

**THE RELATIONSHIP BETWEEN FIRM'S VALUE OBTAINED USING
MODIGLIANI AND MILLER, DIVIDEND VALUATION, EARNINGS VALUATION
AND THAT GIVEN BY MARKET CAPITALIZATION MODEL**

BY

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DECLARATION

STUDENTS DECLARATION

This management research project is my original work and has not been presented for a degree in any other University

Signed

Date

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SUPERVISOR'S DECLARATION

This management research project has been submitted for examination with my approval as the candidate's university supervisor.

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DEDICATION

This research project is dedicated to my late parents Samson and Marren Otieno, without whom my academic potential would not have been realized. The support they gave me during my childhood cannot be explained.

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First, thanks to God with whose grace I accomplished this work.

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Lastly, I wish to express my profound gratitude to all my friends for their encouragement during the course of my study.

ABSTRACT

The main objective of this research is to establish whether there is any relationship between firm's value obtained using Modigliani and Miller, Dividend valuation and Earning valuation models and that given by Market capitalization model. The information sought for the study was obtained from the Nairobi Security Exchange Secretariat and published annual financial statements population of 51 companies listed on Nairobi Security Exchange. Out of the population, complete information on 26 companies was obtained, analyzed and have provided the information used in this report.

The findings were that the market capitalization values were compared with the Modigliani & Miller values and regressed to bring out any relationship if there and it resulted in an r^2 of 0.074 within a confidence level of 97%. The market capitalization when compared with Earnings valuation model resulted in r^2 of 0,081 and when compared with the dividend valuation model it resulted into r^2 of 0.115 being better than the other two models.

Its therefore concluded that the test of significance carried out to determine whether there was significant relationship between market capitalization model and the other three valuation models, with the P-values of 0.657 for Modigliani & Miller show that the difference was significant hence not a good indicator of Market Capitalization Model. Dividend Valuation Model had P-value of 0.643 showing that its not a good indicator of Market Capitalization Model, and Earnings Valuation Model too had a P-value of 0.576 showing the difference were significant hence not a good indicator of Market Capitalization Model.

The recommendation from observation in this study is that when trying to arrive at a firm's value, it is imperative to have the value obtained from one model be collaborated by values from other models to achieve a better results and help the persons using the information e.g Investors, analysts and finance managers to make wise investment decisions.

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LIST OF ABBREVIATIONS

AIMS	:	Alternative Investment Market Segment
CAPM	:	Capital Asset Pricing Model
CMA	:	Capital Market Authority
DSE	:	Dhaka Stock exchange
DPS	:	Dividend Per Share
D1	:	Value of the next year's Dividends
EBIT	:	Earnings before interest and tax
EPS	:	Earnings Per share
G	:	Growth Rate
IAS	:	International Accounting Standards
IOU	:	I owe you
KE	:	Cost of Equity
MM	:	Modigliani and Miller
MPS	:	Market Price Per Share
MIMS	:	Main Investment Market Segment
NSE	:	Nairobi Security Exchange
NASI	:	NSE All Share Index
P/E	:	Price earnings Ratio
P	:	Current Stock Price
ROE	:	Return on Equity
TD	:	Tax Shield

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

According to Robert P. Schweihs (2000) Firm value (FV), Total enterprise value (TEV), or Enterprise value (EV), is an economic measure reflecting the market value of a whole business. It is a sum of claims of all the security-holders: debt holders, preferred shareholders, minority shareholders, common equity holders, and others. Enterprise value is one of the fundamental metrics used in Business Valuation, financial Modeling, accounting, portfolio analysis. Firm valuation is a process and a set of procedures used to estimate the economic value of an owner's interest in a business.

According to Damodoran (2001), Valuation process is used by financial market participants to determine the price they are willing to pay or receive to perfect a sale of a business or a firm. In addition to estimating the selling price of a business, the same valuation tools are often used by business appraisers to resolve disputes related to estate and gift taxation, divorce litigation, allocate business purchase price among business assets, establish a formula for estimating the value of partners' ownership interest for buy-sell agreements, and many other business and legal purposes.

Damodoran (2001) described the value of a firm as the present value of the expected cash flow from both the asset in place and the likely future growth, discounted at the cost of capital. He states that for a firm to increase its value it has four options; first, increase the cash flows generated by the existing investments. Second, increase the expected growth rate in earnings or cash flows. Third, increase the length of the high growth period and lastly the option to reduce the cost of capital.

Market capitalization represents the aggregate value of a company or stock. It is obtained by multiplying the number of shares outstanding by their current price per share. Market capitalization rate is the rate of return expected to be realized from a security. This is an approximation of the discount rate that is used to calculate the present value of the security's cashflow. Generally, the market recognizes three market cap divisions: large cap, mid cap, and small cap, although the cutoffs between the categories are not precise or fixed. (Som 2006).

Market value is the highest price that a marketable asset will bring in an open and competitive market, assuming that both the seller and buyer are informed and acting independently. In theory,

this is the highest price a seller is willing to accept and the lowest price the buyer is willing to pay. It may differ from the appraisal value. This value is established in the capital markets. Brealey et al (2001)

Earnings Valuations on the other hand are measurements of the total "value" of a publicly-traded corporation. Investors need a way to judge how much a company's stock is worth. To evaluate this, analysts have come up with various earnings valuation models . Adams and Thornton (2009), noted in their study that Earnings are net profits, i.e. what's left over after expenses, investors often want to know the earnings per share (EPS). They also went ahead to calculate the price/earnings (P/E) ratio, i.e. the stock price divided by the earnings. This is the most common earnings valuation model. Gordon (1964) suggests that, as far as the accounting rules permit, management will smooth reported income since investors believe that this will permit a higher dividend rate and lead to a higher stock price.

The dividend discount model is a method of valuing stock shares based fundamentals, that is, based on facts and expectations about a company's business, future cash flows and likely risks. Dividend valuation is one of the oldest and most conservative stock pricing method.

The dividend discount model tends to understate the value of a company with intangible assets like reputation and brand recognition. On the other hand, it may overvalue stocks out of favor with the market. No amount of careful calculation, however, will necessarily predict the future movement of a stock, and assumptions about future growth rates, interest rates, the price of risk and the stability of the market make the model vulnerable to exaggerations. Dividend ensures capital gains to the stockholders, the expectations of dividends by shareholders helps them determine the share value, therefore, dividend policy is a significant decision taken by the financial managers of any company. (McGuigan, 2010).

According to Modigliani and Miller (MM) model (1958), under a perfect market situation, the dividend policy of a firm is irrelevant as it does not affect the value of the firm. They argue that the value of the firm depends on the firm`s earnings which results from its investment policy. Under the MM assumption, the rate of return, r , will be equal to the discount rate, k . As a result, the price of each share must adjust so that the rate of return which is composed of the rate of dividends and capital gains on every share be equal to the discount rate.

Investors buy shares for dividends or for capital gains. Investors may choose from growth shares or income shares. Growth shares are those which offer greater opportunity for capital gains. Dividend yield on such shares would be low since companies would follow a high retention policy in order to have a high growth rate. Income shares on the other hand, are those which pay higher dividends and offer low prospects for capital gain. Because of the high payout policy followed by companies, their prices tend to grow at a lower rate. Dividend yields on income shares would generally be high. Those investors who want regular income would prefer to buy income shares which pay high dividends regularly. On the other hand, if investors desire to earn higher return via capital gain, they would prefer to buy the growth shares. They would like a company to retain its earnings in the expectation of higher market price of the share in the future. This shows that there is a linkage between the share price, earnings and dividends. (Maiyo 2010).

Nura (2000), in his study on the impact of dividend payment on shareholders wealth sought to establish whether there is a relationship between dividend paid and the share price(firm value). He found that dividend payment had significant impact on shareholders wealth.

Lintner (1956) hypothesized that dividend are based primarily on net income levels and are adjusted slowly in response to income changes. Lintner provides evidence that arise in individual tax rate gain which encourages shareholders to prefer corporate savings over dividend payments as a tax shelter, since retained earnings are not taxed immediately as dividends are. The shareholders only pay capital gain taxes at the time of sale of stock. Global empirical evidence between dividend and firms value is contradictory and mixed. Modigliani & Miller (1961) and Miller (1977) result is that firm value is independent of dividend policy. Bhattacharya (1979) and others show that a firms dividend policy can be a costly device to signal a firms state and hence relevant.

Bernado & Welch (2000), in their study focused on two dimensions, the market reaction to dividend announcement and the relation between dividend changes and at the same time future earnings. One the first dimension empirical evidence are consistent with the signaling theory, studies document show that stock prices tend to increase or decrease when dividends are increased or decreased respectively. However on the second dimension, empirical research cannot significantly conclude that changes in dividend are related to future earnings.

Most of decision makers use market capitalization figures to make most of their day to day investment decisions. Even the companies that have stocks as one of their investments usually

mark them to the market regularly to reflect the current value of these stocks. This is as per the International Accounting Standards 39, (IAS39) on Recognition and Measurement of financial instruments. IAS 39 stipulates that financial assets available for sale should be carried in the books of the company at their market values. Thus, finance managers of companies usually use the price of shares as trading in the Nairobi Security Exchange (NSE) at the end of a financial year to adjust the value of the financial assets portfolios. Dividends are not just an outcome of a firm's payout policy; rather they reflect the complicated combination of investment strategy, financial decision and private information (Miller and Rock 1985). In the recent past, the NSE has seen an upsurge in the trading volumes. Before it was affected by the economic down turn, the market capitalization had surged up to trillions of shillings. Many theories were advocated as to why the stock market was doing well. Some argued that this was because of fact that the Kenyan economy was growing, others said that it was because of increase in investor's confidence in the market, and the list was endless. The investors who had invested in the shares before year 2010 reaped a lot of benefits from appreciation in the value of stocks.

According to LeRoy Miller (2012) Common stock is a legal representation of ownership position in a corporation and the holders of this stock are paid dividends after the firm's obligations have been settled. The amount or the rate of dividend is not fixed; it is decided by the board of directors. A common stock therefore is known as a variable income security. Holders of common stocks need to determine the value of their investment in a firm hence the need to determine the value of the firms as a whole, since shareholders investment is a proportion of the firm's total investment. Bond is simply an "IOU" in which an investor agrees to loan money to a company or government in exchange for a pre-determined interest rate. If a business wants to expand, one of its options available is to borrow money from individual investors. The company issues bonds at various interest rates and sells them to the public. Investors purchase them with the understanding that the company will pay back their original principal plus any interest that is due by a set date, (this is called the "maturity").

According to Bollefer & Bernstein (2009), there are many types of bonds, each having different features and characteristics. A few of the most notable are the zero coupon and convertible bonds. Preference share is often considered to be a hybrid security since it has many features of both common stock and bonds. It is similar to ordinary shares in that , the non-payment of dividend does not force the company to insolvency, dividends are not deductible for tax purposes and in some cases, it has no fixed maturity date. On the other hand, it is similar to bonds in that, dividend

rate is fixed, preference shareholders do not share in the residual earnings, preference shareholders have claims on income and assets of the company prior to the common shareholders and they usually do not have voting rights.

1.2 Statement of the problem

Blackwell (2005), in his study argued that, many investors in making investment decisions have relied on market capitalization value obtained from the Nairobi Security Exchange. They use this value to establish whether a company is under- or over-valued by comparing it with other valuation models value estimates. Market capitalization method has been used to value firms in developed economies whose financial markets are characterized by high level of efficiency, high technology, liquidity and has many varieties of securities traded. This study attempts to establish whether this model can be relied upon when making investment decisions in an under developed financial market like the NSE. This will be done by comparing the market capitalization value with values obtained through other firm valuation models to see the extent of the variation.

According to Modigliani and Miller (1958), it states that in the absence of taxes, the value of the firm remains invariant to capital changes. This is to say that two firms that are similar in all ways except for their capital structure must command the same value. This is because a difference in valuation cannot last long due to the process of arbitrage. MM argued that arbitrage process continues until the two firms command the same value. Value of the firm is thus determined by capitalizing EBIT at the overall cost of capital (K_e) which is also constant. MM1 therefore argued that the value of a levered firm is equal to that of an unlevered firm provided there were no taxes.

According to Reilly and Brown (2000) many of the popular valuation methods of ordinary shares are based on either earnings per share or dividend per share. It is therefore a choice either between dividends and earnings as the stream of returns to discount so as to estimate the value of investment in a firm.

Omondi (2005) in his study based on 15 companies listed in the NSE tested whether there is any correlation between tangibility of assets and leverage. The study showed a positive correlation between the two. It observed that tangible assets are used in Kenya, as a security to secure debt and those firms with adequate tangible assets will easily secure debt. These two studies indicated that there was no clear relationship between leverage and firm value.

Kerandi (1993), sought to determine the predictive ability of the dividend valuation model on the ordinary shares in firms quoted at the Nairobi security Exchange. He selected 13 companies that are listed at the Nairobi Security Exchange (NSE) as a representative sample of the whole population. The required rate of return for each company was estimated using the capital asset pricing model (CAPM) and the rates were used to discount the forecasted dividend per share and terminal prices to their present value for each of the first 5 months of 1999. Out of the 13 companies selected, only 3 indicated that the dividend valuation model is a good predictor of ordinary share prices on the Nairobi Security Exchange. This is approximately 23% of the sample. Kerandi concluded that the model is not a good predictor of share prices on the NSE. This is attributed to a number of factors such as: The preposition that dividends do not affect share prices, Lack of an efficient market, Existence of information differentials, inappropriate discounting factors, Measurement and evaluation problems.

Bitok (2004) who did a study on dividend policy on a firm value for firms quoted at NSE with payout ratio as the only variable for period 1998-2003. His findings were that there is a relationship between dividend payout ratio and share price.

There is therefore need to establish whether there is any relationship between firm`s value obtained using Modigliani and Miller (MM), dividend valuation and earning valuation models and that given by market capitalization model.

1.3 Objectives of the study

1.3.1 Main Objective of the study

To establish the relationship between market capitalization and other firm valuation models used by companies listed in the Nairobi Security Exchange.

1.3.2 Specific Objectives of the study

1. To establish the relationship between dividend valuation model and Market capitalization model.
2. To establish the relationship between earnings valuation model and Market capitalization model.
3. To establish the relationship between Modigliani & Miller model and Market capitalization model.

1.4 Significance of the study

The study will be useful to the investors at large in making wise investment decisions. Most investors buy ordinary shares with expectation of collecting dividends and eventually selling these shares for a profit in future. Thus, if the future value can be estimated, then the investors can compare these with the prevailing market prices and make wise decisions.

The study will be useful to the corporate managers in mergers and acquisition. The financial managers identify target companies by comparing the calculated values with the market values to determine whether companies are over or undervalued. If the target company's value is less than market value, then such a company is undervalued and therefore can be acquired.

The study will help consultants in their day to day work in that they will be able to give sound and substantiated advice on the fair value of a firm. The study will also provide some insights to the academicians as to the relevance of the previously developed valuation models to the modern day companies hence provoke interest in developing improved or advanced models.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, several theories advanced in support of the various valuation models will be reviewed with an aim of gaining more understanding on the models. Several propositions regarding the Modigliani and Miller model will be reviewed in order to understand the difference between the various propositions. Under the market capitalization model, the key elements that need to be understood is the level of company earnings, dividend risk, cost of money and future growth rates. The review will enable me to have a deeper understanding on the effect of these factors on the market price of shares. In dividend valuation model, the price per share is derived by discounting future expected dividends. In this case, the review will focus on among others, the importance of dividend growth rate and cost of equity. This chapter will be concluded by reviewing work done by other scholars in the same area. This will enable me to appreciate the observations and conclusions made on the same. The value of a company is dependent on many factors and this study will seek to focus on the various factors affecting valuation of the firm using the various valuation models.

2.2 Review of theories

2.2.1 Dividend Valuation model

With rare exception, the company's pre-tax earnings influence value of a firm more than any other factor. Viewed in its simplest manner, buyers are looking to purchase stocks/shares that provide a stream of income hence leading to a desired return on investment thereby justify the purchase price. Most commonly accepted valuation models primarily rely on multiples of earnings. It follows that the stronger the earnings the greater the value of the company other factors remaining constant.

Over the years at Nairobi Security Exchange we have seen listed companies with mixed dividend payments behavior with company's failing to raise their dividends, cut their dividends and even others stopping to pay dividends. In some cases their financial positions do not necessitate any dividend changes. From the investor's perspective, dividends are beneficial since they represent a regular income stream which will enhance self-control by avoiding any irrational trades (Shefrin & Statman, 1984).

On the other hand from managerial perspective, dividends can serve as a tool to mitigate agency problems by digesting extra free cash flows (Jensen 1986), or to signal to the market that only good quality firms afford to pay dividends (Bhattacharya, 1979).

Lintner (1956), conducted an empirical research over dividend pattern of 28 companies for the period of 1934-1953 with the help of regression analysis. The study concluded that major portion of dividend of a firm would be expressed in terms of firm's desired dividend payment and target payout ratio. Lintner seminal work on dividend payout practice (1956) finds that managers believe that stockholders prefer stable dividends and that the market puts a premium on such stability. He hypothesized that differences among firms in target payout ratio reflects judgments based on factors such as prospects for growth of the industry and the individual firm, cyclical movements of investment opportunities, and earning prospects for the firm. Lintner also suggests that dividend policies have industry effects. While an industry effect may reflect correlation of factors such as investment opportunities, earnings stability and internal funds availability among firms within the same industry (Lintner 1956), Lintner seems to have had more in mind. He refers to dividend leadership as analogous to price leadership and wage leadership, thereby suggesting a competitive dimension of the dividend decision apart from other firm specific variables. In earlier paper, Lintner cites oil industry as an example of dividend leadership at work. He states that companies probably most generally follow the 'lead' of other companies in the same industry, but occasionally may be concerned with maintaining some sort of conformance to other companies whose securities are, invest wise, close substitutes for the company's own securities, even though the other companies are in entirely different industries.

Walter (1963), argues that the choice of dividend policies almost always affect the value of the firm. His model, one of the earlier theoretical works, clearly shows the importance of the relationship between the firm's rate of return, r , and its cost of capital, k , in determining the dividend policy that will maximize the wealth of shareholders. According to this model, the value of a share is the present value of all dividends plus the present value of all the capital gains. This is a method of determining the market price per share or the value of a share issue as the present value of all future dividends. The future dividend is discounted at the required rate of return. As it approaches infinity, present value of the terminal price ought to approach zero.

Brigham and Gapenski (1991), argued in their study that the required rate of return on an investment is determined by; The economy's real risk free rate of return plus, The expected rate of inflation during the holding period, a liquidity premium and a risk premium. The rate should fairly

compensate investors for both delaying immediate consumption and accepting the risk inherent in the security.

Kapoor (2006), in his study impact of dividend policy on shareholders' value done on Indian firms suggested that, it cannot be concluded that carefully managed dividend policy will be rewarded by high share price even as manager view dividend decisions as important. Typically firms manage their dividends as proposed by lintner model and partially follow stable dividend policy. A typical firm does not follow a residual policy nor leave its dividend payout to chance.

2.2.2 Earning Capitalization model

The value of a firm can be derived using the earnings capitalization method when a firm pays out 100% dividends. That is, it does not retain any earnings. The value can also be derived when the firms return on equity (ROE) is equal to its opportunity cost of capital, K_e . In the case where the firm does not retain earnings, the earnings in the subsequent years will not grow (if it does not also employ debt). Thus, if the retention rate, b , is zero, the growth rate, g , would also equal to zero and dividend, D would be equal to earnings per share, EPS . Under these conditions, the value of the firm will be equal to the expected earnings divided by the equity capitalization rate. In the second situation, in which the earnings capitalization will yield the same result as dividend capitalization, is when the firms lack real growth opportunities. That is, it earns a rate equal to its cost on its retained earnings. Thus, true growth as opposed to mere expansion is dependent on the existence of opportunities to reinvest retained earnings at a rate higher than the capitalization rate, thereby creating net present value over and above the investment outlay required. This model uses a company's earnings to obtain the value of common stock. The value of a share (market price per share) is obtained by multiplying: EPS -earnings per share by PER - price earnings ratio. (Previts 2008).

Khan (2009), studied the relative importance of dividends, retained earnings and other determinants in the explanation of security prices in Bangladesh with particular stock prices of the companies related to Dhaka Stock exchange (DSE), an emerging capital market of Bangladesh. The prime objective of this study was to determine the determinants of market share prices and to examine their functional relationship with the market price of common stock trades in DSE. Khan used existing models to explain the dynamic relationship of market price of common stocks with the determinants of market share price like dividends, retained earnings, lagged price earnings ratio and market price of previous years. His conclusion from the results of empirical analysis is that dividends, retained earnings and other determinants have dynamic relationship with market

share price. He also found out that the overall impact of dividend on stock prices is comparatively better than that of retained earnings and that expected dividends play a very important role in the determination of stock prices whatever the determinants like lagged price earnings ratio or lagged price that were considered.

Earnings multiplier (price earnings ratio) determination.

Reilly & Brown (2011), Ratio than concentration on dividend alone, many investors prefer to estimate the value of common stock using an earnings multiplier model. The reasoning for this approach recalls the basic concept that the value of any investment is present value of future returns. In the case of common stock, the returns that the investors are entitled to receive are the net earnings of the firm. Therefore one way investors can derive value is determining how many dollars they are willing to pay for dollar of expected earnings during 12 months period. This computation of earnings multiplier indicates the prevailing attitude of investors towards stock value and investors must decide if they agree on the prevailing price earnings ratio. On deciding they consider what influences over time. Thus price earnings ratio is determined by: Expected dividend payout ratio, required rate of return on stock and expected growth rate of dividend for the stock. The spread between cost of equity and growth rate of dividend is the main determinant of price earnings ratio.

Estimating earnings per share (EPS)

EPS= Earnings attributable to shareholders/number of outstanding shares. To obtain EPS value you need to have: Estimate of sales, Estimate of operating profit margin, Estimate of depreciation, Estimate of interest and Estimate of corporate tax rate. In coming up with the estimate of the above values one has to consider growth rate; net profit margin; major changes in expenditure and inflation rate. All the above consideration will help in making better predictions of the estimates that will help in coming up with the figures of earnings attributable to common stockholders that will lead to EPS that will be combined with PER to arrive at an estimate of ending price for the stock.

2.2.3 Modigliani and Miller Model

According to Modigliani and Miller (1961), under a perfect market situation, the dividend policy of a firm is irrelevant as it does not affect the value of the firm. They argue that the value of the firm depends on the firm's earnings which results from its investment policy. Under the MM assumption, the rate of return will be equal to the discount rate. As a result, the price of each share

must adjust so that the rate of return, which is composed of the rate of dividends and capital gains on every share, will be equal to the discount rate. In the study of determining firm value, capital structure theories are very fundamental as they explain the relationship between capital structure, firm value and Cost of capital. The MM model is as follows; the first proposition was in 1958 and it states that in the absence of taxes, the value of the firm remains invariant to capital changes. This is to say that two firms that are similar in all ways except for their capital structure must command the same value. This is because a difference in valuation cannot last long due to the process of arbitrage. MM argued that arbitrage process continues until the two firms command the same value. However later MM (1963) relaxed the assumptions by introducing taxes into their model in which case the method of financing become relevant. Van Horne (1995) explains the impact of the market on the value of the firm. If the expected return of a firm's security is derived using Capital Asset Pricing Model (CAPM), it follows that a firm's value is not dependent on its own risk. He concluded that all decisions of the firm should be judged in the market context.

2.2.4 Market capitalization model

It's a company valuation method whereby the value of a firm is obtained by multiplying the market price of a share by the number of outstanding shares. Price of common stock is a function of: level of company earnings, dividend risk, cost of money, and future growth rate. According to Reilly and Brown (2000) many of the popular valuation methods of ordinary shares are based on either earnings per share or dividend per share. It's therefore a choice between dividends or earnings as the stream of returns to discount so as to estimate the value of investment in a firm. Market capitalization represents the aggregate value of a company or stock. It is obtained by multiplying the number of shares outstanding by their current price per share. Generally, the market recognizes three market cap divisions: large cap, mid cap, and small cap, although the cutoffs between the categories are not precise or fixed. (Lalita S. Som 2006).

2.3 Review of Empirical Literature

Odinga (2007), in his study of 12 companies listed in the NSE for a period of at least eight years attempted to test the validity of asset tangibility, profitability, business risk, and debt tax shield in the capital structure predictive model. The study confirmed that all the above variables used in the study were valid variables in the capital structure predictive model.

Njuru (2007), did a study to test for 'under-reaction' to stock dividend announcement at the NSE. The results showed evidence in favour of existence of under-reaction to stock dividend at the Nairobi Security Exchange for the period 1999 to 2005.

Omondi (2005), in his study based on 15 companies listed in the NSE tested whether there is any correlation between tangibility of assets and leverage. The study showed a positive correlation between the two. It observed that tangible assets are used in Kenya, as a security to secure debt and those firms with adequate tangible assets will easily secure debt. These two studies indicated that there was no clear relationship between leverage and firm value.

Odak (2006) undertook an empirical investigation to determine the difference between dividend policies of locally owned firms and foreign owned firms (multinationals) and also to establish whether the foreign owned have high dividend yields compared to locally owned firms. He surveyed companies incorporated in Kenya and consistently listed in the Nairobi Security exchange both Main Investment Segment (MIMS) and Alternative Investment Segment (AIMS). The firms were divided into two categories; foreign owned those with 51% or more in foreign ownership and control, and locally owned those with 50.9% or less in foreign ownership and control, company's Act, (Cap 487). He concluded that there is a difference in the dividend policies on the foreign firms and those of local firms. A general trend was reported that foreign firms have high dividend payout ratio as well as high dividend yield. This signified high returns to investors more so to foreign owners who could repatriate profits to their home countries.

Chege (2006), did a survey of the different methods of business valuation used by the business valuation practitioners in Kenya. The objective of the study was to find out which methods are preferred by the practitioners and the reasons for use of those methods. The practitioners selected were categorized into four groups: accountants, investment bankers, stockbrokers, and investment advisors. A sample of 96 valuation practitioners were selected out of which 61 were accountants representing 10% of the total population of the practicing accountants. The total population of other categories of practitioners was used due to their small population sizes.

Primary data was collected through questionnaire and 30 practitioners responded positively. Data was analysed through descriptive statistics and presented in tabular and graphical forms. Comparison was made between two categories of respondents, accountants and investment bankers to find out if there were preferences for certain methods by one category compared to the other. Analysis was also made of the choice for the different valuation methods for the two

categories of practitioners. The study found out that the discounted cash flow is the most frequently used valuation method of business valuation, followed by market valuation method and the asset book value method.

Kerandi (1993), sought to determine the predictive ability of the dividend valuation model on the ordinary shares in firms quoted at the Nairobi security Exchange. He selected 13 companies that are listed at the Nairobi Security Exchange (NSE) as a representative sample of the whole population. The required rate of return for each company was estimated using the capital asset pricing model (CAPM) and the rates were used to discount the forecasted dividend per share and terminal prices to their present value for each of the first 5 months of 1999. Out of the 13 companies selected, only 3 indicated that the dividend valuation model is a good predictor of ordinary share prices on the Nairobi Security Exchange. This is approximately 23% of the sample. Kerandi concluded that the model is not a good predictor of share prices on the NSE. This is attributed to a number of factors such as: The preposition that dividends do not affect share prices, Lack of an efficient market, Existence of information differentials, inappropriate discounting factors, Measurement and evaluation problems.

Olweny` (2006) in his study to establish the reliability of the dividend discount model on the valuation of common stocks at the Nairobi Security Exchange used sample consisting of 18 companies listed at the NSE. In order to test the dividend discount model, the required rate of return of each company was estimated. The rates of return were then used to discount the forecasted dividend per share and the terminal prices to their present values for each of the first 6 months of the year 2000. The actual price, predicted price and difference of the two for each of the 18 companies were computed. The results were tested for significance by hypothesis testing on the difference for each company. Only 3 companies (17%) of the 18 had positive results while the rest of the companies (83%) indicated negative results. The conclusion therefore was that the dividend discount model is not a good predictor of share prices at the Nairobi Stock Exchange. The study cited various reasons why companies listed in the Nairobi Security Exchange cannot rely on the model to predict share prices. These were stated as: Inefficient market (Nairobi Security Exchange), inappropriate discount factors, Information differentials, measurement and evaluation problems, among others. Further observations from Olweny`s study was that the dividend valuation model has generally not gained widespread or wholehearted acceptance by investors because of the choice of the required rate of return. Theoretically, such required rate of return or

hurdle rate should be the opportunity cost of capital. It has been the most difficult variable to estimate.

Issues arising from the study done by Olweny` (2006) are that in valuation of ordinary shares a concept known as intrinsic value is commonly used as a means of estimating the anticipated returns. This concept means that shares of a company have some central intrinsic value that can be estimated from historical performance of the firm. The intrinsic value or the true value of any asset is based on cash flows that the investor expects to receive in the future from owning the asset. The current market price can be compared with intrinsic value to find out whether a share is undervalued or overvalued. Valuation of securities requires an analysis of the firms economic and industry environment during the valuation process, irrespective of the capabilities of a firm and its management. Valuation of common stocks is a complex process since it involves forecasting future dividends and future prices, which are uncertain, both in amount and of time and occurrence.

According to Gordon (1959), the dividend discount model can however be used where all securities in an equivalent class are priced to offer the same expected returns (where the market is efficient). Some managers believe that the market is highly inefficient and that any valuation method, including dividend discount method, that is based on rationality of market participants will prove inefficient. Inappropriate discount factors used may also contribute to the results as long as the rate of return is derived through CAPM.

Omosa (2003) also argued that difference in prices of common shares might arise due to under specification bias; measurement errors especially where predictions are involved; normality and other assumptions; joint hypothesis and thin trading leading to delays in price adjustment. The study, concluded on 12 companies actively trading in the NSE attempted to establish if there was any significant difference between actual and predicted share price. Out of the 12 companies, 9 indicated that there was a significant difference between the two this discrediting the effectiveness of the model. Since the results are contrary, it therefore implies that the prices of shares do not only depend on dividends. This supports the widely accepted view within the academic community that it is not the firm`s dividend policy that determines the value of the shares but also other critical variables like the earning power of the company.

Empirical evidence suggests that the most commonly used method in both the United Kingdom and Germany is the earning per share model. Most managers prefer that the dividend discount

model be incorporated into a broader framework of multiple valuation models. The basic idea behind this approach is that different valuation models are used on market anomalies such as overreaction to the expected news about the company.

Omondi (2006) observed in his study that EPS model relates to the earnings per ordinary share at any given time multiplied by the P/E at time t . This was done by use of 18 companies actively trading in the NSE. He assumed that investors needed at least 5 years to assess the risk of stock and therefore his study covered the year 1995-1999. He continued to point out that the application of EPS model requires that: The analyst must select some time horizon for the analysis and once it is done the growth in EPS over this time horizon must be forecasted. The EPS forecast facilitates a forecast of time horizon, an appropriate P/E must be selected; and, Firms performance must be considered as well as the performance of the horizon period. Some investors prefer to derive the value of a share using EPS model because of the following reasons: Earnings are important to investors because they provide cash flow necessary for paying dividends; EPS method is simpler and easier to use especially to investor with less knowledge of finance; This method apply to companies stocks that don't pay dividend, reported earnings are important determinants of stock prices. Empirical studies suggest that, stock price movements are associated with earnings changes and the difference between actual and predicted change can lead to price adjustment.

Elton and Grubber (1995), in their study noted that despite the simplicity of the P/E model, it is difficult to estimate P/E as the main determinants, which are: dividend payout, earnings growth and earnings volatility cannot be easily forecasted. Also some opponents of the model have argued that earnings are inappropriate measure of economic returns because of the flexibility in choosing accounting methods. Accounting earnings reflect a series of more or less arbitrary choices of accounting methods. A firm reported earnings could be changed substantially by adopting different accounting procedures. For instance a switch in depreciation method used for reporting directly affects the EPS. EPS model does not also take into account inflation hence apparent growth in earnings may not be real growth. EPS model is also based on historical information and therefore lacks predictive value.

Francis (1980), noted in his study that another problem with EPS is definition of income. Accountants define income as amounts earned by a firm, while an economist defines it as maximum amounts that can be consumed by owners of the firm in any period without decreasing their future consumption opportunities; this therefore calls for normalization of accounting income to obtain a value consistent with economic income. This normalized earnings are estimated to be

earnings that would be obtained at normal level of economic activity if a company is experiencing normal operations i.e. operations not affected by non-recurring things like strikes, natural disasters and so forth.

These studies show that the value of a firm can be computed using the various models discussed above. Most Kenyan firms use these models to value their firm. Since the Nairobi Security Exchange values companies using the market capitalization model, an assessment as to whether there is variation between the models is necessary. This therefore forms the basis of my research study.

2.4 Conclusion

From the studies reviewed there seems to be differing results between the local studies and the international studies, as the local studies shows that dividend discount model is not reliable in valuation of equity while international studies show contrary. From the review of the models, the firm valuation is influenced by various factors and some errors are likely to occur. Copeland (2005) identifies these errors as one of the failures to forecast complete income statements and balance sheets, making it difficult to focus capital expenditure in a manner consistent with growth in revenues. Most of the studies done focus on the dividend valuation model while this study seeks to look at the dividend valuation model and other valuation models in relation to market capitalization model to determine if there could be any variation in the results attained.

The purpose of this study is to present the theoretical framework of valuation models and to establish the relationship between the models with that of the market capitalization in a sample of companies quoted in Nairobi Security Exchange. This will be done through the examination of the relationship between worked values and the market values of firms quoted based on different valuation methods.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section describes the methodology that was used in this study. The specific issues addressed includes, research design, target population, sampling plan, data collection and data analysis.

3.2 Research Design

Out of the basic research design methods namely: exploratory, descriptive and causal research designs, the study adopted a descriptive design in analyze the various models used in the valuation of companies. Descriptive design was appropriate as it involved a careful in-depth study of the various valuation models that are used in the valuation of companies. CAPM was used to derive the cost of equity.

3.3 Population

Cooper and Schindler (2006) describe population as the total collection of elements about which one wish to make some inference. The target population was all the 65 listed companies at the Nairobi Security Exchange and is divided into two segments namely the Main Investment Market Segment (MIMS) and Alternative Investment Market Segment (AIMS).

3.4 Sample

A sample of firms that are continuously listed at the NSE between the years 2007 - 2011 was selected. This five year period allowed for validity, stable and consistent deductions to be drawn. This was done to ensure that the sample conforms to a criterion of being representative of all the sectors of economy represented on the NSE. All the companies that met the fulfillment of trading on ordinary shares were included in the study. The firms should have continuously trading in the ordinary shares for all the five years under the period of observation. The companies which did not meet the requirement of trading in ordinary shares, not listed, suspended, or had incomplete information during the period of study were not considered in the final sample.

3.5 Data collection

Data used in the study was in the form of secondary data and in particular, the following data was collected, Market capitalization value, Annual reports of each company for years 2007 to 2011, Dividend payment details, Daily prices of securities, Price Earnings Ratio, Tax, growth and EBIT

capitalization rate. The data was obtained from the Nairobi Security Exchange Secretariat and published annual statements of the sample companies.

3.6 Data Analysis

Data Analysis started immediately after data collection. This involved data sorting, data editing, data coding, data entry, data cleaning, data processing and interpretation. The researcher used both the qualitative and quantitative techniques to analyse and compile the data. The results were summarized using descriptive statistics.

The data collected was arranged in groups of common characteristics, through coding and classifications where the results were summarized by certain groups to enable the researcher bring about meaning in the data. The statistical nature of the data was more likely to be observable when are classified into a relatively small number of groupings. Then the researcher used the tabulation where the data had been summarized as raw data and displaying it in compact form for further analysis. The analysis involved the use of statistical package of social sciences (SPSS) software package Version 11.0 to explore the relationship between the variables.

Importance of data analysis includes the following, findings are clearly shown, gaps for further research are pointed out, the researcher can be able to know the results and be able to know the statistical methods used for analyzing data (Saunders, Lewis & Thornhill, 2003). The data was represented in form of table of figures, charts and graphs. The researcher included whether the findings are relevant to the problem under investigation, implementation and conclusions drawn highlighting various issues, the researcher's limitations, and areas of improvement.

The Models researcher will use to explain the variables are as under.

Under the MM valuation model, the value of the firm (**V1**) will be;

$$V1 = \frac{EBIT}{Ke} \times Td$$

V1 – Value of the firm under MM Valuation Model

EBIT - Denotes Earnings before Interest and Tax.

Ke – Denotes cost of Equity

Td – Denotes a tax Shield which is usually (1-tax rate being corporation tax at 30% in Kenya)

Under the Dividend Valuation model, the value of the firm (**V2**) will be;

$$V2 = P = \frac{D1}{Ke-g} \times \text{number of shares outstanding}$$

V2 – Value of the firm under Dividend Valuation Model.

P is the current stock price. g is the constant growth rate in perpetuity expected for the dividends. Ke is the constant cost of equity for that company. D1 is the value of the next year's dividends.

Under the Earnings Valuation Model, the value of the firm (**V3**) will be;

$$V3 = (\text{EPS} \times \text{P/E}) \times \text{Total number of shares of a firm.}$$

V3 – Value of the firm under Earnings Valuation Model

EPS – Denotes Earnings per share. This information can be derived for the firm's financial statements and P/E – Denotes Price Earnings Ratio. This information can be computed from the financial statements of the firms.

Under the Market Capitalization Model, the value of the firm (**Vm**) will be;

$$Vm = \text{MPS} \times \text{Number of outstanding share}$$

Vm - Value of the firm under Market Capitalization Model and MPS Denotes Market price per share

The value of the firm so obtained will be compared with value market (Vm) to obtain Value differences (Vd) as shown below;

$$Vd = Vm - V1$$

$$Vd = Vm - V2$$

$$Vd = Vm - V3$$

Vd denotes value difference.

Once the different values were computed using different valuation models, the regression analysis was performed to establish if there is a relationship between the variables computed under the

three models as compared to Market Capitalization Model, the nature of the relationship and the strength of the relationship.

The regression line used is

$$Y = a + bx + \text{error term}$$

Y- Market value

a-Intercept of the regression line

b-Slope/ degree of change in intrinsic value as market value changes

x-Intrinsic value worked out.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

The study was conducted to establish whether there is any relationship between firm values obtained using Modigliani and Miller model, dividend valuation model and earnings valuation model and that given by their market capitalization.

The data collected was secondary data from the firms` annual reports and weekly market statistics from the NSE. From these, the following was obtained for each firm: dividend per share; earnings per share, price earnings ratio, dividend yield, earnings before interest & tax and market capitalization. This data was obtained for each company for each of the years in the five-year period, (2007-2011). This five year period allowed for validity, stable and consistent deductions to be drawn. This was done to ensure that the sample conforms to a criterion of being representative of all the sectors of economy represented on the NSE. Twenty six firms were used in the study.

4.2 Data Presentation

Table 1: Average Values for Different Valuations

Year	Market Capitalization Model	Modigliani & Miller Model	Dividend Valuation Model	Earnings Valuation Model
2007	24,878,494,405.62	253,933,363.72	26,942,333,492.12	66,058,923,372.55
2008	23,672,704,665.08	150,236,797.79	24,063,855,498.38	59,355,094,777.50
2009	19,943,972,520.92	171,926,632.14	23,886,030,047.58	30,768,364,855.77
2010	29,106,543,670.31	127,592,232.78	22,085,960,900.85	43,089,961,849.00
2011	23,111,859,999.65	197,712,517.31	23,735,431,322.65	26,368,893,047.55

The average values of the different valuation models for the period of study were regressed to determine if there was a relationship between the variables.

4.2.1 The Modigliani and Miller Model (MM)

Using this model, firm value is obtained by capitalizing earnings before tax at the overall cost of capital for each firm. Earnings before tax (EBT) were obtained from the company's annual reports. Using the computed cost of capital (K_e), firm value using the MM model is given as:

$$V_1 = \text{EBIT} / K_e * TD$$

A tax rate (T) of 30% which is the corporation tax rate in Kenya was used to compute the tax shield on debt for each company.

Table 2 : Modigliani & Miller Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.272 ^a	.074	-.234	3.68877

Predictors: (Constant), Modigliani and Miller Model.

The above regression analysis statistics gives the overall goodness of fit measure, with r^2 giving the variation of y (Market Capitalization Valuation Model) around its mean, explained by x (Modigliani & Miller valuation Model) at 97% confidence level. With an r^2 of 0.074, it means that the value derived using Modigliani & Miller Valuation Model explains upto 7.4% of market value. The correlation between the market value and the worked Modigliani & Miller Model value is 0.074. The correlation coefficient had positive value (0.272) depicting Positive relationship but insignificant.

3: Modigliani & Miller Model ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.273	1	3.273	.241	.657 ^a
	Residual	4.082	3	1.361		
	Total	4.409	4			

Predictors: (Constant), Modigliani and Miller Model

Dependent Variable: Market Capitalisation Model

The f statistics has the associated P-Value. Since $0.241 < 0.657$, we reject the relationship that exist between the market value and the computed value at the significance level of 0.03. the P value is 0.657 which is greater than 0.03 and therefore not within the confidence level of 97%.

Table 4 : Modigliani & Miller Model Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.749	7.028		3.912	.030
Modigliani and Miller Model	-18.583	37.892	-.272	-.490	.657

Dependent Variable: Market Capitalisation Model

Based on the coefficient in the table above the regression equation can be expressed as per the equation shown below on Modigliani & Miller values. The constant coefficient (Intercept) in the equation has an associated p-value of 0.30 and therefore within the confidence level of 97% ,the same can not be said of the coefficient slope which has a p-value of 0.657 which is above the 0.03 confidence level.

$$Y = 2.749 - 18.583(\text{Modigliani \& Miller Value}) + \text{Error Term.}$$

This indicates that a unit decrease in Midigliani & Miller model value would mean that Market Capitalization value decreases by 18.583.

4.2.2 The Earnings Valuation Model

This model analyses firm value by multiplying the outstanding shares of a firm with the product of the earnings per share (EPS) and price earnings ratio (PER)

The EPS and PER for each firm were obtained from the market statistics of the firms at the NSE. Firm value is thus given as;

$$V3 = (\text{EPS} * \text{PER}) * \text{Total number of shares of a firm}$$

Table 5 : Earnings Valuation Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.340 ^a	.115	-.179	3.60583

Predictors: (Constant), Earnings Valuation Model

With the r² of 0.115 it means that the value derived using Earnings valuation model explains up to 11.5% of the market value. The correlation between the market capitalization Model values and the Earning valuation model values model is 0.115. The correlation coefficient had positive value (0.340) depicting Positive relationship but insignificant.

Table 6 : Earnings Valuation Model ANOVA^b

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	5.088	1	5.088	.391	.576 ^a
Residual	3.901	3	1.300		
Total	4.409	4			

Predictors: (Constant), Earnings Valuation Model

Dependent Variable: Market Capitalisation Model

The column of f statistic has the associated P-Value (Sig). Since $0.391 < 0.576$, we do reject the relationship that exist between the Market capitalization model and the computed value of Earnings Valuation Model at significance level of 0.03. The P-value 0.576 is greater than 0.03 and therefore not within the confidence level of 97%.

Table 7: Earnings Valuation Model Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.121	4.961		4.274	.024
	Earnings Valuation Model	.065	.104	.340	.626	.576

Dependent Variable: Market Capitalisation Model

Based on the coefficient in the table above the regression equation can be expressed as per the equation shown below on Earnings Valuation Model values. The constant coefficient (Intercept) in the equation has an associated p-value of 0.24 and therefore within the confidence level of 97% ,the same can not be said of the coefficient slope which has a p-value of 0.576 which is above the 0.03 confidence level.

$$Y = 2.121 + 0.065(\text{Earnings Valuation Model Values}) + \text{Error Term.}$$

This is an indicator that a unit increase in Earnings Valuation model value leads to Market Capitalization value increases by 0.065.

4.2.3 The dividend Valuation Model

The price of a share is obtained by discounting the present value of future dividends at the required rate of return. The resultant price, P_0 , was then multiplied with the number of outstanding shares in each firm for each period to obtain the firm value.

$$V_2 = D / (K_e - g) * \text{number of outstanding shares}$$

Table 8 :Dividend Valuation Model Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.284 ^a	.081	-.226	3.67597

Predictors: (Constant), Dividend Valuation Model

The above regression statistics gives the overall goodness of fit measure, with r^2 giving the variation of y (Market Capital Valuation Model) around its mean, explained by x (Dividend valuation Model) at 97% confidence level. With an r^2 of 0.081, it means that the value derived using Dividend Valuation Model explains upto 8.1% of market value. The correlation between the market value and the worked Divided Valuation Model value is 0.081. The correlation coefficient had positive value (0.284) depicting Positive relationship but insignificant.

Table 9:Dividend Valuation Model ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.556	1	3.556	.263	.643 ^a
	Residual	4.054	3	1.351		
	Total	4.409	4			

Predictors: (Constant), Dividend Valuation Model

Dependent Variable: Market Capitalisation Model

The column of f statistic has the associated P-Value (Sig). Since $0.263 < 0.643$, we do reject the relationship that exist between the Market capitalization model and the computed value of Dividend Valuation Model at significance level of 0.03. The P-value 0.643 is greater than 0.03 and therefore not within the confidence level of 97%.

Table 10 : Dividend Valuation Model Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.712	2.535		1.464	.239
	Dividend Valuation Model	-.538	1.048	-.284	-.513	.643

Dependent Variable: Market Capitalisation Model

Based on the coefficient in the table above the regression equation can be expressed as per the equation shown below on Earnings Valuation Model values. The constant coefficient (Intercept) in the equation has an associated p-value of 0.239 and therefore within the confidence level of 97% ,the same can not be said of the coefficient slope which has a p-value of 0.643 which is above the 0.03 confidence level.

$$Y = 3.712 - 0.538(\text{Dividend Valuation Model Values}) + \text{Error Term.}$$

This is an indicator that a unit decrease in Dividend Valuation model value would mean that Market Capitalization value decreases by 0.538.

4.3 Summary and Interpretation of findings

4.3.1 Modigliani and Miller Model

The regression analysis statistics gives the overall goodness of fit measure, with r^2 giving the variation of y (Market Capitalization Valuation Model) around its mean, explained by x (Modigliani & Miller valuation Model) at 97% confidence level. With an r^2 of 0.074, it means that the value derived using Modigliani & Miller Valuation Model explains upto 7.4% of market value. The correlation between the market value and the worked Modigliani & Miller Model value is 0.074. The correlation coefficient had positive value (0.272) depicting Positive relationship but weak.

The adjusted r^2 is used to analyse the effect of introducing any additional independent variable in the regression which might decrease the value of r^2 without having any effect on the dependent variable.

Analysis of variance has been used in this analysis to test the overall explanatory power of the entire regression. It uses the f -statistic or f -ratio to test the hypothesis that the variations in the independent variable explain a significant proportion of the variation in the dependent variable. This analysis has used the f -statistic to test the null hypothesis that all the regression coefficients are equal to zero against the alternative hypothesis that they are not equal to zero. The f statistic on this analysis has the associated P-Value. Since $0.241 < 0.657$, we reject the relationship that exist between the market value and the computed Modigliani and Miller model values at the significance level of 0.03. the P value is 0.657 which is greater than 0.03 and therefore not within the confidence level of 97%.

The standard error of estimate is a test for reliability which can be used to construct confidence interval level for the predicted variable (Modigliani and Miller value). If a researcher wishes to rely on these findings to estimate what the Modigliani and Miller value would be then, significance level needs to be established and then it will be possible to determine the confidence interval for the Modigliani and Miller estimate.

Based on the coefficient table on Modigliani and Miller model the regression equation is

$$Y = 2.749 - 18.583 (\text{Modigliani \& Miller Value}) + \text{Error Term}$$

This equation means that for every unit decrease in the value of Modigliani and Miller model there is also a decrease in the value of Market Capitalization model by 18.583.

4.3.2 Earnings Valuation Model

The earnings valuation model has an r^2 of 0.115 meaning that the value derived using Earnings valuation model explains up to 11.5% of the market value. The correlation between the market capitalization Model values and the Earning valuation model values model is 0.115. The correlation coefficient has positive value (0.340) depicting Positive relationship but insignificant.

The f statistic has the associated P-Value (Sig). Since $0.391 < 0.576$, we do reject the relationship that exist between the Market capitalization model and the computed value of Earnings Valuation Model at significance level of 0.03. The P-value 0.576 is greater than 0.03 and therefore not within the confidence level of 97%.

Based on the coefficient table of Earnings valuation model the regression equation can be expressed as per the equation shown below on Earnings Valuation Model values.

$$Y = 2.121 + 0.065(\text{Earnings Valuation Model Values}) + \text{Error Term.}$$

This is an indicator that a unit increase in Earnings Valuation model value leads to Market Capitalization value increases by 0.065.

4.3.3 Dividend Valuation Model

The regration statistics gives the overall goodness of fit measure, with r^2 giving the variation of y (Market Capital Valuation Model) around its mean, explained by x (Dividend valuation Model) at 97% confidence level. With an r^2 of 0.081, it means that the value derived using Dividend Valuation Model explains upto 8.1% of market value. The correlation between the market value and the worked Divinded Valuation Model value is 0.081. The correlation coefficient had positive value (0.284) depicting Positive relationship but insignificant.

The column of f statistic has the associated P-Value (Sig). Since $0.263 < 0.643$, we do reject the relationship that exist between the Market capitalization model and the computed value of Dividend Valuation Model at significance level of 0.03. The P-value 0.643 is greater than 0.03 and therefore not within the confidence level of 97%.

Based on the coefficient in the table above the regression equation can be expressed as per the equation shown below on Earnings Valuation Model values.

$$Y = 3.712 - 0.538(\text{Dividend Valuation Model Values}) + \text{Error Term.}$$

This is an indicator that a unit decrease in Dividend Valuation model value would mean that Market Capitalization value decreases by 0.538.

On comparison on the four different models the r^2 for the Modigliani & Miller was 0.074, the r^2 for Dividend Valuation model was 0.081 while the r^2 for Earnings Valuation Model was 0.115 to the market value indicating that Earning Valuation Model had a higher correlation to Market Capitalization Model values as compared to the other valuation models.

A test of significance was carried out to determine whether the models were significantly different as compared to Market Capitalization model. Modigliani & Miller had a P-Value of 0.657, Dividend Valuation Model P-Value of 0.643 and Earnings Valuation Model P-Value of 0.576 showing the difference was significant and therefore the models were not good a indicator of the market Capitalization Values.

The results also indicate that the Market Capitalization valuation model relationship with Modigliani & Miller model accounts for only 7.4%, Dividend valuation Model accounts for 8.1% and the Earnings Valuation Model explains the relationship for the highest percentage of only 11.5%.

The following previous studies were undertaken and results attained concurs with this study;

Kerandi (1993), sought to determine the predictive ability of the dividend valuation model on the ordinary shares in firms quoted at the Nairobi security Exchange. He selected 13 companies that are listed at the Nairobi Security Exchange (NSE) as a representative sample of the whole population. The required rate of return for each company was estimated using the capital asset pricing model (CAPM) and the rates were used to discount the forecasted dividend per share and terminal prices to their present value for each of the first 5 months of 1999. Out of the 13 companies selected, only 3 indicated that the dividend valuation model is a good predictor of ordinary share prices on the Nairobi Security Exchange. This is approximately 23% of the sample. Kerandi concluded that the model is not a good predictor of share prices on the NSE. This is attributed to a number of factors such as: The proposition that dividends do not affect share prices, Lack of an efficient market, Existence of information differentials, inappropriate discounting factors, Measurement and evaluation problems.

Olweny` (2006) in his study to establish the reliability of the dividend discount model on the valuation of common stocks at the Nairobi Security Exchange used sample consisting of 18 companies listed at the NSE. In order to test the dividend discount model, the required rate of return of each company was estimated. The rates of return were then used to discount the forecasted dividend per share and the terminal prices to their present values for each of the first 6 months of the year 2000. The actual price, predicted price and difference of the two for each of the 18 companies were computed. The results were tested for significance by hypothesis testing on the difference for each company. Only 3 companies (17%) of the 18 had positive results while the rest of the companies (83%) indicated negative results. The conclusion therefore was that the dividend discount model is not a good predictor of share prices at the Nairobi Stock Exchange.

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The study findings shows that Earnings valuation model is not a good model to value a company that has a negative EPS since the model will give rise to a negative value of a firm. This is an indication that the firm is a loss making or is in temporal financial problems or is engaged in heavy investments draining its immediate resources, hence the resultant of a negative firm value.

Secondly, Earnings valuation and Market capitalization models tend to give similar results especially where the EPS is positive giving rise to the nearly or same value of a firm if only outstanding shares are considered in the valuation. This is because both models have one common element in the formulae, i.e. Market price per share, thus the resultant values tend to be the same.

Thirdly, other factors kept constant, in MM model, the value of a leveraged firm is higher than that of unleveraged firm. An all equity funded company does not benefit from the tax shield on debt hence the value is lower as compared to a firm whose capital structure has a mix of debt. A tax shield is the reduction in income taxes that results from taking an allowable deduction from taxable income. For example, because interest on debt is a tax-deductible expense, taking on debt creates a tax shield. Since a tax shield is a way to save cash flows, it increases the value of the business, and it is an important aspect of business valuation.

Fourthly, the entire four valuation models have an aspect of the firm's profitability. i.e. MM model uses EBIT; Dividend valuation model uses dividend – dividend is paid if a firm is operating profitably and hence the DPS used in the model is dependent on the firm's profitability; Earnings valuation model uses EPS and the expectation of price earnings ratio of a share. The EPS of a firm is dependent on the firm's level of earnings attained in a given period; Market capitalization value is based on MPS, which is influenced by expectation of a firm's performance, which is measured by its profitability.

This study has employed the use of correlation coefficient, which describes the association between movement in the four models, in this case Market capitalization model, Modigliani and Miller model, Dividend valuation model and Earnings valuation model. It describes there movement in either the same direction (positive association) or in different direction (Negative

association). It has also used coefficient of determination which shows how much the movement in one model can be explained by movement in another model.

5.2 Conclusion

The main objective of the study was to establish whether there is a variation between market capitalization value and other firm's valuation models used by companies listed in the NSE in valuation of a firm

In order to achieve this, firms' values calculated using the various models were compared with market capitalization attributed to each firm at the NSE. Regression analyses was undertaken and the results indicated that there is no significant relationship between market capitalization model and the other three valuation models.

The Modigliani & Miller valuation model, the Dividend valuation model and the Earnings Valuation Model as compared to the Market capitalization model shows that Earning Valuation Model had a higher correlation to Market Capitalization Model values as than the other two valuation models. A test of significance was carried out to determine whether the models were significantly different as compared to Market Capitalization model. Modigliani & Miller valuation model, Dividend Valuation Model and Earnings Valuation Model shows that the difference was significant and therefore the models are not good a indicator of the market Capitalization Values.

The difference between the Market Capitalization values and the other firm valuation models could be caused by the absence of perfect market, inappropriate factors like the irrelevance of dividend policies in determining equity values. It is also evident from the study that the valuation of equity is quite difficult since the variables included i.e. future financial positions and market prices are uncertain in amount and time of occurrence. The valuation models are only good as assumptions used in estimating these variables. Inaccurate data will also lead to incorrect valuation.

This does not mean that use of such models in financial decision making is undesirable. Without such models there could be no means of valuing firms. By the use of such theoretical models

financial managers are forced to identify real economic factors that affect the values and therefore shareholders value, this results in better investment decisions.

5.3 Recommendations

The main objective of this study was to establish if there is any relationship between market capitalization values and values from Modigliani & Miller model, Dividend valuation model and Earnings valuation model. Regression analysis was conducted and it showed that there is a relationship between the four models but the relationship is weak, the study recommends that the users of information should not ignore dividend policies of firms as high or lower dividends a firm pays to its shareholders could act as a signal for the future earnings for dividend valuation model. The same earnings are the ones used in computations on Earnings valuation model and also Modigliani and Miller model.

Since the study has shown that there is no significant relationship between the three firm valuation models as compared to Market capitalization valuation models, it is important for persons using this information e.g. investors, analysts, finance managers to collaborate the market capitalization values with values obtained from one or more other models in making their investment decisions or any other decision, and select the most reliable value.

The Nairobi security exchange is not extensively researched and a lot of work needs to be done to provide information to stakeholders, traders and the public at large. Security exchange plays a major part in development of a country hence movement from real assets as the only form of serious investment to security investments. This study shows the results that the models and discussions have a relationship but weak, all this information leading to computation of values relating to these models can be obtained at Nairobi security exchange hence the need to research extensively on Nairobi security exchange.

5.4 Limitations of the study

The entire conclusion drawn above should be understood on the basis of the research limitations discussed below:

Firstly, not all firms pay dividends annually as different firms have varying dividend policies e.g a firm whose shareholders prefer capital gains to dividend is likely not to pay dividends annually and therefore some firms values could not be obtained using the dividend valuation model. This hence reduces the population of study or the time frame of the study which could lead to unreliable results.

Secondly, the study used CAPM model in deriving cost of equity. All CAPM assumptions are violated in the real world, for instance, constant rate of return. In this study none of the assumptions have been relaxed, therefore the results are not guaranteed in a real world situation.

Thirdly, the procedure of sample selection was subjective and judgmental. The 26 companies studied were selected based on the availability of complete information without consideration of the market segments and their selection depends on complete information availability. Some data could not be found for some years and therefore analysis was done based on a shorter period . probably the period of study could be extended as it may yield different results.

The time selected for the study (Year 2007 – 2011) may not be very representative and may have been affected by othe external factors in the economy which may not have been isolated in the study, such factors may include the post election violence in late 2007 and early 2008.

5.5 Areas for Further Research

Further research could be done to investigate whether the same results would be obtained if the same study were done for a different period of time and more so longer period of time. A longer time frame could capture more macro-economic factors hence reduction on on skewness caused by the period of study.

More research could also be done to identify the most reliable measure of valuing private companies given that they are not listed at the NSE. This firms could have peculiar characteristics as they form part of the economy.

Effect of debt on a firm`s value could be an interesting topic for study, as debt could enable a firm to thrive if used well and at the same time it could sink a firm if misused. The balancing could be factor of interest for a firm`s success.

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APPENDIX 1: List of Firms Listed on the Nairobi Security Exchange

Listed Firms on the Nairobi Security Exchange	
MAIN INVESTMENT MARKET SEGMENT	
	AGRICULTURAL
C1	Kakuzi Limited
C2	Rea Vipingo Plantations Ltd
C3	Sasini Tea and Coffe Ltd
COMMERCIAL AND SERVICES	
C4	AccessKenya Group Ltd
C5	Car and General (K) Ltd
C6	CMC Holdings Ltd
C7	Kenya Airways Limited
C8	Marshalls East Africa) Limited
C9	Nation Media Group Limited
C10	Safaricom Limited
C11	ScanGroup Limited
C12	Standard Group Limited
C13	TPS (Tourism Promotion Services) East Africa Limited (Serena Hotels)
C14	Uchumi Supermarkets Limited
FINANCIAL AND INVESTMENTS	
C15	Barclays Bank of Kenya Limited
C16	CFC Stanbic Bank
C17	Diamond Trust Bank (Kenya) Limited
C18	Equity Bank Limited
C19	Housing Finance Company Limited
C20	Centum Investment Company Limited
C21	Jubilee Holdings Ltd
C22	National Bank of Kenya Ltd
C23	Kenya Commercial Bank Limited
C24	Kenya Re-insurance Corporation Ltd
C25	NIC Bank Limited
C26	Olympia Capital Holdings Ltd
C27	Pan Africa Insurance Company Ltd
C28	Standard Chartered Bank Ltd
C29	The Co-operative Bank
INDUSTRIAL AND ALLIED SECTOR	
C30	Athi River Mining Ltd
C31	Bamburi Cement Ltd
C32	British American Tobacco Kenya Ltd
C33	Carbacid Investment Company
C34	Crown Berger Ltd Ord

C35	East African Cables Limited
C36	East African Portland Cement Company
C37	East African Breweries Limited
C38	Eveready East Africa Limited
C39	Kenya Oil Company Limited
C40	BOC Kenya Limited
C41	The Kenya Power & Lighting Co. Ltd
C42	Kenya Electricity Generating Company (KENGEN)
C43	Total Kenya Ltd
C44	Mumias Sugar Company Ltd
C45	Sameer Africa Ltd
C46	Unga Group Ltd
ALTERNATIVE INVESTMENT SEGMENT (AIMS)	
C47	Eaagads Limited
C48	Express Kenya Limited
C49	Kapchorua Tea Company Limited
C50	Williamson Tea Kenya Limited
C51	Limuru Tea Company Limited

APPENDIX 2 : Firm`s Value using Market Capitalization model

COMPANY NAME	YEAR	MARKET CAPITALIZATION IN KES
C2	2007	1,173,000,000.00
	2008	1,020,000,000.00
	2009	666,000,000.00
	2010	1,074,000,000.00
	2011	885,000,000.00
C5	2007	1,269,938,112.00
	2008	1,002,582,720.00
	2009	935,743,872.00
	2010	1,047,141,952.00
	2011	760,291,896.00
C9	2007	23,245,514,760.00
	2008	10,267,957,440.00
	2009	16,828,041,360.00
	2010	26,238,801,524.00
	2011	21,996,600,080.00
C11	2007	4,730,250,000.00
	2008	5,737,931,030.00
	2009	5,627,586,203.00
	2010	14,426,056,476.00
	2011	11,818,748,812.00
C13	2007	6,034,290,294.00
	2008	5,557,898,955.00
	2009	4,763,913,390.00
	2010	10,152,428,840.00
	2011	8,151,585,200.00
C15	2007	107,272,836,000.00
	2008	68,573,142,000.00
	2009	61,104,780,000.00
	2010	84,867,750,000.00
	2011	70,881,544,800.00
C17	2007	15,407,006,706.00
	2008	11,168,041,898.00
	2009	11,412,597,560.00
	2010	22,010,009,580.00
	2011	17,705,829,965.00
C18	2007	54,331,485,750.00
	2008	65,168,875,552.00
	2009	53,134,850,237.00
	2010	99,049,285,285.00
	2011	60,725,543,128.00
C19	2007	5,261,250,000.00
	2008	4,462,000,000.00

	2009	4,140,000,000.00
	2010	6,095,000,000.00
	2011	2,857,270,000.00
C21	2007	9,585,000,000.00
	2008	5,535,000,000.00
	2009	5,175,000,000.00
	2010	9,108,000,000.00
	2011	8,439,750,000.00
C23	2007	56,886,000,000.00
	2008	52,117,777,760.00
	2009	45,464,444,429.00
	2010	64,168,151,042.00
	2011	50,023,372,729.00
C25	2007	18,543,274,000.00
	2008	12,906,118,704.00
	2009	10,198,800,688.00
	2010	16,513,898,064.00
	2011	9,477,541,488.00
C28	2007	56,025,368,860.00
	2008	43,514,849,600.00
	2009	43,786,817,410.00
	2010	74,065,900,314.00
	2011	45,932,341,280.00
C30	2007	9,212,115,000.00
	2008	8,964,477,500.00
	2009	10,995,105,000.00
	2010	18,127,065,000.00
	2011	15,650,690,000.00
C31	2007	71,140,017,900.00
	2008	59,888,280,375.00
	2009	56,621,646,900.00
	2010	67,873,384,425.00
	2011	45,825,000,000.00
C32	2007	13,900,000,000.00
	2008	13,100,000,000.00
	2009	17,800,000,000.00
	2010	27,000,000,000.00
	2011	24,600,000,000.00
C34	2007	1,198,213,500.00
	2008	587,243,250.00
	2009	569,448,000.00
	2010	854,172,000.00
	2011	486,403,500.00
C35	2007	8,505,000,000.00

	2008	5,315,625,000.00
	2009	4,100,625,000.00
	2010	3,290,625,000.00
	2011	2,670,468,750.00
C37	2007	101,482,709,020.00
	2008	157,364,096,844.00
	2009	114,662,281,620.00
	2010	143,130,158,436.00
	2011	154,200,999,420.00
C40	2007	3,124,000,000.00
	2008	3,124,000,000.00
	2009	2,928,816,900.00
	2010	2,577,358,872.00
	2011	1,952,544,600.00
C42	2007	57,157,397,856.00
	2008	53,859,855,672.00
	2009	31,986,159,185.00
	2010	37,591,980,898.00
	2011	29,787,797,729.00
C43	2007	5,908,433,828.00
	2008	5,602,070,592.00
	2009	5,147,136,750.00
	2010	5,017,377,000.00
	2011	2,581,673,414.00
C44	2007	13,566,000,000.00
	2008	19,431,000,000.00
	2009	9,180,000,000.00
	2010	19,660,500,000.00
	2011	10,939,500,000.00
C49	2007	535,944,000.00
	2008	535,944,000.00
	2009	535,944,000.00
	2010	535,944,000.00
	2011	535,944,000.00
C50	2007	1,120,808,960.00
	2008	503,488,400.00
	2009	411,547,040.00
	2010	1,935,146,720.00
	2011	1,619,919,200.00
C51	2007	225,000,000.00
	2008	183,000,000.00
	2009	366,000,000.00
	2010	360,000,000.00
	2011	402,000,000.00

APPENDIX 3: Firms Values using other valuation models

COMPANY	YEAR	FIRM VALUE IN KES		
		MODIGLIANI & MILLER MODEL	DIVIDEND VALUATION MODEL	EARNINGS VALUATION MODEL
C2	2007	13,303,059.34	1,173,000,000.00	1,171,584,000.00
	2008	52,717,531.80	1,020,000,000.00	1,019,760,000.00
	2009	15,173,260.32	666,000,000.00	665,136,000.00
	2010	7,694,732.80	1,074,000,000.00	1,071,840,000.00
	2011	27,845,516.63	885,000,000.00	883,386,000.00
C5	2007	45,332,405.99	1,269,938,112.00	1,940,363,000.00
	2008	44,920,881.55	1,002,582,720.00	1,530,639,200.00
	2009	38,532,852.50	935,743,872.00	1,429,689,800.00
	2010	40,768,787.64	1,047,141,952.00	1,599,224,000.00
	2011	33,169,620.56	760,291,896.00	772,588,800.00
C9	2007	145,043,821.54	23,245,514,760.00	78,278,400,000.00
	2008	125,182,134.09	10,267,957,440.00	34,537,536,000.00
	2009	110,118,102.56	16,828,041,360.00	28,335,360,000.00
	2010	143,986,611.93	26,238,801,524.00	40,084,176,000.00
	2011	117,763,895.62	21,996,600,080.00	33,605,952,000.00
C11	2007	38,070,870.04	4,730,250,000.00	9,005,773,798.05
	2008	49,306,403.49	5,737,931,030.00	7,850,919,812.95
	2009	86,669,759.21	5,627,586,203.00	7,715,403,360.48
	2010	208,357,566.62	14,426,056,476.00	18,576,359,623.46
	2011	220,324,413.78	11,818,748,812.00	12,540,635,101.92
C13	2007	83,613,094.50	6,034,290,294.00	10,933,574,400.00
	2008	44,606,630.61	5,557,898,955.00	10,059,840,000.00
	2009	57,538,111.02	4,763,913,390.00	8,646,912,000.00
	2010	112,777,565.98	10,152,428,840.00	13,136,025,600.00
	2011	107,339,556.03	8,151,585,200.00	10,575,052,800.00
C15	2007	1,032,464,541.26	107,272,836,000.00	429,654,904,000.00
	2008	641,176,914.38	68,573,142,000.00	274,363,258,400.00
	2009	521,459,397.26	61,104,780,000.00	244,628,490,400.00
	2010	1,601,651,312.70	84,867,750,000.00	339,815,599,200.00
	2011	348,407,236.56	70,881,544,800.00	71,062,510,400.00
C17	2007	195,923,020.09	15,407,006,706.00	23,630,700,000.00
	2008	206,096,221.14	11,168,041,898.00	17,119,525,000.00
	2009	222,584,268.31	11,412,597,560.00	17,513,325,000.00
	2010	486,116,343.36	22,010,009,580.00	33,750,350,000.00
	2011	443,121,594.96	17,705,829,965.00	22,635,300,000.00
C18	2007	478,892,470.04	54,331,485,750.00	555,694,261,276.50
	2008	680,344,039.31	65,168,875,552.00	651,819,093,271.10
	2009	614,790,070.51	53,134,850,237.00	52,975,630,825.14
	2010	971,506,614.11	99,049,285,285.00	99,262,935,519.05
	2011	842,633,876.91	60,725,543,128.00	60,744,797,568.50

C19	2007	64,569,598.19	5,261,250,000.00	10,798,481,600.00
	2008	42,878,226.82	4,462,000,000.00	4,549,715,675.00
	2009	41,361,276.29	4,140,000,000.00	4,251,421,200.00
	2010	68,338,446.30	6,095,000,000.00	6,247,139,250.00
	2011	33,097,596.32	2,857,270,000.00	2,921,649,750.00
C21	2007	88,661,616.01	9,585,000,000.00	14,909,706,000.00
	2008	65,051,731.96	5,535,000,000.00	8,609,720,000.00
	2009	67,704,738.91	5,175,000,000.00	8,042,860,000.00
	2010	111,208,385.68	9,108,000,000.00	12,872,475,000.00
	2011	109,825,131.01	8,439,750,000.00	10,856,846,000.00
C23	2007	56,009,998.99	56,886,000,000.00	99,710,800,000.00
	2008	461,360,268.21	52,117,777,760.00	82,290,600,000.00
	2009	423,230,987.26	45,464,444,429.00	71,677,200,000.00
	2010	556,835,275.95	64,168,151,042.00	76,034,700,000.00
	2011	451,723,994.32	50,023,372,729.00	59,052,000,000.00
C25	2007	241,153,844.34	18,543,274,000.00	24,969,480,000.00
	2008	341,375,221.80	12,906,118,704.00	17,416,000,000.00
	2009	270,316,543.15	10,198,800,688.00	12,507,480,000.00
	2010	558,732,069.47	16,513,898,064.00	18,393,360,000.00
	2011	442,131,405.37	9,477,541,488.00	9,596,160,000.00
C28	2007	319,029,746.72	56,025,368,860.00	56,258,202,000.00
	2008	244,105,453.91	43,514,849,600.00	43,682,866,500.00
	2009	280,580,813.58	43,786,817,410.00	43,939,350,000.00
	2010	444,902,299.05	74,065,900,314.00	70,461,136,200.00
	2011	352,418,171.28	45,932,341,280.00	43,679,208,300.00
C30	2007	125,773,536.91	9,212,115,000.00	12,565,935,000.00
	2008	133,274,068.68	8,964,477,500.00	12,214,098,000.00
	2009	170,634,978.51	10,995,105,000.00	14,989,806,000.00
	2010	198,719,787.94	18,127,065,000.00	24,718,446,000.00
	2011	203,978,504.69	15,650,690,000.00	21,315,960,000.00
C31	2007	2,099,153,488.65	71,140,017,900.00	71,866,431,000.00
	2008	2,302,511,932.10	59,888,280,375.00	60,478,002,000.00
	2009	1,270,164,541.08	56,621,646,900.00	57,154,406,400.00
	2010	1,815,237,856.00	67,873,384,425.00	68,563,731,600.00
	2011	1,391,164,152.60	45,825,000,000.00	45,811,655,760.00
C32	2007	57,333,140.95	13,900,000,000.00	13,901,580,000.00
	2008	62,081,490.78	13,100,000,000.00	13,090,000,000.00
	2009	84,804,450.99	17,800,000,000.00	17,795,120,000.00
	2010	169,647,573.28	27,000,000,000.00	26,999,760,000.00
	2011	173,500,922.58	24,600,000,000.00	24,598,120,000.00
C34	2007	21,224,797.47	1,198,213,500.00	1,262,122,500.00
	2008	6,369,741.59	587,243,250.00	620,100,000.00
	2009	8,555,999.25	569,448,000.00	600,600,000.00
	2010	15,135,862.33	854,172,000.00	898,975,000.00

	2011	10,258,288.15	486,403,500.00	512,720,000.00
C35	2007	88,169,636.39	8,505,000,000.00	10,632,110,625.00
	2008	56,702,519.10	5,315,625,000.00	6,660,250,312.50
	2009	35,206,595.72	4,100,625,000.00	5,118,440,625.00
	2010	14,030,409.65	3,290,625,000.00	4,123,153,125.00
	2011	32,183,949.61	2,670,468,750.00	2,661,660,000.00
C37	2007	659,847,887.57	101,482,709,020.00	154,076,400,000.00
	2008	932,766,796.53	157,364,096,844.00	198,879,300,000.00
	2009	684,828,868.28	114,662,281,620.00	145,054,800,000.00
	2010	825,138,351.72	143,130,158,436.00	181,116,000,000.00
	2011	859,223,540.63	154,200,999,420.00	195,054,000,000.00
C40	2007	21,401,979.11	3,124,000,000.00	3,124,383,767.14
	2008	21,407,734.89	3,124,000,000.00	3,123,161,474.22
	2009	16,638,923.53	2,928,816,900.00	2,927,965,590.55
	2010	5,803,794.17	2,577,358,872.00	2,575,589,866.59
	2011	10,397,466.05	1,952,544,600.00	1,951,013,805.03
C42	2007	506,144,358.68	57,157,397,856.00	57,482,711,225.59
	2008	266,447,028.57	53,859,855,672.00	54,220,201,126.12
	2009	436,360,062.42	31,986,159,185.00	32,181,915,489.14
	2010	273,977,367.18	37,591,980,898.00	37,771,814,271.28
	2011	325,876,504.88	29,787,797,729.00	30,145,478,090.91
C43	2007	34,955,514.50	5,908,433,828.00	6,120,710,177.40
	2008	43,165,055.58	5,602,070,592.00	5,812,270,689.60
	2009	69,080,688.98	5,147,136,750.00	5,407,236,113.40
	2010	114,405,423.70	5,017,377,000.00	5,275,494,072.00
	2011	2,765,306.87	2,581,673,414.00	2,691,402,901.20
C44	2007	110,483,814.33	13,566,000,000.00	66,407,250,000.00
	2008	166,124,971.73	19,431,000,000.00	31,619,750,000.00
	2009	59,080,767.57	9,180,000,000.00	14,962,500,000.00
	2010	228,807,726.50	19,660,500,000.00	32,187,500,000.00
	2011	124,793,337.72	10,939,500,000.00	17,829,000,000.00
C49	2007	218,624.09	535,944,000.00	443,282,803.20
	2008	164,537,015.47	535,944,000.00	293,118,336.00
	2009	5,652,436.30	535,944,000.00	266,347,346.40
	2010	8,872,231.58	535,944,000.00	570,995,520.00
	2011	9,412,643.21	535,944,000.00	450,654,576.00
C50	2007	14,165,189.39	1,120,808,960.00	2,242,204,593.44
	2008	163,193,971.60	503,488,400.00	1,006,668,577.54
	2009	5,172,939.26	411,547,040.00	824,188,620.00
	2010	33,401,361.26	1,935,146,720.00	3,872,228,586.72
	2011	518,145,926.57	1,619,919,200.00	3,241,421,542.66
C51	2007	763,314.27	225,000,000.00	450,655,920.00
	2008	1,376,267.93	183,000,000.00	366,069,840.00
	2009	3,263,239.13	366,000,000.00	365,901,480.00

	2010	4,354,235.24	360,000,000.00	359,999,640.00
	2011	4,102,719.78	402,000,000.00	402,045,840.00

APPENDIX 4: Market Capitalization against MM, Dividend Model & Earnings Models

COMPANY	YEAR	FIRM VALUE IN KES		
		VM-V1	VM-V2	VM-V3
C2	2007	1,159,696,940.66	0.00	1,416,000.00
	2008	967,282,468.20	0.00	240,000.00
	2009	650,826,739.68	0.00	864,000.00
	2010	1,066,305,267.20	0.00	2,160,000.00
	2011	857,154,483.37	0.00	1,614,000.00
C5	2007	1,224,605,706.01	0.00	(670,424,888.00)
	2008	957,661,838.45	0.00	(528,056,480.00)
	2009	897,211,019.50	0.00	(493,945,928.00)
	2010	1,006,373,164.36	0.00	(552,082,048.00)
	2011	727,122,275.44	0.00	(12,296,904.00)
C9	2007	23,100,470,938.46	0.00	(55,032,885,240.00)
	2008	10,142,775,305.91	0.00	(24,269,578,560.00)
	2009	16,717,923,257.44	0.00	(11,507,318,640.00)
	2010	26,094,814,912.07	0.00	(13,845,374,476.00)
	2011	21,878,836,184.38	0.00	(11,609,351,920.00)
C11	2007	4,692,179,129.96	0.00	(4,275,523,798.05)
	2008	5,688,624,626.51	0.00	(2,112,988,782.95)
	2009	5,540,916,443.79	0.00	(2,087,817,157.48)
	2010	14,217,698,909.38	0.00	(4,150,303,147.46)
	2011	11,598,424,398.22	0.00	(721,886,289.92)
C13	2007	5,950,677,199.50	0.00	(4,899,284,106.00)
	2008	5,513,292,324.39	0.00	(4,501,941,045.00)
	2009	4,706,375,278.98	0.00	(3,882,998,610.00)
	2010	10,039,651,274.02	0.00	(2,983,596,760.00)
	2011	8,044,245,643.97	0.00	(2,423,467,600.00)
C15	2007	106,240,371,458.74	0.00	(322,382,068,000.00)
	2008	67,931,965,085.62	0.00	(205,790,116,400.00)
	2009	60,583,320,602.74	0.00	(183,523,710,400.00)
	2010	83,266,098,687.30	0.00	(254,947,849,200.00)
	2011	70,533,137,563.44	0.00	(180,965,600.00)
C17	2007	15,211,083,685.91	0.00	(8,223,693,294.00)
	2008	10,961,945,676.86	0.00	(5,951,483,102.00)
	2009	11,190,013,291.69	0.00	(6,100,727,440.00)
	2010	21,523,893,236.64	0.00	(11,740,340,420.00)
	2011	17,262,708,370.04	0.00	(4,929,470,035.00)
C18	2007	53,852,593,279.96	0.00	(501,362,775,526.50)
	2008	64,488,531,512.69	0.00	(586,650,217,719.10)
	2009	52,520,060,166.49	0.00	159,219,411.86
	2010	98,077,778,670.89	0.00	(213,650,234.05)
	2011	59,882,909,251.09	0.00	(19,254,440.50)
C19	2007	5,196,680,401.81	0.00	(5,537,231,600.00)
	2008	4,419,121,773.18	0.00	(87,715,675.00)

	2009	4,098,638,723.71	0.00	(111,421,200.00)
	2010	6,026,661,553.70	0.00	(152,139,250.00)
	2011	2,824,172,403.68	0.00	(64,379,750.00)
C21	2007	9,496,338,383.99	0.00	(5,324,706,000.00)
	2008	5,469,948,268.04	0.00	(3,074,720,000.00)
	2009	5,107,295,261.09	0.00	(2,867,860,000.00)
	2010	8,996,791,614.32	0.00	(3,764,475,000.00)
	2011	8,329,924,868.99	0.00	(2,417,096,000.00)
C23	2007	56,829,990,001.01	0.00	(42,824,800,000.00)
	2008	51,656,417,491.79	0.00	(30,172,822,240.00)
	2009	45,041,213,441.74	0.00	(26,212,755,571.00)
	2010	63,611,315,766.05	0.00	(11,866,548,958.00)
	2011	49,571,648,734.68	0.00	(9,028,627,271.00)
C25	2007	18,302,120,155.66	0.00	(6,426,206,000.00)
	2008	12,564,743,482.20	0.00	(4,509,881,296.00)
	2009	9,928,484,144.85	0.00	(2,308,679,312.00)
	2010	15,955,165,994.53	0.00	(1,879,461,936.00)
	2011	9,035,410,082.63	0.00	(118,618,512.00)
C28	2007	55,706,339,113.28	0.00	(232,833,140.00)
	2008	43,270,744,146.09	0.00	(168,016,900.00)
	2009	43,506,236,596.42	0.00	(152,532,590.00)
	2010	73,620,998,014.95	0.00	3,604,764,114.00
	2011	45,579,923,108.72	0.00	2,253,132,980.00
C30	2007	9,086,341,463.09	0.00	(3,353,820,000.00)
	2008	8,831,203,431.32	0.00	(3,249,620,500.00)
	2009	10,824,470,021.49	0.00	(3,994,701,000.00)
	2010	17,928,345,212.06	0.00	(6,591,381,000.00)
	2011	15,446,711,495.31	0.00	(5,665,270,000.00)
C31	2007	69,040,864,411.35	0.00	(726,413,100.00)
	2008	57,585,768,442.90	0.00	(589,721,625.00)
	2009	55,351,482,358.92	0.00	(532,759,500.00)
	2010	66,058,146,569.00	0.00	(690,347,175.00)
	2011	44,433,835,847.40	0.00	13,344,240.00
C32	2007	13,842,666,859.05	0.00	(1,580,000.00)
	2008	13,037,918,509.22	0.00	10,000,000.00
	2009	17,715,195,549.01	0.00	4,880,000.00
	2010	26,830,352,426.72	0.00	240,000.00
	2011	24,426,499,077.42	0.00	1,880,000.00
C34	2007	1,176,988,702.53	0.00	(63,909,000.00)
	2008	580,873,508.41	0.00	(32,856,750.00)
	2009	560,892,000.75	0.00	(31,152,000.00)
	2010	839,036,137.67	0.00	(44,803,000.00)
	2011	476,145,211.85	0.00	(26,316,500.00)
C35	2007	8,416,830,363.61	0.00	(2,127,110,625.00)
	2008	5,258,922,480.90	0.00	(1,344,625,312.50)

	2009	4,065,418,404.28	0.00	(1,017,815,625.00)
	2010	3,276,594,590.35	0.00	(832,528,125.00)
	2011	2,638,284,800.39	0.00	8,808,750.00
C37	2007	100,822,861,132.43	0.00	(52,593,690,980.00)
	2008	156,431,330,047.47	0.00	(41,515,203,156.00)
	2009	113,977,452,751.72	0.00	(30,392,518,380.00)
	2010	142,305,020,084.28	0.00	(37,985,841,564.00)
	2011	153,341,775,879.37	0.00	(40,853,000,580.00)
C40	2007	3,102,598,020.89	0.00	(383,767.14)
	2008	3,102,592,265.11	0.00	838,525.78
	2009	2,912,177,976.47	0.00	851,309.45
	2010	2,571,555,077.83	0.00	1,769,005.41
	2011	1,942,147,133.95	0.00	1,530,794.97
C42	2007	56,651,253,497.32	0.00	(325,313,369.59)
	2008	53,593,408,643.43	0.00	(360,345,454.12)
	2009	31,549,799,122.58	0.00	(195,756,304.14)
	2010	37,318,003,530.82	0.00	(179,833,373.28)
	2011	29,461,921,224.12	0.00	(357,680,361.91)
C43	2007	5,873,478,313.50	0.00	(212,276,349.40)
	2008	5,558,905,536.42	0.00	(210,200,097.60)
	2009	5,078,056,061.02	0.00	(260,099,363.40)
	2010	4,902,971,576.30	0.00	(258,117,072.00)
	2011	2,578,908,107.13	0.00	(109,729,487.20)
C44	2007	13,455,516,185.67	0.00	(52,841,250,000.00)
	2008	19,264,875,028.27	0.00	(12,188,750,000.00)
	2009	9,120,919,232.43	0.00	(5,782,500,000.00)
	2010	19,431,692,273.50	0.00	(12,527,000,000.00)
	2011	10,814,706,662.28	0.00	(6,889,500,000.00)
C49	2007	535,725,375.91	0.00	92,661,196.80
	2008	371,406,984.53	0.00	242,825,664.00
	2009	530,291,563.70	0.00	269,596,653.60
	2010	527,071,768.42	0.00	(35,051,520.00)
	2011	526,531,356.79	0.00	85,289,424.00
C50	2007	1,106,643,770.61	0.00	(1,121,395,633.44)
	2008	340,294,428.40	0.00	(503,180,177.54)
	2009	406,374,100.74	0.00	(412,641,580.00)
	2010	1,901,745,358.74	0.00	(1,937,081,866.72)
	2011	1,101,773,273.43	0.00	(1,621,502,342.66)
C51	2007	224,236,685.73	0.00	(225,655,920.00)
	2008	181,623,732.07	0.00	(183,069,840.00)
	2009	362,736,760.87	0.00	98,520.00
	2010	355,645,764.76	0.00	360.00
	2011	397,897,280.22	0.00	(45,840.00)

APPENDIX 5 : Regression Analysis Graphs

