EFFECT OF DIVIDEND POLICY ON STOCK PRICE VOLATILITY: EVIDENCE FROM NAIROBI SECURITIES EXCHANGE

BY

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A RESEARCH PROJECT PRESENTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTERS IN SCIENCE OF COMMERCE (FINANCE AND INVESTMENT) OF KCA UNIVERSITY

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DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

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SUPERVISOR

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ABSTRACT

Dividend policy continues to generate endless debate despite years of theoretical and empirical research. These include the linkage between dividend policy and stock price risk. Provious studies have produced mixed results in different countries. This study sought to determine the effect of dividend policy on stock price volatility in listen firms in Nairobi Stocks Exchange. The objectives of the study were to determine the effect of dividend yield on the stock price volatility of shares in the listed companies at NSE, establish the effect of payout ratio on the stock price volatility of shares in the listed companies at NSE and to assess the effect of size of the firm on the stock price volatility of shares in the listed companies at NSE. The study employed descriptive researcher design in which the study targeted all the listed firms in the NSE. The study employed purposive sampling to select 38 firms which have been consistently trading since 1994. The study used secondary data collected from the NSE website. Data was analysed using panel data analysis. Regression analysis was performed to determine the relationship between the variables. Prior to performing the regression analysis, the study performed diagnostic tests to ensure the data achieved regression assumptions. These included tests for multicolliniarity, heteroskedasticity test, panel unit root test and Hausman specification test. The findings were presented in tables and figures. The study established that dividend policy affected the stock price volatility of the firms listed at the NSE. The study results revealed that two dividend policy indicators (dividend, yield and payout ratio) depicted a negative insignificant relationship with the stock price volatility. The study established that the relationship between the firm size and stock price volatility was positive and significant. The study concluded that dividend yield and payout ratio all had negative insignificant effect on stock price volatility among firms listed in NSE in Kenya. The study recommended that every firm listed in NSE should provide the information regarding its activities and performance, so that investors can analyze the situation and invest their money in the best firms. Listed firms should take seriously the effects of the dividend policy indicators (no matter how insignificant) is still one of the determining variables of the market price of shares. The listed firms at the NSE should endeavour to formulate dividend policies that will maximize shareholders wealth.

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This proposal is dedicated to my wife Anyango Saum.

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LIST OF ABREVIATION AND ACRONYMS

NSE: Nairobi Securities Exchange

IFC: International Finance Corporation

PCM: Perfect Capital Market

NYSE: New York Stock Exchange

ADF: Augmented Dickey-Fuller

VIF: Variance Inflation Factor

DEFINITION OF OPERATIONAL TERMS

Dividend Policy: refers to a company's approach to distributing profits back to its owners or stockholders (Sinha, 2015).

Dividend Yield: refers to the financial ratio that indicates how much a company pays out in dividends each year relative to its share price (Sinha, 2015).

Firm Size: is measured in terms of total assets, total sales, and market value of equity (Saif, 2010).

Payout ratio: refers to the proportion of earnings paid out as dividends to shareholders, typically expressed as a percentage. It is the net income a firm pays to its stockholders in dividends (Amarjit, Bigerand & Tibrewala, 2010)

Stock Price Volatility: refers to the statistical measure of the dispersion of returns for a given security or market index which can either be measured by using the standard deviation or variance between returns from that same security or market index (Paramin, 2013).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In the modern economy, the stock market has been deemed very important since it acts as a mediator between lenders and borrowers. Listed company issued the share in the stock market that helps to convert the savings into investments; such investments help to boost the business activities. An operational stock market may assist the development process in an economy through two important channels, one by boosting savings and two by allowing for a more efficient allocation of resources (Alshogeathri, 2011). Savings have been found to increase as they are presumed to provide households with assets that satisfy their risk preference and liquidity needs (Kibet, 2015).

Focusing on price mechanism, an operational stock market values the profitable company's shares. Relative share prices in operational stock market may reflect the status of a company listed in the stock market. Price mechanism therefore ensures the efficiency of utilizing current and future economic resources (Lamin, 1997). Dividend policy has been an issue of interest in financial literature since Joint Stock Companies came into existence. Dividends are commonly defined as the distribution of earnings (past or present) in real assets among the shareholders of the firm in proportion to their ownership (Frankfurter, and Wood 2003). Dividend policy connotes to the payout policy, which managers pursue in deciding the size and pattern of cash distribution to shareholders over time. Firms generally adopt dividend policies that suit the stage of life cycle they are in. For instance, high-growth firms with larger cash flows and fewer projects tend to pay more of their earnings out as dividends.

Further, volatility characterizes the behavior of the stock market (Mandelbrot, 1963; Black, 1976). Paramin (2013) has described volatility as the rate of change in the price of a security which is measured over a given time period. He further explained that higher volatility will lead to higher risk of substantial gain or loss. It is the relative rate at which the price of a security moves up and down within a very short period of time (Taylor, 2007). Volatility is calculated by variance or the standard deviation of the price of stock market returns. A highly volatile market means that prices or stock returns have enormous swings over a specific time which may be day, week, month or year.

Various attempts have been made to establish the effect and relationship between dividend payment and the market prices of shares. Empirically is has been established that there is a positive relationship between the movement of stock prices and the stock exchange to earnings, trading volume, dividend or general economic conditions (Paramin, 2013). Theorists like Gordon (1963), Walter (1961), Modigliani and Miller (1961) have raised question about the determinants of movement of stock prices which led to the emergence of two distinctive groups namely the dividend relevance and dividend irrelevance groups.

From the foregoing discussion, it is clear that the issue of the relationship between dividend policy and the share price volatility has generated intense debate for many years. Further, whether to distribute earnings or not to the shareholders or to plough the money back into the firm has left the opportunity for many finance scholars and professionals to examine its various effects. Previous research have revealed mixed results on the idea of whether to support or reject the idea that dividends reduce stock price volatility (Magnus & Fosu, 2006; Olowe, 2011).

Rozeff (1982) and Easter (1984) in their study to determine whether dividends are announced and paid continuously. They found a positive reaction to the stock market and also a reduction in the agency cost. Manager's ability to use excess funds can be monitored by dividend payout policy. These studies further established that firms with low dividend yield and dividend payout ratio had not only greater investment opportunity but also high stock price volatility. Moreover, according to Donaldson (1961) and Gordon (1963) if the policy of the dividend is in the same pattern then the stocks with high dividend yield depicted a shorter life compared to the stocks with low dividend yield and payout. They therefore concluded that expanding firms although may have lower payout ratio and dividend yield, it will result in price stability. This may be attributed to the fact that dividend yields and payout ratio serves as proxies for the amount of projected growth opportunities (Vijay, 2015).

1.1.1 Nairobi Securities Exchange

The Nairobi Securities Exchange (NSE) stands out as an average Securities Exchange with great potential for growth in the sub Saharan Africa. For instance, in 1994 it was rated by the International Finance Corporation (IFC) as the best performing emerging market in the world. It accounts for over 90% of market activity in the East African region and is a reference point in terms of setting standards for the other markets in the region (Kibuthu, 2005). However, in the recent past, the NSE has witnessed slow growth in the number of listed firms which may be attributed to the effect of global financial crisis together with other factors. Listed companies at the NSE are categorized according to Agricultural, Automobile and Associates, Banking, Commercial and Service, Construction and Allied, Energy and Petroleum, Insurance, Investment, Manufacturing and Allied, Telecommunication and Technology.

As an emerging market, NSE continues to face challenges which have hampered its growth. These include among others, harsh economic and political conditions, illiquidity, lack of awareness by the members of the public, underdeveloped market infrastructure and high and volatile interest rates (Ngugi & Njiru, 2005). The Nairobi Securities Exchange has consistently faced severe fluctuation in the share price over the period under consideration as evidenced by drop in the NSE 20 share index to 1097.73 points in August 2002 from 1932.85 points in February 2001. Further, the index slid significantly from 6161 points high in February 2007 to 2474.75 points in February 2009. Moreover, the NSE 20 Share Index dipped to 3155.00 points in November 2011 from 4559.56 points in October 2010 (NSE Monthly Market Statistical Bulletins, 2012).

1.2 Statement of the Problem

Dividend policy indicators of payout ratio and dividend yield are among the key factors that an investor would consider during an investment decision. They determine whether the investor will or will not invest. Investors pay close attention to the dividend yields, and that the riskiness of their investments may affect the evaluation of firm's shares in the long run. As such therefore, dividend policy may have an influence on share price volatility. Dividend policy continues to generate endless debate despite years of theoretical and empirical research. These include the linkage between dividend policy and stock price risk (Allen and Rachim, 1996).

Research regarding the influence of dividend policy measures on share price volatility has produced mixed results in different countries. For instance, studies using the data from US, Japan and Singapore markets have found that stock price has a significant positive relationship with the dividend payment (Gordon, 1959; Ariff and Finn, 1986, Lee, 1995; Irfan and Nishat, 2001). Others like Loughlin (1989) and Easton and Sinclair (1989) found a negative relationship.

In Nigeria, Wodung (2014) in his study on the effect of dividend policy on stock price volatility found that dividend yield and dividend payout ratio, have significant negative impact on stock price volatility. In South Africa, Umwari (2015) found that both the dividend policy and asset growth and leverage did affect the share price volatility. This conflicting research indicates a knowledge gap in research regarding the impact of dividend policy measures on share price volatility. The conflicting results despite the magnitude of international empirical and theoretical research, demonstrate that there is need to further investigate the effect of dividend policy measures on share price volatility in the NSE in Kenya.

Despite dividend policy being one of the mostly researched topics in the field of finance in most developed countries (Tuigong, 2015; Arnott, & Asness, 2003), the question as to whether dividend policy affects the share price volatility still remains unresolved among managers, policy makers and researchers (Ouma & Murekefu, 2012; Tuigong, 2015). Most of the studies conducted (Arnott, & Asness, 2003; Farsio, Geary, & Moser, 2004), on dividend policy and stock prices concentrated in developed countries. The question of relevance of dividend policy on stock prices in developing countries remains valid.

In Kenya, not many studies have been done on the stock price volatility. However, study by Chege, Othieno and Kodongo (2014) on the return volatility and equity prices in which both yield positive and significant conditional variance parameters and shocks to equity returns of conditional volatility were highly persistent. Kenyoru, Kundu and Kibiwott (2013) investigated the effect of dividend policy on the share price volatility in Kenya where regression models were used to test the relationship between dividend yield and dividend payout ratio and stock price volatility. They found dividend payout ratio to be an important predictor of share price volatility while the dividend yield enhanced share price volatility. Waweru (2013) in her study on the

determinants of stock price volatility at the NSE used regression model to measure the effect of interest rate, exchange rate and inflation rate on volatility. She found interest rate to have a positive but weak relationship with stock price volatility while exchange rate and inflation negatively influenced stock price volatility. While these studies are beneficial to the researcher, most of the studies, none of the studies looked at the combination of policy indicators of dividend yield, payout ratio and firm size on the stock price volatility. Secondly, the studies were done over a shorter period of five to ten years and none looked at the effect of the variables over a period of over twenty years hence a knowledge gap. This study sought to fill this gap by investigating the effect of dividend policy on the price volatility of the companies listed at the Nairobi Securities Exchange between 1994 - 2015.

1.3 Objective of the Study

The general objective of the study was to determine the effect of dividend policy on the price volatility of the companies listed at the Nairobi Securities Exchange.

1.3.1 Specific Objectives

i. To determine the effect of dividend yield on the stock price volatility of shares in the listed companies at NSE
ii. To establish the effect of payout ratio on the stock price volatility of shares in the listed companies at NSE
iii. To assess the effect of size of the firm on the stock price volatility of shares in the listed companies at NSE

1.4 Hypothesis of the Study

The study sought to test the null hypothesis (Ho) against the alternative hypothesis (HA):

i. Ho: Dividend yield has no effect on the stock price volatility of shares in the listed companies at NSE

ii. Ho: The payout ratio of the dividend has no effect on the stock price volatility of shares in the listed companies at NSE

iii. Ho: The size of the firm has no effect on the stock price volatility of shares in the listed companies at NSE

1.5 Justification of the Study

Dividend policy is always one of the main factors that an investor will focus on when determining their investment strategy. By having information on dividend yield and dividend payout ratio, an investor may perform a better and more accurate financial analysis on the firm, together with other financial ratios. It was therefore important to investigate how dividend policy influenced the stock price volatility.

The contributions of the study could be of interest to many stakeholders. First, the information from this study could form the basis of formulation of dividend policy by the senior management especially finance managers of listed companies whose main objective is to maximize the shareholder's wealth in a Kenyan context. The study could therefore help in making strategic investment decisions which would maximize shareholder's wealth.

Further, the study could be provide an insight to shareholders on the theory and practice of dividend policy and its effects on the stock price volatility of listed firms which is also useful in appraisal of the efficiency of the management in decision making. Therefore, shareholders have a responsibility to continually monitor management's decisions to ensure that they are aimed at maximizing shareholders' wealth. In addition, researchers and scholars of in the

learning and research institutions will access and use this study as a reference for future related studies.

This study could also help potential investors to make informed investment decisions. The potential investors will invest in companies that practice dividend policies that maximize the shareholder's wealth.

1.6 Limitations of the Study

The limitations of the study are related to the case study and data set. First, there could be other relevant factors which significantly influence share price volatility of listed firms in the NSE other than dividend policy. This could be inferred from low adjusted R2 from the analysis. This means the explanatory power of the selected predictor variable is low and the others relevant factors are worth exploring. However, the discussion of these factors is beyond the scope of the study. Secondly, this study sought to establish the relationship between dividend policy and stock prices volatility. The presence of the relationship means existence of association between the variables.

1.7 Scope of the Study

The scope of this study was limited to the firms trading at the Nairobi Securities Exchange. The study will focus on the firms which have consistently traded at the NSE since 1994 to 2015. The independent variables under focus were the payout ratio, dividend yield and firm size while the dependent variable was the stock price volatility.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter reviews related literature with regard to dividend policy and stock price volatility. The chapter also presets the theoretical framework.

2.2 Theoretical Framework

This study is anchored on three theories namely: the Modigliani and Miller's Dividend Irrelevance Theory and the Agency Cost Theory.

2.2.1 Dividend Irrelevance Theory

Modigliani and Miller (1961) observed that 'the dividend policy is irrelevant'. The dividend policy has no effect on the price of shares and it has no impact on a shareholder's wealth under the Perfect Capital Market (PCM) which assumes rational investors. According to them therefore, the dividend policy does not have any impact on shareholder's wealth and they further noted that all dividend policies are equivalent. This implies that firms will continue paying dividend to their shareholders. They further noted that the shareholder's wealth is affected by the income generated by the investment decisions a firm makes, and not by how it distributes that income. Modigliani and Miller went further to argue that regardless of how a firm distributes its income, its value is determined by its basic earning power and its investment decisions. This implies that when given a firm's investment policy, the dividend payout policy that the firm chooses to follow will affect neither the current share price nor the total returns to shareholders. That is to that investors will calculate the value of companies based on the capitalized value of

their future earnings, and this is not affected by whether the firms pay dividends or not and how firms set their dividend policies.

According to Modigliani and Miller, to an investor all dividend policies are effectively the same. This is due to the fact that investors can create homemade dividends by adjusting their portfolios in a way that matches their preferences. That stockholder's 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. The assumptions include; existence of a 100% payout of dividend by management in every period, perfect capital markets, investors are rational and value securities based on the value of discounted future cash flow to investors, managers act as the best agents of shareholders and there is certainty about investment policy of the firm. It is therefore clear that from the foregoing that according to Modigliani and Miller the issue of dividend policy is irrelevant.

This theory is relevant to this study as it posits that the investor is only interested in the returns and will therefore disregard dividend policy which imply that the value of a company is determined by its profits and not the distribution policy.

2.2.2 Agency Costs Theory

Agency theory assumes that the relationship between shareholders and management is an agency one (Jensen and Meckling, 1976; Easterbrook, 1984; La Porta et al., 2000). There is always a conflict of interest between shareholders and management. While the former tries to maximize their wealth, the latter try to maximize their compensation. To minimize the conflict between them, management tends to take steps to assure shareholders.

According to Jensen–Meckling (1976), agency problems in corporations is as a result of both external debt and external equity. Agency theory is based on the relationship between the principal and the agent. The theory is mainly concerned with owner-manager relationship and the need for shareholders to monitor management behaviour. The need is as a result of the separation of ownership and control and the associated conflicts of interests that arise between shareholders as the principals, and managers as the agents. The theory postulates that monitoring of the firm and its management is helpful mainly to the shareholders in reducing agency conflicts and in assuring the market that the managers are not in a position to abuse their position. Some shareholders may be monitoring managers, but the problem of collective action results in too little monitoring taking place.

As a result, dividend policy can be employed by management to reduce agency cost resulting from the conflict of interest with shareholders. According to Easterbrook (1984), one way of solving conflict problem is by increasing the payout ratio. Easterbrook further explained that firms will increase their dividend payment, assuming they wish to proceed with planned investment, they are forced to go to the capital market to raise the additional finance required for the investment. This results in monitoring by potential investors of the firm and its management, thereby reducing agency problems. This prompted Rozeff (1982) to develop a model that underpins this theory, called the cost minimisation model. This model combines both the transaction costs with the agency costs. The central idea is that the optimal payout ratio is at the level where the sum of these two types of costs is minimised. This theory is important to the study as it helps in understanding the concept of agency costs and the how firms can reduce or mitigate agency conflicts. Firms are said to use their dividend policy to reduce existing agency conflicts.

2.1.3 Bird in the Hand Theory

The proponents of this theory argue that cash dividend policy has no effect on the firm's capital cost. Consequently, cash dividend policy will not affect the returns on capital required. Theorists such as Lintner (1962) and Gordon (1963) argue that returns on capital required rise when the cash dividends ratio decreases because investors are less sure of their resulting capital gains than the return earnings and rising stock prices from obtaining these cash dividends. According to these theorists the investors are able to evaluate the dollar, which they received from cash dividends more than the dollar they receive from capital gains. The argument is that the dollar from cash dividends today is less risky than the future dollar from capital gains. Investors are able to evaluate share prices through a predictable future cash flow per share and then discount it at a rate reflecting the risks. Therefore company's share price which has a low cash dividend and high return earnings for future capital gains will be less than the share price which has high cash dividends. This implies that the share price will drop when retained earnings increase for future capital gains.

According to the bird in the hand theory, a share with high cash dividend are less risky. Hence, with the stability of other factors affecting share price, less risky stocks will be more expensive. According to Rozeff (1982) managers are aware that these companies' profits have uncertainty risks and thus prefer low cash dividends because they do not want to find themselves forced in the coming years, with uncertain profits, to reduce cash dividends rate which is familiar for shareholders because they are evaluate the consistency in the cash dividend level more than cash dividend itself (Gombola and Feng-Ving, 1993). This means that high risk for a company leads to a reduction in cash dividends rate distribution. Also, the decrease in cash dividends is a result of the company's high risks and not vice versa.

In conclusion, According to the bird in hand theory, capital gains are more risky than cash dividends and the investors prefer those companies that distribute cash dividends to companies that hold profits to convert them into capital gains. Due to this preference, investors pay higher prices for a company's shares with cash dividends compared to a company that holds their profits when other factors are fixed. In other words, this theory indicates that if the company wants to maximize their share price, then they should adopt a high dividend ratio (Baker and Powell, 1999).

2.2 Empirical Review

According to Bohart (2006), investors are attracted to the stock market with the objective of making money, which is achieved through the selling stock at a price higher than its buying price. He further suggests that, since stock prices are to a large extent connected to investors' money-making goals, it helps to understand their inner workings.

2.2.1 Dividend Yield and Stock Price Volatility

The dividend relevance group believes that under conditions of uncertainty, investors are not indifferent as to how the earnings stream is split between dividends and retained earnings. Williams (1938 cited in Sinha, 2015) was one of the earliest protagonists of the view that dividends were all that mattered.

According to Sinha (2015) the sole reason for an investor to purchase shares for a common stock is because he/she wants to receive future income. Included in the shareholders income are dividends, capital gains or losses upon shares. Therefore if dividends are forth coming then the value of equity investment is calculated on the basis of the discounted value of those future dividends and capital gains. Sinha (2015) asserts that over long period stock prices

reflects the present value of the expected dividends. According to Hashemijoo and Ardekani (2012), dividend policy should be dependent on the investment opportunity available to the company. Hashemijoo and Ardekani (2012) argued that so long as there are investments opportunities from where to earn rate of return (r) which is higher than the firms weighted average cost of capital (Ko) the firm should pay no dividend to its shareholders. But if there are no such opportunities, the firm should payout a part of its profits.

Using the "bird–in–hand" theory Kirshman (1963 cited in Hashemijoo and Ardekani, 2012) and Mokaya, Nyang'ara & James (2013), proved that investors are often ready to pay premium on stocks with higher than average rates of dividends just as they discount the one with the lower rate. According to Wodung (2014) the uncertainty of dividend increases with futurity. Shareholders will pay a higher price for a share which has a greater dividend payout ratio. Levinsohn (2003) argued that paying dividends influences how a company finances its growth but will not have a lasting effect on its value in the marketplace. According to the other school of thought, dividend policy of a company affects the market prices of the shares. Therefore investors are risk avoiders and always prefer the current and certain dividends on the uncertain future returns. It can therefore be deduced that the firm' market value depends on the dividend payout.

Luvembe, Mungai and Mungami (2014) established that there was significant relation between dividend yield and price volatility where earnings, firms' size, debt level, growth level and dividend payout significantly impacted on stock returns and dividend yields. The findings seem to agree with Gordon's concept of dividend relevance theory that dividend policy has significant positive effect on stock prices as according to him, firms that pay larger amount of dividends to their shareholders, faces less risk in terms of stock price volatility.

Pradhan (2003) doing a study in Nepal, revealed that dividend payment had a strong relationship with stock prices. He found that retained earning had a weak relationship with stock market prices. He further established that the Nepalese stockholders valued dividend income than the capital gains. Nishat & Irfan (2003) found that dividend yield and payout ratio was positively correlated to the share price volatility.

A dividend is a payment made by an organization to shareholders out of their excess earnings (Hackbarth & Johnson, 2011). It's usually expressed as a per-share amount. When one compares companies' dividends, dividend yield or simply the yield is used. Dividend yield is the dividend amount divided by the stock price. It shows the percentage of the share purchaser's purchase price – the investment in the company; the return obtained as dividends. In the absence of any capital gains, the dividend yield is the return on investment for a stock (Cohen, 2002).

Dividend yield is a financial ratio that shows how much a company pays out in dividends each year relative to its share price. It is measured by dividing the dividend amount issued for the period over the stock price; preferably the price at the beginning of the period (Cohen, 2002). It is a way to measure how much cash flow shareholders do get for each dollar invested in an equity position. Investors who require a minimum stream of cash flow from their investment portfolio can secure this cash flow by investing in stocks paying relatively high, stable dividend yields to supplement their income (Cohen, 2002).

According to Cohen (2002), Net Assets Value, Price to Book Value, and Dividend Yield are related to stock returns owing to signaling process associated with these ratios. Their values convey information on expected profits for the company. Baker (2009) provided a proof to the notion that the forward-looking equity risk premium is the expected dividend yield. Cohen

(2002) explains that the dividend puzzle in relation to the observed decline in both, the dividend yield and the forward-looking equity risk premium.

2.2.2 Payout Ratio and Stock Price Volatility

Dividend payout has been researched and have been subject of debate in the financial literature. Many theoretical models have been developed to describe the factors that managers should consider when making dividend policy decisions. The dividend payout means the procedures followed by the managers in deciding the size and pattern of cash distribution to shareholders over time. Miller and Modigliani (1961) argue that dividend decision does not affect the firm value and hence, irrelevant.

According to Amarjit, Bigerand and Tibrewala (2010) company's income can be invested in operating assets, acquiring securities, retirement of debt, and distribution to shareholders in the form of cash dividends. Among the issues that arise include the proportion of the after tax income distributed to shareholders; whether cash dividends, or by buying back some shares; and the stability of the distribution. According to Hackbarth and Johnson (2011) the harder one looks at the dividends picture, the more puzzle it looks. Pradhan (2003) and Enhardt (2013) found that setting corporate dividend policy has remained controversial which requires judgment by decision makers. Therefore, no single explanation of dividend payments has been reached.

According to Anil and Kapoor (2008), none of the cash flows, market-to-book value ratio, corporate tax or sales growth does explain the dividend payment pattern of the IT sector. Only liquidity and beta were found to be noteworthy determinants. Ahmed and Javid (2009) in their study found that both current earnings per share and past dividend per share are important in setting the firms' dividend payments. Also important to the dividend payout are the

ownership, profitability and market liquidity. Al-Twaijry (2007) found that current dividends are affected by the past and future. He also found that dividends were associated with net earnings but less strongly.

Appannan and Sim (2011) found that variables with a strong relationship with dividend payout are not necessarily the determinants of the dividend payment decision. The profit-after-tax was found to have the strongest relationship with dividend per share. They further found that debt-to- equity ratio and past dividend per share were the strongest dividend payment.

From a theoretical viewpoint, the importance of dividend in determining stock price is obvious. Stock price should equal the present value of all future expected dividends of the stock. We would in this study measure the effect of dividend payment on share prices of various quoted firms. Various schools of thought have emerged on the issue of dividend and stock valuation. One school argues that the current value of a firm is independent of its dividend decisions, rather the value a firm derive from its investment policy. They believe that whatever gains that would be derived from dividend payments would be offset exactly by the cost of external financing (Miller et al 1961). The underlying assumptions for this school are a frictionless market, rational investors and perfect certainty about future earnings of the firm. This view is further enhanced by the notion of a preference for capital gains over dividend payments due to tax considerations. Some people value capital gains higher because it attracts less tax relative to each dividend.

2.2.3 Size and Stock Price Volatility

The size effect refers to the effect of firm size on investment returns. As stated in Saif (2010), the common stock of small firms has, on average, higher risk-adjusted returns than that of large firms. This result will hereafter be referred to as the size effect, or small-firm effect. There are several empirical papers in the literature that have found a size effect to be prominent in many

countries. Some authors have indicated that the negative relation between abnormal returns and firm size is stable over time (Saif, 2010; Munyua, 2014).

Mousavi investigated the effect of firm's size on investment returns during 1992-1996 and found that no linear relationship can be defined between return and firm's size with 95% of confidence. Then the researcher used R^2 coefficient to explain the size effect as an independent variable on return that is equal to 2.72%, 4.39% and 3.85% during 1993-1995, respectively. These stats show the degree in which total volatilities of return explain with size variable and also it shows other factors will affect the return. In other words, size has a weak effect on return. Also the researcher found that there is a linear relationship between price earning coefficient and return and price earning explains 10.5% of returns' volatilities (Munyua, 2014). Nicholson surveyed 189 firms in banking, insurance, transportation and other industries during 1937-1963 and found that portfolios with the highest and the lowest price earnings had 32% and 90% price increasing, respectively. In other words, higher price earnings will produce higher returns (Munyua, 2014).

Jacobs and Levy concluded that stocks with low price earning had a good average return during 1978-1986. They also found that, even when low price earnings compare with other factors such as sales ratio the results were positive. In addition, they investigated the firm's size effect and found that the smaller firms had higher average returns in comparison with larger firms. Ultimately, they found that, the effect of size and other related and effective characteristics on return can be derived from macroeconomic events (Ndung'u *et al.* 2014). Keim examined the effect of firm's size and price earning (Earning per share in comparison with current stocks' price) on stocks' returns during 1951-1986. The researcher used return, price and volume of

issued stocks and found that return is inversely relates to market value and also average return is positively relates to price earning.

In addition, portfolios of smaller firms with lower price earnings have higher returns in comparison with larger firms with higher price earnings (Keim, 1990 cited in Sinha, 2015). Fama and French found that, market value of stocks (MV) as a size index and book to market ratio (B/E) can explain most of stocks' average returns characteristics. They also indicated that, B/M ratio relates to profit and is a stronger and more important index in comparison with MV (Ndako, 2010). Fuller, Huberts and Levinson categorized the studied firms based on price earning during 1983-1990 to find an answer for the question "are growth and value stocks have higher and lower growth than the average?" 20% of firms with the highest growth rate (cheap stocks) were categorized in the first group and this trend was continued until the last 20% of firms (firms with the lowest growth rate or growth stocks) that is categorized in the fifth group. Then, the relative rate of earnings for each group was observed during the period. The results shows that firms with the highest ratios (cheap value stocks), in the first year after categorization, approximately had grown10% slower than the average group.

On the other hand, firms with the lowest ratios (expensive growth stocks) approximately had grown 9% faster than the average group and the average group exactly maintains the expected trend (Ndako, 2010). Lakonishok, Schleifer and Vishny (cited in Ndako, 2010) categorized the trading stocks of NYSE based on "book value" to "market value" during 1968-1989. They also made ten levels of portfolios based on B/E and sorted them from the highest B/E to the lowest. Then, they subtracted each stock's monthly return from each monthly portfolio's return with a comparable size in order to balance each level. Consequently, they found that in a high volatility market, "cheap value stocks" had a higher performance in comparison with

"expensive growth stocks" in each level (Ndako, 2010). Laporta studied expensive growth stocks and cheap value stocks of 900 firms during 1982-1991 and found that expensive growth stocks had higher performance in comparison with cheap value stocks (Profilet & Bacon, 2013). Berk (as cited in Profilet & Bacon, 2013) indicated that, if the firm size measure in a correct way, smaller firms necessarily shouldn't have higher returns in comparison with larger firms. The results show that the effect of size on stocks return will remain as a secret even there were more empirical realities exist (Profilet & Bacon, 2013).

Jensen, Johnson & Mercer investigated the effect of size (market size) and P/B on firms' stocks returns during 1965-1994 and found that both these factors will be important in the systematic risk and will affect the return. In addition, the importance of these factors relates to fiscal conditions (Wodung, 2014). Shiller and Campbell calculated price changes, income changes and price earning for each year during1980-1989 and found that price earning doesn't follow the fast income growth. They also found that price earning and continuous growth of stocks inversely relate to each other. Shen stated that high price earning ratio will decrease investment income and short run performance of stock market.

Nazir, Nawaz, Anwar, and Ahmed (2010) researched in an emerging market reason being emerging economies tend to have a substantial amount of market risk, or that the overall volatility cannot be diversified away, hence the need to reduce the risk. Their findings as compared to those of the developed markets was that where in developed markets size and leverage tended to be highly correlated with price volatility, these two variables had less of a significance in determining the volatility in the emerging markets. This difference shows that the variables affect price volatility differently in different market settings.

Applying the fixed effect and random effect models, Nazir *et al.* (2010) sought to test the role of corporate dividend policy in determining the volatility in the stock price in Karachi Stock Exchange (KSE-100) indexed using 73 listed firms. The researcher found that share price volatility is significantly influenced by dividend policy including dividend payout ratio and dividend yield. He further found size and leverage to negatively and insignificantly relate to stock price volatility. The researchers did find similar result in Pakistan except that size had a positive influence on the stock price volatility. However, contradicting result the relationship between dividend policy and the volatility of stock price was found in UK. Hussainey *et al.* (2011) observed that a company with higher payout ratio or dividend yield will result in less volatile stock price. Therefore, the dividend payout ratio is among the most important determinants of the volatility of stock price. The larger the size of the company, the less volatile is the stock price. While, if company incurs high leverage, there is higher probability that stock price will be more volatile. Allen and Rachim (2006) in the Australian listed companies during 1972 to 1985, found a positive relationship between share price volatility and earnings volatility and leverage.

2.3 Summary and Research Gaps

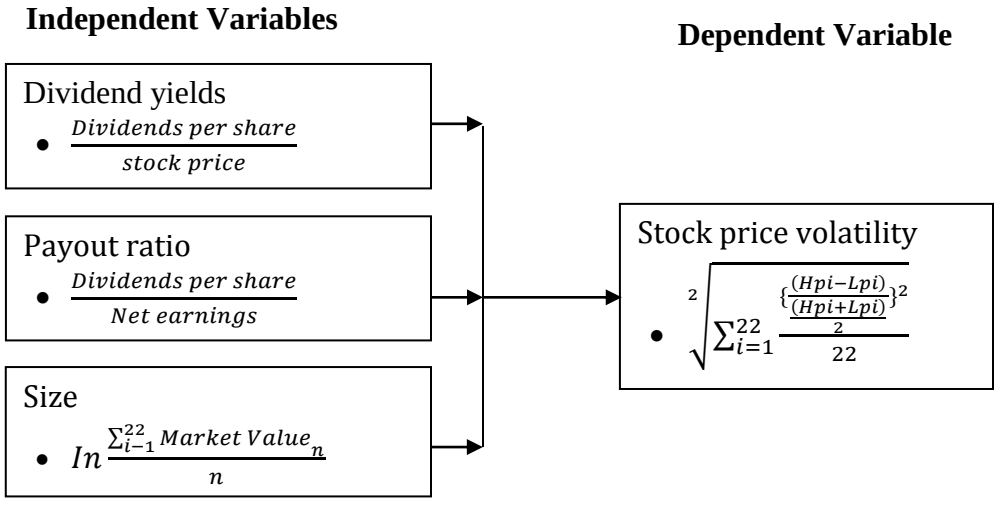
The reviewed literature has demonstrated that the dividend policy has a direct influence on the stock prices. For instance Hussainey *et al* (2011) found in their study that size and leverage influenced the stock price volatility in England. A further analysis depicted a negative relationship of size while leverage had a positive relationship. Remilar results were found by Allen and Rachim (2006) found similar results as Hussainey *et al* (2011), where they found that financial leverage positively influenced the stock price volatility. They also found positive relationship between dividend yield and stock price volatility. This study was done in Australia.

While these studies and many others highlighted the relationship between dividend policy and stock price volatility, the findings were mixed which calls for more research to ascertain the effect of dividend policy and stock price volatility. Secondly, these studies were done in the developed countries where the setup may not be the same as those of the developing countries and Kenya in particular and therefore the findings may not be used for generalization.

2.4 Conceptual Framework

FIGURE 1

Conceptual Framework



Source: Author 2016

2.5 Operationalization of the Variables

The study has five variables of interest. The independent variables are the dividend yield, payout ratio, discount rate and earnings. The dependent variable is the stock price volatility (See table 2.1 below).

TABLE 1

Operationalization of the Variables

Variables	Description	Measures
Dividend yield	Refers to financial ratio that indicates how much a company pays out in dividends each year relative to its share price.	$\frac{\text{Dividend per share}}{\text{Price per share}}$
Payout ratio	Refers to the percentage of net income that a company pays out as dividends to common shareholders.	$\frac{\text{Dividends}}{\text{Net earnings}}$
Size of the firm	refers to the effect of firm sizeon investment returns.	$= In\frac{\sum_{i-1}^{22} Market\ Value_n}{n}$
Price volatility	refers to the degree of variation of a trading price series over time as measured by the standard deviation of returns.	$\sqrt[2]{\sum_{i=1}^{22} \frac{\{\frac{(Hpi-Lpi)}{\frac{(Hpi+Lpi)}{2}}\}^2}{22}}$

Source: Author 2016

Hp - High price

Lp – Low price

i - (from 1 to 22)indicates years from 1994 to 2015

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter the researcher presents the research design, the population used, the data collection method and the data analysis techniques.

3.2 Research Design

The study used a descriptive survey research design. Descriptive research design determines and reports the way things are (Mugenda & Mugenda, 2003). This approach is appropriate for this study because it involves fact finding and enquiries from the effect of the dividend policy on the stock price volatility at the NSE. The design explored and evaluated in details the relationship between the variables. Descriptive survey can also be used to investigate a population by collecting sample to analyse and discover occurrences, this makes it appropriate for this study are the researcher seeks to discover how the dividend policy influences stock price volatility.

3.3 Population of Study

The populations of interest for this study was the firms listed at the NSE. There were sixty one (61) listed companies at the NSE by 31st December 2015. Listed companies fall into two main segments, the main market segment and the alternative investment market segment (NSE, 2016)

3.4 Sample Size

The study used purposive sampling to select those firms which have traded in the NSE since 1994 for consistency of the data. According to the records at the NSE there are 38 firms which have been trading since 1994. This constituted the population of the study (see Appendix)

3.5 Data Collection

In this study, annual data for the five variables for the period 1994 to 2015wascollected using panel data. The annual data for the 38 firms were collected from the Nairobi Securities Exchange (NSE) for 22 years. This brought to a total of 836 data for the study.

Panel data analysis is a method of studying a particular subject within multiple sites, periodically observed over a defined time frame. In economics, panel data analysis is used to study the stock market behavior and stock prices over time. Panel data collection helps to retain the originality of the data which can be neglected due to other methods of data collections. The stock market price volatility is calculated by considering the highest and lowest stock prices of the individual firms. The dividend policy measures include dividend payout ratio, dividend yield ratio, discount rate and earnings. The data was collected from the Nairobi Security Exchange trading records.

3.6 Data Analysis

The secondary data collected was prepared accordingly, analyzed and reported as per the findings. The researcher made use of STATA to clean, explore and analyze the data. The study utilized panel data which consisted of time series and cross-sections. The data was analyzed using panel regression methods because it had a combined variation of both cross-sections and time series.Descriptive statistics was used to summarise and profile the data. The study used visual plots to determine the existence of significant time related fixed effects.

The data was subjected to different statistical tests as follows:

(i) Test for Stationarity

The Augmented Dickey-Fuller (ADF) Test suffices to check for the stationarity of the time series. Based on the ADF test is the Levin-Lin-Chu Test which tests for a unit root in a panel data. If it is not stationary we deference.

(ii) Testing for Serial Correlation

The study will use the Wooldridge statistic to test for the serial correlation.

3.7 Model Specification

Multiple regressions model was used in this study following similar studies (Lee *et al*., 2013).

The general equation for multiple regression was expressed as follows:

$$Y_{it} = \boldsymbol{\alpha_i} + \boldsymbol{\beta_1} X1_{it} + \boldsymbol{\beta_2} X2_{it} + \boldsymbol{\beta_3} X3_{it} + \boldsymbol{\varepsilon_i} \ldots\ldots \mathbf{3.2}$$

Where; Y= Stock price volatility

X_1= Dividend yield

X_2=payout ratio

X_3=Firm size,

ε= error term,

β=coefficient of independent variable and

α= constant.

3.8 Diagnostic Tests

The study used multiple regression models that utilized the principal data analysis method of which basic assumptions must be tested before the actual analysis. These diagnostic tests included tests for multicolliniarity, heteroskedasticity test, panel unit root test and Hausman specification test.

3.8.1 Multicollinearity Checks

Multicollinearity is the study of the relationship between independent variables in a study. It is also viewed as the absence of a strong correlation between two or more independent variables. A correlation matrix is the conventional check for multicollinearity (Field, 2009). The matrix measures the nature and strength of relationship between the explanatory variables informing the study. According to Sosa-Eacudero (2009), if VIF = 1, there is no correlation, if VIF is more than 5 but less than 10, there is moderate correlation and if VIF is greater than 10, there is high correlation. The common rule of thumb is that VIF should be less than 3 (Kutner, Nachtsheim & Neter, 2004). In the event of very high correlations, the researcher may consider to drop one of the variables (Saunders, *et al.,* 2009; Kothari, 2010). The researcher could also ignore it, transform the highly correlated variables into a ratio and include only the ratio and not the individual variables in the regression (Brooks, 2008). The magnitude of multicollinearity will be analyzed by considering the size of Variance Inflation Factor (VIF).

3.8.2 Test for Fixed or Random Effects

Two different estimation techniques for panel data analysis were considered; fixed Effects (FE) and Random Effects (RE) model. Fixed effects regression is the model to use when one wants to control for omitted variables that differ between cases but are constant over time. It allows one to use the changes in the variables over time to estimate the effects of the independent variables on the dependent variable and is the main technique used for analysis of panel data. If one has reason to believe that some omitted variables may be constant over time but vary between cases, and others may be fixed between cases but vary time, then the RE model should be used. The critical difference between FE and RE model is that FE model allows for correlation between the unobserved and explanatory variables whereas RE model requires these to be uncorrelated. In

order to decide between fixed or random effects the Hausman test of the model specification was tested. If no such correlation exists, then the random effects model may be more powerful. In the presence of such a correlation, however, then the random effects model would be inconsistently estimated and the fixed effects model would be the model of choice (Greene, 2008).

Thus, if the Hausman test identifies the fixed effects model as appropriate, then the researcher would test for inclusion of time fixed effects in the study estimation. The time fixed effects tests if the dummies for all years are equal to zero and if they are, then there is no need for time fixed effects in the specification of the model to be estimated. To test whether the dummies for all years were equal to zero the study used the F-test in accordance with Greene (2008).

On the other hand, if the Hausman test chooses the random effects model as the more suitable one then there would be need to test whether the data have panel affects so as to determine whether to run a simple Ordinary Least Square (OLS) regression or the random effects model. This study will apply the Breusch-Pagan Langrage multiplier test proposed by Breusch and Pagan (1980) to choose between the random effects model and the simple OLS model. The null hypothesis of this test was that variance across the entities was equal to zero; that is, there are no panel effects.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the results of the effect of dividend policy of the stock price volatility on the firms listed at the Nairobi Securities Exchange. It deals with the presentation and analysis of 836 annual observations from 1994 - 2015. Descriptive statistics including means and standard deviation of the variables are analysed. The chapter also discusses their correlation. Regression results are analysed including diagnostic tests and significance of the regression coefficients.

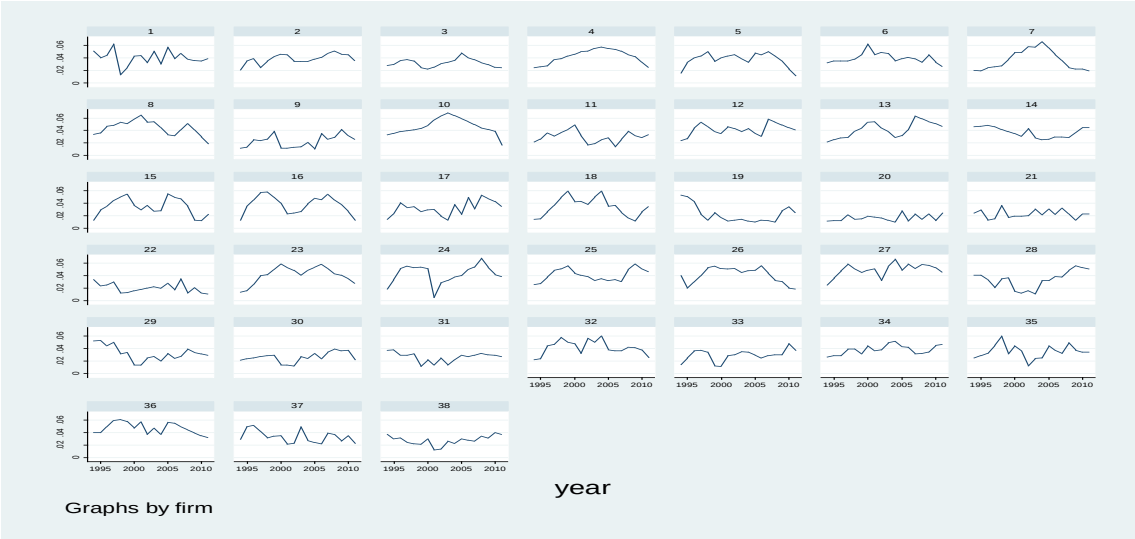
4.2 Exploration of the Data

4.2.1 Trend Analysis

The study performed trend analysis to establish the behavior of the variables across the study period. This was done by plotting line graphs to show if there were significant differences in stock price volatility between firms under study. The findings are presented in figures 2 and 3 show the behavior within individual firms over time, for this matter. The findings show stock price volatility across all the firms. The study was covered the periods from 1994 to 2015. However, when plotted, the study established that from 2012, the volatility was constant as the figures were the same. The researcher therefore excluded the four years from the study.

FIGURE 2

Volatility Trends

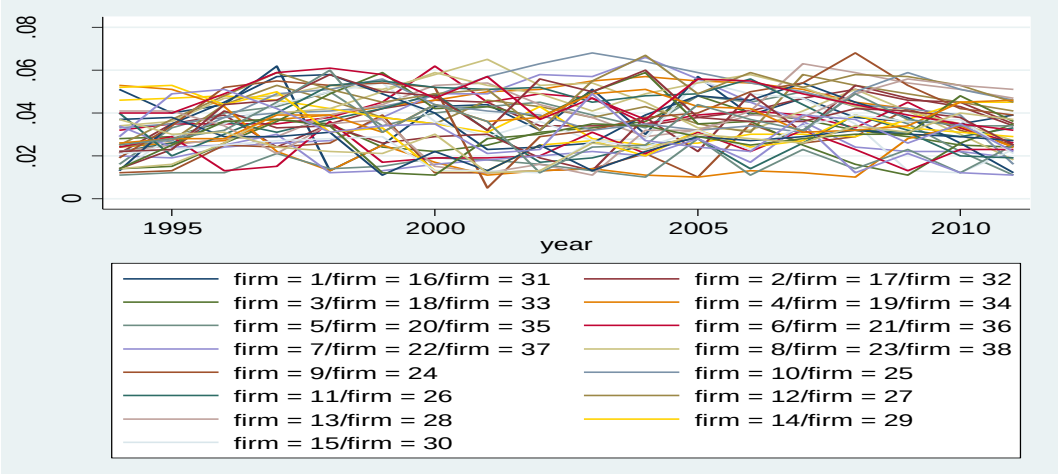


Source: Author 2016

Further observation of the overlain volatility plot indicated slopes being non-significantly different among majority of the firms listed at the NSE. Figure 4.2 below indicates the Overlain Plot of Volatility.

FIGURE 3

Overlain Plot of Volatility



Source: Author 2016

4.3 Descriptive Statistics

The study findings in Table 2 show that the distribution of the observations in payout ratio had the biggest variation with standard deviation (32.54089). The list variance was seen in the volatility as it had the least standard deviation value (0.0132143). The average of the firm size was 6.53844 and dividend yield of 1.949776. The study findings show that the average payout ratio was 2.1268 while the stock price volatility was 0.035.

TABLE 2

Descriptive Statistics

```
. xtsum volatility dratio dyield fsize
```

Variable		Mean	Std. Dev.	Min	Max	Observations
volati~y	overall	.0351257	.0132143	.005	.068	N = 684
	between		.0079279	.0165	.0495556	n = 38
	within		.0106456	-.0025965	.0656813	T = 18
dratio	overall	2.126784	32.54089	.004	833.333	N = 684
	between		9.297519	.0130556	55.92722	n = 38
	within		31.21886	-53.79144	779.5326	T = 18
dyield	overall	1.949776	4.830952	.116	100	N = 684
	between		2.466873	.169	11.37933	n = 38
	within		4.171823	-8.401557	90.57044	T = 18
fsize	overall	6.538844	.6823921	4.474	8.61	N = 684
	between		.6440128	5.253222	7.781778	n = 38
	within		.2474467	5.731677	7.455177	T = 18

Source: Author 2016

4.4 Correlation

In linear regression methodology, there should be no two variables with high correlation. The results in Table 3 show that there was a negative relationship between the variables except volatility and firm size (correlation coefficient, 0.0892). The findings however show that the relationships were very weak for all the variables.

TABLE 3

Correlation

```
. pwcorr volatility dratio dyield fsize,sig star(0.05)

             | volati~y   dratio   dyield    fsize
-------------+------------------------------------
  volatility |   1.0000
             |
             |
      dratio |  -0.0084   1.0000
             |   0.8256
             |
      dyield |  -0.0304  -0.0020   1.0000
             |   0.4277   0.9586
             |
       fsize |   0.0892* -0.0249  -0.0763*  1.0000
             |   0.0196   0.5149   0.0460
             |
```

Source: Author 2016

4.5 Specification Tests for the Data

Before the regression analysis, it was necessary to perform specification tests.

4.5.1 Multicollinearity Test

Multicollinearity is a common problem when estimating linear or generalized linear models. It occurs when there are high correlations among predictor variables, leading to unreliable and unstable estimates of regression coefficients. Since in the model there are several variables it is best to test for multicolliniarity, in addition to the pair wise correlation test, the main problem is that the more variables are used n models the more the degree of the multicollinearit increases, as such the regression model estimate of the coefficient become unstable and the standard errors for the coefficients can get significantly inflated. This test was done with "Variance Inflation Factor" (VIF). Generally VIF > 10 is a problem, however, VIF < 10 can be tolerated even though it does not indicate a good degree of inflation. R squared is also a good indication of how well the

variables fit together. The study performed a collinearity diagnostic test to check the presence and preclude multicollinearity. The findings are presented in Table 4.

TABLE 4

Collinearity Diagnostics

Collinearity Diagnostics

Variable	VIF	SQRT VIF	Tolerance	R-Squared
volatility	1.01	1.00	0.9914	0.0086
dratio	1.00	1.00	0.9993	0.0007
dyield	1.01	1.00	0.9936	0.0064
fsize	1.01	1.01	0.9860	0.0140
Mean VIF	1.01			

	Eigenval	Cond Index
1	3.1016	1.0000
2	0.9948	1.7658
3	0.8143	1.9517
4	0.0840	6.0767
5	0.0053	24.1392
Condition Number		24.1392

Eigenvalues & Cond Index computed from scaled raw sscp (w/ intercept)
Det(correlation matrix) 0.9850

Source: Author 2016

The findings show that that mean VIF is 1.01. According to Basso (2007), a mean VIF > 5, is not good. From our test then, there is no multicollinearity since VIF < 5 hence no high correlation.

4.5.2 Testing for Stationary

In order to obtain reliable estimates of the dividend policy indicators, it is necessary to check for stationarity of the panel data since such data generally show evidence of non-stationarity characteristics. When panel data is non-stationary and regression analysis is performed, it will produce spurious results. As a result, a stationary test was carried out by conducting a unit root

test on each of the variables. Levin-Lin-Chu root test of volatility was used to test the null hypothesis that there is unit root in the data. The findings are presented in Table 5.

TABLE 5

Levin-Lin-Chu unit-root test for Stationarity

Levin-Lin-Chu unit-root test for volatility

Ho: Panels contain unit roots	Number of panels = 38
Ha: Panels are stationary	Number of periods = 18
AR parameter: Common	Asymptotics: N/T -> 0
Panel means: Included	
Time trend: Not included	

ADF regressions: 1 lag
LR variance: Bartlett kernel, 8.00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	-13.0255	
Adjusted t*	-4.0238	0.0000

Source: Author 2016

From the above findings there is no presence of unit root–panel data are stationary. Since p-value < 0.05, reject null hypothesis

4.5.3 Testing for Serial Correlation

It was necessary to perform a serial correlation test because serial correlation in panel data biases the standard error and causes the result to be less efficient. The study therefore performed a Wooldridge test for autocorrelation, presented in Table 6.The study findings show that there is a first order serial correlation since the p-value < 0.05.This being a micro panel, we assume it.

TABLE 6

Testing for Serial Correlation

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,      37) =     26.030
           Prob > F =      0.0000
```

Source: Author 2016

4.5.4 Test for Heteroskedasticity

To detect whether a phenomenon of heteroskedasticity is present in our data we can perform a test of Wald which tests the presence of heteroskedasticity between individuals. This tests the null hypothesis that the variance of the error is the same for all individuals. The findings are presented in Table 7.

TABLE 7

Test for Heteroskedasticity

```
Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (38)  =     379.85
Prob>chi2 =      0.0000
```

Source: Author 2016

The results show there is a presence of heteroskedasticity since the p-value < 0.05, hence reject the null hypothesis. The researcher proceeded to use robust option to eliminate heteroskedasticity.

4.6 Diagnostic Test for Model Selection

4.6.1 Hausman fixed random

The next step was to choose between the FE and the RE. The most appropriate way to choose between these methods was through the Hausman test (Wooldridge, 2002). The main issue that is taken into consideration when choosing between the FE and the RE is whether the unobserved effects are correlated with the explanatory variables. The Hausman test takes into consideration the estimates from both FE and RE and checks if there is a systematic difference between them. The results are presented in Table 8.

TABLE 8

Hausman Test Results

```
. hausman fixed random
```

	Coefficients			
	(b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
dratio	-9.15e-06	-8.44e-06	-7.03e-07	1.32e-06
dyield	-.0002817	-.000253	-.0000286	.0000183
fsize	.0012909	.0014303	-.0001394	.0010719

```
                b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                        =        2.79
              Prob>chi2 =      0.4248
```

Source: Author 2016

With a *p-value* >0.05, the Hausman test accepts the null hypothesis that the difference in coefficients is not systematic, hence suggesting that the RE method is the most appropriate to estimate our model. Having chosen RE, perform B-P LM test.

The results indicate that the overall r-squared is 5.9% which indicates that means overall 5.9% of the variations in the stock price volatility in the listed firms are explained by the independent variables conquered in the model. Further, the within r-squared is 0.0138 indicating that 1.38% of the variations within the variables were explained by the model. The between r-squared is 0.0007 indicating that 0.07% of the variations between the variables were explained by the model. However, the findings show that only dividend yield was significant at 5% in explaining total stock price volatility of the listed firms. The other variables were insignificant in explaining the change. The results show that both the dividend yield and payout ratios negatively influenced the stock price volatility. However, firm size had a 0.0014303 positive change on the stock volatility. This means that a point increase in firm size would increase the volatility by 0014.

The results of the study show that with p-value < 0.05, the model is deemed fit.

TABLE 9

Breusch and Pagan Langrangian Multiplier Test for Random Effect

```
Breusch and Pagan Lagrangian multiplier test for random effects

        volatility[firm,t] = Xb + u[firm] + e[firm,t]

        Estimated results:
                        |        Var     sd = sqrt(Var)
                --------+------------------------------
                volatil~y|    .0001746       .0132143
                        e|    .0001187       .0108955
                        u|    .0000577       .0075945

        Test:   Var(u) = 0
                                chibar2(01) =   563.02
                             Prob > chibar2 =   0.0000
```

Source: Author 2016

The findings show that p-value < 0.05. Hence, reject Ho, RE is appropriate.

4.6.2 Regression Model with robust standard errors.

The results of the study show that there was a negative relationship between the payout ratio and stock price volatility. This mean that a unit changes in payout ratio will result in to a decline of 8.44×10^{6} in the stock price volatility. The findings also show that these tests were significant as the p-value < 0.05. The study findings further show a significant negative relationship between dividend yield and stock price volatility. This implies that a unit change in dividend yield will result into a decline of 0.0000253 in the stock price volatility. Finally the study findings show that a unit change in firm size will result into a 0.0014303 positive change in the stock price volatility. This test was however insignificant as the p-value > 0.05. This is represented as:

A test without the firm size revealed that there was no effect of the introduction of the firms size, as a moderator, hence the conclusion that the firm size is not a moderator.

TABLE 10

RE Model with robust standard errors

```
ındom-effects GLS regression                    Number of obs      =       684
:oup variable: firm                             Number of groups   =        38

-sq:  within  = 0.0138                          Obs per group: min =        18
      between = 0.0007                                         avg =      18.0
      overall = 0.0059                                         max =        18

                                                Wald chi2(3)       =    739.01
)rr(u_i, X)   = 0 (assumed)                     Prob > chi2        =    0.0000

                                  (Std. Err. adjusted for 38 clusters in firm)
------------------------------------------------------------------------------
             |               Robust
  volatility |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      dyield |   -.000253   .0000655    -3.86   0.000    -.0003814   -.0001247
      dratio |  -8.44e-06   4.22e-07   -20.01   0.000    -9.27e-06   -7.62e-06
       fsize |   .0014303    .001448     0.99   0.323    -.0014077    .0042684
       _cons |   .0262843   .0093532     2.81   0.005     .0079525    .0446162
-------------+----------------------------------------------------------------
     sigma_u |  .00759448
     sigma_e |  .01089547
         rho |  .32698562   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Source: Author 2016

The researcher then run a regression model without the firm size to establish its effect in the model as a moderator. The findings presented in Table 11 show that there was no difference in the output as the coefficients remained the same are when the test was run with the inclusion of the firm size. The results mean that firm size has no effect on the model as a moderator.

TABLE 11

RE Model with robust standard errors without Firm size

```
Random-effects GLS regression                   Number of obs      =       684
Group variable: firm                            Number of groups   =        38

R-sq:  within  = 0.0130                         Obs per group: min =        18
       between = 0.0264                                        avg =      18.0
       overall = 0.0010                                        max =        18

                                                Wald chi2(2)       =    753.59
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

                                    (Std. Err. adjusted for 38 clusters in firm)
------------------------------------------------------------------------------
             |               Robust
  volatility |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      dyield |  -.0002568   .0000626    -4.10   0.000    -.0003796   -.0001341
      dratio |  -8.22e-06   3.17e-07   -25.92   0.000    -8.84e-06   -7.60e-06
       _cons |    .035644   .0013627    26.16   0.000     .0329731    .0383149
-------------+----------------------------------------------------------------
     sigma_u |  .00761474
     sigma_e |  .01089197
         rho |  .32830083   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Source: Author 2016

Due to violation of the linear regression assumptions by the presence of heteroskedasticity and serial correlation, the researcher fitted a panel corrected model (with corrected standard errors) that produces robust results in the presence of serial correlation and heteroskedasticity. The results are presented in table 12.

TABLE 12

Panel Regression with Corrected Standard Errors

```
Linear regression, correlated panels corrected standard errors (PCSEs)

Group variable:   firm                          Number of obs      =       684
Time variable:    year                          Number of groups   =        38
Panels:           correlated (balanced)         Obs per group: min =        18
Autocorrelation:  no autocorrelation                           avg =        18
                                                               max =        18
Estimated covariances      =       741          R-squared          =    0.0086
Estimated autocorrelations =         0          Wald chi2(3)       =      6.42
Estimated coefficients     =         4          Prob > chi2        =    0.0929
```

volatility	Panel-corrected Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
dratio	-2.56e-06	.0000103	-0.25	0.804	-.0000228	.0000177
dyield	-.0000649	.0001094	-0.59	0.553	-.0002793	.0001495
fsize	.0016902	.0007402	2.28	0.022	.0002393	.003141
_cons	.024206	.0046987	5.15	0.000	.0149967	.0334152

Source: Author 2016

The study established that the R-squared value for the test was 0.0086. This implies that 0.8% of the variance in the stock price volatility is explained by the independent variables.

The panel regression results show that the constant was 0.024206 and that this value was significant at the 5% significant level. This implies that in the absence of the influence of the independent variable, the dependent variable is deemed to change with a value of 0.024206.

The findings further show the coefficient for the payout ratio was -2.56×10^{6} with a p-value of 0.804. This implies that there was a statistically insignificant negative relationship between the payout ratio and the stock price volatility.

The coefficient of dividend yield was -0.0000649 and a p-value of 0.553 which is greater than 0.05. This shows that there was an insignificant negative relationship between dividend yield and stock price volatility. This therefore implies a unit change in dividend yield would result into a 0.0000649 change in the stock price volatility in the opposite direction.

The coefficient of firm size was 0.0016902 and a p-value of 0.022. This indicated a significant positive relationship between firm size and stock price volatility. Thus a unit change in firm size leads to a 0.00169 change in the stock price volatility. The relationship is presented in the model below:

$$\text{Stock price volatility}_t = 0.024206 - 0000649 Dividend\ yield_t - 2.56\ \text{X}\ 106\text{Payout ratio}_t + + 0.0016902\text{Firm size}_t \ldots(1)$$

CHAPTER FIVE

DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discussion the study findings, conclusion and the recommendations given after considering the study results. The purpose of the study was to determine the effect of dividend policy on the stock price volatility using panel data in the companies listed in NSE in Kenya. The specific objectives of the study were to determine the effect of dividend yield on the stock price volatility of shares of listed companies at NSE, establish the effect of payout ratio on the stock price volatility of shares of listed companies at NSE and to assess the effect of firm size on the stock price volatility of shares of listed companies at NSE.

5.2 Summary of the Findings and Discussion

5.2.1 Relationship between Payout Ratio and Stock Price Volatility

The study performed a regression analysis on the corrected panel to determine the effect of dividend policy on the stock price volatility. The study findings revealed that the payout ratio had a negative insignificant relationship with the stock price volatility of the firms listed at the NSE. These findings were inconsistent with the views of Bunyasi (2007) who concluded that dividend payout in the exchange signals investors wealth thus resulting in the price change due to the confidence gains. The findings are further in consistent with Ordu, Enekwe and Anyanwaokoro (2014) who in their study found that there was a negative insignificant relationship between payout ratio and stock price volatility of quoted firms. However, the study results are consistent with Khaled et al (2011) who propounded a negative relations between dividend payout and stock price changes.

5.2.2 Relationship between Dividend Yield and Stock Price Volatility

A test of the relationship between the dividend yield and stock price volatility in the firms trading at the NSE revealed a negative insignificant relationship. The study findings are inconsistent with those of Chen, Huang and Cheng (2009) who found that cash dividend has significant positive effect on the stock price, where in their analysis they found that increase in cash dividend caused increase in stock price and when the cash dividend decreased so did the stock price. The findings were also inconsistent with the findings by Khan (2012) on his study on the effect of dividend announcement on the stock price of chemical and pharmaceutical industry in Pakistan applying panel data than cash dividend had a significant positive relation with stock market price. The results however, are consistent with the views of Ali and Chowdhury (2010) who found in their study of price movement of private commercial banks towards the dividend announcement at the Dhaka Stock Exchange, that there was insignificant relationship between stock price and dividends.

5.2.3 Relationship between Firm Size and Stock Price Volatility

The study established a positive significant relationship between the firm size and the stock price volatility. The study findings are consistent with those of Daunfeldt, Selander and Wikström (2009) who found an existence of a positive significant relationship between the size of the company and the stock price. They argued that there was a direct relationship between the size of the firm and the prices of the stocks. The study findings are also consistent with Saif (2010) who noted that the size of the firm has a direct effect of the stock prices as the stock of small firms has, on average, higher risk-adjusted returns than that of large firms.

5.3 Conclusion

This study examined the effect of dividend policy on the stock price volatility. The study seems to be a confirmatory test of dividend relevance or irrelevance as propounded by the various schools of thought. First the study tested the effect of payout ratio on the stock price volatility where it was revealed that there was a negative insignificant relationship between the payout ratio and the stock price volatility. From the findings of the study, it is clear that payout ratio has a negative insignificant effect on the stock price volatility. Similarly, the relationship between the dividend yield and stock price was negating and insignificant. However, the study established a positive and significant relationship between firm size and stock price volatility. These findings are in line with the irrelevance theory of Modigliani and Miller (1961) which states that the firms implement policy, the dividends payout policy that the firm choses to follow with effect neither the current share price nor the total returns to the shareholders. That is, the investors will calculate the value of companies based on the capitalized value of their future earnings, and this is not affected by whether the firms pay dividends or not and how firms set their dividend policies. These results confirm that generally, there are some other exogenous and endogenous variables other than dividend payout that are responsible for the movement of share prices on the NSE

5.4 Recommendations of the Study

The study established that there existed a relationship between the dividend policy and stock price volatility. The study recommends that every firm listed in NSE should provide the information regarding its activities and performance, so that investors can analyze the situation and invest their money in the best firms.

This study recommends that the listed firms should take seriously the effects of the dividend policy indicators (no matter how insignificant) is still one of the determining variables of the market price of shares.

The study also recommends that listed firms at the NSE should endeavour to formulate dividend policies that will maximize shareholders wealth.

5.5 Limitations of the Study

The limitations of the study are related to the data set as there could be other relevant factors which significantly influence share price of listed firms in the NSE other than dividend policy. This could be inferred from low R squared from the analysis. This means the explanatory power of the selected predictor variable was low and the others relevant factors are worth exploring.

The second limited was the fact that the study used secondary data which was data whose objective may not have been the same as that of this study. This may have compromised its accuracy.

5.6 Suggestions for Further Studies

This study was done on the effect of dividend policy on share price volatility for firms listed at the NSE. The variables chosen were firm specific variables and may not be the only variables that affect share prices. It is recommended that further research could be conducted to establish whether macroeconomic variables affect share price for firms listed in the NSE. This was informed by the low explanatory power of the selected independent variables on the change in dependent variable in the study.

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APPENDICES

APPENDIX 1: LISTED FIRMS AT THE NAIROBI SECURITIES EXCHANGE

1 Nation Media Group
2 TPS Eastern Africa (Serena) Ltd
3 Scangroup Ltd
4 Uchumi Supermarket Ltd
5 Sameer Africa Ltd
6 Barclays Bank Ltd
7 CFC Stanbic Holdings Ltd
8 Kenya Commercial Bank Ltd
9 Standard Chartered Bank Ltd
10 Equity Bank Ltd
11 Jubilee Holdings Ltd
12 Kenya Re-Insurance Corporation Ltd
13 British-American Investments Company (Kenya) Ltd
14 Olympia Capital Holdings ltd
15 Centum Investment Co Ltd
16 Trans-Century Ltd
17 British American Tobacco Kenya Ltd
18 East African Breweries Ltd
19 Bamburi Cement Ltd
20 Crown Berger Ltd
21 E.A.Cables Ltd
22 E.A.Portland Cement Ltd
23 KenolKobil Ltd
24 Total Kenya Ltd
25 Kakuzi
29 Limuru Tea Co. Ltd
30 Rea Vipingo Plantations Ltd
31 Sasini Ltd
32 Williamson Tea Kenya Ltd
33 Express Ltd
34 Kenya Airways Ltd
35 Standard Group Ltd
36 Hutchings Biemer Ltd
37 Longhorn Kenya Ltd
38 AccessKenya Group Ltd
39 Safaricom Ltd
40 Car and General (K) Ltd
41 Home Afrika ltd

42 Marshalls (E.A.) Ltd
43 Housing Finance Co Ltd
44 National Bank of Kenya Ltd
45 NIC Bank Ltd
46 The Co-operative Bank of Kenya Ltd
47 I & M Holdings
48 Pan Africa Insurance Holdings Ltd
49 CFC Insurance Holdings
50 CIC Insurance Group Ltd
51 City Trust Ltd
52 B.O.C Kenya Ltd
53 Carbacid Investments Ltd
54 Mumias Sugar Co. Ltd
55 Unga Group Ltd
56 Eveready East Africa Ltd
57 Kenya Orchards Ltd
58 A.Baumann Co. Ltd
59 Athi River Mining
60 KenGen Ltd
61 Kenya Power & Lighting Co Ltd

APPENDIX II: LIST OF COMPANIESLISTED BY 1994

1 Nation Media Group
2 Uchumi Supermarket Ltd
3 Sameer Africa Ltd
4 Barclays Bank Ltd
5 CFC Stanbic Holdings Ltd
6 Kenya Commercial Bank Ltd
7 Standard Chartered Bank Ltd
8 Jubilee Holdings Ltd
9 Olympia Capital Holdings ltd
10 Centum Investment Co Ltd
11 British American Tobacco Kenya Ltd
12 East African Breweries Ltd
13 Bamburi Cement Ltd
14 Crown Berger Ltd
15 E.A.Cables Ltd
16 E.A.Portland Cement Ltd
17 KenolKobil Ltd
18 Total Kenya Ltd
19 Kakuzi
20 Limuru Tea Co. Ltd
21 Sasini Ltd
22 Williamson Tea Kenya Ltd
23 Express Ltd
24 Standard Group Ltd
25 Car and General (K) Ltd
26 Marshalls (E.A.) Ltd
27 Housing Finance Co Ltd
28 National Bank of Kenya Ltd
29 NIC Bank Ltd
30 Pan Africa Insurance Holdings Ltd
31 City Trust Ltd

32 B.O.C Kenya Ltd

33 Carbacid Investments Ltd

34 Unga Group Ltd

35 Kenya Orchards Ltd

36 A.Baumann Co. Ltd

37 Athi River Mining

38 Kenya Power & Lighting Co Ltd

APPENDIX III: DATA ANALYSIS OUTPUT

Table 4.6 Table Re Model

```
. xtreg volatility dratio dyield fsize,re

Random-effects GLS regression                   Number of obs      =       684
Group variable: firm                            Number of groups   =        38

R-sq:  within  = 0.0138                         Obs per group: min =        18
       between = 0.0007                                        avg =      18.0
       overall = 0.0059                                        max =        18

                                                Wald chi2(3)       =      8.40
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0385
```

volatility	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
dratio	-8.44e-06	.0000133	-0.64	0.525	-.0000345	.0000176
dyield	-.000253	.0000983	-2.57	0.010	-.0004456	-.0000604
fsize	.0014303	.0013015	1.10	0.272	-.0011205	.0039812
_cons	.0262843	.0086171	3.05	0.002	.0093952	.0431735
sigma_u	.00759448					
sigma_e	.01089547					
rho	.32698562	(fraction of variance due to u_i)				

Table 4.9:Robust Test

```
. xtreg volatility  dyield dratio fsize, re vce(robust)

Random-effects GLS regression                   Number of obs      =       684
Group variable: firm                            Number of groups   =        38

R-sq:  within  = 0.0138                         Obs per group: min =        18
       between = 0.0007                                        avg =      18.0
       overall = 0.0059                                        max =        18

                                                Wald chi2(3)       =    739.01
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

                                  (Std. Err. adjusted for 38 clusters in firm)
```

volatility	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
dyield	-.000253	.0000655	-3.86	0.000	-.0003814	-.0001247
dratio	-8.44e-06	4.22e-07	-20.01	0.000	-9.27e-06	-7.62e-06
fsize	.0014303	.001448	0.99	0.323	-.0014077	.0042684
_cons	.0262843	.0093532	2.81	0.005	.0079525	.0446162
sigma_u	.00759448					
sigma_e	.01089547					
rho	.32698562	(fraction of variance due to u_i)				

```
.
```

Table 4.8:Panel regression corrected

```
. xtpcse volatility dratio dyield fsize

Linear regression, correlated panels corrected standard errors (PCSEs)

Group variable:   firm                          Number of obs      =       684
Time variable:    year                          Number of groups   =        38
Panels:           correlated (balanced)         Obs per group: min =        18
Autocorrelation:  no autocorrelation                           avg =        18
                                                               max =        18
Estimated covariances      =       741          R-squared          =    0.0086
Estimated autocorrelations =         0          Wald chi2(3)       =      6.42
Estimated coefficients     =         4          Prob > chi2        =    0.0929
```

volatility	Panel-corrected Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
dratio	-2.56e-06	.0000103	-0.25	0.804	-.0000228	.0000177
dyield	-.0000649	.0001094	-0.59	0.553	-.0002793	.0001495
fsize	.0016902	.0007402	2.28	0.022	.0002393	.003141
_cons	.024206	.0046987	5.15	0.000	.0149967	.0334152

APPENDIX IV: DATA COLLECTION WORKSHEET

Firm	Year	Price volatility	Payout ratio	Dividend yield	Firm size
E. A. Portland	1994	0.051	0.093	4.348	6.224
E. A. Portland	1995	0.040	0.022	2.778	6.409
E. A. Portland	1996	0.044	0.015	2.703	6.560
E. A. Portland	1997	0.062	0.042	2.041	6.582
E. A. Portland	1998	0.013	0.025	1.754	6.685
E. A. Portland	1999	0.025	0.126	1.493	6.755
E. A. Portland	2000	0.043	0.126	1.449	6.830
E. A. Portland	2001	0.044	0.099	1.429	6.883
E. A. Portland	2002	0.032	0.035	1.410	6.860
E. A. Portland	2003	0.051	0.009	1.316	6.889
E. A. Portland	2004	0.030	0.009	1.186	6.914
E. A. Portland	2005	0.057	0.010	1.163	6.938
E. A. Portland	2006	0.039	0.011	1.124	6.953
E. A. Portland	2007	0.047	0.011	1.087	6.958
E. A. Portland	2008	0.038	0.013	1.099	6.965
E. A. Portland	2009	0.036	0.018	1.031	6.986
E. A. Portland	2010	0.035	0.034	1.042	6.999
E. A. Portland	2011	0.039	0.032	1.064	7.041
KPLC	1994	0.021	0.192	0.503	6.659
KPLC	1995	0.035	0.333	0.448	6.755
KPLC	1996	0.039	0.079	0.360	6.754
KPLC	1997	0.024	0.037	0.322	6.832
KPLC	1998	0.035	0.037	0.308	6.884
KPLC	1999	0.042	0.035	0.244	6.885
KPLC	2000	0.046	0.082	0.236	6.893
KPLC	2001	0.045	0.079	0.256	6.953
KPLC	2002	0.034	0.250	0.353	6.995
KPLC	2003	0.034	0.200	0.346	6.999
KPLC	2004	0.034	0.476	0.457	7.040
KPLC	2005	0.038	0.909	0.526	7.079
KPLC	2006	0.041	0.192	0.562	7.103
KPLC	2007	0.047	0.179	0.599	7.114
KPLC	2008	0.051	0.135	0.735	7.130
KPLC	2009	0.046	0.130	0.917	7.170
KPLC	2010	0.045	0.112	1.053	7.228
KPLC	2011	0.035	0.103	0.840	7.230
BOC	1994	0.028	0.013	0.526	5.971

BOC	1995	0.029	0.014	0.505	5.986
BOC	1996	0.036	0.018	0.461	5.999
BOC	1997	0.037	0.021	0.362	6.041
BOC	1998	0.035	0.029	0.313	6.099
BOC	1999	0.024	0.022	0.258	6.195
BOC	2000	0.022	0.022	0.265	6.252
BOC	2001	0.025	0.011	0.243	6.298
BOC	2002	0.031	0.011	0.188	6.324
BOC	2003	0.033	0.012	0.173	6.374
BOC	2004	0.036	0.018	0.193	6.427
BOC	2005	0.048	0.019	0.170	6.452
BOC	2006	0.040	0.010	0.193	6.495
BOC	2007	0.037	0.015	0.209	6.495
BOC	2008	0.032	0.015	0.204	6.495
BOC	2009	0.029	0.012	0.256	6.467
BOC	2010	0.025	0.004	0.270	6.411
BOC	2011	0.024	0.011	0.239	6.291
ARM	1994	0.024	0.020	8.333	5.787
ARM	1995	0.026	0.020	1.786	5.844
ARM	1996	0.027	0.018	1.020	5.853
ARM	1997	0.037	0.016	0.943	5.896
ARM	1998	0.039	0.019	0.513	5.910
ARM	1999	0.043	0.022	0.518	5.953
ARM	2000	0.046	0.016	0.450	5.976
ARM	2001	0.050	0.018	0.476	5.999
ARM	2002	0.051	0.017	0.641	6.077
ARM	2003	0.055	0.012	0.524	6.113
ARM	2004	0.057	0.020	0.505	6.145
ARM	2005	0.055	0.029	0.427	6.565
ARM	2006	0.054	0.029	0.377	6.888
ARM	2007	0.051	0.034	0.535	6.964
ARM	2008	0.045	0.040	0.568	6.953
ARM	2009	0.042	0.040	0.599	7.041
ARM	2010	0.033	0.045	2.222	7.258
ARM	2011	0.024	0.059	8.333	7.195
A Baumann	1994	0.016	1.250	33.333	5.754
A Baumann	1995	0.033	0.038	16.667	5.830
A Baumann	1996	0.040	5.000	14.286	5.839
A Baumann	1997	0.043	0.455	11.111	5.851

A Baumann	1998	0.050	0.042	10.000	5.853
A Baumann	1999	0.034	0.016	5.000	5.874
A Baumann	2000	0.040	0.026	3.333	5.879
A Baumann	2001	0.043	0.015	2.500	5.892
A Baumann	2002	0.045	0.007	1.965	5.902
A Baumann	2003	0.039	0.009	1.901	5.913
A Baumann	2004	0.033	0.009	1.842	5.928
A Baumann	2005	0.048	0.010	1.515	5.943
A Baumann	2006	0.045	0.012	1.449	5.953
A Baumann	2007	0.050	0.015	1.389	5.958
A Baumann	2008	0.043	0.014	1.235	5.962
A Baumann	2009	0.035	0.014	1.190	5.977
A Baumann	2010	0.022	0.015	1.163	5.981
A Baumann	2011	0.011	0.016	1.124	5.991
KCB	1994	0.032	0.052	0.290	6.844
KCB	1995	0.035	0.047	0.225	6.853
KCB	1996	0.035	0.032	0.209	6.897
KCB	1997	0.035	0.029	0.205	6.910
KCB	1998	0.038	0.029	0.173	6.927
KCB	1999	0.045	0.014	0.170	6.950
KCB	2000	0.062	0.015	0.204	6.963
KCB	2001	0.045	0.020	0.196	6.985
KCB	2002	0.049	0.020	0.201	6.994
KCB	2003	0.047	0.020	0.210	7.041
KCB	2004	0.035	0.020	0.257	7.106
KCB	2005	0.039	0.017	0.225	7.353
KCB	2006	0.041	0.020	0.229	7.682
KCB	2007	0.039	0.021	0.197	7.755
KCB	2008	0.033	0.019	0.244	7.717
KCB	2009	0.045	0.019	0.251	7.658
KCB	2010	0.033	0.020	0.253	7.807
KCB	2011	0.026	0.020	0.239	7.699
NMG	1994	0.020	0.074	0.239	6.517
NMG	1995	0.019	0.073	0.217	6.578
NMG	1996	0.024	0.063	0.218	6.639
NMG	1997	0.026	0.058	0.191	6.698
NMG	1998	0.027	0.058	0.196	6.710
NMG	1999	0.038	0.056	0.195	6.728
NMG	2000	0.049	0.052	0.167	6.754

NMG	2001	0.049	0.035	0.195	6.842
NMG	2002	0.058	0.031	0.209	6.866
NMG	2003	0.057	0.030	0.205	6.953
NMG	2004	0.066	0.020	0.236	6.959
NMG	2005	0.056	0.017	0.251	7.132
NMG	2006	0.045	0.009	0.336	7.349
NMG	2007	0.036	0.014	0.535	7.366
NMG	2008	0.024	0.033	0.529	7.011
NMG	2009	0.022	0.014	0.562	7.226
NMG	2010	0.022	0.012	0.813	7.419
NMG	2011	0.019	0.010	1.099	7.342
NIC Bank	1994	0.034	0.028	1.028	6.495
NIC Bank	1995	0.036	0.033	1.266	6.528
NIC Bank	1996	0.047	0.036	1.647	6.599
NIC Bank	1997	0.048	0.030	2.358	6.616
NIC Bank	1998	0.053	0.036	4.149	6.647
NIC Bank	1999	0.051	0.027	17.241	6.670
NIC Bank	2000	0.058	0.020	5.714	6.687
NIC Bank	2001	0.065	0.021	5.208	6.691
NIC Bank	2002	0.053	0.019	1.965	6.710
NIC Bank	2003	0.054	0.014	3.067	6.752
NIC Bank	2004	0.045	0.031	6.993	6.615
NIC Bank	2005	0.033	0.030	1.042	6.925
NIC Bank	2006	0.032	0.027	5.650	6.791
NIC Bank	2007	0.041	0.031	5.000	7.268
NIC Bank	2008	0.051	0.071	10.000	7.111
NIC Bank	2009	0.041	0.067	12.500	7.009
NIC Bank	2010	0.030	0.100	20.000	7.218
NIC Bank	2011	0.018	0.143	100.000	6.977
K. Orchards	1994	0.012	0.066	4.348	5.660
K. Orchards	1995	0.013	0.062	3.448	5.670
K. Orchards	1996	0.025	0.061	3.030	5.680
K. Orchards	1997	0.024	0.061	2.326	5.680
K. Orchards	1998	0.026	0.056	1.887	5.689
K. Orchards	1999	0.039	0.056	1.695	5.698
K. Orchards	2000	0.012	0.056	1.587	5.684
K. Orchards	2001	0.012	0.059	1.408	5.715
K. Orchards	2002	0.013	0.070	1.299	5.719
K. Orchards	2003	0.014	0.074	1.220	5.732

K. Orchards	2004	0.021	0.072	1.124	5.739
K. Orchards	2005	0.010	0.070	1.064	5.740
K. Orchards	2006	0.035	0.070	0.901	5.742
K. Orchards	2007	0.026	0.074	0.813	5.817
K. Orchards	2008	0.029	0.075	0.752	5.839
K. Orchards	2009	0.042	0.076	0.680	5.857
K. Orchards	2010	0.032	0.077	0.621	5.879
K. Orchards	2011	0.025	0.085	0.704	5.882
Express K.	1994	0.033	0.016	7.692	5.944
Express K.	1995	0.035	0.018	5.263	5.995
Express K.	1996	0.038	0.017	4.348	5.999
Express K.	1997	0.040	0.017	3.030	6.092
Express K.	1998	0.041	0.012	2.041	6.194
Express K.	1999	0.043	0.010	2.041	6.273
Express K.	2000	0.048	0.010	2.564	6.298
Express K.	2001	0.057	4.348	3.226	6.324
Express K.	2002	0.063	4.762	2.703	6.370
Express K.	2003	0.068	9.091	2.381	6.411
Express K.	2004	0.064	1.111	2.041	6.446
Express K.	2005	0.059	1.020	1.852	6.462
Express K.	2006	0.054	1.639	1.639	6.476
Express K.	2007	0.050	2.941	1.449	6.505
Express K.	2008	0.044	1.250	1.370	6.539
Express K.	2009	0.042	8.333	1.299	6.591
Express K.	2010	0.039	3.226	1.235	6.602
Express K.	2011	0.016	9.091	1.613	6.614
Stan Chart	1994	0.022	0.011	1.786	7.277
Stan Chart	1995	0.026	0.014	2.222	7.299
Stan Chart	1996	0.036	0.019	1.961	7.322
Stan Chart	1997	0.031	0.017	1.493	7.326
Stan Chart	1998	0.037	0.023	1.408	7.374
Stan Chart	1999	0.042	0.016	1.449	7.390
Stan Chart	2000	0.049	0.014	1.370	7.410
Stan Chart	2001	0.032	0.008	1.538	7.428
Stan Chart	2002	0.017	0.011	1.786	7.457
Stan Chart	2003	0.019	0.011	1.724	7.476
Stan Chart	2004	0.025	0.010	1.449	7.521
Stan Chart	2005	0.028	0.012	1.587	7.578
Stan Chart	2006	0.014	0.011	1.695	7.746

Stan Chart	2007	0.026	0.013	1.515	7.748
Stan Chart	2008	0.039	0.012	4.348	7.639
Stan Chart	2009	0.032	0.014	1.724	7.641
Stan Chart	2010	0.029	0.014	1.613	7.870
Stan Chart	2011	0.033	0.019	1.333	7.662
HFCK	1994	0.024	0.024	1.370	7.045
HFCK	1995	0.027	0.026	1.449	7.079
HFCK	1996	0.044	0.022	1.972	7.111
HFCK	1997	0.053	0.022	2.326	7.143
HFCK	1998	0.046	0.022	4.739	7.163
HFCK	1999	0.038	0.017	20.000	7.253
HFCK	2000	0.035	0.012	6.667	7.281
HFCK	2001	0.046	0.009	5.495	7.370
HFCK	2002	0.043	8.333	2.445	7.459
HFCK	2003	0.038	0.008	3.067	7.576
HFCK	2004	0.043	0.009	4.115	7.660
HFCK	2005	0.035	0.010	6.250	7.680
HFCK	2006	0.031	0.009	5.263	7.698
HFCK	2007	0.058	0.009	5.000	7.710
HFCK	2008	0.053	0.008	4.762	7.743
HFCK	2009	0.049	0.009	4.167	7.771
HFCK	2010	0.045	0.010	3.226	7.787
HFCK	2011	0.041	0.011	2.941	7.844
Total K.	1994	0.022	0.025	2.273	7.041
Total K.	1995	0.025	0.043	1.754	7.075
Total K.	1996	0.028	0.012	1.515	7.095
Total K.	1997	0.029	0.009	2.174	7.129
Total K.	1998	0.039	0.009	1.316	7.163
Total K.	1999	0.044	0.019	1.408	7.170
Total K.	2000	0.053	0.029	1.786	7.225
Total K.	2001	0.054	0.029	1.887	7.197
Total K.	2002	0.044	0.032	2.222	7.246
Total K.	2003	0.038	0.014	1.587	7.253
Total K.	2004	0.029	0.013	1.754	7.214
Total K.	2005	0.032	0.012	1.408	6.851
Total K.	2006	0.041	0.011	1.613	6.779
Total K.	2007	0.063	0.012	1.961	6.771
Total K.	2008	0.059	0.016	1.786	6.748
Total K.	2009	0.054	0.028	2.222	6.712

Total K.	2010	0.051	0.050	1.124	6.700
Total K.	2011	0.047	0.036	1.282	6.412
Unga G.	1994	0.046	0.025	0.526	5.785
Unga G.	1995	0.047	0.043	0.529	5.787
Unga G.	1996	0.048	0.012	0.562	5.810
Unga G.	1997	0.046	0.009	0.641	5.830
Unga G.	1998	0.042	0.021	0.529	5.859
Unga G.	1999	0.038	0.099	0.498	5.896
Unga G.	2000	0.035	8.333	0.505	5.953
Unga G.	2001	0.031	6.250	0.474	5.964
Unga G.	2002	0.043	3.846	0.505	5.990
Unga G.	2003	0.028	5.263	0.532	5.999
Unga G.	2004	0.025	5.882	0.478	6.103
Unga G.	2005	0.026	9.091	0.469	6.092
Unga G.	2006	0.030	833.333	0.448	6.183
Unga G.	2007	0.030	8.333	0.483	6.193
Unga G.	2008	0.029	8.929	0.575	6.225
Unga G.	2009	0.037	9.091	0.699	6.278
Unga G.	2010	0.045	100.000	1.020	6.296
Unga G.	2011	0.045	8.130	1.031	6.301
City Trust	1994	0.013	0.023	0.746	5.958
City Trust	1995	0.029	0.139	0.730	5.995
City Trust	1996	0.035	0.039	0.613	6.092
City Trust	1997	0.044	0.040	0.592	6.164
City Trust	1998	0.050	0.039	0.578	6.225
City Trust	1999	0.054	0.026	0.549	6.278
City Trust	2000	0.036	0.010	0.532	6.298
City Trust	2001	0.029	0.011	0.529	6.390
City Trust	2002	0.036	0.011	0.515	6.445
City Trust	2003	0.027	0.006	0.503	6.475
City Trust	2004	0.028	0.008	0.478	6.477
City Trust	2005	0.055	0.008	0.467	6.495
City Trust	2006	0.049	0.009	0.444	6.511
City Trust	2007	0.047	0.011	0.422	6.553
City Trust	2008	0.035	0.010	0.394	6.587
City Trust	2009	0.013	0.010	0.380	6.601
City Trust	2010	0.012	0.009	0.360	6.603
City Trust	2011	0.023	0.007	0.347	6.638
Marshallas	1994	0.013	0.118	4.762	6.128

Marshallas	1995	0.035	0.270	5.556	6.224
Marshallas	1996	0.045	0.025	1.111	6.223
Marshallas	1997	0.057	0.021	3.125	6.281
Marshallas	1998	0.058	0.019	4.762	6.324
Marshallas	1999	0.049	0.025	3.226	7.394
Marshallas	2000	0.040	0.019	7.692	6.398
Marshallas	2001	0.023	0.006	5.556	6.410
Marshallas	2002	0.024	9.174	5.263	6.427
Marshallas	2003	0.026	83.333	4.762	6.427
Marshallas	2004	0.039	83.333	5.000	6.442
Marshallas	2005	0.048	81.967	5.556	6.475
Marshallas	2006	0.046	0.015	9.091	6.493
Marshallas	2007	0.054	0.014	7.692	6.552
Marshallas	2008	0.045	7.692	7.143	6.565
Marshallas	2009	0.038	7.463	33.333	6.591
Marshallas	2010	0.026	0.008	20.000	6.613
Marshallas	2011	0.012	0.011	16.667	6.631
Bamburi	1994	0.014	0.015	0.170	7.274
Bamburi	1995	0.023	0.032	0.228	7.298
Bamburi	1996	0.041	0.020	0.242	7.322
Bamburi	1997	0.033	0.019	0.209	7.360
Bamburi	1998	0.034	0.019	0.265	7.372
Bamburi	1999	0.026	0.021	0.187	7.410
Bamburi	2000	0.029	0.017	0.158	7.430
Bamburi	2001	0.030	0.017	0.132	7.462
Bamburi	2002	0.019	0.027	0.155	7.491
Bamburi	2003	0.013	0.034	0.150	7.504
Bamburi	2004	0.038	0.008	0.173	7.538
Bamburi	2005	0.022	0.011	0.169	7.706
Bamburi	2006	0.049	0.013	0.145	7.892
Bamburi	2007	0.031	0.018	0.137	7.852
Bamburi	2008	0.053	0.016	0.128	7.777
Bamburi	2009	0.047	0.018	0.143	7.753
Bamburi	2010	0.043	0.017	0.135	7.832
Bamburi	2011	0.034	0.016	0.116	7.661
Limiru	1994	0.014	0.063	1.020	5.045
Limiru	1995	0.015	0.048	0.699	5.085
Limiru	1996	0.026	0.034	0.629	5.125
Limiru	1997	0.036	0.032	0.524	5.688
Limiru	1998	0.049	0.030	0.483	5.183

Limiru	1999	0.059	0.022	0.437	5.225
Limiru	2000	0.042	0.018	0.394	5.251
Limiru	2001	0.043	0.015	0.375	5.262
Limiru	2002	0.038	0.014	0.369	5.276
Limiru	2003	0.050	0.011	0.408	5.298
Limiru	2004	0.059	0.011	0.420	5.328
Limiru	2005	0.035	0.011	0.437	5.318
Limiru	2006	0.036	0.008	0.461	5.322
Limiru	2007	0.025	0.005	0.505	5.352
Limiru	2008	0.016	0.014	0.529	5.262
Limiru	2009	0.011	0.030	0.559	5.563
Limiru	2010	0.026	0.083	0.606	5.556
Limiru	2011	0.035	0.045	0.690	5.604
C& G	1994	0.053	0.048	14.286	4.474
C & G	1995	0.051	0.043	11.111	4.483
C & G	1996	0.043	0.034	10.000	4.524
C & G	1997	0.022	0.028	8.333	4.596
C & G	1998	0.013	0.031	7.143	4.657
C & G	1999	0.025	0.036	5.882	4.742
C & G	2000	0.017	0.043	5.263	4.832
C & G	2001	0.011	0.027	4.545	4.889
C & G	2002	0.013	0.030	4.167	4.993
C & G	2003	0.014	0.029	3.846	5.053
C & G	2004	0.011	0.024	3.448	5.524
C & G	2005	0.010	0.125	3.125	5.810
C & G	2006	0.013	0.091	3.030	6.004
C & G	2007	0.012	0.111	2.778	6.104
C & G	2008	0.010	0.143	2.632	6.001
C & G	2009	0.028	0.125	2.564	5.971
C & G	2010	0.034	0.125	2.439	6.020
C & G	2011	0.024	0.111	2.326	5.881
BB	1994	0.011	0.032	0.699	7.390
BB	1995	0.012	0.029	0.694	7.430
BB	1996	0.012	0.026	0.746	7.449
BB	1997	0.021	0.022	0.571	7.489
BB	1998	0.014	0.016	0.585	7.493
BB	1999	0.015	0.018	0.535	7.530
BB	2000	0.019	0.019	0.562	7.591
BB	2001	0.018	0.022	0.685	7.621
BB	2002	0.016	0.014	0.532	7.831

BB	2003	0.013	0.015	0.505	7.754
BB	2004	0.010	0.013	0.495	7.610
BB	2005	0.028	0.017	0.503	8.610
BB	2006	0.011	0.020	0.488	8.019
BB	2007	0.023	0.022	0.562	8.030
BB	2008	0.014	0.020	0.546	7.836
BB	2009	0.023	0.018	0.518	7.786
BB	2010	0.012	0.014	0.483	7.929
BB	2011	0.025	0.010	0.420	7.851
E.A Cables	1994	0.024	0.026	4.167	5.771
E.A Cables	1995	0.029	0.024	2.941	5.810
E.A Cables	1996	0.013	0.021	2.041	5.844
E.A Cables	1997	0.015	0.015	1.887	5.853
E.A Cables	1998	0.036	0.013	1.538	5.896
E.A Cables	1999	0.017	0.011	1.316	5.915
E.A Cables	2000	0.019	0.013	1.124	5.933
E.A Cables	2001	0.019	0.014	1.099	5.953
E.A Cables	2002	0.020	0.014	1.408	5.958
E.A Cables	2003	0.031	0.017	1.493	5.994
E.A Cables	2004	0.021	0.018	1.852	6.014
E.A Cables	2005	0.031	0.021	2.326	6.443
E.A Cables	2006	0.022	0.020	2.439	6.988
E.A Cables	2007	0.032	0.023	2.941	6.930
E.A Cables	2008	0.023	0.023	3.125	6.726
E.A Cables	2009	0.013	0.015	3.448	6.613
E.A Cables	2010	0.023	0.009	3.846	6.517
E.A Cables	2011	0.023	0.025	5.263	6.427
C-Berger	1994	0.034	0.032	3.030	5.371
C-Berger	1995	0.024	0.027	2.128	5.462
C-Berger	1996	0.025	0.026	1.190	5.494
C-Berger	1997	0.030	0.029	1.053	5.525
C-Berger	1998	0.012	0.037	0.840	5.600
C-Berger	1999	0.013	0.036	0.775	5.647
C-Berger	2000	0.016	0.030	0.730	5.680
C-Berger	2001	0.018	0.027	0.709	5.697
C-Berger	2002	0.020	0.022	0.676	5.710
C-Berger	2003	0.022	0.018	0.654	5.754
C-Berger	2004	0.020	1.000	0.617	5.822
C-Berger	2005	0.028	0.014	0.565	5.919
C-Berger	2006	0.017	0.018	0.535	6.016

C-Berger	2007	0.035	0.032	0.503	6.079
C-Berger	2008	0.012	0.013	0.498	5.769
C-Berger	2009	0.021	0.029	0.474	5.755
C-Berger	2010	0.012	0.031	0.448	5.932
C-Berger	2011	0.011	0.043	0.422	5.687
BAT	1994	0.014	0.030	0.813	6.958
BAT	1995	0.016	0.024	0.746	7.075
BAT	1996	0.026	0.020	0.806	7.084
BAT	1997	0.040	0.018	0.606	7.145
BAT	1998	0.042	0.013	1.099	7.201
BAT	1999	0.050	0.008	1.149	7.225
BAT	2000	0.059	0.009	0.535	7.248
BAT	2001	0.053	0.009	0.794	7.253
BAT	2002	0.049	0.010	0.360	7.278
BAT	2003	0.041	0.008	0.417	7.276
BAT	2004	0.049	0.007	0.450	7.301
BAT	2005	0.054	0.011	0.529	7.310
BAT	2006	0.058	0.010	1.020	7.294
BAT	2007	0.052	0.008	0.847	7.143
BAT	2008	0.043	0.010	0.752	7.117
BAT	2009	0.041	0.010	0.546	7.250
BAT	2010	0.035	0.013	0.472	7.431
BAT	2011	0.027	0.017	0.420	7.391
Jubilee	1994	0.019	0.091	4.348	5.943
Jubilee	1995	0.034	0.077	2.703	5.970
Jubilee	1996	0.052	0.059	1.064	5.981
Jubilee	1997	0.055	0.045	1.538	5.999
Jubilee	1998	0.053	0.059	1.075	6.041
Jubilee	1999	0.054	0.034	1.124	6.045
Jubilee	2000	0.052	0.030	1.149	6.131
Jubilee	2001	0.005	0.032	0.826	6.194
Jubilee	2002	0.029	0.024	0.633	6.224
Jubilee	2003	0.032	0.029	0.599	6.281
Jubilee	2004	0.038	0.030	0.562	6.320
Jubilee	2005	0.040	0.038	0.503	6.475
Jubilee	2006	0.050	0.037	0.680	7.066
Jubilee	2007	0.054	0.034	0.840	6.982
Jubilee	2008	0.068	0.037	0.654	6.743
Jubilee	2009	0.053	0.045	0.613	6.714
Jubilee	2010	0.042	0.067	0.893	6.959

Jubilee	2011	0.039	0.063	0.725	6.926
EABL	1994	0.026	0.031	0.362	7.484
EABL	1995	0.027	0.040	0.448	7.502
EABL	1996	0.038	0.048	0.472	7.541
EABL	1997	0.049	0.032	0.476	7.563
EABL	1998	0.051	0.022	0.474	7.591
EABL	1999	0.056	0.018	0.433	7.601
EABL	2000	0.044	0.020	0.476	7.611
EABL	2001	0.041	0.020	0.505	7.630
EABL	2002	0.039	0.019	0.503	7.639
EABL	2003	0.032	0.018	0.258	7.661
EABL	2004	0.035	0.020	0.236	7.689
EABL	2005	0.032	0.016	0.256	7.992
EABL	2006	0.034	0.014	0.300	7.962
EABL	2007	0.031	0.015	0.205	8.006
EABL	2008	0.050	0.014	0.187	8.197
EABL	2009	0.059	0.014	0.394	8.059
EABL	2010	0.051	0.013	0.420	8.156
EABL	2011	0.046	0.013	0.168	8.188
Sameer	1994	0.040	0.043	0.244	5.994
Sameer	1995	0.020	0.042	0.257	5.999
Sameer	1996	0.030	0.034	0.251	6.000
Sameer	1997	0.040	0.028	0.235	6.075
Sameer	1998	0.053	0.029	0.266	6.136
Sameer	1999	0.055	0.036	0.258	6.162
Sameer	2000	0.052	0.043	0.251	6.194
Sameer	2001	0.051	0.026	0.246	6.219
Sameer	2002	0.052	0.030	0.243	6.253
Sameer	2003	0.045	0.029	0.214	6.273
Sameer	2004	0.048	0.024	0.222	6.278
Sameer	2005	0.049	0.026	0.292	6.283
Sameer	2006	0.056	0.024	0.275	6.289
Sameer	2007	0.044	0.026	0.322	6.294
Sameer	2008	0.032	0.030	0.272	6.298
Sameer	2009	0.031	0.034	0.191	6.301
Sameer	2010	0.020	0.038	0.243	6.324
Sameer	2011	0.019	0.043	0.220	6.350
NBK	1994	0.025	0.031	2.941	6.427
NBK	1995	0.037	0.034	4.762	6.428

NBK	1996	0.048	0.029	2.564	6.445
NBK	1997	0.059	0.024	2.326	6.475
NBK	1998	0.051	0.026	2.222	6.481
NBK	1999	0.045	0.021	1.786	6.517
NBK	2000	0.049	0.042	1.695	6.525
NBK	2001	0.051	0.063	2.439	6.578
NBK	2002	0.032	1.000	2.564	6.601
NBK	2003	0.055	1.000	2.941	6.588
NBK	2004	0.067	1.000	1.961	6.514
NBK	2005	0.049	1.000	2.083	6.495
NBK	2006	0.059	1.000	2.326	6.445
NBK	2007	0.052	1.000	1.754	6.410
NBK	2008	0.058	1.000	1.923	6.336
NBK	2009	0.057	1.000	1.695	6.322
NBK	2010	0.053	1.000	2.174	6.330
NBK	2011	0.045	1.000	1.818	6.350
Kakuzi	1994	0.041	0.052	1.020	5.995
Kakuzi	1995	0.041	0.017	0.813	6.099
Kakuzi	1996	0.034	0.033	0.565	6.252
Kakuzi	1997	0.021	0.038	0.427	6.298
Kakuzi	1998	0.035	0.038	0.375	6.374
Kakuzi	1999	0.037	0.038	0.457	6.578
Kakuzi	2000	0.015	0.007	0.270	6.754
Kakuzi	2001	0.012	0.029	0.258	6.832
Kakuzi	2002	0.016	1.000	0.270	6.844
Kakuzi	2003	0.011	1.000	0.345	6.944
Kakuzi	2004	0.032	1.000	0.505	6.958
Kakuzi	2005	0.032	1.000	0.503	7.041
Kakuzi	2006	0.039	1.000	0.855	7.107
Kakuzi	2007	0.038	1.000	0.505	7.195
Kakuzi	2008	0.049	1.000	0.478	7.253
Kakuzi	2009	0.056	0.159	0.917	7.273
Kakuzi	2010	0.053	0.068	0.427	7.298
Kakuzi	2011	0.051	0.068	0.420	7.344
KenolKobil	1994	0.052	1.000	1.961	6.424
KenolKobil	1995	0.053	1.000	2.326	6.428
KenolKobil	1996	0.044	1.000	1.282	6.446
KenolKobil	1997	0.050	1.000	1.493	6.428
KenolKobil	1998	0.031	1.000	1.149	6.445
KenolKobil	1999	0.033	1.000	1.316	6.462

KenolKobil	2000	0.013	1.000	1.639	6.475
KenolKobil	2001	0.013	1.000	2.174	6.480
KenolKobil	2002	0.025	1.000	4.348	6.495
KenolKobil	2003	0.027	1.000	1.000	6.516
KenolKobil	2004	0.020	1.000	1.000	6.530
KenolKobil	2005	0.032	1.000	1.000	6.552
KenolKobil	2006	0.024	1.000	0.568	6.566
KenolKobil	2007	0.027	1.000	0.613	6.568
KenolKobil	2008	0.039	1.000	0.641	6.582
KenolKobil	2009	0.033	1.000	0.599	6.591
KenolKobil	2010	0.031	0.039	0.763	6.600
KenolKobil	2011	0.029	0.038	0.943	6.613
Centum	1994	0.021	1.000	0.476	6.445
Centum	1995	0.023	1.000	0.427	6.464
Centum	1996	0.025	1.000	0.292	6.690
Centum	1997	0.027	1.000	0.281	6.838
Centum	1998	0.028	1.000	0.268	6.896
Centum	1999	0.029	1.000	0.266	6.995
Centum	2000	0.013	1.000	0.369	7.041
Centum	2001	0.013	1.000	0.301	7.075
Centum	2002	0.012	1.000	0.427	7.129
Centum	2003	0.027	1.000	0.375	7.163
Centum	2004	0.024	1.000	0.301	7.173
Centum	2005	0.032	1.000	0.322	7.198
Centum	2006	0.023	1.000	0.476	7.225
Centum	2007	0.034	1.000	0.293	7.247
Centum	2008	0.039	1.000	0.345	7.252
Centum	2009	0.036	1.000	0.469	7.298
Centum	2010	0.037	1.000	0.521	7.338
Centum	2011	0.021	1.000	0.680	7.346
Sasini	1994	0.037	0.013	0.813	5.830
Sasini	1995	0.038	0.010	0.763	5.832
Sasini	1996	0.029	0.010	0.746	5.837
Sasini	1997	0.029	0.013	0.735	5.839
Sasini	1998	0.031	0.013	0.714	5.839
Sasini	1999	0.011	0.011	0.719	5.841
Sasini	2000	0.022	0.006	0.725	5.842
Sasini	2001	0.013	0.098	0.709	5.844
Sasini	2002	0.025	0.029	0.699	5.844
Sasini	2003	0.013	0.016	0.690	5.845

Sasini	2004	0.022	0.018	0.680	5.851
Sasini	2005	0.029	0.016	0.676	5.858
Sasini	2006	0.027	0.018	0.676	5.867
Sasini	2007	0.029	0.017	0.685	5.870
Sasini	2008	0.032	0.016	0.694	5.882
Sasini	2009	0.030	0.016	0.709	5.891
Sasini	2010	0.029	0.018	0.725	5.895
Sasini	2011	0.027	0.022	0.735	5.897
Williamson	1994	0.022	0.012	0.448	5.719
Williamson	1995	0.023	0.014	0.361	5.751
Williamson	1996	0.044	0.044	0.427	5.768
Williamson	1997	0.046	0.042	0.272	5.777
Williamson	1998	0.058	0.044	0.313	5.787
Williamson	1999	0.050	0.041	0.270	5.810
Williamson	2000	0.048	0.012	0.258	5.844
Williamson	2001	0.032	0.021	0.270	5.853
Williamson	2002	0.056	0.079	0.334	5.886
Williamson	2003	0.050	0.014	0.336	5.943
Williamson	2004	0.060	0.024	0.334	5.845
Williamson	2005	0.038	0.020	0.461	6.018
Williamson	2006	0.036	0.125	0.336	5.918
Williamson	2007	0.036	0.032	0.324	6.050
Williamson	2008	0.042	0.200	0.324	5.702
Williamson	2009	0.041	0.031	0.427	5.614
Williamson	2010	0.038	0.167	0.420	6.287
Williamson	2011	0.025	0.037	0.331	6.209
Carbacid	1994	0.014	0.037	0.433	6.569
Carbacid	1995	0.025	0.035	0.410	6.678
Carbacid	1996	0.036	0.031	0.283	6.771
Carbacid	1997	0.037	0.039	0.273	6.771
Carbacid	1998	0.034	0.035	0.268	6.789
Carbacid	1999	0.012	0.043	0.266	6.825
Carbacid	2000	0.011	0.029	0.369	6.839
Carbacid	2001	0.028	0.042	0.292	6.851
Carbacid	2002	0.030	0.023	0.410	6.886
Carbacid	2003	0.035	0.021	0.361	6.898
Carbacid	2004	0.034	1.000	0.292	6.913
Carbacid	2005	0.029	1.000	0.302	6.921
Carbacid	2006	0.025	1.000	0.415	6.954

Carbacid	2007	0.028	1.000	0.285	6.954
Carbacid	2008	0.030	0.015	0.418	6.963
Carbacid	2009	0.030	0.005	0.448	6.981
Carbacid	2010	0.048	0.018	0.397	6.986
Carbacid	2011	0.036	0.018	0.405	6.994
CFC	1994	0.026	0.032	0.752	5.866
CFC	1995	0.028	0.036	0.746	5.896
CFC	1996	0.028	0.028	0.806	5.908
CFC	1997	0.039	0.027	0.606	5.910
CFC	1998	0.039	0.028	0.621	5.927
CFC	1999	0.031	0.033	0.565	5.928
CFC	2000	0.044	0.031	0.595	5.944
CFC	2001	0.036	0.032	0.641	5.990
CFC	2002	0.038	1.000	0.562	5.999
CFC	2003	0.049	0.031	0.532	6.076
CFC	2004	0.051	0.034	0.505	6.041
CFC	2005	0.043	0.035	0.503	6.091
CFC	2006	0.042	0.036	0.488	6.016
CFC	2007	0.031	0.033	0.459	6.012
CFC	2008	0.032	0.047	0.448	6.055
CFC	2009	0.034	0.043	0.429	6.061
CFC	2010	0.045	0.035	0.405	6.064
CFC	2011	0.046	0.041	0.420	6.065
Olympia	1994	0.025	1.250	4.274	5.995
Olympia	1995	0.028	0.038	7.634	6.000
Olympia	1996	0.032	5.000	7.194	6.078
Olympia	1997	0.045	0.455	7.519	6.105
Olympia	1998	0.060	0.262	7.407	6.136
Olympia	1999	0.031	0.457	4.237	6.195
Olympia	2000	0.044	0.026	4.184	6.224
Olympia	2001	0.036	1.000	4.329	6.247
Olympia	2002	0.012	0.007	4.367	6.253
Olympia	2003	0.024	1.000	4.464	6.259
Olympia	2004	0.025	1.000	3.215	6.273
Olympia	2005	0.044	1.000	4.587	6.278
Olympia	2006	0.037	1.000	4.292	6.298
Olympia	2007	0.032	1.000	3.058	6.300
Olympia	2008	0.049	1.000	3.106	6.335
Olympia	2009	0.037	1.000	2.950	6.360

Olympia	2010	0.034	1.000	4.237	6.374
Olympia	2011	0.034	1.000	3.077	6.390
Pan African	1994	0.040	0.084	2.994	6.184
Pan African	1995	0.040	0.074	4.329	6.196
Pan African	1996	0.049	0.061	2.950	6.219
Pan African	1997	0.059	0.042	2.309	6.225
Pan African	1998	0.061	0.056	2.299	6.246
Pan African	1999	0.058	0.036	1.866	6.251
Pan African	2000	0.047	0.030	1.855	6.255
Pan African	2001	0.057	0.031	2.320	6.273
Pan African	2002	0.037	0.025	3.040	6.276
Pan African	2003	0.047	0.030	3.086	6.282
Pan African	2004	0.037	0.032	1.957	6.294
Pan African	2005	0.056	0.039	2.392	6.298
Pan African	2006	0.055	0.038	2.309	6.294
Pan African	2007	0.049	0.036	1.898	6.297
Pan African	2008	0.044	0.038	1.916	6.301
Pan African	2009	0.039	0.045	1.855	6.321
Pan African	2010	0.035	0.064	2.294	6.338
Pan African	2011	0.032	0.069	1.905	6.360
Standard Group	1994	0.029	0.086	0.314	6.754
Standard Group	1995	0.049	0.085	0.277	6.832
Standard Group	1996	0.051	0.085	0.279	6.896
Standard Group	1997	0.042	0.089	0.244	6.902
Standard Group	1998	0.031	0.089	0.236	6.910
Standard Group	1999	0.034	0.083	0.242	6.922
Standard Group	2000	0.035	0.083	0.251	6.929
Standard Group	2001	0.021	0.077	0.260	6.990
Standard Group	2002	0.023	0.073	0.265	6.999
Standard Group	2003	0.049	0.076	0.258	7.041
Standard Group	2004	0.027	0.063	0.310	7.073
Standard Group	2005	0.024	0.050	0.336	7.107
Standard Group	2006	0.022	0.048	0.336	7.107
Standard Group	2007	0.039	0.045	0.348	7.123
Standard Group	2008	0.037	0.042	0.346	7.162
Standard Group	2009	0.026	0.037	0.360	7.163
Standard Group	2010	0.035	0.032	0.448	7.099
Standard Group	2011	0.022	0.029	0.524	7.120
Uchumi	1994	0.037	1.000	4.274	5.832
Uchumi	1995	0.030	1.000	7.634	5.882

Uchumi	1996	0.031	1.000	4.184	5.910
Uchumi	1997	0.024	1.000	3.003	5.927
Uchumi	1998	0.022	1.000	2.985	5.943
Uchumi	1999	0.021	1.000	2.976	5.953
Uchumi	2000	0.030	1.000	2.950	5.960
Uchumi	2001	0.012	1.000	3.021	5.981
Uchumi	2002	0.013	1.000	4.367	5.990
Uchumi	2003	0.026	1.000	4.464	5.995
Uchumi	2004	0.023	1.000	3.215	5.999
Uchumi	2005	0.030	1.000	3.145	6.041
Uchumi	2006	0.028	1.000	3.003	5.995
Uchumi	2007	0.026	1.000	3.058	5.970
Uchumi	2008	0.034	1.000	3.106	5.965
Uchumi	2009	0.031	1.000	2.950	5.953
Uchumi	2010	0.040	1.000	2.976	5.927
Uchumi	2011	0.037	1.000	3.077	5.910