THE RELATIONSHIP BETWEEN DIVIDEND PAYOUT RATIO AND MARKET VALUES OF FIRMS LISTED AT THE NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

This research project report is my original work and has never been presented for award of a degree in this or any other institution of higher learning.

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DEDICATION

This project is dedicated in all sincerity to my beloved family.

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ABSTRACT

This study was undertaken with a view of establishing whether there exist any relationship between the dividend payout ratio and market value of companies listed at NSE. Because there was no study done on the same, there was a desire to research on it. With this gap in mind, a study was conducted with an objective of establishing a relationship between dividend payout ratio and market value of all quoted companies at the NSE with regular dividend payout behavior, for the 8 years i.e. 2004 to 2011.With the help of correlation study as a research design, 30 firms listed consistently at NSE including those listed within the years and regularly paid dividends to their shareholders were considered. Secondary data was used which was extracted from published financial statements as published in the NSE Handbook 2008 and 2012, which was analyzed using excel worksheet with focus on correlation model and was presented using tables. The findings of the study revealed that there is a weak relationship between dividend payout ratio and market value. This is in line with the expectations that dividends payout ratio influence the market value. Generally all the 8 years, reported a positive relationship between dividend payout ratio and market value. The prevailing accounting standard, political and economic factors, affect the preparation of published accounts, which determine the market value and dividend payout ratios. Finally similar studies were suggested to be carried out with help of other modules, and also on unquoted companies and a comparison made.

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LIST OF ABBREVIATIONS

CMA	Capital Market Authority
DPS	Dividend Per Share
GSE	Ghana Stock exchange
MM	Modigliani and Miller
MPS	Market Price per Share
NASI	Nairobi Securities Exchange All Share Index
NPV	Net Present Value
NSE	Nairobi Securities Exchange
SPSS	Statistical Package for Social Science
UK	United Kingdom
UON	University of Nairobi

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Individuals and Corporations invest because they expect some returns, either in form of dividends or capital gains (Walter, 2006). Miller and Modigliani (1961) observed that dividends are irrelevant and argued that firms should retain earnings in relation to investment opportunities available. The key issue is whether dividends are more than just a means of distributing unused funds. If they do not affect the value of the common stock, dividend policy becomes more than a passive variable determined solely by the investment opportunities available. The firm could affect shareholder wealth by varying its dividend payout ratio, as a result, they would be an optimal dividend policy (Van Horne, 2009).

Generally dividends are per share payments designated by a company board of directors to be distributed to shareholders, dividends payments may be omitted if the business is poor or the directors withhold the earnings to reinvest in profitable projects. The management and the board of directors must first determine the dividend paying capacity of a business, based on average net income and on average cash flow (Deangelo, Deangelo and Skinner, 2004).

Olson and Mccann (1994) argues that to determine dividend paying capacity, the capital needs, expansion plans, debt repayment, operation cushion, contractual requirements, past dividend paying history of a business and dividends payment of comparable companies should be investigated. After analyzing these factors, the percentage of the next income of average cash flow that can be used for the payment of dividend can be

estimated. What also must be determined is the dividend yield, which can best be determined by analyzing comparable companies using dividend yield. As with the price earning ratio method, this usually produces a subjective result.

Black (1976) in his famous paper "the dividend puzzle" posed two questions: why do companies pay dividends and why do investors pay attention to dividends? Black says that the answer may be because dividends represent a return to the investors at a risk or because companies pay dividends to reward existing shareholders and encourage others to buy new stocks at high prices. He postulates that investors pay attention to dividends because they represent a return in their investment or represents a chance to sell their shares at high prices in the future. He concludes that the answers are not so obvious. The harder one looks at the dividend picture, the more it's like a puzzle, with pieces that just don't fit together.

Lintner (1956) suggest that managers believe that stockholders prefer stable dividends and that the market puts a premium on such stability. He hypothesizes that difference among firms in target payout ratios reflect judgment based on factors such as prospects for growth of the industry and the individual firm, cyclical movements of the investment opportunities and earnings prospects for the firm. Myers (2009) description of the managers' pecking order preferences for internal financing includes a link between dividend payout ratio and factors such as investment opportunities and fluctuations in firm profitability.

1.1.2 Dividend Payout Ratio

Gugler (2003) argues that dividend payout ratio is the percentage of a company's annual earnings paid out as dividends. It's generally a percentage of dividends per shares to earnings per share, and it varies with industry, market conditions and tax law. Moreover, both a low dividend payout ratio and a high dividend payout ratio can have good or bad implications. A low dividend payout ratio can indicate a fast-growing company whose shareholders willingly forego cash dividends, because the company uses the extra money to generate higher returns and, in turn, a high stock price. But also a low dividend payout ratio can also point to a company that simply can't afford to pay dividends. Similarly, a high dividend payout ratio can indicate a blue-chip that pays high dividends and whose stock price is temporarily depressed. Also a high dividend payout ratio can also point to a mature company with few growth opportunities. Certainly other conclusions can be drawn from both a low dividend payout ratio and a high dividend payout ratio, and the dividend payout ratio should thus be considered with other financial indicators when picking stocks therefore more mature companies tend to have a higher payout ratio.

Al-Najjar and Hussainey (2009) argues that firms use different rates when paying out dividends, such as constant payout ratio where firms pay a fixed dividend rate, which fluctuates as the earnings per share changes. Constant amount per share payout ratio where dividend per share is fixed, irrespective of the earnings levels. This creates certainty and is preferred by shareholders who have a high reliance on dividend income (Gitman, 2010). And lastly a residual dividend payout ratio, where dividends are paid out of earnings left over, after all investment opportunities have been financed. The policy is consistent with shareholders wealth maximization (Pandey, 2009).

1.1.3 The Market Value of firm

The market value is the current quoted price at which investors buy or sell a share of common stock at a given time i.e. shares outstanding times price per share, this has nothing to do with the assets of the company. It is only what investors are willing to pay for it, some companies sell at many times their value in assets while others actually sell at a discount to assets (Helfert 1996). Value can be estimated using dividend valuation models where present value from an expected future stream of dividends is computed. If the predictions are correct, the valuation will probably be reasonably accurate, but if the forecast were off its target, such would not be the case. If a firm fails to pay dividends, then the dividend valuation makes little sense. If a firm were never to pay dividend, would the company cease to have value? Probably not! As long as the expectation exists that retained earnings were being reinvested to increase the asset base of the company, the firm would have some value (Hanlon, Myers and Shevlin, 2003).

Al-Malkawi (2007) argues that in this environment, many investors prefer to have capital gains from appreciating stock prices rather than dividends. Nevertheless, there has always been the "bird-in-hand" theory that dividends are worth more than earnings because, once paid to the shareholder, the company cannot take them away. While it is true that dividends do have information content and these influence expectations, rising dividends is a guarantee that the common stock will also rise in the short run. While increased dividends generally increase common stock value, this is not always the case. If a company's overall performance is questionable, then raising dividends may not encourage investors.

1.1.4 Nairobi Securities Exchange

Nairobi Securities Exchange is the principal securities exchange in Kenya. It was established in 1954 as an overseas stock exchange, with permission of the London Stock Exchange, as a voluntary organization of stock brokers. NSE is now one of the most active capital market in Africa, which is self regulating organization for listed instruments. The NSE use two indices; the NSE 20- Share Index which has been in use since 1964, which measures the performance of 20 blue chip companies, with strong fundamentals and which have consistently returned positive financial results. And the Nairobi Securities Exchange All Share Index (NASI) which was introduced in 2008 as an alternative index. The index incorporates all the traded shares of the day. Its attention is therefore on the overall market capitalization (NSE 2010).

Barasa (2008) argues that securities market is a place where securities are traded. These securities are issued by listed companies and the government, with the aim of raising funds for different purposes such as, expansion, development and financing budget deficits. NSE deals in both variable income securities and fixed income securities. Variable incomes securities are ordinary shares which have flexible rate of dividend payable. The fixed income securities include treasury bond, corporate bond, preference shares and debenture stocks, these have a fixed rate of interest or dividend. As a capital market institution, the securities exchange market plays an important role in the process of economic development. It helps mobilize domestic savings by reallocation of financial resources from dormant to active agents. Long-term investments to liquid and the transfer of securities between shareholders are facilitated.

Muga (2001) observes that securities market, consist of both primary and secondary markets. In the primary market, shares are first brought to the market for the first time and sold to investors at a subscription price, while in the secondary market existing shares are traded among investors by forces of demand and supply, which determine their market price. Therefore the value of a firm depends on the market price of shares prevailing in the market.

1.2 Research Problem

Despite the importance of dividend and its link to firm's valuation there has been little exploration of company's dividend payout ratio and market value of firms quoted at NSE. The theories and studies that explain the response of dividend payout ratio provides mixed results. The dividend irrelevance theory, proposed that dividend policy is irrelevant to the shareholder and that stockholder wealth is unchanged when all aspects of investment policy are fixed and any increase in the current payout is financed by fairly priced stock (Miller and Modigliani, 1961). Stakeholder theory by Cornell and Shapiro (1987) posit that non-investor stakeholders influence, this interaction of investment and financing decisions. While financial signaling theory implies that dividends may be used to convey information, rather than dividends per se, which affects shares prices (Brigham and Gapenski, 1994)

Nairobi Securities Exchange is the only security market in Kenya which deals with buying and selling of shares among investors. The market is controlled by the forces of demand and supply in determining prices, if the demand is high price will be high and vice versa. Therefore the market value of a firm depends on the market price of shares

prevailing in the market, which is a direct reflection of returns expected in form of dividends and capital gain. Dividends payment usually depend on the firm's earnings ability and it conveys information to investors that the company is profitable and financially strong, this in turn causes an upsurge in demand for firm's shares, causing a rise in their market price and vice versa. Generally an increase in dividend payout ratio signals to the shareholders a permanent and a long-term increase in a firm's expected earnings.

In global studies Khaled, chijoke and Aruoriwo (2010) sought to examine the relationship between dividend policy (dividend yield and dividend payout) and the volatility of stock price changes in the United Kingdom (UK). Amidu and Abor (2006) studied the determinants of dividend payout ratios of listed firms in Ghana, findings showed, positive relationships between dividend payout ratios and profitability, cash flow, and tax. And negative associations between dividend payout and risk, institutional holding, growth and market-to-book value. A number of local studies in the area of dividend policy have been undertaken. Kuria (2000) did a study, on different payout ratios adopted by different firms and the relationship between dividend payout ratios and growth in assets, return on assets and return on equity at NSE. Kimathi (2008) sought to identify the forms of dividend policies preferred in various industries and the effect of industry on dividend payout ratios for firms listed in NSE. While Muriuki (2010) studied the relationship between dividend policies and share prices for companies quoted at the NSE. The above literature review shows that there is no known study done on the relationship between dividend payout ratio and market value of firms at NSE, this study was to contribute

towards filling a research gap and also provides an answer to the following question: Does dividend payout ratio affect the market value of firms quoted at the NSE?

1.3 Objective of the Study

To establish the relationship between dividend payout ratio and market value of firms quoted at the Nairobi Securities Exchange.

1.4 Value of the Study

Findings of this study will contribute to the already available knowledge in this area and as a result contribute to theory that already exist in this discipline, and it will also enable scholars to carry out further research by identifying information gaps in this study. Besides, it will also facilitate related arguments and debate among scholars in this area.

The study will also contribute to the practice as it will be of interest to the management of publicly quoted companies, in determining the effect of dividends payout ratio on the market value of firms, so that they can make prudent financial decisions, to enhance performance of shares at NSE, thus increasing investor's confidence.

Regulators or government agencies will be able to formulate good policies relating to dividends and taxes based on the findings of this study. The regulators have a role to protect investors and regulate the industry, by providing checks and balances in the market, example the disclosure requirements and the publication of annual reports is a requirement by CMA that needs to be strictly adhered to. The investors will also benefit in that they will be able to gauge the value of the firm based on its dividend policy hence make informed investment decisions.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter provides a discussion of the various theories that seek to explain the relationship between dividends and market value of firms. It further examines the previous empirical evidence on earlier works, in this area of study.

2.2 Theories of dividend policy

Dividend policy has captivated researchers for a long time, resulting in intensive empirical examinations and theoretical modeling. A number of conflicting theoretical models, with weak empirical support have come up, attempting to explain the dividend behavior.

2.2.1 Miller and Modigliani Dividend Irrelevance Theory

Miller and Modigliani (1961) advanced the theory and proposed that the firm's dividend policy is irrelevant to the shareholder and that stockholder wealth is unchanged when all aspects of investment policy are fixed and any increase in the current payout is financed by fairly priced stock sales. They argue that a firm's value is primarily determined by the ability to generate earnings from investment and the level of business and financial risk. According to Miller and Modigliani (1961) dividend policy is a passive residue determined by the firm's need for investment funds. It does not matter how the earnings are divided between dividend payment to shareholders and retention. Therefore the optimal dividend policy does not exist since investment decision is a mere detail without any effect.

Miller and Modigliani (1961) based their argument on the assumptions that there is a 100 per cent payout by management in every period, other assumptions are existence of perfect capital markets with no taxes or transactional cost and the market prices cannot be influenced by a single buyer or seller, and free and costless access to information about the market; Those investors are rational and that they value securities based on the value of discounted future cash flow to investors; That managers act as the best agents of shareholders; and that there is certainty about the investment policy of the firm, with full knowledge of future cash flows, no uncertainty, all investors make decisions using the same discounting rate at all times i.e. required rate of return equal cost of capital. In light of the foregoing, they concluded that the issue of dividend policy is irrelevant.

2.2.2 Bird-in-hand theory

This theory was advanced by Lintner (1962). He argued that shareholders are risk averse and prefer certainty. Where by dividend payments are more certain than capital gains, which rely on demand and supply forces to determine their prices. Al-Malkawi (2007) asserts that in a world of uncertainty and information asymmetry, dividends are valued differently from retained earnings (capital gains): A bird in hand (dividends) is worth more than two in the bush (capital gains). Owing to the uncertainty of future cash flow, investors will often tend to prefer dividends to retained earnings. Though this argument has been widely criticized and has not received strong empirical support, it has been supported by (Gordon and Shapiro, 1956).

Lintner (1962) posit that the main assumptions are; that investors have imperfect information about the profitability of a firm, where cash dividends are taxed at a higher

rate than when capital gain is realized on the sale of a share and that dividends function as a signal of expected cash flows. Walter (2006) argues that despite the tax disadvantage of paying dividends, management continue to pay dividends in order to send a positive signal about the firm's future prospects. The cost of this signaling is that cash dividends are taxed higher than capital gains. While some investors would rather have capital gains to cut down on tax impact, others may prefer dividends because they prefer immediate cash in hand. Al-Malkawi (2007) also assumed that assets in which management invest outlive management's stay in their position and that ownership of the assets is transferred to new management over time.

2.2.3 Agency cost and the free cash flow theory

Agency cost is the cost of the conflict of interest that exists between shareholders and management (Ross, westerfield, Jaffe and Jordan 2008). This arises when management acts in their own interest rather than on behalf of the shareholders who own the firm. This could be direct or indirect. This is contrary to the assumptions of Miller and Modigliani (1961) who assumed that managers are perfect agents for shareholders and no conflict of interest exists between them. This is somehow questionable, as the owners of the firm are different from the management. Managers are bound to conduct some activities, which could be costly to shareholders, such as undertaking unprofitable investments that would yield excessive returns to them, and unnecessarily high management compensation.

Al-Malkawi (2007) argues that costs are borne by shareholders; therefore, shareholders of firms with excess free cash flow would require high dividend payments instead. Agency cost may also arise between shareholders and bondholders: while shareholders require

more dividends, bondholders require fewer dividends to shareholders by putting in place a debt covenant to ensure availability of cash for their debt repayment. Easterbrook (1994) also identified two agency costs; the cost of monitoring managers and the cost of risk aversion on the part of managers.

Dividend policy will have a beneficial effect on the value of the firm; this is because dividend policy can be used to reduce agency problem between shareholders and managers by reducing agency costs. The theory implies that firms adopting high dividend payout ratio will have a higher value due to the reduced agency costs (Gitman, 2010).

2.2.4 Signaling hypothesis (informational signaling effect theory)

Ross (1977) argued that in an inefficient market, management can use dividend policy to signal important information to the market which is only known to them. For example, if management pays high dividends it signals high expected profits in future to maintain the high dividend level. This would increase the share price (value) of the firm and vice-versa.

Though Modigliani and Miller (1961) assumed that investors and management have perfect knowledge about a firm, this has been countered by many researchers, as management who look after the firm tend to have more precise and timely information about the firm than outside investors. This, therefore, creates a gap between managers and investors; to bridge this gap, management use dividends as a tool to convey private information to shareholders (Al-Malkawi, 2007).

Petit (1972) observed that the amount of dividends paid seems to carry great information about the prospects of a firm; this can be evidenced by the movement of share price. An increase in dividends may be interpreted as good news and brighter prospects, and vice versa. But Lintner (1956) observed that management are reluctant to reduce dividends even when there is a need to do so, and only increase dividends when it is believed that earnings have permanently increased.

2.2.5 Clientele effects of dividends theories

This theory was advanced by petit (1972). It states that different groups of shareholders (clientele) have different preferences for dividends depending on their level of income from other sources. Low-income earners prefer high dividends to meet their daily consumption, while high-income earners prefer low dividends to avoid payment of more taxes.

Investors tend to prefer stocks of companies that satisfy a particular need. This is because investors face different tax treatments for dividends and capital gains and also face some transaction costs when they trade in securities. Miller and Modigliani (1961) argued that for these costs to be minimized, investors tend to prefer firms that would give them those desired benefits. Likewise, firms would attract different clientele based on their dividend policies. Though they argued that even though clientele effect may change a firm's dividend policy, one clientele is as good as another, therefore, dividend policy remains irrelevant.

Al-Malkawi (2007) affirms that firms in their growth stage, which tend to pay lower dividends, would attract clientele that desire capital appreciation, while firms in their

maturity stage, which pay higher dividends, attract clientele that require immediate income in the form of dividends. He grouped the clientele effect into two groups, those that are driven by tax effects and those driven by transaction cost. He argued that investors in higher tax brackets would prefer firms that pay little or no dividends, to get reward in the form of share price appreciation, and vice versa. Transaction cost-induced clientele, on the other hand, arises when small investors depend on dividend payments for their needs; this clientele prefers companies who satisfy this need because they cannot afford the high transaction cost of selling securities.

When a firm sets a dividend policy, there will be shifting of investors into and out of the firm until equilibrium is achieved. Low-income shareholders will shift to firms paying high dividends and high-income shareholders to the firm paying low dividends. At equilibrium, dividend policy will be consistent with clientele of shareholders the firm has. Dividend decisions at equilibrium are irrelevant since they cannot cause any shifting by investors (Pandey, 2009).

2.2.6 Residual dividend theory

Under this theory, a firm will pay dividends from residual earnings remaining after all suitable projects with positive NPV have been finalized. It assumes that retained earnings are the best sources of long-term capital since it is readily available and cheap. This is because no floatation costs are included in their use to finance new investment projects. Therefore, the first claim on earnings after tax and preference dividend will be a reserve for financing investments. According to this theory, dividend policy is irrelevant

and treated as a passive variable. It will not affect the value of the firm. However, investment decisions will affect the value of the firm (Pandey, 2009).

2.3 Empirical review

Amidu and Abor (2006) examined the determinants of dividend payout ratios of listed firms in Ghana. A sample of twenty firms that had been listed on the GSE during the 6 year period 1998 to 2003 was considered. Data was derived from the annual reports and analyzed by least squares model to estimate the regression equation. The results showed a positive relationship between dividend payout and profitability, cash flow, and tax. The results suggest that, profitable firms tend to pay high dividend. The results also showed negative associations between dividend payout and risk, institutional shareholding, growth and market-to-book value.

Khaled, Chijoke and Aruoriwo (2010) studied the relationship between dividend policy (dividend yield and dividend payout ratio) and the volatility of stock price changes in the United Kingdom (UK) from 1998 to 2007. Multiple regression analyses were used to explore the association between share price changes and both, dividend yield and dividend payout ratio. It was based on a sample of publicly quoted companies in the UK. The study found a positive relation between dividend yield and stock price changes and negative relation between dividend payout ratio and stock price changes.

Kuria (2000) investigated different payout ratios adopted by different firms, and establish a relationship between dividend payout ratios and growth in assets, return on assets and return on equity. A sample was drawn from those companies which had been continuously quoted for eight years (1991-1998). They used regression analysis to

conduct the study. The researcher found out that on average dividend payout ratios have been decreasing over the period of study. The average growth in assets has also been decreasing The only significant results was that on average return on assets, which mean that in making dividend decisions managers considered return on assets.

Bitok (2004) studied the effect of dividend policy on the value of the firms quoted at NSE. The population of interest in the study consisted of all the firms quoted at NSE. The researcher used a sample of 43 companies consistently quoted at NSE for a period of 6 years from 1998 to 2003.The study was facilitated by the use of secondary data. Dividend data was extracted from published reports of quoted companies, data on the value of the firm was obtained from the share prices as reported by NSE. The data collected was analyzed using simple linear regression and correlation analysis. The researcher found out that, on average, there was a significant positive relationship between the dividend policy and value of the firm.

Kimathi (2008) sought to identify the forms of dividend policies preferred by various industries and its effect on dividend payout ratios for firms listed in NSE in Kenya. He used 16 firms in commercial and service industry as these had full information available for the entire period covered by the study (1996-2005). Regression analysis was used to test the relationship. The outcome of the study was that industrial factors had a strong positive influence on dividend payout ratios in three industries namely Agriculture, Finance & Investment and Industrial & allied. While commercial and services industry had a weak positive influence with industry factors.

Muriuki (2010) examined the relationship between dividend policies and share prices for companies quoted at NSE. He used all 47 listed firms from 2005 to 2009, with the help of multivariate regression model; the study concluded that there is a negative relationship between share prices and the usage of constant payout ratio, constant dividend per share plus extra and residual dividend policy. While usage of constant amount per share had a positive relationship with share price.

2.4 Summary of literature review

The study by Khaled et al. Used dividend policy and the volatility of stock price changes in the UK. And concluded that, there is positive relationship between dividend yield and stock prices and negative relationship between dividend payout and stock prices. While in Kenya, Kuria used dividend payout ratio, to establish a relationship which exist with return in assets, return on equity and growth in assets at NSE. Bitok sought to find out the effect of dividend policy on the value of the firms quoted at NSE. Kimathi examined dividend policies of various industries, and the effect of industry on dividend payout ratios. Lastly Muriuki researched on the relationship between dividend policies and share prices for companies quoted at the NSE. The evidence presented in this chapter, shows that dividend has influence on market price of shares, creating a gap which needs to be researched ,on the relationship between dividend payout ratio and the market value of firms listed at NSE.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses in details the research design, the population and the sample size that was used in the study. And it also explains the data collection and data analysis method applied in the study.

3.2 Research Design

The research design was a correlation. Mugenda (2005) explains that a correlation research design is used to analyze the degree of relationship between two variables and this is consistent with this study, which seeks to establish the relationship between dividend payout ratio and market value of firms. The correlation design will enable the researcher to determine cause-effect relationship between the variables, where causes already exist and cannot be manipulated.

3.3 Population of the study

The population of interest in this study consisted of the 30 firms which were continuously quoted at the Nairobi Securities Exchange, for a period of 8 years or listed between January 1, 2004 and December 31, 2011 and paid dividends regularly.

The 8 years period is justifiable, because it provided the most recent, accurate and more reliable data, which established the existence of a relationship between dividend payout ratio and the market value of the firm as reflected in the share prices over the years.

3.4 Data collection

This study used secondary data. Where dividends and earnings data of various firms were extracted from published reports of quoted companies. This information was obtained from the NSE databank and company libraries. Data on the value of the firms was obtained from the share prices as reported by Nairobi Securities Exchange.

3.5 Data analysis

Correlation analysis was used in data analysis, which tested any existing relationships or interdependence between two variables, the independent and dependent variables.

3.5.1 Correlation Analysis

Correlation analysis is a statistical tool generally used to describe the degree to which one variable is related to another Mugenda (2005). The relationship, if any, is usually assumed to be a linear one. If such a relationship does not exist then one should not talk of correlation, generally two phenomena should have cause-effect relationship.

In this study coefficient of correlation (r) and coefficient of determination (r^2) were estimated to determine the nature and magnitude of the relationship. Correlation coefficient was used to measure the degree of relationship between dividend payout ratio and the market value of a firm. The magnitude of the sample coefficient of correlation indicates a weak or strong linear relationship:

r will always be a value in the interval $-1 \leq r \leq +1$. The closer the r is to the end points, the stronger the linear relationship. The closer the value of r to 0, the weaker the relationship. However an r value close to 0 does not rule out a non-linear relationship.

A positive co-efficient (r) indicates a positive upward-sloping relationship, whereas a negative co-efficient (r) indicates the downward sloping relationship.

The coefficient of determination (r^2) measures the variability that is, the proportion or percentage of variations in y due to variation in x or the regression of y on x assuming y to be the predicted variable. Its values show how much of the change in y that is observed in the sample can be accounted for by the change in x the dependent variable in the model $0 \leq r^2 \leq 1$ or $0 \leq r^2 \leq 100\%$. The larger the r^2 the better the line fits the data points i.e. the smaller the sum of the squared residuals

CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents the information analyzed from the data that was available for the study on the relationship between dividend payout ratio and market value of company's listed at the NSE. The data analyzed was collected on thirty companies that had paid dividend regularly from 2004 to 2011, either for the entire period of eight years or from the time firms were listed during the eight years period of the study and had paid dividend regularly.

The dividend payout ratio and market value of the firms were analyzed in this section where by a pool of data had been used to take care of short term influences of transitory effects of dependent and independent variables. Correlation analysis had been used to prove the effective coefficient estimates. The study aimed to analyze the data using existing theoretical models to explain the effect of dividend payout ratio on market value.

This study was generally guided by the following objective; determining the relationship between dividend payout ratio and the market value of various companies. The analysis was done based on the thirty companies' listed at NSE.

4.2 Data Analysis

The statistical tool applied has enabled analyze the objective of the study, where all the data were derived from Appendices 2, 3 & 4. Figures were obtained from published financial statements of companies under study and contained in the NSE Handbook 2008 and 2012. Data was extracted and condensed for purpose of the study as shown on Appendices 3 and 4 and subsequently resulting to various table as shown below.

Table 1. NSE variables 2011 and 2010

		2011				2010	
Firms	DPR % X.	Market Value Y millions	Correlation		DPR % X.	Market Value Y millions	Correlation
Kapchorua Tea	16	450			18	571	
Williamson Tea	-27	1620			6	1935	
Rea Vipingo	0.14	885			0.7	1074	
Limuru Tea co.	22	402			12	360	
Car & General	9	760			8	1047	
Carbacid ltd	56	3109			55	5301	
Kenya Airways	20	14887			23	27697	
Barclays Bank	101	70882			70	84858	
KCB	50	50023			51	64168	
Standard Chartered	54	45932			72	74066	
Diamond Trust	11	17706			11	22010	
NIC Bank ltd	7	9478			10	16514	
Nation Media	105	21997			82	26239	
TPS ltd	31	8152			38	10152	
E. African Cables	40	2671			110	3291	
Athi-River Mining	17	15651			22	18127	
Bamburi cement	63	45825			58	67873	
Crown-Berger	23	486			32	854	
Kengen ltd	52	29788			56	37592	
Cooperative Bank	26	42782			31	66355	
Total Kenya ltd	-257	2582			20	5017	
BAT ltd	58	24600			75	27000	

Jubilee Holding	16	8440			15	9108	
Kenya Reinsurance	11	4380			14	6630	
Safaricom ltd	61	152000			53	222000	
BOC Kenya Ltd	88	1953			231	2577	
Scangroup ltd	22	11819			26	14426	
E. A. Breweries	77	154201			78	143130	
Mumias Sugar	40	10940			39	19661	
Equity bank	29	60726			42	99049	
Total	**822**	**815123**	**0.3362**		**1359**	**1078683**	**0.1502**

Source NSE Handbook 2008 and 2012.

Table 1 above summarizes the correlation between dividend payout ratio and market value for 2010 and 2011. As observed there was positive relationship between the two variables, where by Nation Media Group had the highest dividend payout ratio of 105% in 2011, while BOC Kenya Ltd had a ratio of 231% in 2010.

Table 2. NSE variables 2009 and 2008

		2009				**2008**	
Firms	DPR % X	Market Value Y millions	Correlation		DPR % X	Market Value Y millions	Correlation
Kapchorua Tea	36	266			-14	293	
Williamson Tea	32	412			-5	504	
Rea Vipingo	0.2	666			0.1	1020	
Limuru Tea co.	33	366			71	183	

Car & General	8	935			7	1002	
Carbacid ltd	199	3500			68	1552	
Kenya Airways	-11	9117			21	24004	
Barclays Bank	56	61105			49	68573	
KCB	54	45464			53	52118	
Standard Chartered	69	43787			84	43515	
Diamond Trust	19	11413			20	11168	
NIC Bank ltd	15	10199			14	12906	
Nation Media	70	16828			30	10268	
TPS ltd	35	4764			59	5558	
E. African Cables	68	4101			44	5316	
Athi-River Mining	23	10995			25	8965	
Bamburi cement	57	56622			64	59888	
Crown-Berger	34	570			77	587	
Kengen ltd	53	31986			34	53860	
Cooperative Bank	24	31257			15	37194	
Total Kenya ltd	36	5147			62	5602	
BAT ltd	100	17800			100	13100	
Jubilee Holding	22	5175			27	5535	
Kenya Reinsurance	23	7020			20	7650	
Safaricom ltd	38	120000			14	144000	
BOC Kenya Ltd	86	2929			66	3124	
Scangroup ltd	28	5628			52	5738	
E. A. Breweries	74	114662			69	157364	
Mumias Sugar	38	9180			50	19431	
Equity bank	35	53135			28	65169	

Total	**1354**	**685027**	**0.12685**		**1205**	**823447**	**0.0991**

Source NSE Handbook 2008 and 2012

Table 2 above also gives a correlation between dividend payout ratio and market value for year 2008 and 2009. As observed there was positive relationship between the two variables, where by Carbacid ltd had the highest dividend payout ratio of 199% in 2009, while British American Tobacco Ltd had a ratio of 100% in 2008.

Table 3. NSE variables 2007 and 2006

		2007				**2006**	
Firms	DPR % X	Market value millions	Correlation		DPR % X	Market Value Y millions	Correlation
Kapchorua Tea	-2108	438			-20	587	
Williamson Tea	31	1121			-8	828	
Rea Vipingo	0.4	1173			0.4	1530	
Limuru Tea co.	214	225			124	210	
Car & General	9	1270			11	1008	
Carbacid ltd	-	-			-	-	
Kenya Airways	20	43854			17	48470	
Barclays Bank	46	107273			50	104557	
KCB	47	56886			49	48104	
Standard Chartered	78	56025			88	55753	
Diamond Trust	31	15407			29	10132	
NIC Bank ltd	32	18543			37	6181	

Nation Media	70	23246			109	22319	
TPS ltd	32	6034			34	7773	
E. African Cables	44	8505			50	9720	
Athi-River Mining	29	9212			35	7719	
Bamburi cement	57	71140			76	78036	
Crown-Berger	31	1198			56	1038	
Kengen ltd	72	57157			32	86286	
Cooperative Bank	-	0			-	-	
Total Kenya ltd	85	5908			89	6012	
BAT ltd	123	13900			100	19700	
Jubilee Holding	29	9585			27	11628	
Kenya Reinsurance	25	10170			-		
Safaricom ltd	-	0			-		
BOC Kenya Ltd	68	3124			98	3124	
Scangroup ltd	59	4730			68	3935	
E. A. Breweries	67	101483			72	91598	
Mumias Sugar	55	13566			59	31620	
Equity bank	38	54332			24	12589	
Total	**-717**	**69235**	**0.1507**		**1306**	**674414**	**0.2585**

Source NSE Handbook 2008 and 2012

Table 3 summarizes the correlation between dividend payout ratio and market value for 2007 and 2006. There was positive relationship between the two variables, where by Kapchorua Tea ltd had the highest dividend payout ratio of -2108% in 2007, while Limuru Tea Ltd had a ratio of 124% in 2006.

Table 4. NSE variables 2005 and 2004

		2005				2004	
Firms	DPR % X	Market Value Y millions	Correlation		DPR % X	Market value Y millions	Correlation
Kapchorua Tea	75	391			38	391	
Williamson Tea	50	1042			41	701	
Rea Vipingo	0.4	1230			0.4	570	
Limuru Tea co.	-95	208			93	213	
Car & General	8	646			41	334	
Carbacid ltd	-	-			-	-	
Kenya Airways	19	11079			27	4432	
Barclays Bank	582	407387			77	40743	
KCB	60	22555			51	12774	
Standard Chartered	83	37804			97	33180	
Diamond Trust	30	4006			42	2783	
NIC Bank ltd	33	8406			32	4121	
Nation Media	60	13548			50	9091	
TPS ltd	135	6292			33	1828	
E. African Cables	48	2774			57	1033	
Athi-River Mining	35	3674			-	1395	
Bamburi cement	89	50814			129	34481	
Crown-Berger	69	830			-	664	
Kengen ltd	-	-			-	-	
Cooperative Bank	-	-			-	-	
Total Kenya ltd	81	7094			75	16350	

BAT ltd	91	20400			136	20000	
Jubilee Holding	26	2988			33	2088	
Kenya Reinsurance	-				-	-	
Safaricom ltd	-				-		
BOC Kenya Ltd	52	2831			55	2675	
Scangroup ltd	-	-			-	-	
E. A. Breweries	62	98188			51	48874	
Mumias Sugar	59	12495			71	4616	
Equity bank	-	-			-	-	-
Total	**1693**	**721012**	**0.9254**		**1170**	**246273**	**0.574**

Source NSE Handbook 2008 and 2012 editions

Table 4 above summarizes the correlation between dividend payout ratio and market value for year 2005 and 2004, where the two variables, had a positive relationship. Barclays Bank ltd posted the highest dividend payout ratio of 582% in 2005, while British American Tobacco Ltd had a ratio of 124% in 2006

The tables above 1, 2, 3, and 4 above were extracted to enable calculate the relationship between the Dividend Payout Ratio and the market value. This had been derived from Appendices 3 and 4, which shows the dividend payout ratio and market value for all companies quoted at the NSE for the years 2004 to 2011.

4.3 Correlation and coefficient of determination

The table summarized below presents the results of the study on the relationship of dividend payout ratio and market value of firms listed at NSE using peason product-movement coefficient of correlation (r) and coefficient of determination (r^2) model.

Table 5 Summary of the relationship

Year/model	**r-correlation**	**r^2**
2011	0.33620	0.11303
2010	0.15022	0.02257
2009	0.12685	0.01609
2008	0.09912	0.00982
2007	0.15070	0.02271
2006	0.25848	0.06681
2005	0.92537	0.85631
2004	0.57373	0.32917
Overall / average	**0.32758**	**0.17956**

Source NSE Handbook 2008 and 2012 editions

The study performed correlation test on the relationship between dividend payout ratio (independent) variables and market value (dependent) variables of firms listed at the

NSE. The results had shown a positive correlation in all the 8 years, although the values differed from year to year ranging from the most closer of 0.9253 to less closer of 0.0991 depicting that, though positive the association between the two was weak, where the closer r is to +1 or -1 the closer the relationship between the variables and the closer r is to 0, the less close the relationship therefore the higher r the better the estimate will be.

While the coefficient of determination had a wider variability which ranged from 0.00982 or 1% to 0.8572 or 86% which specify how much of the variation in market value is due to its relationship with dividend payout ratio (that is variation y due to variation in x).

CHAPTER FIVE: SUMMARYOF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussions drawn from the data findings analyzed and presented in the previous chapter. The chapter is structured into summary and findings, conclusion, recommendations, limitations and suggestions of areas for further research.

5.2 Summary of findings

It's observed that there is positive relationship between dividend payout ratio and market value of firms listed at NSE. Data of 30 continuously listed companies at NSE including those listed within the period and paid dividends regularly, were examined from 2004 to 2011.The results had shown a positive correlation in all the 8 years, although the values differed from year to year as shown in table 1, 2, 3, 4 and 5. In table 1 correlation is positive but weak; for year 2011 correlation was 0.336 while 2010 was 0.150. Table 2 also shows a weak but positive correlation where year 2009 was 0.127 and 2008 was 0.099. While table 3 had a weak correlation but positive, where year 2007 was 0.151 and 2006 was 0.258. And lastly table 4 had a strong correlation in year 2005 of 0.925 and 2004 of 0.574. This wider range, where the most closest is 0.9253 to a less closer of 0.0991 depicts that, though positive the association between the two was weak, with an overall coefficient of correlation of 0.3276 and coefficient of determination (r^2) of 0.1796 as shown in table 5.

The eight years analysis results showed that the year 2005 had the highest variability of 0.8563 or 85% respectively as shown in table 5. While the rest showed variability as

follows: 2004 had 0.574 or 57%, 2006 had 0.26 or 26%, 2007 had 0.15 or 15%, 2008 had 0.10 or 10%, 2009 had 0.13 or 13%, 2010 had 0.15 or 15% and lastly 2011 had variability 0.34 or 34%

The above observation indicate that the overall relationship between dividend payout ratio and market value according to Pearson product-movement coefficient of correlation are positively related with an overall average of the eight years as shown in table 5 being $r = 0.03276$ and an overall average coefficient of determination variation of 0.1796 . As all parameters are positive this implies that as dividend payout ratio increases, so does the market value.

5.3 Conclusions

From the foregoing research, the study concludes that dividend payout ratio is positively correlated with market value although the association is low. As per the observations, seen the market value per company increased on an annual basis, while the dividend payout ratio did not follow the same pattern. The correlation test done indicate a moderate association of 0.3276 overall, with a variation of 0.1796

5.4 Recommendations

Dividend payout ratio have clear relationship with the market value of the firms quoted at NSE, thus firms should have a high dividends payout ratio to maintain high market values. This is consistent with the dividend theories like information signaling effect theory, Bird in hand theory and Agency theory. These theories propose that dividend policy is relevant to the market value of a firm, other factors kept constant. It's also

recommended that firms should maintain a consistent dividend payout ratio in order for dividend to equate to the market value of the firm.

5.5 Limitations of the study

The study was restricted to firms quoted at NSE and concentrated on the firms that have continuously paid dividends over the years resulting to small sample size. The study omitted firms that choose not to pay dividends, this may have provided bias findings. Therefore the findings of this study should not be generalized to the findings of other firms whose characteristics differ from sample selected.

The study mainly relied on secondary data obtained from NSE handbook and data base. The reliability of the data depends on the correctness, accuracy and care taken by the person preparing the handbook and database, since there were no other sources to compare the accuracy of the figures.

Dividend payout ratio and market values are accounting figures which could be exposed to possibility of manipulation by the firms in order to evade payment of taxes or to influence the performance of the firm. Also market anomalies do play a role in determining share prices and dividend payout ratio.

Short coming on the module used will be applicable to the results obtained from the used modules. Here correlation analysis was used, but it is clearly known that relationship between dividend payout ratio and market value is affected by other factors such as investment decision, capital structure and government legislations.

The study does not take into account the prevailing economic and political environment that may affect the financial performance of firms. For example the global financial crises

may affected some firms negatively regardless of their dividend policies, while government rules and legislation could created an enabling environment especially in companies where government is a shareholder.

5.6 Suggestions for further research

A similar study can be carried on all unquoted companies who regularly pay dividends with an objective of determining the relationship between dividend payout ratio and market value and comparison of the two can be done.

Comparisons can also be made between locally and foreign owned listed companies. And across markets analysis can be conducted to verify the results and compare with other East African markets such as Uganda stock exchange, Tanzania stock exchange and others .

Due to the shortcoming of correlation analysis, a similar study can be performed with other modules such as regression analysis which can be used to analyze the data. A similar study can be conducted analyzing the market sector-wise so as to determine the relationship of dividend payout ratio on market value of different sectors. Further studies should also be conducted to identify other variables that could be affecting market value.

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APPENDIX I

A List of Companies Listed at NSE

1. Kapchorua Tea Company Limited
2. Williamson Tea Kenya Limited
3. Rea Vipingo plantations Limited
4. Limuru Tea Company Limited
5. Car & General (Kenya) Limited
6. Carbacid Investment company
7. Barclays Bank of Kenya Limited
8. Kenya Commercial Bank Limited
9. Standard Chartered Bank Kenya Limited
10. Diamond Trust Bank (Kenya) Limited
11. NIC Bank Limited
12. Kenya Airways Limited
13. Nation Media Group
14. TPS (Tourism Promotion Service) Eastern Africa Limited (Serena Hotels)
15. Athi-River Mining Limited
16. Bamburi cement Company Limited
17. Crown-Berger Kenya Limited
18. East African Cables Limited
19. Kenya Electricity Generating Company Limited
20. The Cooperative Bank
21. Total Kenya Limited

22. British American Tobacco Kenya Limited

23. Equity Bank Limited

24. Jubilee Holding Limited

25. Kenya Reinsurance Corporation

26. Safaricom Limited

27. BOC Kenya Limited

28. Scangroup Limited

29. East African Breweries Limited

30. Mumias Sugar company Limited

APPENDIX II

Summary of Working Schedules

		2011		
Company Name	**D P R %**	**Market Value**	XY	**Correlation**
Kapchorua Tea Company	16	449,880	7198080	0.336202673
Williamson Tea Kenya	-27	1619919	-43737813	
Rea Vipingo plantations	0.14	885000	123900	
Limuru Tea Company	22	402000	8844000	
Car & General ltd	9	760292	6842628	
Carbacid Investment co.	56	3109194	174114864	
Barclays Bank of Kenya	101	70881545	7159036045	
Kenya Commercial Bank Limited	50	50023373	2501168650	
Standard Chartered Bank Kenya	54	45932341	2480346414	
Diamond Trust Bank	11	17705830	194764130	
NIC Bank Limited	7	9477542	66342794	
Kenya Airways	20	14887099	297741980	
Nation Media Group	105	21996600	2309643000	
TPS Eastern Africa ltd	31	8151585	252699135	
Athi-River Mining ltd	17	15650690	266061730	
Bamburi cement Company	63	45825000	2886975000	
Crown-Berger Kenya	23	486404	11187292	
East African Cables	40	2670469	106818760	
Kenya Electricity Generating Company	53	29787798	1578753294	
Cooperative bank of Kenya	26	42781544	1112320144	
Total Kenya Limited	-257	2581673	-663489961	
British American Tobacco Kenya	58	24600000	1426800000	
Equity	29	60725543	1761040747	
Jubilee Holding ltd	16	8439750	135036000	
Re-Insurance corporation	11	4380000	48180000	
Safaricom	61	152000000	9272000000	
BOC Kenya Limited	88	1952545	171823960	
ScanGroup	22	11818749	260012478	
East African Breweries	77	154200999	11873476923	
Mumias Sugar company	40	10939500	437580000	
	∑x	**∑y**	**∑xy**	**correlation**
	822.14	815122864	46099704174	0.336202673

	2010				2009		
D P R %	Market Value	XY	Correlation	D P R %	Market Value	XY	Correlation
18	571,152	10280736	0.1502191	36	266,016	9576576	0.1268462
6	1,935,147	11610882		32	411,547	13169504	
0.7	1,074,000	751800		0.2	666000	133200	
12	360,000	4320000		33	366,000	12078000	
8	1,047,142	8377136		8	935,744	7485952	
55	5,300,921	291550655		199	3,499,967	696493433	
70	84857750	5940042500		56	61104780	3421867680	
51	64168151	3272575701		54	45464444	2455079976	
72	74065900	5332744800		69	43786817	3021290373	
11	22010010	242110110		19	11412598	216839362	
10	16513898	165138980		15	10198801	152982015	
23	27696929	637029367		-11	9116906	-100285966	
82	26238802	2151581764		70	16828041	1177962870	
38	10152429	385792302		35	4763913	166736955	
22	18127065	398795430		23	10995105	252887415	
58	67873384	3936656272		57	56621647	3227433879	
32	854172	27333504		34	569448	19361232	
110	3290625	361968750		68	4100625	278842500	
56	37591981	2105150936		53	31986159	1695266427	
31	66355047	2057006457		24	31256720	750161280	
20	5017377	100347540		36	5147137	185296932	
75	27000000	2025000000		100	17800000	1780000000	
42	99049285	4160069970		35	53134850	1859719750	
15	9108000	136620000		22	5175000	113850000	
14	6630000	92820000		23	7020000	161460000	
53	222000000	11766000000		38	120000000	4560000000	
231	2577359	595369929		86	2928817	251878262	
26	14426057	375077482		28	5627586	157572408	
78	143130158	11164152324		74	114662282	8485008868	
39	19660500	766759500		38	9180000	348840000	
∑x	∑y	∑xy	correlation	∑x	∑y	∑xy	correlation
1358.7	1078683241	58523034827	0.1502191	1354.2	685026950	35378988883	0.1268462

2008				2007			
D P R %	Market Value	XY	Correlation	D P R %	Market Value	XY	Correlation
-14	293,400	-4107600	0.0991195	-2108	438,144	-923607552	0.1507015
-5	503,488	-2517440		31	1,120,809	34745079	
0.1	1,020,000	102000		0.4	1,173,000	469200	
71	183,000	12993000		214	225,000	48150000	
7	1,002,583	7018081		9	1,269,938	11429442	
68	1,551,765	105520020		0	0	0	
49	68573142	3360083958		46	107272836	4934550456	
53	52117778	2762242234		47	56886000	2673642000	
84	43514850	3655247400		78	56025369	4369978782	
20	11168042	223360840		31	15407007	477617217	
14	11168042	156352588		32	15407007	493024224	
21	24004005	504084105		20	43853471	877069420	
30	10267957	308038710		70	23245515	1627186050	
59	5557899	327916041		32	6034290	193097280	
25	8964478	224111950		29	9212115	267151335	
64	59888280	3832849920		57	71140018	4054981026	
77	587243	45217711		31	1198214	37144634	
44	5315625	233887500		44	8505000	374220000	
34	53859856	1831235104		72	57157398	4115332656	
15	37192750	557891250		0	0	0	
62	5602071	347328402		84	5908434	496308456	
100	13100000	1310000000		123	13900000	1709700000	
29	65168876	1889897404		38	54311486	2063836468	
27	5535000	149445000		29	9585000	277965000	
20	7650000	153000000		25	10170000	254250000	
14	144000000	2016000000		0	0	0	
66	3124000	206184000		68	3124000	212432000	
52	5737931	298372412		59	4730250	279084750	
69	157364097	10858122693		67	101482709	6799341503	
50	19431000	971550000		55	13566000	746130000	
∑x	∑y	∑xy	Correlation	∑x	∑y	∑xy	correlation
1205.1	823447158	36341427283	0.0991195	-716.6	692349010	36505229426	0.1507015

	2006				2005		
D P R %	Market Value	XY	Correlation	D P R %	Market Value	Xy	Correlation
-20	586,800	-11736000	0.258484	75	391,200	29340000	0.9253713
-8	827,472	-6619776		50	1,042,002	52100100	
0.4	1,530,000	612000		0.4	1,230,000	492000	
124	210,000	26040000		-95	208,200	-19779000	
11	1,008,153	11089683		8	646,109	5168872	
0	0	0		0	0	0	
50	104557068	5227853400		586	407387000	2.38729E+11	
49	48103600	2357076400		60	22554800	1353288000	
88	55753401	4906299288		83	37803526	3137692658	
29	10131592	293816168		30	4006063	120181890	
37	10131592	374868904		33	4006063	132200079	
17	48469626	823983642		19	11078772	210496668	
109	22318546	2432721514		60	13547999	812879940	
34	7773373	264294682		135	6292218	849449430	
35	7719000	270165000		35	3673500	128572500	
76	78043624	5931315424		89	50814299	4522472611	
56	1038056	58131136		69	830445	57300705	
50	9720000	486000000		48	2774250	133164000	
32	86285687	2761141984		0	0	0	
0	0	0		0	0	0	
89	6012202	535085978		81	7093533	574576173	
100	19700000	1970000000		91	20400000	1856400000	
24	12588473	302123352		0	0	0	
27	11628000	313956000		26	2988000	77688000	
0	0	0		0	0	0	
0	0	0		0	0	0	
98	3124000	306152000		52	2831125	147218500	
68	3935250	267597000		37	8730000	323010000	
72	91598030	6595058160		62	98187816	6087644592	
59	31620000	1865580000		59	12495000	737205000	
∑x	∑y	∑xy	Correlation	∑x	∑y	∑xy	correlation
1306.4	674413545	38362605939	0.258484	1693.4	721011920	2.60058E+11	0.9253713

2004

D P R %	Market Value	XY	Correlation
38	391,200	14865600	0.5737293
41	700,506	28720746	
0.4	570,000	228000	
93	213,000	19809000	
41	334,194	13701954	
0	0	0	
77	40743320	3137235640	
51	12774400	651494400	
97	33180073	3218467081	
42	2782500	116865000	
32	2782500	89040000	
27	4,431,509	119650743	
50	9091421	454571050	
33	1827583	60310239	
0	1395000	0	
129	34481131	4448065899	
0	664356	0	
57	1032750	58866750	
0	0	0	
0	0	0	
75	16349729	1226229675	
136	20000000	2720000000	
0	0	0	
33	2088000	68904000	
0	0	0	
0	0	0	
55	2674925	147120875	
-59	4275000	-252225000	
51	48874249	2492586699	
71	4615500	327700500	
∑x	**∑y**	**∑xy**	**Correlation**
1170.4	246272846	19162208851	0.5737293

APPENDIX III

Dividend payout ratio %

	2011	2010	2009	2008	2007	2006	2005	2004
Kapchorua Tea	16	18	36	-14	-2108	-20	75	38
Williamson Tea Kenya	-27	6	32	-5	31	-8	50	41
Rea Vipingo plantations	0.14	0.7	0.2	0.1	0.4	0.4	0.4	0.4
Limuru Tea Company	22	12	33	71	214	124	-95	93
Car & General (Kenya)	9	8	8	7	9	11	8	41
Carbacid Investment co.	56	55	199	68	-	-	-	-
Kenya Airways Limited	20	23	-11	21	20	17	19	27
Barclays Bank of Kenya	101	70	56	49	46	50	582	77
Kenya Commercial Bank Limited	50	51	54	53	47	49	60	51
Standard Chartered Bank	54	72	69	84	78	88	83	97
Diamond Trust Bank	11	11	19	20	31	29	30	42
NIC Bank Limited	7	10	15	14	32	37	33	32
Nation Media Group	105	82	70	30	70	109	60	50
TPS Eastern Africa	31	38	35	59	32	34	135	33
East African Cables	40	110	68	44	44	50	48	57
Athi-River Mining	17	22	23	25	29	35	35	-
Bamburi cement ltd	63	58	57	64	57	76	89	129
Crown-Berger Kenya	23	32	34	77	31	56	69	-
Kengen ltd	52	56	53	34	72	32	-	-
The Cooperative Bank	26	31	24	15	-	-	-	-
Total Kenya Limited	-257	20	36	62	85	89	81	75
British American	58	75	100	100	123	100	91	136
Jubilee Holding Limited	16	15	22	27	29	27	26	33
Kenya Reinsurance	11	14	23	20	25	-	-	-

Safaricom ltd	61	53	38	14	-	-	-	-
BOC Kenya Limited	88	231	86	66	68	98	52	55
Scangroup limited	22	26	28	52	59	68	-	-
East African Breweries	77	78	74	69	67	72	62	51
Mumias Sugar company	40	39	38	50	55	59	59	71
Equity bank ltd	29	42	35	28	38	24	-	-

Source NSE Handbook 2008 and 2012

APPENDIX IV

FIRM MARKET VALUE
KSHS '000'

	2011	2010	2009	2008	2007	2006	2005	2004
Kapchorua.	449880	571,152	266,016	293,400	438,144	586,800	391,200	391,200
Williamson	1619919	1,935,147	411,547	503,488	1,120,809	827,472	1,042,002	700,506
Rea Vipingo	885000	1,074,000	666000	1,020,000	1,173,000	1,530,000	1,230,000	570,000
Limuru Tea	402000	360,000	366,000	183,000	225,000	210,000	208,200	213,000
Car & General	760292	1,047,142	935,744	1,002,583	1,269,938	1,008,153	646,109	334,194
CMC		7,546,087	5,827,094	10,984,073	7,453,825	5,778,535	2,294,418	2,670,752
Barclays	70881545	84857750	61104780	68573142	107272836	104557068	407387000	40743320
KCB	50023373	64168151	45464444	52117778	56886000	48103600	22554800	12774400
Standard Chartered	45932341	74065900	43786817	43514850	56025369	55753401	37803526	33180073
Diamond Trust Bank	17705830	22010010	11412598	11168042	15407007	10131592	4006063	2782500
NIC Bank	9477542	16513898	10198801	12906119	18543274	6181091	8406284	4120728
Kenya Airways	14887099	27696929	9116906	24004005	43853471	48469626	11078772	4,431,509
Nation Media	21996600	26238802	16828041	10267957	23245515	22318546	13547999	9091421
TPS	8151585	10152429	4763913	5557899	6034290	7773373	6292218	1827583
Athi-River	15650690	18127065	10995105	8964478	9212115	7719000	3673500	1395000
Bamburi ltd	45825000	67873384	56621647	59888280	71140018	78036244	50814299	34481131
Crown-Berger	486403	854172	569448	587243	1198214	1038056	830445	664356
East African Cables	2670469	3290625	4100625	5315625	8505000	9720000	2774250	1032750
Kengen ltd	29787798	37591981	31986159	53859856	57157398	86285687	-	-
Cooperative Bank	42781544	66355047	31256720	37193750	-	-	-	-
Total Kenya	2581673	5017377	5147137	5602071	5908434	6012202	7093533	16349729
BAT ltd	24600000	27000000	17800000	13100000	13900000	19700000	20400000	20000000
Equity bank ltd	60725543	99049285	53134850	65168876	54331486	12588473	-	-
Jubilee ltd	8439750	9108000	5175000	5535000	9585000	11628000	2988000	2088000
Kenya Reinsurance	4380000	6630000	7020000	7650000	10170000	-	-	-
Safaricom ltd	152000000	222000000	120000000	144000000	-	-	-	-
BOC Kenya	1952545	2577359	2928817	3124000	3124000	3124000	2831125	2674925

Limited								
Scangroup	11818749	14426057	5627586	5737931	4730250	3935250	-	-
East African Breweries	154200999	143130158	114662282	157364097	101482709	91598030	98187816	48874249
Mumias ltd	10939500	19660500	9180000	19431000	13566000	31620000	12495000	4615500

Source NSE Handbook 2008 and 2012