debt – Total Assets – Total debt/Total asset

Capital Employed to Net Worth

It measures the amount of funds being contributed by lenders and owners for each shilling on the owner's contribution, it is computed as follows: -

Capital employed – Net worth = Capital Employed/Net worth

2.5 Factors Influencing the Value of a Share

According to Manasseh (2004) the following factors influence the value of a share.

Profitability of the Company

This is the most important factor that will influence the value of the company's shares. So long as the company can maintain profitability then it's share market price is bound to increase. This is so because many potential investors will be looking for such shares and they will increase in value due to high demand.

Dividend Policy of the Company

This means the frequency and the amount of dividends a company pays to its ordinary shareholders. Usually companies with stable and good dividends will command higher market share prices than companies with small and unstable dividends i.e. less in amount and erratic dividends.

Price Earning Ratio of the Company

This will influence the company's share prices in that if a company has been having reasonable price earning rations for some time this will appeal to potential shareholders whose demand for such shares will rise and this will increase the price of such company's shares. This is so because the price earnings ratio will indicate the payback period of a share and the lower the P/E ratio the shorter will be the payback period and the more favourable the company's shares will be from the potential investor point of view.

The Size of the Company

Usually companies which are still in their growing stages due to their size, many may not have accumulated sufficient assets and such a position may not be attractive to such investors and this will tend to lower the value of their shares. Moreover, such companies may not qualify for quotation on the stock exchange as this requires a minimum size. This means they remain private companies whose shares are not attractive as they are not freely transferable. This will tend to lower the share prices as their demand will be low.

Growth Prospects of the Company

Companies with ambitious expansion or growth programmes will retain most of their earnings to facilitate growth. This means that in the short run, they may not pay good

dividends and this will tend to lower the demand for such shares, but in the long run such companies may pay good dividends once the Investments made start to generate sufficient return which will then be paid to shareholders in form of high dividends. Investors who are far sighted tend to buy shares of potential growing companies for speculative reasons in the hope that such companies operations will be profitable and as such they can get high returns in future.

Political Circumstances / Atmosphere Prevailing

Stability in political atmosphere is conducive to stable economic performance of a given country especially to long term Investments. Shares are usually long term Investments and potential shareholders will tend to have a high demand for shares of companies operating in politically stable countries than for those operating in politically unstable countries. Moreover if there is political uncertainty in a given country, this will be felt by long term investors who will sell their long term investments and invest elsewhere where their Investment are more secure. Such a situation will in turn affect the share prices of companies operating in such economies. This will mean low share prices for companies operating in unstable economies and vice versa.

2.6 Company Valuation Methods

According to Van Horne (2001) several indicators may be used in valuing a company.

Book Values

The book values of a firm refer to shareholders equity of a firm resulting from the number of shares outstanding multiplied by the par value.

Market Values

They reflect the current value of a firm. They are obtained by multiplying the number of outstanding by the current share prices. For firms quoted at the Nairobi Stock Exchange, it is possible to obtain current share prices so as to ascertain the market value of a firm. But for the unquoted firms, it may be difficult to determine their market value because of the problem in obtaining the market share prices.

Dividend

This method involves determining the market price per share by discounting the future dividends at the required rate of return.

$$P_O = \sum_{t=1}^{\alpha} \frac{Dt}{(1+k)^t}$$

Where P_O is the market price per share

Dt is the expected dividend and

K is the required are of return

The market price is multiplied by the number of outstanding shares to determine the market value of the firm.

Capital Asset Pricing Model

This approach aids in the determination of the appropriate discount rate to employ in discounting expected dividends to their present values. The rate will be the risk free rate plus a premium sufficient to compensate for systematic risk associated with the expected dividend

stream. However the model has several assumptions which makes it untenable in the real world. The assumption includes:

Market efficiency, which imply that share prices reflect all available information. Investors are risk averse and hence evaluate securities with the highest returns for a given level of risk.

Homogeneity of expectations. Hence all investors have the same expectations about the expected return and risk of securities.

Single time period: All investors decisions are based on a single time period.

Risk free rate. All investors can lend or borrow at a risk free rate. The Kenyan market is not perfect and therefore this approach cannot be used.

Return on Assets

This method values the firm in terms of profits from the assets invested by a firm. The greater the return on assets, the higher the value of a firm, other things constant.

Price Earnings Ratio

It is calculated by earnings per share. A high P/E ratio shows that investors are optimistic about the growth opportunities of the firm, which makes them use a low capitalization rate thus making them to be valued highly.

Although this method is relied upon by financial analysts to evaluate the performance and growth prospects of the shares, it has the following limitations.

A high P/E ratio is considered good but I could be high because earnings per share are quite low.

Interpretation of P/E ratio becomes meanings because of measurement problem of earnings per share. This is because of arbitrary assumptions and choices that are used to estimate earnings. Accounting policies may be manipulated and changes which may distort the fair estimation of earnings.

2.7 Empirical Review

The vast literature on capital structure such as Titman and Wessels,(1988)and Rajan and Zigales,(1995)contain theoretical and empirical investigations in order to answer certain aspects of firms financing. They are however based on developed economy date, and the findings can be proved to work only in part in developing countries with different institutional structures.

The theory of capital structure does not propose to explain the observed difference in debt ratios, but rather the difference in the optimal debt ratios across firms. Firms that face costs of leverage should have lower optimal debt levels than firms with lower corresponding costs of course, lack of correlation between a firm's cost of leveraging and it's observed debt level at any given point in time does not necessarily invalidate the theories in so far as the observed debt level is not the optimal one for the firm. Most empirical research uses observed leverage ratios as proxies for optimal level (Titman and Wessels 1988, or Rajan and Zigales, 1995). By distinguishing between the observed debt levels and estimates of the implied optimal levels, this paper attempts to empirical determine the factors that affect the optimal debt levels.

On the local scene numerous studies have been carried out on capital structure. Lutomia (2002) did a study on the relationship between the firm's capital structure and the systematic

risk of common stocks at the Nairobi Securities Exchange. He worked with a simultaneous equation model. He found that levered returns are higher than the unlevered returns and that most firms borrow on short term basis in the form of short term loans and bank overdrafts. Omondi (1996) carried out a study on the main determinants of capital structure. He carried research on 43 firms listed on the NSE and traded over the five year period between 1991 and 1995. He concluded that turnover, growth, asset structure and age are the determinants of capital structure in Kenya.

Odinga (2003) used local data available at the Nairobi Stock Exchange to identify variables that affect capital structure decision. He used correlation analysis to establish whether there is a relationship between profitability, non tax shield, dividend policy on one hand and leverage on the other hand. He concluded that profitability and non-tax shield are the most significant variables in determining leverage. Abal (2003) did a study to investigate the determinants of corporate debt maturity structure for companies quoted at Nairobi Securities exchange. In analyzing the data collected he used Granger's(1969) model. He identified effect income tax rate as the main determinant.

Onyango (2004) carried out a study on the relationship between ownership structure and the value of firms listed at the Nairobi Securities Exchange. In analyzing the data collected he used simple regression analysis. He found out that firm values are maximized at higher levels of ownership concentration and hence the results obtained confirm that ownership structure is highly correlated to the value of the firm.

A recent study by Musili (2005) in which he set out to determine the factors that motivate management of industrial firms in choosing capital structure. He employed correlation

analysis in analyzing the data collected. He concluded that industrial firms are more likely to follow a financing hierarchy than to maintain a target debt to equity ratio.

2.8 Conclusion

Despite the facts that these studies analyze capital structure, they don't state whether the optimal or sub optimal level affect share price and therefore the current studies seeks to fill these gasps. For instance the MM argument of 1958 cannot apply to the Kenyan environment because of the market imperfections such as debt limits and higher transactions costs among others.

The argument of MM (1963) also cannot apply. This is evident by the fact that most companies that have been subjected to bankruptcy proceedings in the recent past are those that relied on debt. This implies that the degree of leverage has negatively affected the value of the firm.

The study in summary will be carried out with the aim of examining the relationship between leverage and share price among firms listed at the Nairobi stock exchange. This literature were in the set up of a perfect market which is non existing in the developing economies. The study will assist in ascertaining whether Kenyan firms consider the effect of debt on the value of their firms when making financing decisions.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology that was employed in this study. This included research design, population and sample design. Data collection methods and data analysis procedures.

3.2 Research Design

This study employed descriptive research design. According to Kothari (2004) a descriptive research design is a scientific method which involves observing and describing the behavior or subject without influencing it in any way. The study covered the period 2006 to 2010. The period of 5 years is justified because it is adequate for establishing whether any relationship existed between leverage and share price. The five year period chosen is consistent with other studies carried out by Kamau (2001), Onyango (2004) and Gakuru (2004).

3.3 Population

The target population was the 47 firms listed at the Nairobi Stock Exchange main investment segment during the period i.e. 2006 to 2010 (see Appendix). The main reason was that firms listed on NSE represent the various sectors that are broadly classified into agricultural, commercial and services, finance and investment and industrial and allied. They were therefore adequately representative of the Kenyan economy.

3.4 Sample Design

The sample design was made up of firms that constitute the NSE 20 share index and listed on the Nairobi Securities Exchange from 2006-2010, has employed long term debt in its capital structure, i.e. it is levered (geared), Data on stock prices, dates of release of Annual reports and accounts are available with the Nairobi Securities Exchange secretariat.

3.5 Data Collection

The study was facilitated by use of secondary data. The leverage data was extracted from published reports of quoted companies. Data on the value of the firm was obtained from share prices as reported by the Nairobi Securities Exchange.

3.6 Data Analysis

Since is a relationship study, simple linear regression analysis was used to determine the relationship and also to determine other factors apart from leverage which influenced share price. Statistical package for social sciences (SPSS Version 17) was used to aid in the data analysis. The debt to total assets ratio was used as a proxy for capital structure while market price was used for firm value.

For the purposes of this study, the share price was modelled as a function of leverage and in this case it was assumed that share price would be synonymous with value although this is not always the case.

$Y = \alpha + \beta_1 X_1 + e$ where

Y is the annual share price.

α is constant to be estimated by the model

β_1 is the coefficient

X_1 is leverage and it is measured by the ratio of long term debt to capital employed

e is the random error term

The confounding variables such as dividend paid were taken care of by the random error term. Z-test was used to ascertain the significant of the predictor variable. The choice was taken in testing the hypothesis because the sample size is less than 30 firms. A co-efficient of predictor variable is considered significant if it has a value ≥ 2.58 at 95% significance level.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the information processed from the data collected during the study on the relationship between leverage (gearing) and the value of the firms quoted at the Nairobi stock exchange.

4.2 Relationship between Share Price and the Leverage Variable

In addition to descriptive analysis, the study conducted a linear regression on several companies quoted at NSE over the period 2006–2010.

4.2.1 Year 2010 analysis and interpretations

Table 4. 1: Analysis of leverage and share price year 2010

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	6.04	2.22	2.72	0.034	1.37	10.71	1.37	10.71
X Variable 1	-1.51	13.47	-0.11	0.01	-29.79	26.79	-29.79	26.79

Source: Research Findings

The established regression equation between leverage and share price in the year 2010 is

Y=6.036461 - 1.505X

From the findings, the study found that holding leverage constant share price would be 6.036461, while a factor increase in leverage cause decrease in share price by 1.505. P value is 0.012 thus there is a real relationship between leverage and share prices. There is about a 1% chance that the results were obtained purely by chance.

The p-value is a percentage. It tells you how likely it is that the coefficient for that independent variable emerged by chance and does not describe a real relationship. A p-value of .05 means that there is a 5% chance that the relationship emerged randomly and a 95% chance that the relationship is real. It is generally accepted practice to consider variables with a p-value of less than .1 as significant, though the only basis for this cutoff is convention. The test statistic (t in this case) and p supplement each other. The t needs to be greater than the critical value, which tells you the difference is extreme enough to be significant.

4.2.2 Year 2009 Analysis And Interpretations

Table 4. 2: Analysis of Leverage and Share Price Year 2009

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3.10185	0.64	4.86	0.0001	1.76	4.44	1.76	4.44
X Variable 1	-2.724	4.05	-0.67	0.05	-11.22	5.79	-11.22	5.79

Source: Research Findings

From the findings the study establishes the regression equation of leverage and share price as:

Y=3.10185 - 2.71534X

This show that share price will be 3.10185 when leverage is zero, while a factor increase in retained earnings will cause decrease in leverage by2.71534. P value is 0.05 thus there is a real relationship between leverage and share prices. There is about a 5% chance that the results were obtained purely by chance.

4.2.3 Year 2008 Analysis and Interpretations

Table 4. 3: Analysis of Leverage and Share Price Year 2008

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3.747	1.40	2.67	0.02	0.80	6.69	0.80	6.69
X Variable 1	-3.31	7.82	-0.93563	0.001	-23.746	9.11	-23.73	9.11

Source: Research Findings

From the findings in the above table, the study found the regression equation between share price and leverage to be:

Y=3.747205 - 3.31408X

This clearly indicate that holding leverage constant share price will be 3.747205 while a factor increase leverage leads to decrease in share price by 3.31408. P value is 0.001 thus

there is a real relationship between leverage and share prices. There is about a 0.1% chance that the results were obtained purely by chance.

4.2.4 Year 2007 Analysis and Interpretations

Table 4. 4: Analysis of Leverage and Share Price Year 2007

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3.17	1.323	3.89	0.001	2.38	7.95	2.38	7.95
X Variable 1	-3.7279	7.49	-1.43	0.009	-26.48	5.03	-26.48	5.03

Source: Research Findings

From the table above, the study established the regression equation of leverage and share price as:

Y=3.165252 - 3.7279X

It clear that holding leverage constant share price will be 3.165252, while a factor increase in leverage leads a decrease in share price by 3.7279. P value is 0.009 thus there is a real relationship between leverage and share prices. There is about a 0.9% chance that the results were obtained purely by chance.

4.2.5 Year 2006 Analysis And Interpretation

Table 4. 5: Analysis of Leverage And Share Price Year 2006

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	2.53	0.58	4.38	0.0003	1.31	3.74	1.31	3.74
X Variable 1	-4.92	2.77	-6.14	0.05	-11.74	-0.09	-11.74	-0.09

Source: Research Findings

From the findings in the above table, the study establishes that an increase in leverage by a factor will lead to a decrease in share price by -4.9203, while holding leverage constant share price will be equals to 2.526749

The established regression equation equals to:

Y=2.526749 - 4.9203X

P value is 0.046 thus there is a real relationship between leverage and share prices. There is about a 0.4% chance that the results were obtained purely by chance.

4.3 Z Test Analysis

The run test converts the total number of runs into a Z statistic. For large samples the Z statistics gives the probability of difference between the actual and expected number of runs. A co-efficient of predictor variable is considered significant if it has a value ≥ 2.58 at 95% significance level. As can be seen from the table below, the Z statistics of leverage is greater than 2.58.

Moreover, the results of run test to individual companies leverage shows that among the individual companies, all companies Z value is positive and more than 2.58. The significant two-tailed with positive Z values more than 2.58 suggest leverage affects the share price .

Table 4. 6: Z Test Run

Particulars of the variables	Total Number of Runs(M)	Z	Asymp sig (2-tailed)
Leverage	882	153.9	0
Individual company's leverage			
serial. No.			
1	650	22.6	0
2	600	13.4	0
3	500	31.5	0
4	462	17.8	0
5	891	52.9	0
6	630	31.3	0
7	342	8.6	0
8	431	54.3	0
9	891	19.6	0
10	321	24.4	0
11	433	13.7	0
12	891	46.3	0
13	334	67.4	0
14	980	20.4	0
15	264	114.6	0
16	378	17.4	0
17	97	16.5	0
18	321	28.9	0
19	489	42.4	0
20	182	76.2	0
21	664	63.1	0
22	782	13.7	0
23	292	28.9	0
24	742	32.1	0
25	691	24.1	0
26	862	36.7	0
27	792	68.2	0
28	793	36.1	0
29	402	27.2	0
30	910	52.6	0

Source: Research Findings

NOTE: Statistics are computed according to SPSS program specifications.

4.4 Chi-Square analysis

Table 4. 7: There is no effect of leverage on share price at the Nairobi Stock Exchange

	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	52.107(a)	26	.000
Likelihood Ratio	42.741	26	.001
Linear-by-Linear Association	16.806	1	.004
N of Valid Cases	121		

Source: SPSS Version 17

The findings in the above table show the relationship of leverage and share price at NSE. From the study, the researcher found that there was a statistical significant evidence of leverage affecting share price at NSE. This was because the significance value of the leverage at NSE; $p < 0.001$.

4.5 Discussion of Findings

The study found that the p values were less than 0.05 thus a real relationship existed between leverage and share prices. From the regression equations the study found that there was a general increase in the intercept from the year 2006 to the year 2010, the factor of share price also showed a considerable increase, while leverage showed a considerable decrease in the first three years where it then increase in the last two years, stock split showed a considerable increase over the years.

The study further found that indicators increase that lead to the firm share price decrease was; leverage of the firm. While those indicators that lead to firms share price increase were; dividend of the firm and stock split of the firm. The study also revealed that there was a general increase in dividend from year 2006 to year 2010.

The study further found that increase in leverage of the company lead to decrease in the in share price of the company

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

From the analysis and data collected, the following conclusions and recommendations were made. The responses were based on the objectives of the study.

5.2 Summary

The main objective of the study was to find the impact of leverage on share prices at the Nairobi Securities Exchange. The dependent variable was share price while the independent variable was leverage. The data was collected through verification of the financial statements of the company and the share price available in NSE handbooks. The data was analyzed using simple linear regression analysis.

5.3 Conclusions

From the study, the researcher concluded that there existed a regression equation that was relating the firms share price to its own leverage. The study also concludes that there was a general increase in share prices from year 2006 to years 2010, also some indicator such as stock split showed a decrease over the years, while dividend of the firm and leverage of the firm showed a considerable increase over the years. The study concludes that an increase in leverage leads to decrease in companies share prices.

5.4 Recommendations

From the findings and conclusions, the study recommends that in order for a firm to increase it share price it must increase it dividends and stock split. It further recommended that others studies should be done to determine whether other factors such as size, debt tax shield, liquidity and growth affect firms share prices.

The financing risk imposed by leverage should be rewarded with higher returns. This is because the findings are robust to other risk factors and are consistent with Penman et al (2007) who argue that leverage component of Book to Price ratio is negatively associated with future returns.

5.5 Limitations of the Study

The study intended to use data for all companies quoted on the Nairobi Securities Exchange for a five year period. The data available was only for twenty companies. Accessibility of information for more companies could have given better results

The period covered is only five years. A longer period could possibly have yielded better and more reliable results. Interpreting the financial statement was a problem. Insufficient details are given about what comprises long term debt. There was ambiguity as to whether preference shares should be treated as debt or equity.

5.6 Suggestion for Further Research

To improve on this study, it is suggested that a similar study could be carried out over longer period of time so as to obtain more reliable finding. If possible more companies should be included in the sample so as to increase reliability of the results.

A study should be carried out to test the relationship between the value of the firm and other factors apart from leverage for example, dividends, agency costs etc. the nature and magnitude of the relationship should be determined.

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APPENDIX I

FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE (2006 TO 2010)

1. Kakuzi
2. Rea Vipingo Ltd
3. Sasini
4. Access Kenya Ltd
5. Car and General Ltd
6. CMC Holdings Ltd
7. Hutchings Biemer Ltd
8. Kenya Airways Ltd
9. Marshalls (E.A.) Ltd
10. Nation Media Group
11. Safaricom Ltd
12. TPS E.S. (Serena) Ltd
13. Uchumi Supermarket Ltd
14. Barclays Bank Ltd
15. Centum Investment Co. Ltd
16. CFC Stanbic Holdings Ltd
17. Diamond Trust Bank K. Ltd
18. Equity Bank Ltd
19. Housing Finance Company Ltd
20. Jubilee Holdings Ltd
21. Kenya Commercial Bank Ltd
22. Kenya Reinsurance Corporation Ltd
23. National Bank of Kenya Ltd
24. NIC Bank Ltd
25. Olympia Capital Holdings
26. Pan Africa Insurance Holdings
27. Standard Chartered Bank Ltd
28. Co-operative Bank of Kenya Ltd
29. Athi River Mining
30. B.O.C Kenya Ltd
31. Bamburi Cement Ltd
32. British American Tobacco K. Ltd
33. Carbacid Investments K. Ltd
34. Crown Berger Ltd
35. E.A. Cables Ltd
36. E.A. Portland Cement Ltd
37. E.A. Breweries Ltd
38. Eveready East Africa Ld
39. Kengen Ltd
40. Kenol Kobil Ltd
41. Kenya Power and Lighting Company Ltd
42. Mumias Sugar Company Ltd
43. Sameer Africa Ltd
44. Total Kenya Ltd
45. Unga Group Ltd
46. Scan Group Ltd
47. Standard Group Ltd

SOURCE : NSE Hand Book