AN EMPIRICAL TEST OF APPLICABILITY OF CONSTANT DIVIDEND MODEL BY COMPANIES LISTED AT THE NAIROBI STOCK EXCHANGE.

BY

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D61/70105/2007

A research project submitted in partial fulfillment of the requirement for the Degree of Master of Business Administration of the University of Nairobi.
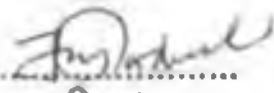
OCTOBER 2009

DECLARATION

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

Henry Kimathi .... Date ....

This research project is submitted for examination with my approval as University supervisor

Supervisor: Name: **J.O Aduda**

Signature.................................

Date................................

DEDICATION

To my parents for their love and care and ensuring that I had access to education as I was raised up.

ACKNOWLEDGEMENTS

ABSTRACT

This research paper tests the applicability of constant dividend model by companies listed at the Nairobi stock exchange. Data was collected from annual reports and share price schedules obtained from Nairobi stock exchange and Capital market Authority for a population of 20 companies that paid dividends consistently from 2002 to 2008.

The data was then analyzed by re-computing the dividends that should have been paid if the dividend constant model was applied. This recomputed figure was later compared to the dividend as paid out by the companies thought the years of study. Paired sample t-test statistic was also performed to determine whether there is a significant difference between the two dividend figures.

The findings of the research established that the dividend model was not employed by the companies listed at the Nairobi stock exchange. Most firms instead adopted stable and predictable policy where a specific amount of dividend per share each year was paid periodically. In some years there was a slight adjustment of the dividend paid after an increase in earnings, but only by a sustainable amount. The study shows that the relationship between the stock market prices and the dividend paid from the constant dividend model is uneven from one year to another and where there was a relationship it was insignificant. Though a share would be highly priced, a high dividend per share was not always declared.

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CHAPTER ONE:

INTRODUCTION

1.1 Background to the study

When investors buy stock in a publicly traded firm, the only cash received directly from the investment are the expected dividends. Therefore the distribution of cash to the stock holders is one of the major decisions undertaken by a firm. Finance managers endevour to establish policies that assist distribute earning to the share holders. A fundamental observation made for dividend policy is that there is a widespread tendency of corporations to pursue relative stable dividend policy. The constant dividend model assumes that investors prefer current certain dividends. According to this model, the current price per share (P_0) is the present value of expected dividends discounted at the required rate of return. Investors thus expect firms to pay out a gradually growing dividend stream since in my cases firms will not increase their dividends in the short-run for fear of not being able to maintain the new level of payouts into the future. In this case, it is not unreasonable to argue that dividends will be expected to grow at some rate into the indefinite future, (Van Horne, 2002).

A firm determines the amount of dividends to pay to the shareholders while incorporating the expectations of future dividends growth. Dividends are expected to grow at a constant rate according to the constant dividend model. The existence of uncertainty about the future is sufficient to make the price of a share dependent upon the dividend policy which is followed: and in particular, the more generous is the dividend policy, the higher will be the price of the share. Bitok (2004), found that there was weak relationship between the dividend policy and the value of firms quoted at the Nairobi stock exchange. However, share prices are usually volatile if growth expectations are high and small changes in such expectations will cause wild fluctuations in the share price. A perfect dividend policy is the one that strikes a balance between current dividends and future growth and maximizes the firm's stock price. It is important that firm decides how much is to be retained and how much is to be invested. If a firm is faced with investing in activities with higher internal rate of return compared to cost of equity, earnings should be used to finance such investments. Whatever is left then can be paid out as dividends. Both dividend and growth are desirable and are always in conflict. The dividend constant

model assumes that the investors are rational and risk averse. They prefer certain returns to uncertain returns and therefore put a premium to the certain returns and discount the uncertain returns. Thus, the investors would prefer current dividends and avoid risk. Retained earnings involve risk and so the investor discounts the future dividends. This risk will also affect the stock value of the firm, (Pandey, 2005).

The general economic growth in Kenya has been on an upward trend from 2002 when an opposition political party took over the Government before slowing at the current economic recession. The liberalized business environment enabled many firms to expand their businesses and diversify their products to capture and serve the emerging business opportunities and changing marketing conditions. Year after year, the earnings and dividends of most companies listed at the Nairobi stock exchange have been improving as the gross national product grew. Kioko (2006) established that there was a relationship between dividend changes and a firm's future profitability while Wandeto (2005) found a positive relationship between dividends changes and earnings. The finance managers could have had exercised prudence in the payment of dividends by not immediately increasing the payout ratio in the fear of reducing the dividends in future due to fluctuations in earnings. The firms could instead opt to gradually grow the dividends payable to the shareholders during this period of expected improved earnings. However with inflation, the growth of the gross national product of the country was also affected and in return in companies grew at an average rate.

The dividend discount model is a widely accepted financial tool used to evaluate stocks values based on the net present value of the future dividends. In this study, the model will be tested whether used to decide the future growth in dividends is worth the investment today. The number of investors at the Nairobi stock exchange has significantly increased. The Investors' expectation is to buy a stock that is undervalued and be able to determine the amount of future cash flows to be generated. Using the model, it is very easy to identify growth or income stocks that can prove to be profitable if the investment is made in the present. However, most growth stocks firms would not pay out dividends rather they re-invest earnings into the company with the hopes of providing shareholders with returns by means of a higher share price. This study tested whether the factors as incorporated by the constant dividend model are adopted in the determination of dividend payout to shareholders for companies listed at the NSE.

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1.2 Statement of the Problem

The constant growth model can be used to project share prices, earnings, dividends and annual returns into the future. Gordon (1959) explained the preference for the current income with the bird in hand argument. Since a bird in hand is better than two in the bush, the investors would prefer the income that they earn currently to the income in future which may or may not be available. The determination of the amount of dividends payable is an important decision that companies undertake. Finance managers consider several factors such as legal guidelines, liquidity, restrictions in debt contracts, the stage of company growth, availability of investment opportunities and business cycles to determine the dividends payable. The constant dividend model could be adopted and the extent of application by companies listed at the NSE could be moderate in an attempt to supplement other models when determining the dividends payable.

Assets can be valued by discounting expected dividends future dividends and since most distant dividends present greater uncertainty, share prices tend to lower for firms that pay smaller dividends in the near future, because the discount rate reflects a larger risk and consequently, a smaller present value. Lintner (1956) emphasize relevance of current and past earnings while Miller et al. (1961) analysis of the content of dividends suggest that dividend changes also depends on the managements expectations of future earning. Grullon, et al. (2002) concluded that firms that increase dividends had a significant decrease in systematic risk while firms in which dividends decreased, incurred a significant increase in risk. Graham, et al. (1962) argue that firms should present a high payout ratio because short term dividends present value is superior to the long-term dividends, and because the shares prices of a firm that pays dividends should be superior to a similar firm that does not pay dividends. Barsky, et al. (1993) argue that a small random walk component in the growth rate of dividends, when extrapolated into the future, was capable of reproducing the large swings in US stock prices over the period 1880-1990.

The model has been widely employed in valuations of firms and also to determine the market price shares. However, in this study an attempt to find out whether given the market price of shares a firm would use the model to determine the amount of dividends payable to shareholders. Hence the aim of this study is to test the test the applicability of constant dividend model by companies listed at the Nairobi stock exchange.

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1.3 Objective of the study

The objective of this study is to test the applicability of constant dividend model among companies listed at the Nairobi stock exchange.

1.4 Importance of the study

The study will be of importance to the following groups.

Finance Managers

The study will provide Finance Managers a wider variety of policies that can be adopted to determine the dividends payable to investors. They will also have a better under understanding on the time value of money and dynamics of divided policy.

Investors

Investors will be able to make objective decisions on companies which would give better returns and enable certainty of payments to be achieved. Investors will be knowledgeable on the shareholder wealth maximization and how the dividends could influence the market price of shares.

Financial advisers and Analysts

Financial Analysts will enrich a pool of knowledge that will improve and better financial advisory to their clients. They will guide their clients on the need for firm to retain some of the earnings to investments expansions in future and hence enable the expected growth of rate to be achieved. A fundamental assumption in most of the finance literature is that managers work to maximize the wealth of the firm's present stockholders. Since share price is the critical variable in this wealth maximization framework, this study will assist financial analyst to address the issue of how share price is determined in the market place in their advisory role to the investors.

Government

The study will be of help to the government as major player through receipt of withholding tax on divided and enhance its control and regulating divided payments through the legal framework. The findings of the study are important in the drafting of the rules and new laws affecting dividend practices of companies listed on the NSE.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter analyses the previous research articles on methods of determining dividends payout. The chapter starts with a brief introduction of the constant dividend model and dividends payout and latter looks at the various dividends theories. Further, the dividends policies in practice are reviewed and lastly, the empirical studies and their conclusion.

2.1.1 The constant dividend model

The constant growth model is a variant of the discounted cash flow model, a method for valuing a stock or business. It is used to resolve valuation issues for litigation, tax planning, and business transactions that are currently off market. It is named after Myron J. Gordon, who originally published it in 1959. It assumes that the company issues a dividend that has a current value of D that grows at a constant rate g. It also assumes that the required rate of return for the stock remains constant at k which is equal to the cost of equity for that company. It involves summing the infinite series which gives the value of price current P. Thus, the investors would prefer to pay a higher price for the stocks which earn them current dividend income and would discount those stocks which either postpone/reduce the current income. The discounting will differ depending on the retention rate (percentage of retained earnings) and the time, (Aswath Damodaran, 2006).

The model work best for a mature company that pays a hefty portion of its earnings as dividends, such as a utility company. An increased uncertainty over quality of accounting information could lead to a larger required return on investment K. Doubts regarding optimistic forecasts of a firm's earnings and dividend growth could lead to a lower expected dividend growth rate g. The dividend discount model makes an assumption that that dividends are steady, or grow at a constant rate indefinitely. But even for steady, reliable, utility-type stocks, is it possible to forecast exactly what the dividend payment will be next year or several years later? It forces investors to evaluate different assumptions about growth and future prospects. The challenge is to make the model as applicable to reality as possible, which means using the most reliable assumptions possible, (Aswath Damodaran, 2006).

2.1.2 Dividends payout

Dividend payout is summarised by the following key elements; what fractions of firms earning should be paid out over time on average? What amount should the firm payout as current dividends? Firms are generally free to select the level of dividend they wish to pay to holders of ordinary shares, although factors such as legal requirements, debt covenants and the availability of cash resources impose some limitations on this decision. Most firms tend to maintain a target dividend per share. The profits of firms fluctuate considerably with changes in the business environment. Dividends are increased with a lag after earnings rise only after earnings appear clearly sustainable. Empirical literature has recorded systematic variations in dividend behaviour across firms, countries, time and type of dividend ((Mathur, 1979).

Lintner (1956) found that the primary factor influencing a change in dividend policy was a firm's earning. Brittain (1964, 1966) and Fama et al. (1968) reevaluated Lintner's model. Their results supported Lintner's view that managers prefer paying a stable dividend and are reluctant to increase dividend to a level that the firm cannot sustain. Fama et al. (1968) found that changes in a firm's per share dividend are largely a function of the firm's target dividend payout ratio, current or lagged earnings, and the last period's dividend.

Variations amongst firms are noted, for example, in Fama, et al. (2001). They bring evidence to show that US dividend paying firms tend to be large and profitable, while non-payers are typically small, less profitable but with high investment opportunities.
Variations across countries include La Porta, et al. (2000) who studied the dividend policies of over 4000 firms from 33 countries around the world. It is found that dividend policies vary across legal regimes in a way that is consistent with the idea that dividend payment is the outcome of effective pressure by minority shareholders to limit agency behaviour. Thus firms in common law countries with good legal protection of investors tend to have higher payout ratios compared with firms in countries with weaker legal protection. This is consistent with Allen et al. (1995), who note that firms in the US, had payout ratios of around 60 percent during the 1980s and early 1990s. However during the same period, Glen, et a. (1995) observed a payout ratio of only about 40 percent, for a composite of emerging markets' firms.

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Time trends in dividend behaviour is investigated by Fama et al. (2001), who found that the percentage of US firms that pay dividends fell from 66.5 in 1978 to 20.8 percent in 1999. The study also describes a declining trend in the propensity to pay dividend by US corporations in the time period from the late 1970s to the late 1990s. Likewise DeAngelo, et al. (2000) look at time trends in the type of dividends paid by US firms. They find that special dividends have gradually disappeared in the period from the 1940s to the 1990s although incidences of very large special dividends have increased. In light of the freedom over dividend policy and the observed variations across firms, countries, time and type of dividends, the question of how dividend policy is determined has been the subject of many studies. This question is often referred to as the dividend puzzle, and the debate is generally believed to have been initiated by Miller's et al. (1961) irrelevancy theory. Miller et al. (1961) show that in a perfect capital market with rational behaviour, perfect certainty with investment and borrowing decisions given, dividend policy has no effect on the value of the firm.

2.2 Dividend theories

This section reviews the various dividend theories that have been advanced to explain the payment of dividends by firms. The decision to pay out earnings or retain dividends has been a subject of debate for many scholars. The effect of dividend on the firm value and cost of capital have been covered in attempt to resolve the dividend puzzle.

2.2.1 Dividend irrelevance theory

Miller et al. (1961) argued that dividend policy has no effect on either the value of a firm or its cost of capital. MM stated that dividend policy is irrelevant and that the value of the firm is determined by its basic earnings power (cash flows) and its risk class (cost of capital).The manner in which the earnings and dividend is split does not affect its value. MM started the whole controversy by challenging the prevailing view on dividend policy. They showed that under perfect market conditions, a firm's value is decided by its investments and not on dividends. MM demonstrated that under the particular set of assumptions, if a firm pays high dividends then it might have to issue new stocks to new investors and the share of the value the company gives up to the new investors is exactly equal to the dividends payable. MM argued further that investors are able to replicate and dividend stream that a firm is able to pay. If dividends are lower than desired an investor can simply sell some of the shares of stock and obtain the desired cash distribution.

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However if the dividend are higher, an investor can use the excess dividends to purchase additional shares in the company. Investors are able to manufacture home made dividends which are perfect substitutes for corporate dividends. For a corporate decision to have value the firm must be able to do something for the shareholders that they are unable to do for them selves. Since investors can manufacture home made dividends which are perfect substitutes of corporate dividends, then dividend policy is irrelevant.

A more radical MM view suggests that in view of the differential taxation of dividends and capital gains, dividends will reduce the firm's value as they are taxed at a higher rate. The dividend irrelevancy argument of MM assumes a world of perfect capital markets. Given the assumptions used by MM, it is very hard to dispute their claim. MM's position was a direct challenge to the traditional view, which held that high payout ratios tend to increase the value of the firm. The MM position can be challenged using evidence of market imperfections or inefficiencies. Taxes and transaction costs, however, might drive one to the conclusion that dividends may actually decrease value. Other imperfections such as the existence of a special clientele who prefer high-payout stocks or dividends as purveyor of valuable information about future prospects do make a case for the relevance of dividends.

2.2.2 Information Content or Signaling Theory

Stephen Ross, (1977) observed that there is a strong association between dividend payment and share prices. The theory states that investors regard dividends as signals of managements forecast earnings. If for instance investors expect a company's dividend to increase by 5%, then the stock price generally will not change significantly on the day the dividend increase is announced. If however, investors expect an increase of 10% but the company actually increases the dividend by 20%, this generally would be accompanied by an increase in stock price. Conversely, a less than expected dividend increase, or a reduction, generally would result in a price decline. It is well known that firms are usually reluctant to cut dividends and therefore managers do not raise dividends unless they anticipate higher or at least stable earnings in the future to sustain higher dividends. This therefore means that a larger than expected dividend increase is taken by investors as a signal that the firm's management forecast improved earnings in the future, whereas a dividend reduction signals a forecast of poor earnings. Thus it can be argued that investors' reaction to changes in dividend payments do not show that investors prefer

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dividends to retained earnings, rather, the stock price changes simply indicate important information is contained in the dividend announcements, in effect dividend announcements provide investors with information previously only known to management. MM argued that investors reaction to a change in dividend policy does not necessarily show that investors prefer dividends to capital gains, rather the fact a price change follows a dividend action simply indicates that there is important information or signaling content in the dividend announcement.

2.2.3 Bird in Hand Theory

Gordon and Lintner (1963) concluded that investors prefer to receive dividends today rather than wait for capital gains. They argue that current dividends are certain and resolve uncertainty in the investors mind about the future. Because investors are risk averse preferring current to future dividends, near dividends are therefore discounted at a lower rate in comparison to future dividends. Because of this, equity costs reduce with high payout ratios. The stock prices increases as shareholders get more dividends in cash as they view the stock as attractive thus lowering the cost of capital while increasing the value of common stock.

2.2.4 Tax Differential Theory

Investors would prefer not to receive dividends now to avoid paying immediate taxes. They would prefer reinvesting them in the corporation which would result in a future capital gain on the stock price as the value of the stock increases. Litzenberger et al. (1979) argue that investors have to pay taxes on dividends received and capital gains realized. Capital gains tax rate is lower than ordinary income tax rate and capital gains tax is payable when the gain is realized. Hence from the taxation viewpoint, investors should prefer capital gains to dividends. The value of a firm with a low pay out ratio should therefore be higher than the one with a higher pay out ratio. Due to this Litzenberger and Ramaswamy argued that M M's assumption that taxes do not exist is far from reality. Higher dividend payouts are desirable and hence, higher returns must be promised to attract investors to such stocks. In this theory it is assumed that taxes on cash dividends are higher than those on capital gains. The stock price will be more attractive if less cash dividends are paid.

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2.2.5 Clientele Effect

Petit (1972) used quarterly dividend announcements to test their accuracy in predicting firm's future earnings. He sampled 625 NYSE firms and found clear support for the hypothesis that dividends announcement provide investors with information. Thus there is a tendency of a firm to attract the type of investor who likes its dividend policy. For instance stockholders such as retired individuals prefer current dividends to future capital gains, so they require a firm to pay out a higher percentage of its earnings. Other stockholders (especially young investors) have no need for current income hence prefer a low pay out ratio since they prefer to receive their earnings in future. If investors could not invest in companies with different dividend policies, it might be very expensive for them to achieve their investment goals. Investors who prefer capital gains could reinvest any dividends they receive, but first they would have to pay taxes on the income. In essence, then, a clientele effect might exist if stockholders are attracted to companies because they have particular dividend policies. Consequently, we would expect the stock price of a firm to change if the firm changes its dividend policy because investors will adjust their portfolios to include firms with the desired dividend policy. In response to this MM argued that one client is as good as any other and the existence of clientele effect does not suggest that one dividend policy is better than any other policy. In absence of market imperfections, the switching is quite healthy as a firm would attract some and loose other investors.

2.2.6 Disposition Theory

Shefrin et al. (1985) predicted that because investors dislike incurring losses much more than they enjoy making gains, they will gamble in the domain of losses. Investors are thus reluctant to sell their shares because they will experience regret if the stock subsequently rises in price. They hold onto stocks that have lost value (relative to the reference point of their purchase) and will be eager to sell stocks that have risen in value A second argument was at that although many investors are willing to consume out of dividend income they are unwilling to "dip into capital" to do so. Dividend and sales of stock are not perfect substitutes for these investors. For behavioral reasons, then, certain investors prefer dividends. Whether they are numerous enough to make a question is the question.

2.3 Dividend Policies in Practice

A dividend policy is the plan of action adopted by the firm's directors whenever there is a decision to be made. It determines the divisions of earnings between earnings between dividend payment to shareholders and reinvestment of cash to be done. Firms design policies that are believed enable them achieve their various goals. The main approaches include: residual, stable predictable, constant payout or low regular plus extra policy. Dividend policies assist to resolve a firm attempt to maintain a steady, stable dividend growth pattern or vary dividend payment from period to period and from year to year depending on the cash flows and the financing requirements.

2.3.1 Residual Policy

This is a policy in which the dividend payment is set equal to the actual retained earnings available less the amount of retained earnings necessary to finance the firm's optimal capital budget. Companies using the residual dividend policy choose to rely on internally generated equity to finance any new projects. Myers (1984) argued that firms will only pay dividends from residual earnings. The policy is particularly suited to growth companies with enormous profitable investments. The policy states that dividends should only be paid out of free cash flows. The justification of the policy is that investors would prefer to have the firm retain and re-invest rather than pay them out of dividend so long as the return earned on the re-invested earnings exceed their required rate of return. As a result, dividend payments can come out of the residual or leftover equity only after all project capital requirements are met. These companies usually attempt to maintain balance in their debt/equity ratios before making any dividend distributions, which demonstrates that such a company decides upon dividends only if there is enough money leftover after all operating and expansion expenses are met. According to this policy dividend would thus fluctuate from period to period. This would create uncertainty to investors and as a result the cost of capital may increase, (Pandey 2005).

2.3.2 Constant pay out policy

This policy involves payment of a certain constant percentage of earnings to the shareholders in each dividend period. Earnings fluctuate from period to period and thus this policy imply that dividend per share will also fluctuate. The problem with the policy is that if the firm's earnings drop or if a loss occurs in a given period .the dividends may be low or even nonexistent and would cause uncertainty to the investors.

2.3.3 Stable or predictable policy

This policy involves payment of a specific amount of dividend par share each year or periodically increasing the dividends at a constant rate. This makes dividends predictable by investors and reduces uncertainty and to provide them with income. Most firms prefer reasonably stable dividends policies. If management is convinced that the new level of earnings is permanent then, an increase in the amount of dividend can be made.

2.3.4 Low regular plus extra policy.

Low regular plus extra policy involves payment of low regular dividends plus year end extras in good years. It is a policy based on paying a low regular dividend, supplemented by an additional dividend when earnings are higher than normal in a given period. The policy gives a firm flexibility as it can set the low regular dividends at levels which can be sustained even in a loss making years. By establishing a low regular dividend that is paid each period, the firm gives investors the stable income necessary to build confidence in the firm and the extra dividend permits them to share in the earnings from an especially good period. Investors are however assured of receiving at least minimal dividends hence reduce uncertainty. This policy is common among companies that experience cyclical shifts in earnings and whose cash flows are quite volatile (Mathur, 1979).

2.4 Empirical studies

Gordon (1959) stated that investors believe future capital gains to be more uncertain than dividends, having therefore lower present value than dividends. However, there were limitations of such dividend policy: investors do not like reductions in dividend payments, companies need enough cash to pay out dividends, good investment opportunities reduce possibilities to pay out dividends. Lintner (1956) based on findings from field investigations set up a theoretical model of corporate dividend behavior and tested its adequacy and reliability. He found managers to give serious consideration to perceptions of shareholders and only change dividend rate after they were convinced that such change was positively desirable by shareholders. Question of dividend payment was only addressed together with analysis of the existing dividend rate. Similarly to findings of Gordon Lintner concluded that most managers believed shareholders prefer a reasonably stable rate, which is reflected in the stock price premium on stability or gradual growth in dividend rate.

Fernandez, et.al (1999) concluded that dividends are relevant in explaining share market value, which leads authors to believe that investors consider dividends to be a sign about firm's future economic prospects. This work was based on a sample of non-financial firms listed on the London stock exchange in the period between 1991 and 1996, resulting in a total of 4,752 observations. The authors reached the following conclusions. First, the lower the earnings level, the more sensitive firms are to dividends. Second, dividends policy is sensitive to firms' size, because the smaller the firm, the higher the expectations are regarding future earnings. Third, dividends are more important when their increase is followed by a decrease in operational income, and they are less relevant when their decrease is followed by earning increases, since the expectations regarding future prospects are partially advanced by positive earning changes and lastly dividends have higher relevance when their absolute increase is followed by an increase in the payout ratio, because in this way investors believe investment opportunities would not be diminished. The results are consistent with dividend content information hypothesis, since in accordance with this hypothesis, a dividend decrease announcement may be a pessimist message transmitted by firms' managers regarding the expectations of future prospects.

Baker, et.al (1985) and Farrelly et.al (1986) surveyed chief financial officers (CFOs) of NYSE firms from three industry groups (utilities, manufacturing, and wholesale/retail) to identify the major determinants of corporate dividend policy. Their evidence shows that the most important factors are the anticipated level of future earnings, the pattern of past dividends, the availability of cash, and the desire to maintain or increase the stock price. Similar to the findings of Lintner (1956), they report that firms try to avoid changing dividend rates that might soon need to be reversed, maintain an uninterrupted record of dividend payments, have a target payout ratio, and periodically adjust the payout toward the target. Respondents show strong agreement that dividends provide a signaling device and the market uses dividend announcements to help value firm stocks.

Robbins et.al (1972), in their surveys of multi national corporation firm practice found that the age and size of business has a bearing on affiliate dividend practice. Older affiliates provide a greater share of their earnings to the parent presumably because as the affiliate matures, it has lessened investment opportunities while at the same marginal rates elsewhere in the world in newer locations are greater. Brealey et al. (1991) concluded that managers have long- term payout ratio. Managers focus more on dividend changes than on absolute levels, smooth dividends and reluctant to make dividends that might have to be reversed later. Glen et al. (1995) study the dividend policy of firms in emerging market and found substantial differences in dividend policies of companies in developed and emerging markets. They show that dividend payments are much lower in emerging markets and companies follow less stable dividend policies, although they do have target payout ratios.

Lee, et al. (1999) assessed whether there is long-term relationship between various definitions of earnings and dividends. The study utilized a bivariate time-series model of earnings and dividend obtained from annual observations on the Standard & Poor's Index for the period 1871 to 1992. The model is sufficiently general to allow various specification of target dividend to be nested within it. These restrictions are then tested, taking into account the non-stationarity of the dividend and earnings series and the co-integration between them. The results indicate that dividend behaviour is determined primarily by changes in permanent earnings and that the Lintner model performs better when the target payout ratio is a function of permanent rather than current earnings. This is supportive of the signalling hypothesis in the sense that current earnings are not a good

indicator of the long-term financial position, hence managers utilize dividends to signal this position.

Marsh, et al. (1987) studied an aggregate stock market dividend process using 55 years of aggregate data and economic earnings. They found that market prices adequately reflect permanent earnings. Managers systematically change the dividend payout following unexpected changes in permanent earnings by partially adjusting dividend levels. Bhat, et.al (1994), on the basis of a survey of managers perspective about dividend payment and retention, claim that dividends depends on current and expected earnings as well as the patterns of past dividends. They also documented that dividends helps in signaling the future prospects of the firm and dividends are paid even if the firm has profitable investment opportunity.

Lintner (1956) carried out a series of interviews with the managers of 28 US Industrial firms about their firms' dividend policies in the 7 years from 1947 to 1953.From the survey it emerged that firms tend to establish dividend policies with target payout ratios that are applied to current earnings. He also reported that although the target payout ratios and speed of adjustments vary across firms, in most cases they stay reasonably stable over time. He further noted that companies moved to a target dividend level (based on a percentage of earnings) over a period of three years. He explained this caution in terms of managers' unwillingness to cut dividends paid to investors. The dependent variable in the decision making process according to the study was the change in existing rate and not the amount of the newly established rate as such. Based on his findings, Lintner (1956) developed the partial adjustment model of the change in the dividend level from the previous to the current period. The rationale of the model is that dividends depends on current net income and are constrained by past dividends because of reluctance to cut dividends or to raise them to a higher level which may not be maintained. The model reflect management's belief that investors dislike erratic patterns in dividend levels and hence the emphasis is on the change from the previous actual level.

Grullon, et.al (2002) analyzed the reaction between dividend policy changes and a firm's dividend risk and growth. Their main goal was to relate dividend policy changes with a firm's lifecycle. The authors found evidence that dividend increases suggest that firms are in a transition between phase between the growth and the maturity phase, since in the

latter, investments opportunities start to reduce as well as the level of required resources, thus allowing higher cash flow, which could be used for dividend payments. Supporting their work on the capital asset pricing model, they concluded that firms that increase dividends had a significant decrease in systematic risk while firms in which dividends decreased, incurred a significant increase in risk. Black [1976] posed the question, "Why do corporations pay dividends?" In addition, he posed a second question, "Why do investors pay attention to dividends?" Although, the answers to these questions may appear obvious, he concluded that they are not. The harder we try to explain the phenomenon, the more it seems like a puzzle, with pieces that just do not fit together. After over two decades since Black's paper, the dividend puzzle persists.

Bernstein (1998) expresses concern over the decline in payout over a period of time In the US market. He observes given the concocted earning estimates provided by firms the low dividend payout induces reinvestment risk and earning risks for investors. He asserts by trying to calculate the historical correlation between payout ratios in the year t and earnings growth over t+5.the correlation is positive and statistically significant. Patsouratis (1989) provided empirical results that showed that earnings are a more influential factor than prior year dividend in determining current period changes in dividends. The decision to pay dividends starts with profits. Therefore, it is logical to consider profitability as a threshold factor, and the level of profitability as one of the most important factors that may influence firms' dividend decisions. Mahapatra, et.al (1993) do not find any evidence in support Lintner's model who found that both earning and lagged dividends positively influence current divided. De Angelo, et.al (1992) analyses the relationship between dividends and losses and the information conveyed by dividend as about the earning performance. They examined the dividend behaviour of 167 NYSE firms with at least one annual loss during 1980-1985 and those with no losses during the same period, were all the firms had a consistent track record of 10 or more years of positive earning and dividends. They find out that 59% of the 107 firms with at least one loss during 1980- 95 reduced dividends compared to 1% of the 440 firms without losses. Their finding support signaling hypothesis in that dividends change would improve the ability to predict future year's performance. Pruitt and Gitman (1991) find that risk (year to year variability of earnings) also determine the firms' dividend policy. A firm that has relatively stable earnings is often able to predict approximately what its future earning will be. Such a firm is more likely to pay a higher percentage

Bernartzi, et al. (1997) analyzed the issue of whether dividend signals the future or the past and found that changes in dividend across stocks are not strong forecasters of cross-sectional differences in future earning growth. Benartzi, et al. (1997) take an empirical approach of comparing the unexpected earnings of firms that changed their dividends with those that did not. The sample contained 7186 firm-year observations of 1025 US firms that trade on the NYSE or the AMEX for at least two years during the period 1979 to 1991 and which meet various other requirements. The hypothesis is that firms that increase their dividends in a given year should enjoy positive unexpected earnings in years that follow. Similarly, firms that decrease their dividends in a given year should experience negative unexpected earnings in years that follow Benartzi, et al. (1997) also investigate variation in the unexpected earnings across dividends increasing firms. The hypothesis is that if signaling is costly, then the larger the dividend-increase, the greater should the unexpected earnings in the following year. Results in Benartzi, et al. (1997) show a strong contemporaneous correlation between dividend changes and earnings changes. Firms that increase their dividends in year 0, experience earnings increases in that year, which are significantly higher than the mean earnings change of the group of firms that did not change their dividends. Similarly, firms decreasing their dividends, experience significantly more severe earnings decreases in the same year compared with the group of firms that did not change their dividends. However contrary to the signalling hypothesis no correlation is found between the sign and size of dividend increases in a given year and earnings changes in future years. Furthermore firms that cut dividends in a given year, experience significant earnings increases in the following year.

Karanja (1987) studied dividend practices of publicly quoted companies in Kenya by collecting data through a questionnaire and obtained information about the kind of dividend policies managers of the quoted companies pursued. He found three factors to be the most important determinants of dividend policy i.e. cash and liquidity, current and prospective and company level of distributable resource. He also found that dividend policy is also influenced by the attitude of the board of directors though he concluded that companies followed a stable dividend payout ratio. Abdul (1993) in her study "an empirical study to identify parameters which are important in the determination of dividends by publicly quoted Companies" concluded that liquidity is the most important factor in determining dividends. Njoroge (2001), in his study "a study on dividend policies growth in assets, return on assets and return on equity at the Nairobi stock

exchange", found that both Return on Equity and return on assets are positively related to the payout ratio and that growth in assets is not significant in determining the level of dividend. Bitok (2004) studied 'the effect of dividend policy on the value of the firms quoted at the NSE. According to his finding of the study, dividend policy is irrelevant thus implying that an optimal dividend policy exists. However, the relationship between dividend policy and the value for the firm quoted at the NSE is weak implying there are other factors (investment and financing) other than dividend policy that affect the value for the firm. Tiriongo (2004), in the study dividend policy practices in the companies listed at the NSE, noted that there was a general declining trend of dividend payment pattern attributed to numbers of factors dwindling company profits and economic performance that were associated with Financial liberalization. Wandeto (2005), in his study an empirical investigation of the relationship between dividend changes and earnings, found by using a simple regression model, that there was a strong positive relationship between dividend par share and earning per share with a correlation coefficient of 25.3% and concluded that dividend change is most sensitive to earning .

Mundi (2006) In his study the relationship between earning per share and dividend per share of equities for companies listed at the NSE. The findings of the study reveal that there is a significant relationship between earning per share and dividend per share. Muchiri (2006), Determinants of dividend payout; the case of listed companies in Kenya" concluded that the most important factor in dividend policy was the company's current and future profitability. Other factors considered were the cash flow position, the immediate financial needs and the availability of profitable investments. Kioko (2006) researched on an analysis of the relationship between dividend changes and future profitability of companies quoted at the NSE and established that at least in the year of dividend change there existed a relationship between dividend changes & future profitability. However, for the 1st and 2nd year after dividend what was observed was that though a relationship exists, it was very insignificant.

2.5 Conclusions from empirical studies

Traditional approach to dividend policy concludes companies distribute as much of net income as possible in the form of cash dividends, since investors prefer dividends to future capital gains. Gordon (1962) explained the preference for the current income with the bird in hand argument. Since a bird in hand is better than two in the bush, the investors would prefer the income that they earn currently to the income in future which may or may not be available and are less risky. Dividends can give investors a sense of what a company is really worth, Gordon, (1962). Pruitt and Gitman (1991) from their survey of finance managers suggest that factors such as current and past years' profits, the year-to-year variability of earnings, the growth rate of earnings, and prior years' dividends are important influences on the amount of dividends paid. These finding are consistent with Lintner's (1956) behavioral model. The survey of corporate managers studies by Baker, et al. (1985) and Farrelly, et al. (1986) concluded that the major determinants of dividend payments are the anticipated level of future earnings and the pattern of past dividends.

The conclusions of the empirical studies show the relationship between the impact of the current income, the growth of dividends paid to investors and the effect of stock price on dividend payment. current dividend payments reduce investor's uncertainty, causing investors to discount the firm's earnings at lower rate of return to equity while dividend reduction increase investors uncertainty raising the required rate of return .This study tried to establish whether the model as applied in developed countries was relevant in developing country using local data in dividend payout by companies listed on the Nairobi stock exchange. The study further tried to establish the relevant of constant dividend model to establish the dividends payout.

The study differs from the reviewed studies in that it seeks to establish whether the dividend constant model can be used to explain the various dividend policies by the companies at the Nairobi stock exchange. The model has extensively been used to assist in share pricing and business valuation but in this study it will be used to explain the dividend policies.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology that was adopted in order to achieve the research objective. It discusses the research design and the population of the study. The section further addresses the how the data for the study was collected and how the analysis was carried out

3.2 Research design

A survey design was applied in this research study. This design involves collecting data for all members of the population. The design was also used by Muchiri (2006) who carried out a survey for all companies listed at the Nairobi stock exchange on the determinants of dividend payout.

3.3 Population of the study

The population of the study was a census of all the 20 companies quoted at the Nairobi Stock Exchange that paid dividends consistently from December 2002 to 2008. The Nairobi Stock Exchange was preferred since information was readily available for all listed firms. In addition, the 7-year period was deemed adequate to enable sufficient analysis and conclusions to be drawn of the firms and was also guided by the time period when Lintner (1956) conducted his research.

3.4 Data collection.

This research employed secondary data mainly from financial statements of all the 20 firms that paid dividends consistency from December 2002 to 2008 and the Nairobi Stock Exchange yearly guide manuals. Share prices was be obtained from the daily pricelist schedules circulated by the Nairobi stock exchange hard books

3.5 Data analysis.

The data was analyzed using the constant Dividend model.

According to Gordon (1959) expected share price is expressed as follows as a function of the dividend in year one hence (D1), shareholders' expected rate or return (k), and the long-term growth rate of dividends (g). The model assumes that dividends, earnings, and stock values grow at the same constant rate.

$$P_s = \frac{D_0(1+g)}{k-g}$$

The analysis was done by done by re-computing dividends for all the companies for the seven year period that consistently paid dividends December 2002 to 2008.

The equation used for data analysis was:

$D_1 = P_0 * (K_e - g)$

Where

D_1 represents the dividend paid in the following year

P_0 the current share price

g: the dividend growth rate

K_e the required rate of return on a stock

The require rate of return was obtained using the equation:

$K_e = \dfrac{\text{Profit after tax}}{\text{Equity}}$

The end year Stock prices were obtained from NSE hard book 2007, company's financial statement and daily stock pricelist schedules circulated by Nairobi stock exchange.

g was estimated using the equation: (1 – payout ratio) * Return on equity

The complete analysis of the data was done using Microsoft excel. Paired sample t-test statistic was used to determine whether there is a significant difference between the dividend paid and the figures observed from the computations.

DATA ANALYSIS AND RESEARCH FINDINGS

4.0 Introduction

This chapter outlines the analysis done to enable achieve the objective of the study. Dividends were recomputed for each of the companies of the study to obtain the dividends that ought to have been paid if the constant dividend was applied were recomputed. The re-computed dividends and the dividend per share were plotted on a graph against the years of the study. The trend of the dividends was then established.

4.1 Statistics analysis

Statistics analysis was employed to do analysis for the 20 companies of study for the seven years.

Table1: Bamburi Cement Company Limited

Item	Bamburi Cement Company Limited								average
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	13%	10%	18%	19%	20%	25%	19%		18%
Growth rate	0%	0%	-5%	2%	5%	10%	6%		3%
Payout	104%	95%	129%	89%	76%	61%	68%		89%
DPS	3.50	2.80	6.12	5.30	5.50	6.00	6.00		5.03
Computed dividends		5.78	12.00	22.29	23.86	33.47	29.99	21.65	21.23

The average dividend growth rate for Bamburi during the period of study was 3 percent while the payout rate was 89 percent. The recomputed dividends showed an increase of amounts paid for year 2002 to 2007. The dividend model forecast the dividend payable for 2009 at Kes. 21.65 which is fairly high compared to the dividend paid in 2008. Appendix II (t calculated = 4.03) lie extreme of t $_{critical}$ 2.57 indicating that the difference between the dividends as per payout and recomputed figures are significantly different. However the Pearson correlation is positively correlated indicating that the dividends comparisons move in the same direction.

A graph of the trend of dividend per share and recomputed dividend for Bamburi.

Bamburi Cement
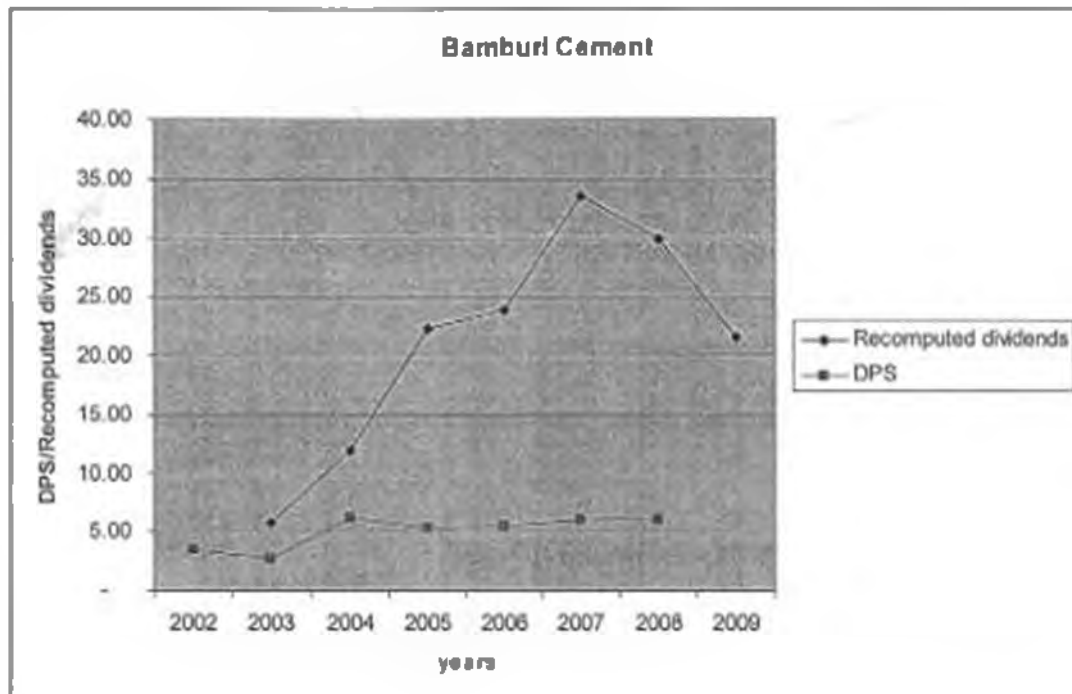
Appendix III: shows Paired sample t-test statistic for Bamburi for the difference between the dividend per share and recomputed figures. With a standard deviation of 9.73 the distribution is negatively skewed showing investors have a greater chance of extremely negative outcomes. At 95% confidence level mean dividend range is 5.7 to 26.1. However, the dividend per share lies outside this range

Table2: Barclays Bank of Kenya Limited

Item	Barclays Bank of Kenya Limited								average
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	18%	31%	30%	28%	30%	28%	27%		27%
Growth rate	1%	5%	7%	12%	15%	15%	16%		10%
Payout	93%	85%	77%	58%	50%	46%	40%		64%
DPS	9	14	14	14	16.5	16.5	20		14.86
computed dividend		16.85	72.44	45.73	43.24	11.60	10.12	5.45	33.33

Barclays Bank of Kenya Limited had an average growth rate of 10 percent and the dividend per share was also fairly stable and from Kes 9 in 2002 to Kes. 20 in 2008. However the recomputed dividend forecast for 2009 shows a sharp decline to Kes 5.45 and this is not inline with the upward dividend growth rate trend.

Appendix II Pearson correlation is -0.57 showing that the as the dividend per share increases the recomputed dividend figure decreased.
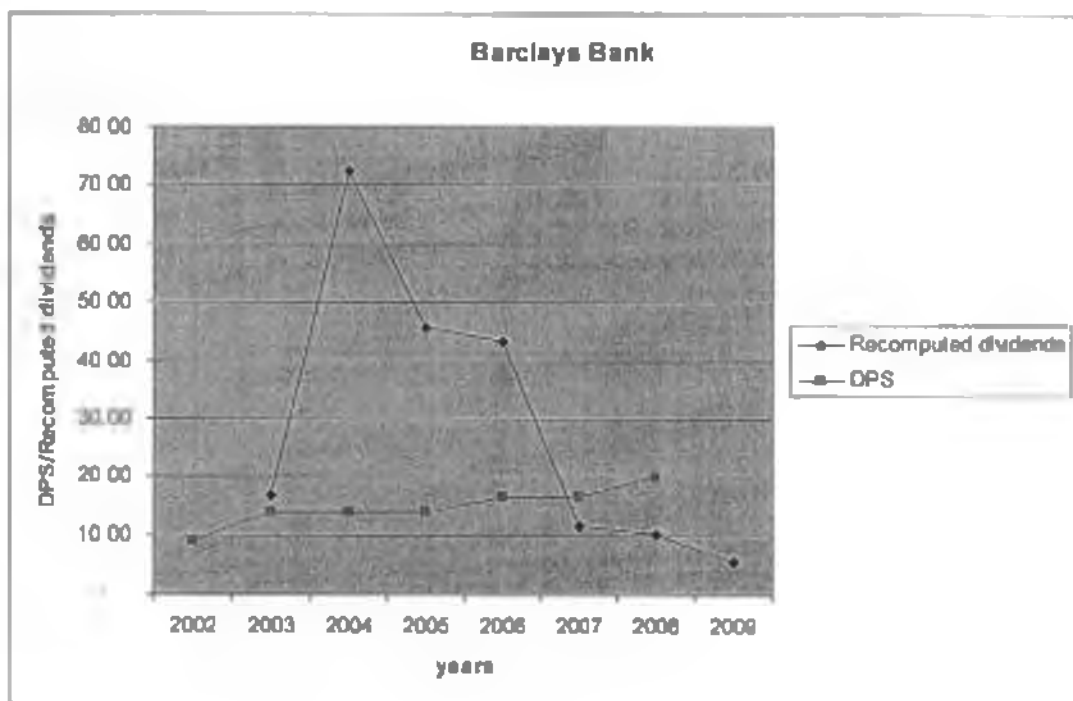
Appendix III shows Barclays is positively skewed and the degree of peak in the distribution for the kurtosis is 0.6 indicating that the tails are flatter and greater risk of extreme outcomes.

Table3: British American Tobacco Kenya Limited.

Item	British American Tobacco Kenya Limited								average
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	20%	27%	32%	36%	29%	30%	35%		30%
Growth rate	-2%	-3%	-12%	3%	0%	-7%	0%		-3%
Payout	109%	110%	136%	90%	100%	123%	100%		110%
DPS	9	12.5	16.5	12.5	12	17	17		13.79
Computed dividend		11.82	82.13	87.76	65.50	56.38	50.35	45.50	57.06

The payout percentage for British American tobacco Kenya limited for the period of the study averaged 110 percent indicated no earnings were sufficiently retained. This is also supported by the negative dividend growth rate. The dividend per share remains constant at least with two years but is adjusted in the following year. The recomputed dividend mean is Kes. 57.06 indicating the dividend payable in 2009 will be Kes. 57.06 which is greater than the Kes 17 paid in 2008 by the company. Appendix II (t calculated = 4.01) is higher than the t critical 2.57 indicating that there is a significance difference between dividend per share and the recomputed dividend. Appendix III The Pearson correlation coefficient is positively weak by 0.1 indicating that there is a slight increase in dividend per share as the recomputed dividend increases.

British American Tobacco Kenya Limited
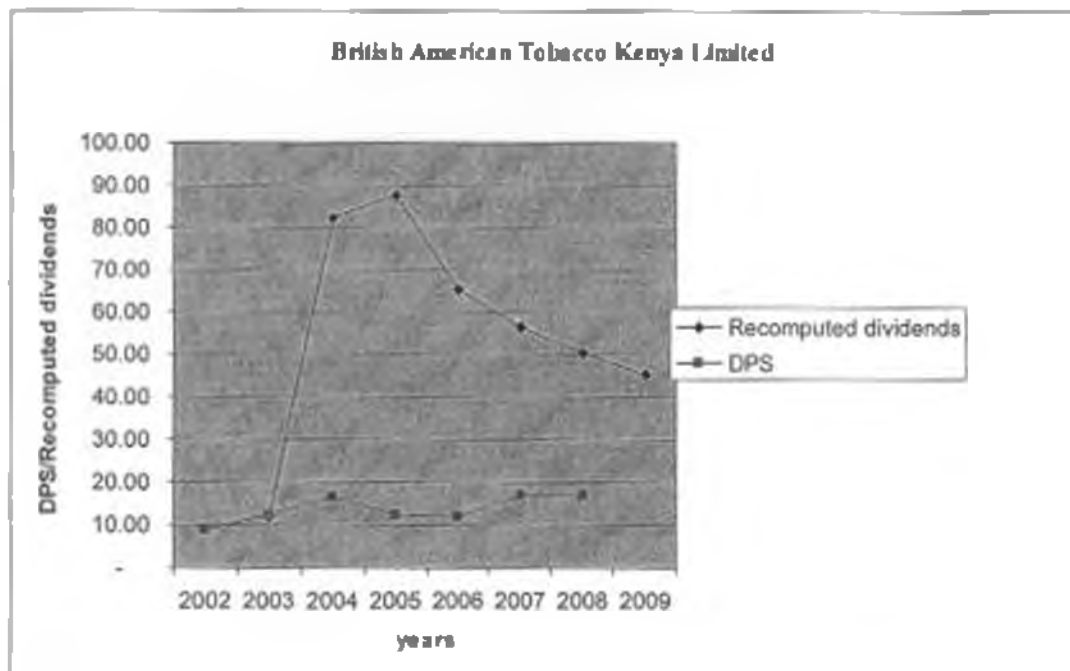
Table 4: CFC Stanbic Limited

| | CFC Stanbic Bank | | | | | | | | |
Item	2002	2003	2004	2005	2006	2007	2008	2009	average
Cost of Equity	9%	13%	11%	14%	17%	15%	4%		12%
Growth rate	6%	10%	9%	11%	12%	9%	4%		9%
Payout	36%	24%	18%	24%	29%	38%	14%		26%
DPS	0.67	0.84	0.84	0.84	1.75	1.9	0.5		1.05
Computed dividend		0.31	1.06	1.21	2.47	4.33	7.63	0.38	2.48

The average cost of equity is 12 Percent while the dividend growth rate is 9 percent. This growth rate is reasonably stable as it is less than the cost of equity. The average dividend per share was Kes 1.05 while the recomputed figure for dividends stood at Kes 2.48. The kurtosis for CFC Stanbic analysis is above 3 indicating it is a leptokurtic distribution hence could yield higher dividends at increased risk. The two dividends distributions are strongly positively skewed at 1.86 hence indicating a strong association.

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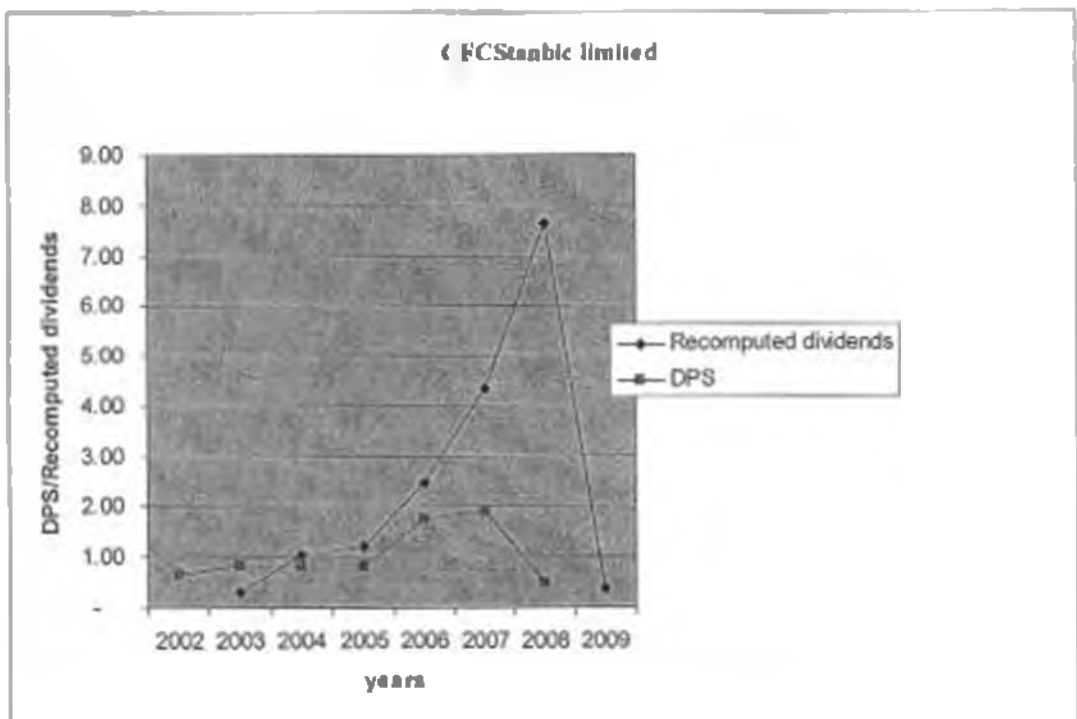
Table 5: City trust limited

Item	City trust limited								average
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	3%	3%	5%	7%	8%	16%	14%		8%
Growth rate	-1%	-1%	-7%	1%	2%	7%	13%		2%
Payout	156%	136%	237%	90%	78%	57%	8%		109%
DPS	2	2.25	6.25	2.75	3.1	3.75	0.5		2.94
Computed dividend		0.72	0.97	0.84	3.43	3.87	12.33	1.5	3.81

City trust limited had a low dividend growth rate due to a payout ratio that is greater than the earnings up to the year 2004. This rate was however reduced from 2005 and a positive dividend growth rate was achieved. The dividend per share also had a swing in 2004 before stabilizing from 2005. The computed dividend trend was affected by the high payout ratio in the early years of study. The dividend forecast by the constant model is Kes. 1.5. Appendix II (t $_{calculated}$ = 0.46) is lower higher than the t $_{critical}$ 2.57 indicating there is no significance dividends between the dividend per share and the recomputed dividends.
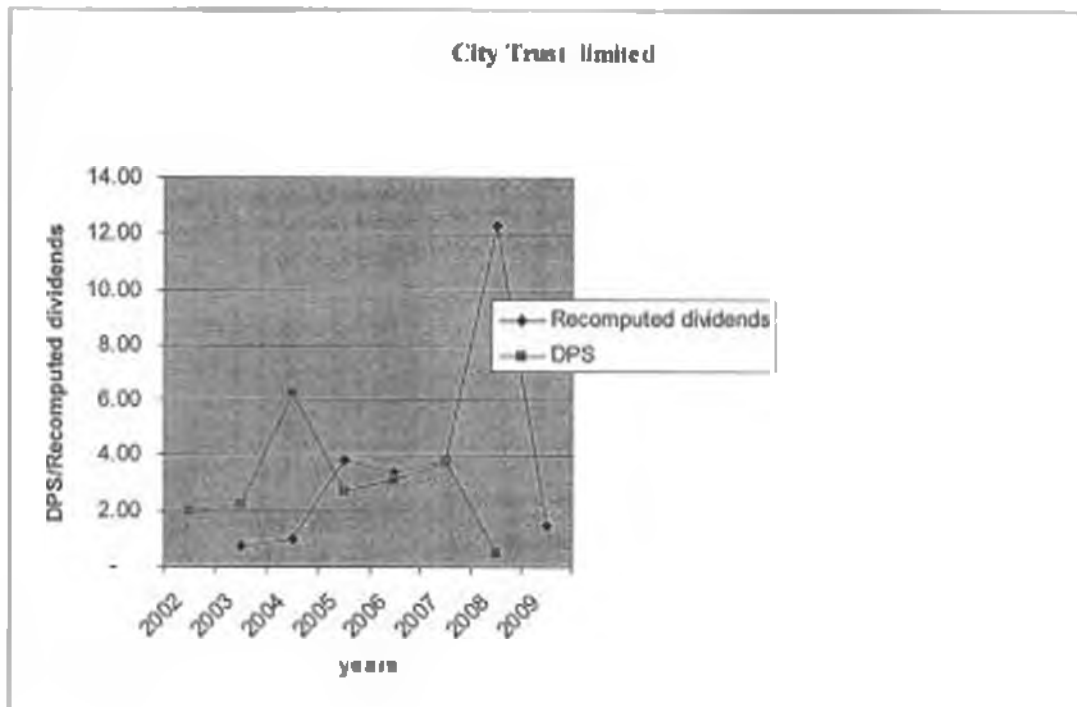
Table 6: CMC Holdings Limited

Item	CMC Holdings Limited								average
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	7%	8%	10%	11%	12%	15%	19%		12%
Growth rate	6%	7%	8%	9%	9%	10%	14%		9%
Payout	63%	50%	42%	30%	29%	33%	22%		38%
DPS	1	1	1	1.5	2.3	4.2	5.4		2.34
Computed dividend		0.19	0.72	0.98	1.13	3.75	11.57	15.35	4.81

CMC Holdings Limited maintained an average of 38 percent payout over the period of the study. The dividend growth rate averaged at 9 percent a rate lower than the required rate of return on equity. Both the dividend per share and the re-computed dividends have steadily been growing in line with the growth rate. Appendix II paired T test indicated that CMC Holdings had a strong positive Pearson correlation of 0.9 implying the strong association of the two dividend data distribution.

CMC Holdings Limited
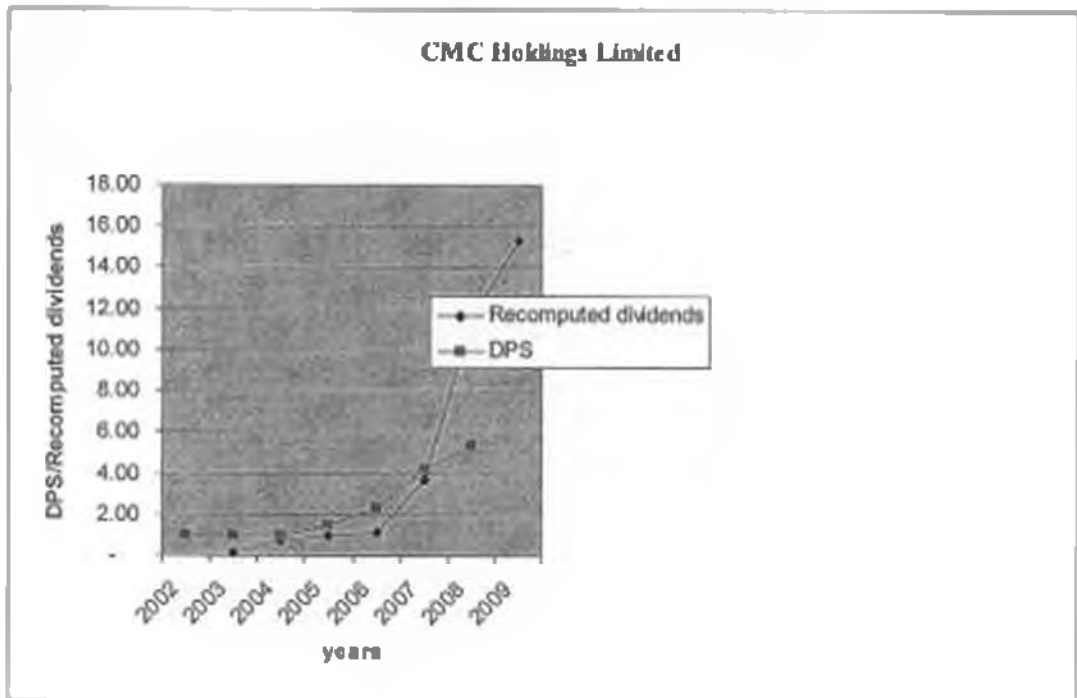
Table 7: Diamond Trust Bank (Kenya) Limited

| Item | Diamond Trust Bank (Kenya) Limited | | | | | | | | |
	2002	2003	2004	2005	2006	2007	2008	2009	average
Cost of Equity	6%	10%	11%	18%	17%	14%	16%		13%
Growth rate	2%	5%	7%	13%	12%	9%	12%		9%
Payout	54%	109%	51%	62%	72%	83%	85%		74%
DPS	0.6	0.7	0.7	0.7	1	1.4	1.4		0.95
Computed dividend		0.38	1.44	1.36	1.70	3.53	4.21	2.45	2.15

The company has a mean growth rate of 9 percent and the dividend per share has grown to average of Kes 0.95 for the period of study. This is in line with the dividend model assumption that a firm pays out a gradually growing dividend stream and for this case almost three quarter of earnings for every year has been paid out. Appendix II The mean dividend (Mean = 1.12, standard deviation for 6 year observation was significantly greater than zero, T stat of 2.4 , two tail p = 0.06, providing evidence that there is no significance difference between the dividend data for the two distributions.

Diamond Trust Bank (Kenya) Limited
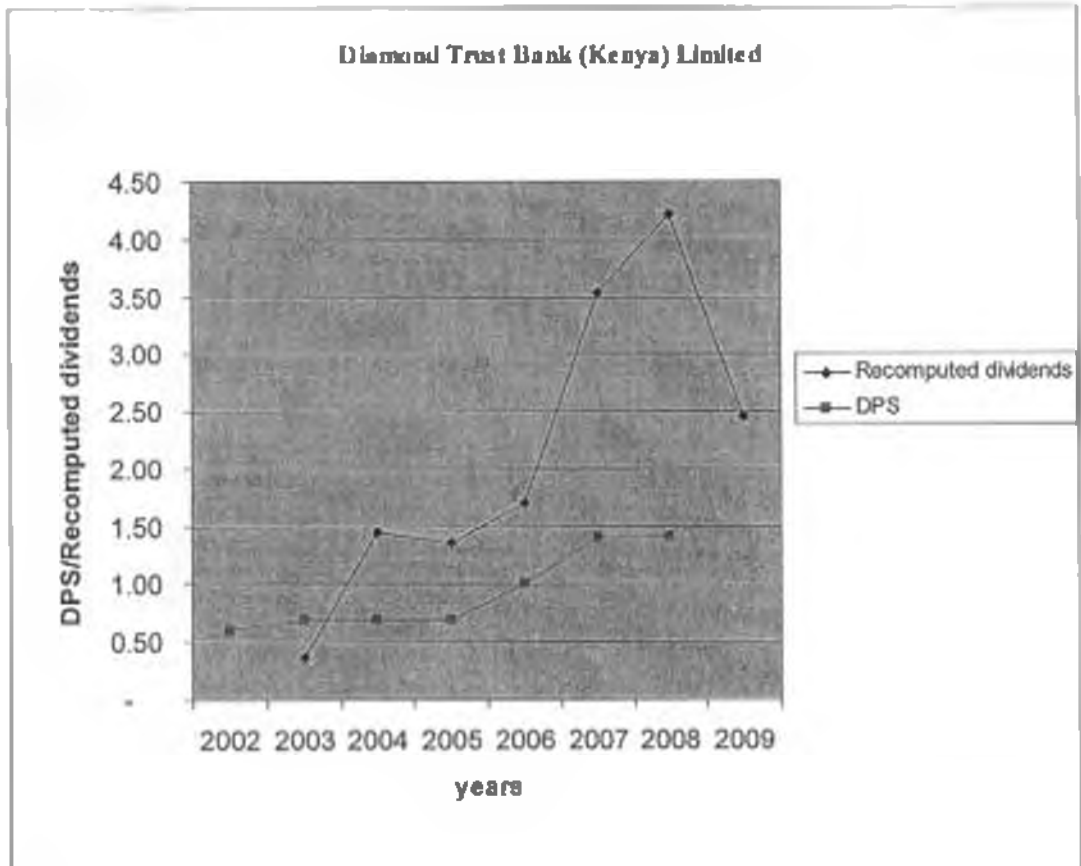
Table 8: East African Breweries Limited

Item	East African Breweries Limited								
	2002	2003	2004	2005	2006	2007	2008	2009	average
Equity	21%	16%	31%	34%	34%	36%	42%		30%
Growth rate	9%	-1%	15%	13%	10%	6%	6%		8%
Payout	54%	109%	51%	62%	72%	83%	85%		74%
DPS	11.5	15	18	4.5	5.9	7.7	8.05		10.09
Computed dividend		9.20	38.43	71.11	31.46	34.58	71.3	65.0	42.68

East Africa breweries has a very high payout ratio of 74 percent while maintaining a dividend growth rate 8 percent. The dividend distributions of the two data sets are positively skewed at 0.9 as per appendix III implying that it is unlikely extreme reduction of dividends would be encountered by investors. At a standard error of 11.3, the dividend interval spreads from 3.9 to 61.7 implying that most of the figures for re computed dividends falls within this range. The dividend payable for the year 2009 is estimated by the dividend model to be Kes 65.02. This can be explained by the general decline in price trend affecting by the low price for the share in the market due to the current economic crisis.

East African Breweries Limited
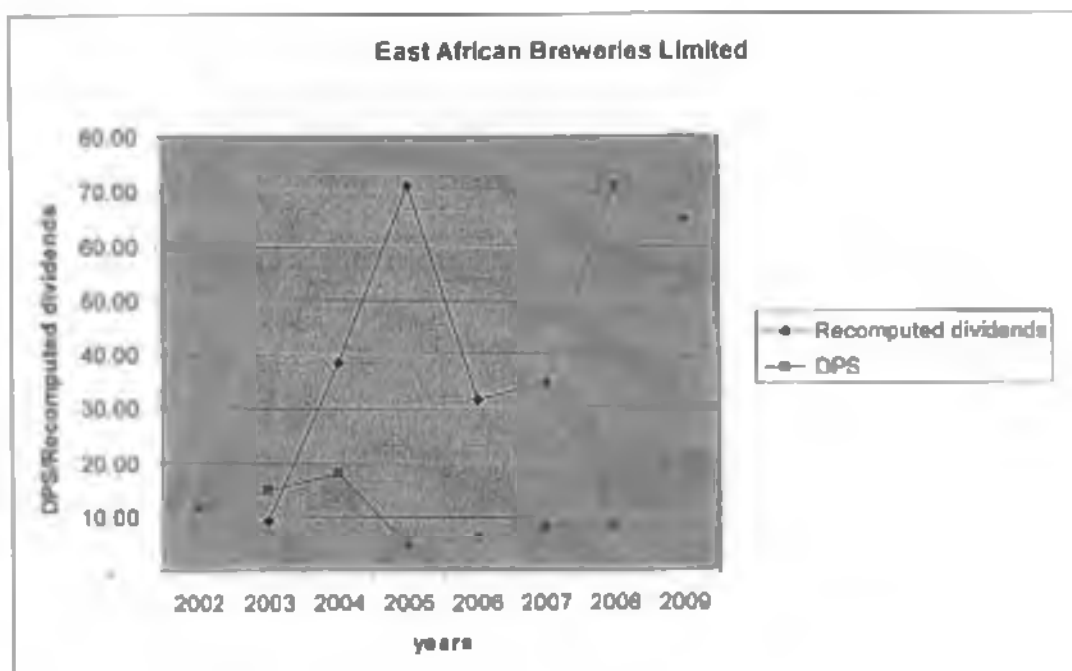
Table 9: East African Cables Limited

	East African Cables Limited								
Item	2002	2003	2004	2005	2006	2007	2008	2009	average
Cost of Equity	2%	4%	39%	36%	35%	38%	34%		27%
Growth rate	7%	-4%	17%	19%	18%	19%	16%		13%
Payout	-172%	217%	57%	48%	50%	49%	52%		43%
DPS	0.05	0.1	0.35	0.5	0.7	0.9	1		0.50
Computed dividend		(0.38)	1.12	11.39	23.54	8.43	7.73	4.60	8.06

The company has a mean of 27 percent cost of equity and a dividend has been growing at an average rate of 13 percent for a 43 percent pay out. The dividend payable in 2009 as per the model is Kes 4.60 though the dividends that ought to have been paid as per recomputed figures are quite different from the dividend per share. The company has maintained a fairly growing dividend per share.

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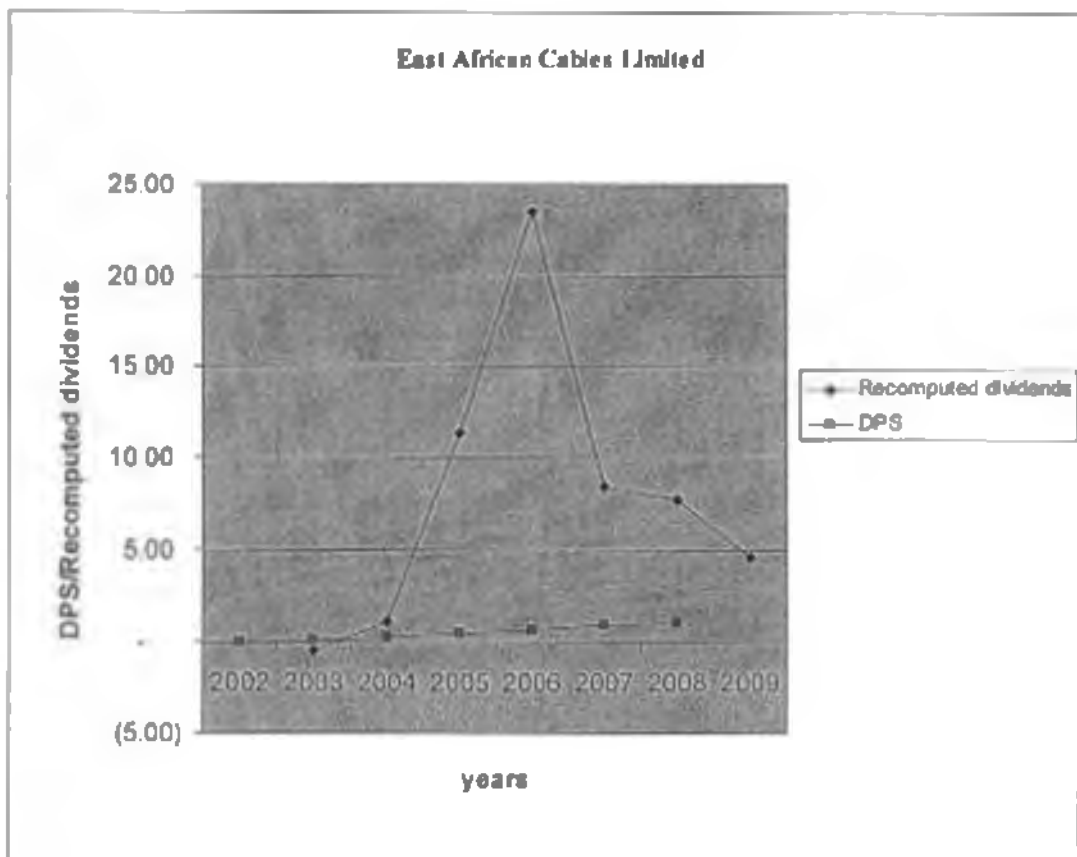
Table 10: Centum Investment Company Limited

Item	Centum Investment Company Limited								average
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	11%	6%	8%	8%	10%	13%	11%		9%
Growth rate	6%	1%	3%	3%	6%	10%	8%		5%
Payout	45%	76%	68%	56%	36%	22%	28%		47%
DPS	2	2.2	3	3	4	4.5	4.5		3.31
Computed dividend		0.91	2.29	3.69	2.92	3.54	7.92	7.65	4.13

The company has a practice to pay on average half of its earning to the shareholders as dividends. Though the earnings fluctuate, the company maintained an average dividend growth rate of 5 percent. The shareholder average required return was 9 percent. Dividend per share has been growing as indicated by the annual mean growth rate of 5 percent.

Centum Investment Company Limited
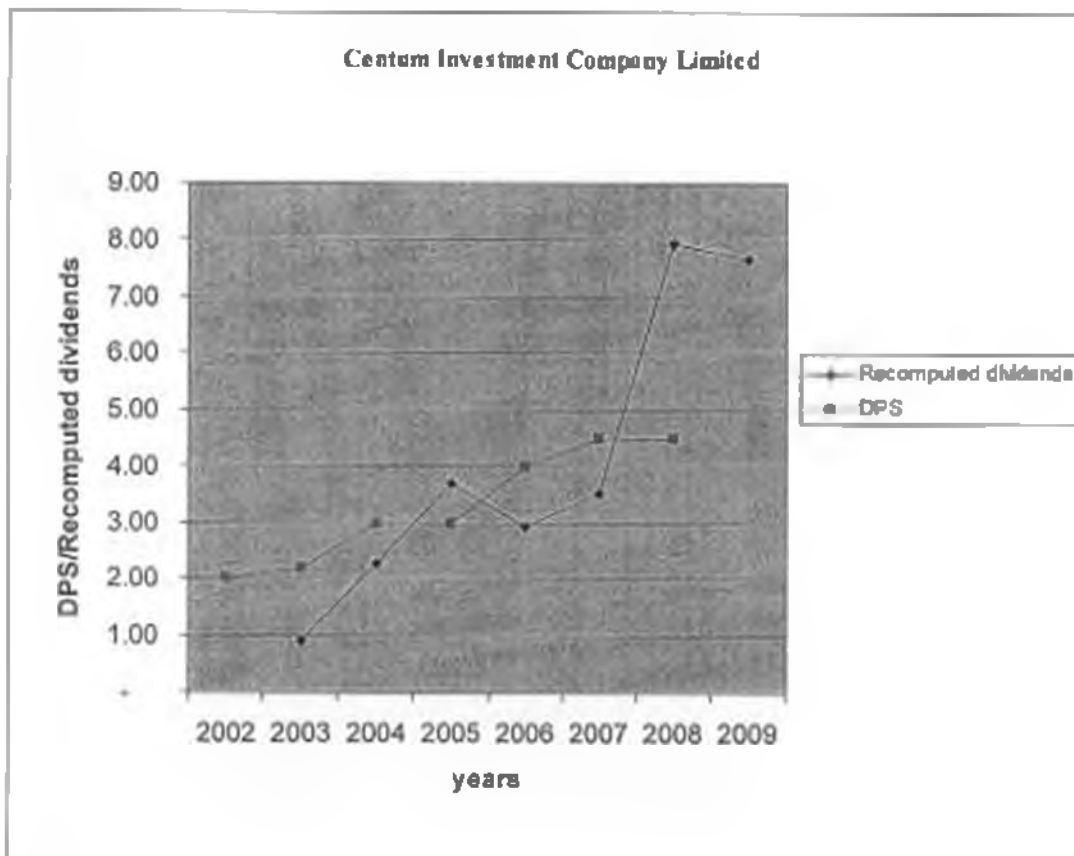
Table 11: Jubilee Insurance Company Limited

| Item | Jubilee Insurance Company Limited | | | | | | | | |
	2002	2003	2004	2005	2006	2007	2008	2009	average
Cost of Equity	9%	11%	12%	21%	15%	17%	22%		15%
Growth rate	6%	7%	6%	10%	10%	12%	16%		9%
Payout	38%	38%	47%	52%	36%	31%	30%		39%
DPS	1.75	2.25	2.5	4	4.25	4.25	4.25		3.32
computed dividend		0.56	2.06	3.20	8.93	18.11	11.33	8.23	7.49

The dividend per share has been growing at an average of 9 percent. This is below the mean of 15 percent on the required rate of return by equity holders. This is in line with the assumption by the dividend model that the cost of equity should be greater than the growth rate for the model to apply. The company has maintained a payout of 39 percent but as the stock exchange moved from a bull run to the bear market the recomputed dividends figures have also affected by that trend. This is shown by the rise of recomputed dividends figures in 2007 and the drop in 2008 and the forecast of a lower dividend payable in 2009.

Jubilee Insurance Company Limited

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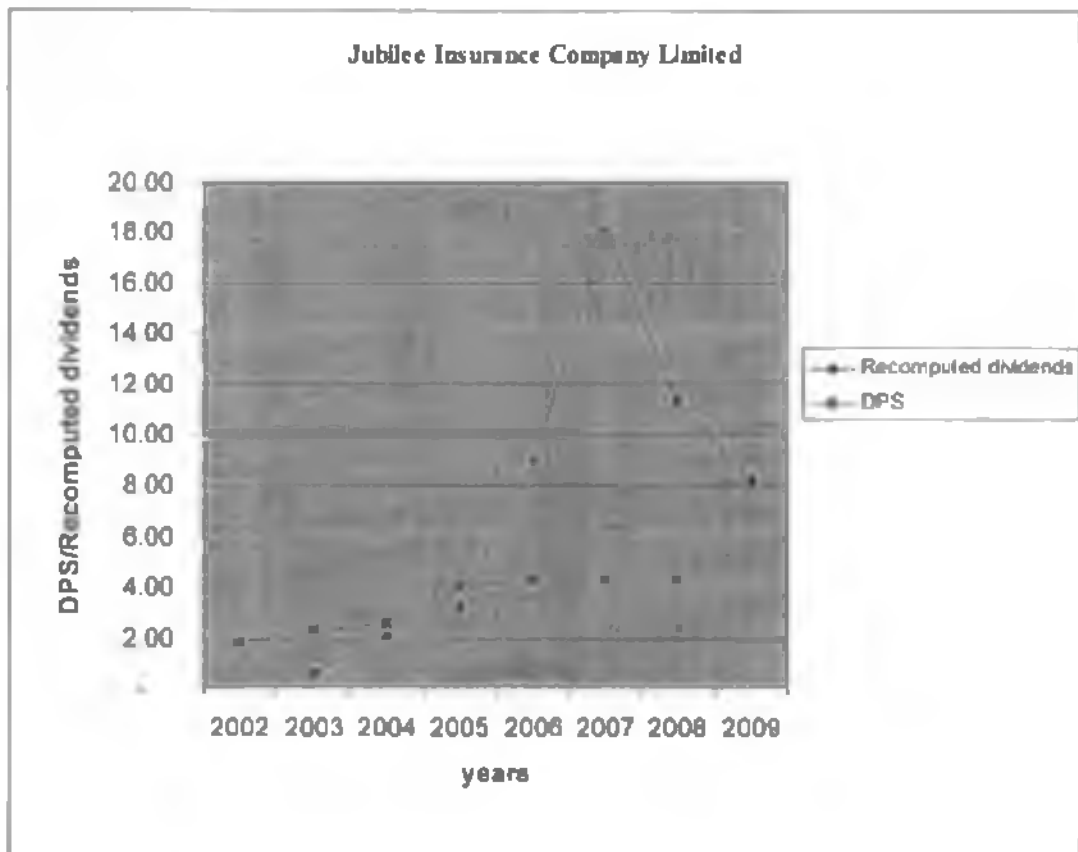
Table 12: Kapchorua Tea Company Limited

Item	Kapchorua Tea Company Limited								average
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	4%	5%	6%	4%	1%	0%	11%		4%
Growth rate	4%	3%	4%	1%	2%	3%	12%		4%
Payout	-14%	42%	38%	75%	-20%	-20%	-3%		-281%
DPS	0.5	3.75	3.75	5	0.5	5	0.5		2.71
computed dividend		(0.69)	3.10	2.18	2.86	(0.45)	(3.05)	(0.24)	0.53

Kapchorua Tea Company limited had a flexible dividend policy as exhibited by the graph analysis below. The dividend for 2005 and 2007 was Kes 5 while the one for 2006 and 2008 were reduced to Kes 0.5. The recomputed dividend amounts also showed no predictable trend. This implied that the company management did not apply the dividend model to predict the dividend payable. The average growth rate is equal to the average cost of equity thus making the computation using the dividend constant model yield absurd results.

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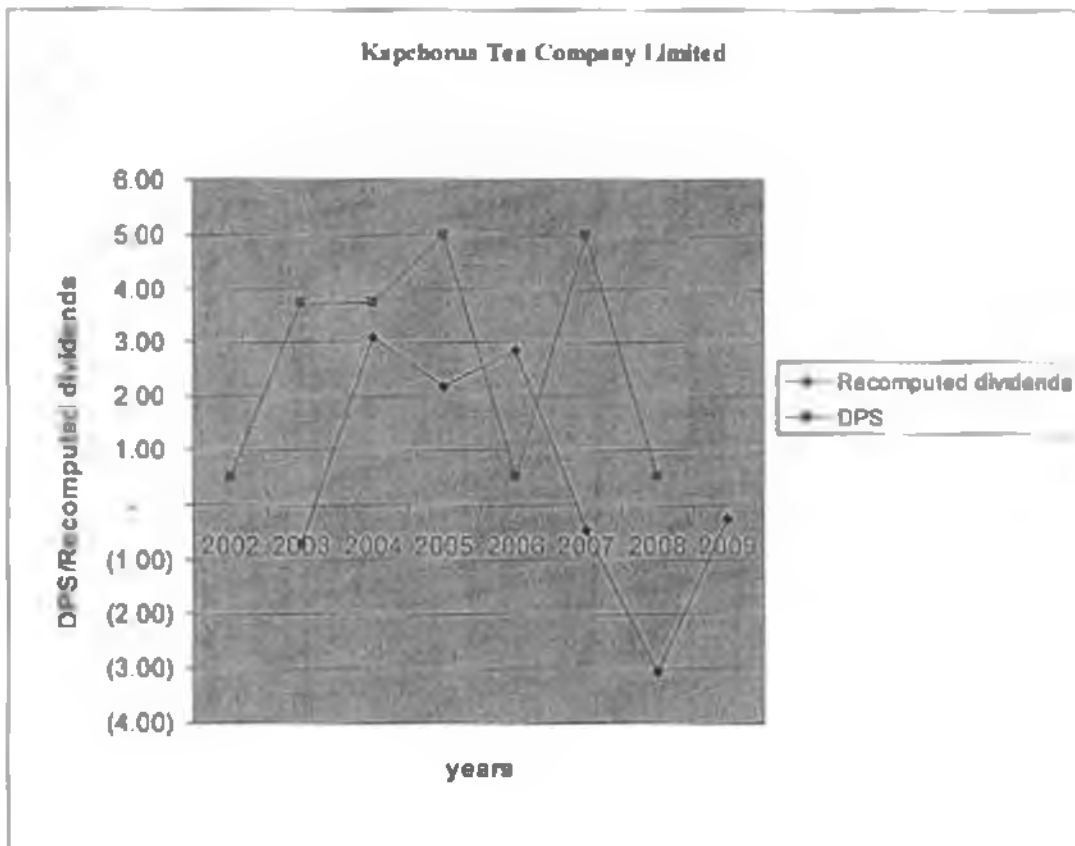
Table 13: Kenya Airways Limited

| Item | Kenya Airways Limited | | | | | | | | average |
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	11%	6%	15%	24%	28%	19%	15%		17%
Growth rate	8%	2%	11%	20%	23%	15%	12%		13%
Payout	32%	57%	27%	19%	17%	20%	21%		27%
DPS	0.6	0.5	0.75	1.25	1.75	1.75	1.75		1.19
Computed dividend		0.28	0.19	0.39	1.12	4.92	3.55	1.61	1.72

To achieve an average growth rate of 13 percent, The Company had a practice to retain two thirds of yearly earnings for the period for the study. Though the firm has year-to-year swings in growth rates, the constant dividend model can be used to forecasts the dividend payable without loss of generality. The dividends were smoothed even when earnings are volatile.

Kenya Airways Limited
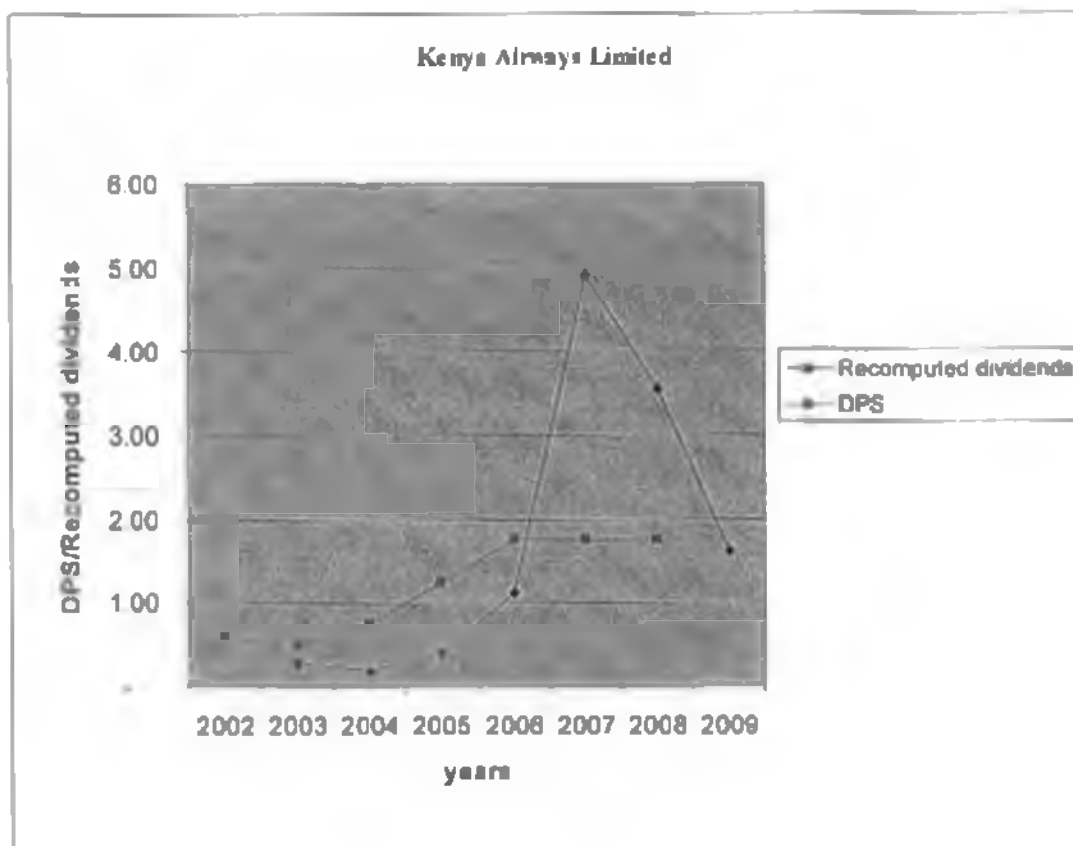
Table 14: Limuru Tea Company Limited

Item	Limuru Tea Company Limited								average
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	7%	18%	21%	9%	11%	7%	23%		14%
Growth rate	1%	5%	1%	17%	-3%	-3%	7%		4%
Payout	87%	75%	93%	-95%	124%	147%	71%		72%
DPS	3	10	15	5	10	5	10		8.29
Computed dividend		23.45	21.20	69.54	(28.28)	49.87	36.01	50.67	31.78

The dividend per share has a person coefficient of -0.56 as per appendix II implying that the association with the recomputed dividends is uneven from one year to another. The company has a high dividend payout ratio. The company has a policy to pay a high dividend in one year and adjust it lower the following year. The $T_{calculated}$ is 1.34 which is lower than the $T_{critical}$ of 2.57 showing a significance difference between the divided per share and the recomputed dividend figures.

Limuru Tea Company Limited

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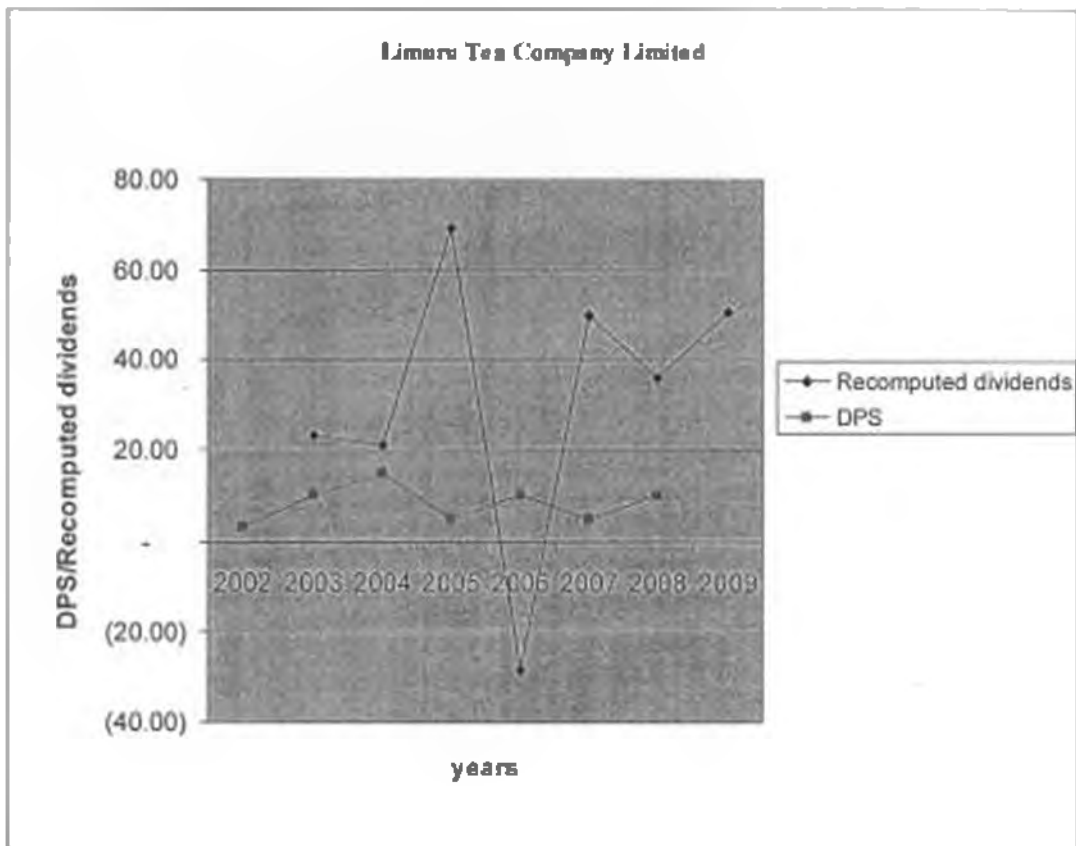
Table 15: Nation Media Group Limited

| Item | Nation Media Group Limited | | | | | | | | average |
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	17%	22%	22%	22%	22%	29%	30%		24%
Growth rate	12%	12%	11%	9%	-2%	9%	12%		9%
Payout	33%	44%	50%	60%	109%	69%	61%		61%
DPS	2.5	5	6	6	12	10.5	11		7.57
Computed dividend		4.82	18.57	19.10	25.17	76.62	65.68	26.40	33.77

The company had an average of 61 percent payout ratio and a 9 percent dividend growth rate that resulted in dividend per share rise from Kes. 2.5 to Kes. 11 in 2008. The model predicts that a dividend of Kes .26.40 will be payable in 2009 if the current growth rate is maintained in the current year.

Nation Media Group Limited
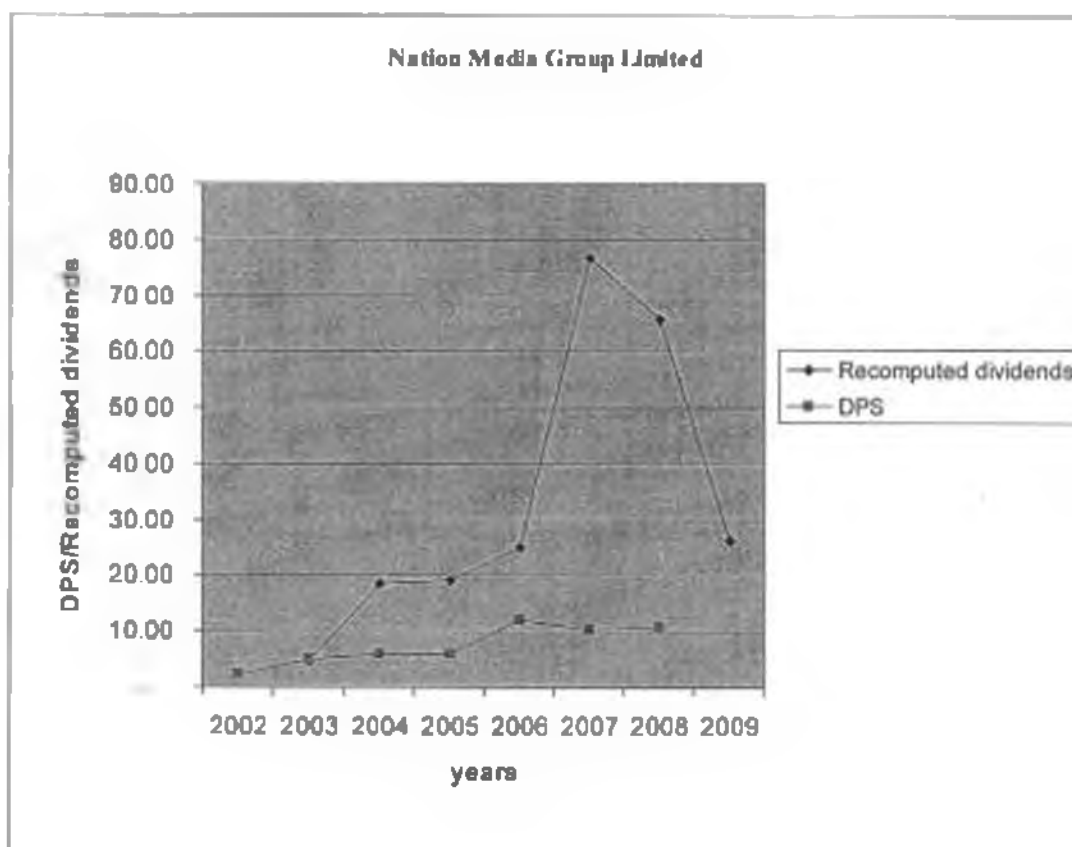
Table 16: NIC Bank Limited

Item	NIC Bank Limited								average
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	9%	9%	10%	10%	15%	16%	19%		13%
Growth rate	3%	2%	2%	3%	8%	11%	16%		6%
Payout	72%	77%	76%	75%	49%	31%	14%		56%
DPS	2	2.25	2.4	2.5	2.7	0.8	0.5		1.88
Computed dividend		1.30	3.28	3.74	3.79	7.47	3.06	1.16	3.40

The average cost of equity was 13 percent as the company maintained a payout of 56 percent of the earnings. The dividend per share had the same trend as the recomputed dividend and forecasted divided for year 2009 is lower than the dividend for year 2008.

NIC Bank Limited
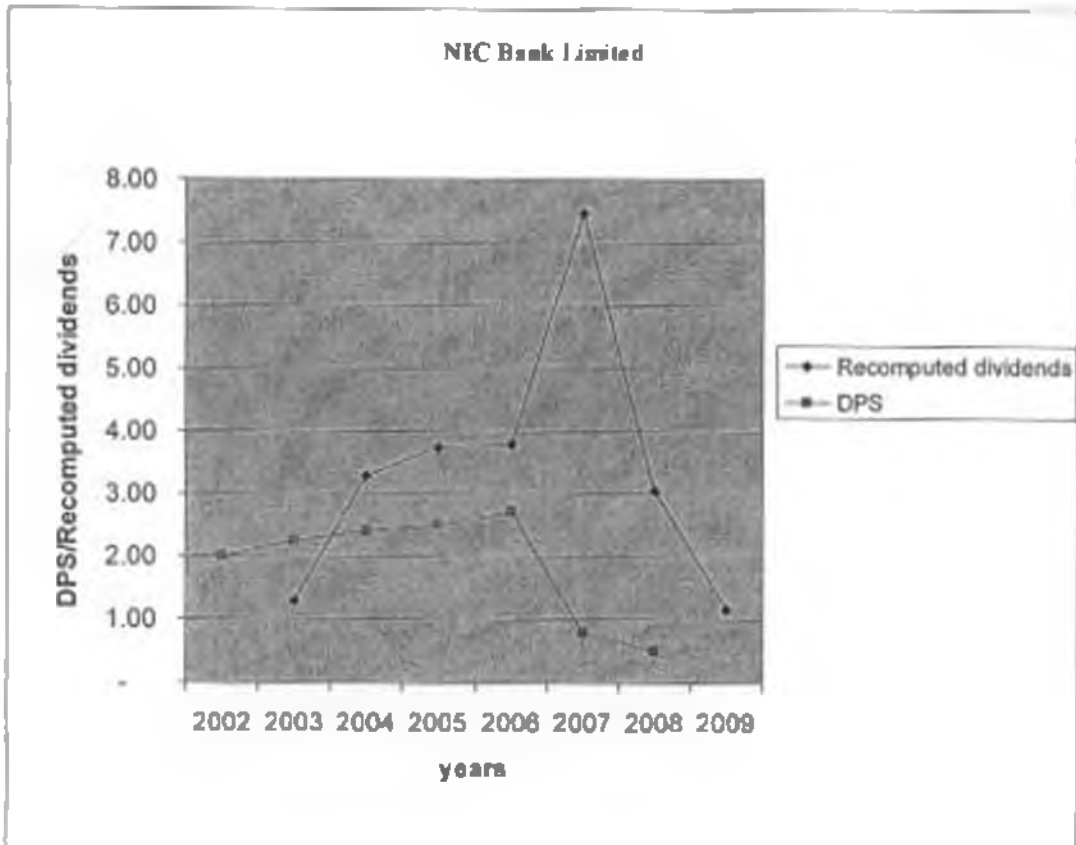
Table 17: Rea Vipingo

| Item | Rea Vipingo | | | | | | | | |
	2002	2003	2004	2005	2006	2007	2008	2009	average
Cost of Equity	5%	1%	22%	20%	17%	16%	19%		14%
Growth rate	2%	-5%	14%	12%	10%	9%	18%		9%
Payout	61%	800%	37%	39%	43%	42%	7%		147%
DPS	0.8	2.25	2.4	2.5	2.7	0.8	0.5		1.70
computed dividend		0.09	0.29	0.79	1.59	1.87	1.52	0.23	0.90

The average dividend per share stood at Kes. 1.70 which was higher than the dividend as per the model of kes. 0.90. The company had a very high payout in 2003 that impacted high in smoothing the payout ratio for the period of the study. However the average growth rate of the dividends was 9 percent. The kurtosis of the two dividend data distribution was – 2.3 indicating that it was normal distributed.
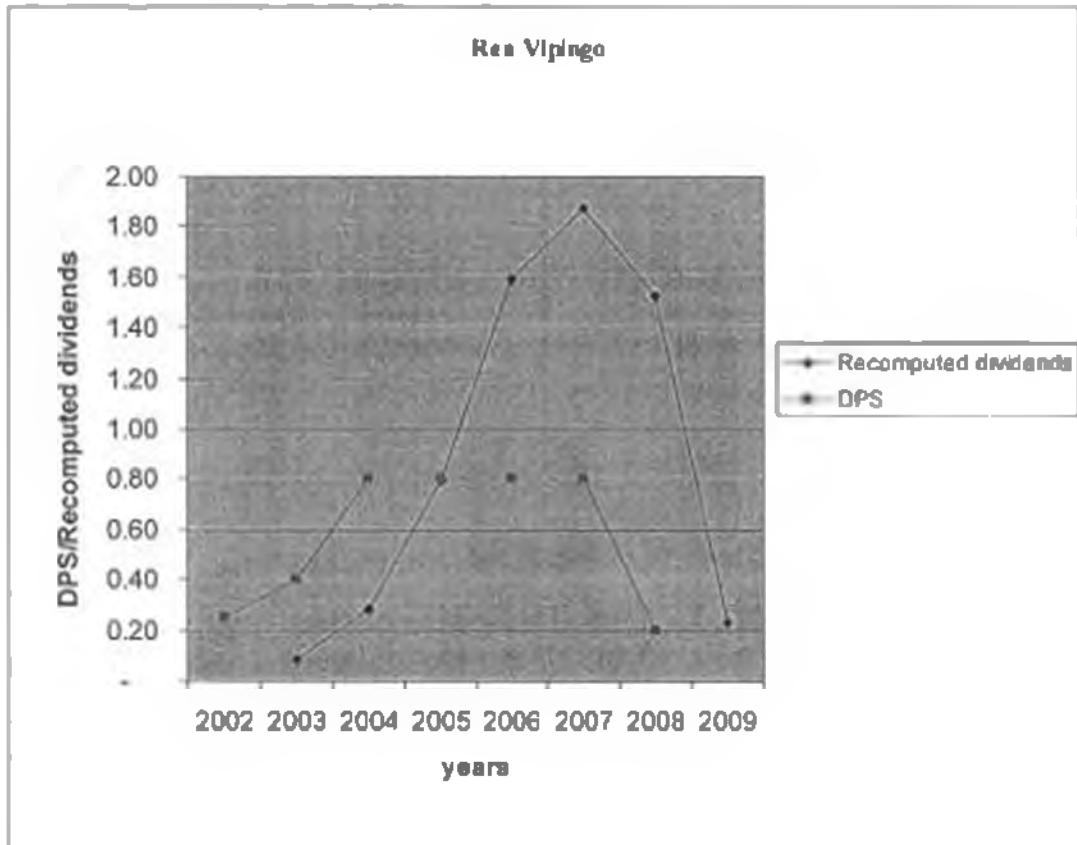
Table 18: Standard Chartered Bank Kenya Limited

Item	Standard Chartered Bank Kenya Limited								Average
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	39%	43%	30%	26%	26%	32%	28%		32%
Growth rate	3%	11%	1%	4%	3%	6%	3%		4%
Payout	92%	75%	96%	83%	88%	82%	88%		87%
DPS	8.25	8.5	6.5	7.5	8.5	10	10		8.46
computed dividend		22.2	62.3	35.5	29.6	46.8	53.9	39.9	41.50

The dividend model indicates that a dividend of Kes 46.5 will be payable in 2009 as the company maintain the average of 4 percent dividend growth and a payout ratio of 87 percent. However, the re-computed dividends figures shows a rapidly rising trend up to the year 2004 before a sharp decline through 2006 while the dividend per share is fairly stable through the period of the study.

Standard Chartered Bank Kenya Limited
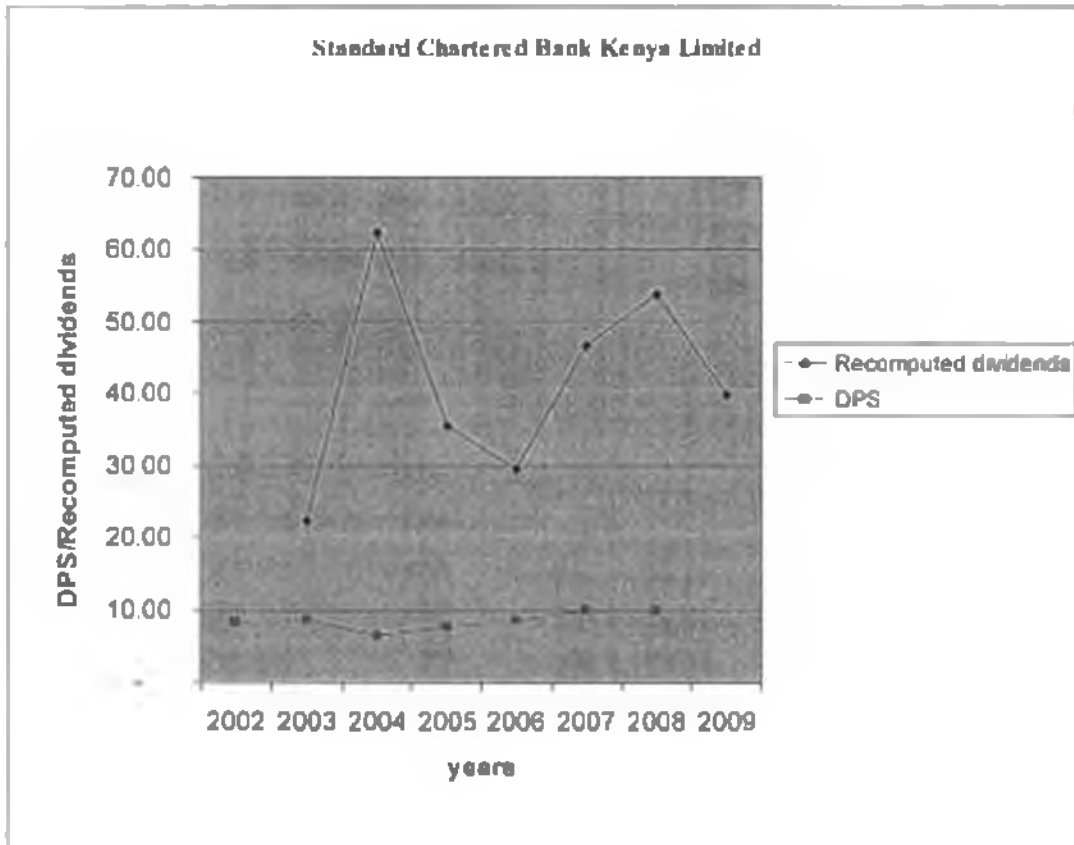
Table 19: Total Kenya Ltd

Item	Total Kenya Ltd								Average
	2002	2003	2004	2005	2006	2007	2008	2009	
Cost of Equity	11%	12%	13%	12%	10%	11%	14%		12%
Growth rate	3%	2%	3%	2%	1%	2%	5%		3%
Payout	74%	81%	75%	81%	89%	84%	62%		78%
DPS	1.7	2.5	2.5	2.5	2.5	2.5	2.5		2.39
computed dividend		1.76	4.00	9.02	3.84	3.22	3.11	2.79	3.97

The recomputed dividend distribution is leptokurtic showing that there is a greater chance of extreme outcomes to the expectations of the investors. The dividend growth rate is low at an average of 3 percent and the dividend per share is maintained at the level for 6 years of the 7 years of study. This is in line with the low dividend growth rate of 3 percent and a high payout ratio of 78 percent of the earning for each year.
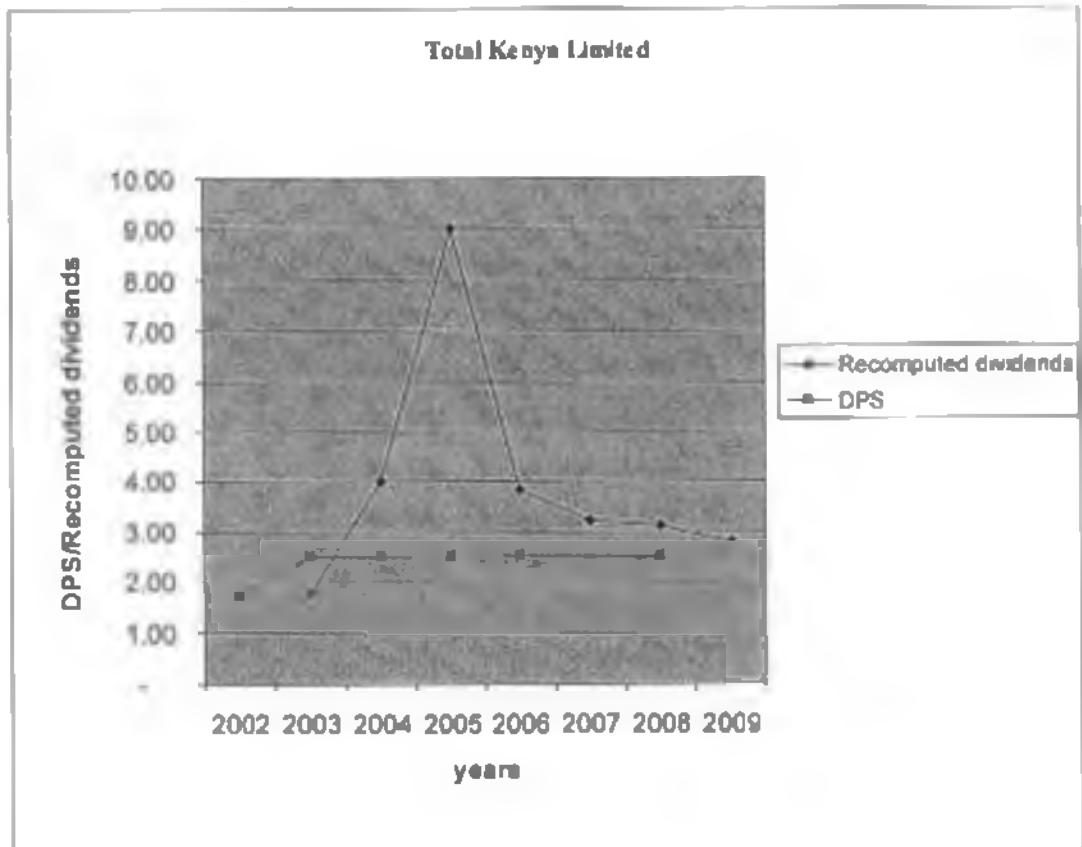
Table 20: Williamson Tea Kenya Limited

| Item | Williamson Tea Kenya Limited | | | | | | | | |
	2002	2003	2004	2005	2006	2007	2008	2009	average
Cost of Equity	2%	3%	4%	4%	3%	5%	4%		3%
Growth rate	2%	1%	2%	2%	3%	4%	4%		3%
Payout	-16%	51%	41%	50%	-8%	31%	-5%		21%
DPS	0.5	3.75	3.75	5	0.5	5	0.5		2.71
Computed dividend		(0.15)	1.01	1.15	2.35	(0.19)	2.15	(0.16)	0.88

The cost of equity for Williamson Tea Kenya Limited is only 3 percent and is lower than the risk free rate of return. Thus the results of computation can be considered to be biased. This is further complicated by the fact that it is also equal to the dividend growth rate. Hence the results of dividend as per the computations can be considered to be inaccurate and meaning less.

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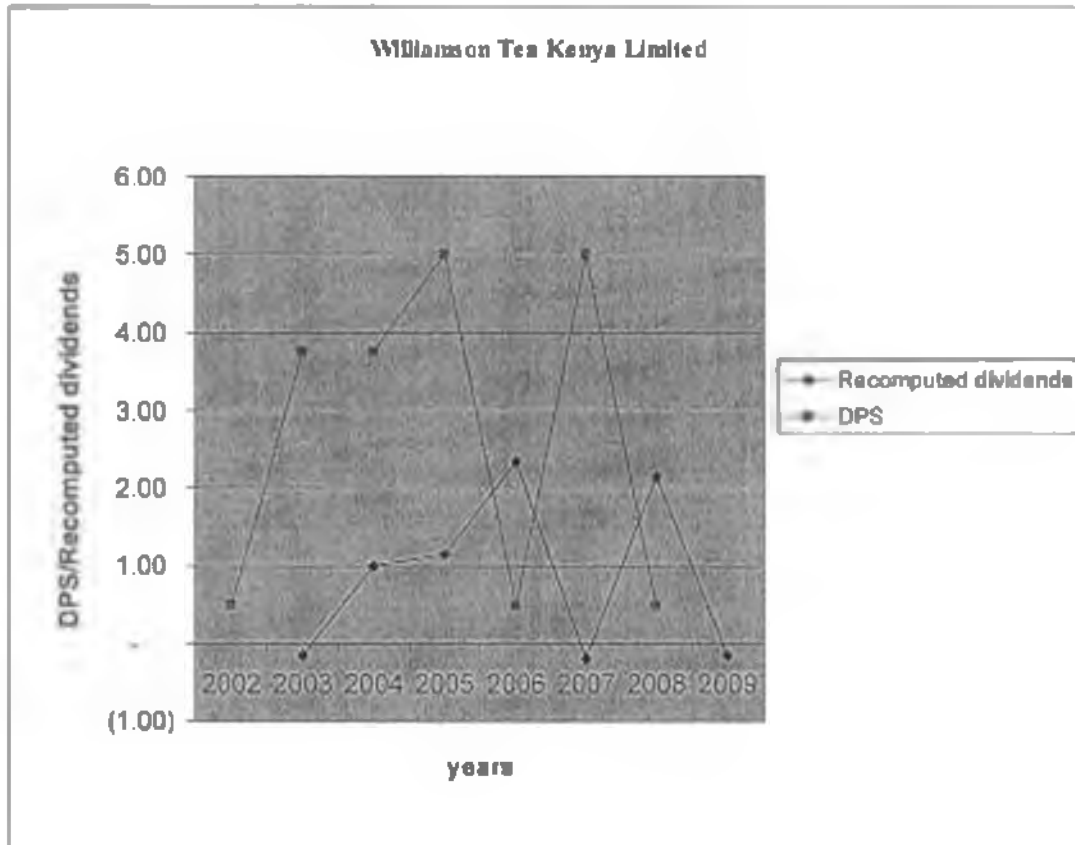
CHAPTER FIVE:

SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 Summary and conclusions

The objective of the study was to test the applicability of constant dividend model by companies listed at the Nairobi stock exchange. The main findings are presented in this chapter. The analysis done involved re-computing dividends using the constant dividend model for each of the 20 company considered under the study to derive the amounts that would have been paid out if the model was employed to determine dividends payout. The re-computed dividends figures were then compared to the dividend per share that was paid by each company.

The empirical results of the study show the dividend model was not applied by companies at the Nairobi stock exchange. Most of the some companies maintained the dividend per share at the same level at least for 2 years consecutively. Barclays paid Kes.14 for year 2002 to 2005, British American tobacco, Standard chartered bank, Bamburi Cement; Jubilee Insurance paid Kes 17, 10, 6 and 4.25 respectively for 2007 and 2008. Thus it can be concluded that the companies adopted the stable and predictable policy where a specific amount of dividend par share each year was paid periodically. This is consistent with Lintner (1956) that companies maintain adjust the level of dividends only after a rise in earnings appear sustainable. The study also established that some of the parameters of the dividend constant model i.e. the dividend growth rate, the market prices of the shares and the earnings from year to year influence the level of dividend paid. The dividend growth rate ranged from 2 percent for City trust limited to 13 percent for East Africa cables influenced the level of payout. This is consistent with the study by Pruitt and Gitman (1991) from their survey of finance managers who suggested that factors such as current and past years' profits, the year-to-year variability of earnings, the growth rate of earnings, and prior years' dividends are important influences on the amount of dividends paid.

The study also established that there were other factors that influence the dividend policy of the companies listed at the Nairobi stock exchange. The empirical results indicated that

there was a significant difference between the dividend per share as paid out and the re-computed dividends using the constant dividend model. The paired t test performed for all the most companies considered under the study indicated that the $t_{calculated}$ value of most of the companies lie extreme of the $t_{Critical}$ of 2.57. The dividend per share and the re-computed dividend amounts using the constant dividend model were uneven from one year to another and where there was a relationship it was insignificant. Thus factors excluded in the dividend model could be related to Karanja (1987) findings that the most important determinants of dividend policy were cash and liquidity, current and prospective and company level of distributable resource.

The study also found out that an increase in dividends was not necessarily followed by a decrease in risk. Most of the companies cost of equity rose when dividends were adjusted upwards. This is inconsistent with Grullon, et al. (2002) conclusion that firms that increase dividends had a significant decrease in systematic risk while firms in which dividends decreased, incurred a significant increase in risk

5.2 limitations of the study

One of the limitations encountered in the study was limited population of the companies that paid dividends consistently for the period of study. A number of only 20 companies that paid dividends were considered. Therefore the finding cannot be reasonably generalized for all the companies operating in Kenya. Another limitation was the time duration covered by the study. A time period of seven years was employed. From 2002 to 2007, here was a general economic growth that could have impacted on the companies' earnings and stock prices thus affecting the output of the dividend model.

5.3 Suggestions for further study

This study focused on the constant dividend model by companies listed at the Nairobi stock Exchange. A different study can be done to test the applicability of the two stage-growth model. A similar study can be carried out with a large population and more lengthy time duration. This would assist to establish if with large population and a wider time span, the trend of application of the model could be existence. Also the study focused mainly on the effect on the model on dividends. A further study can be done to find the role of the model in share pricing and business valuation.

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Appendix 1: POPULATION

AGRICULTURE
Rea Vipingo

COMMERCIAL AND SERVICES
CMC Holdings Limited

Kenya Airways Limited

Nation Media Group Limited

FINANCE AND INVESTMENTS
Barclays Bank of Kenya Limited

Centum Investment Company Limited

CFC Bank

Diamond Trust Bank (Kenya) Limited

Jubilee Insurance Company Limited

NIC Bank Limited

Standard Chartered Bank Kenya Limited

INDUSTRIAL AND ALLIED
Bamburi Cement Company Limited

British American Tobacco Kenya Limited

East African Breweries Limited

East African Cables Limited

Total Kenya Ltd

ALTERNATIVE INVESTMENT MARKET SEGMENT (AIMS)
City Trust Limited

Kapchorua Tea Company Limited

Limuru Tea Company Limited

Williamson Tea Kenya Limited

Appendix 11:

T-Test: Paired Two Sample for Means

Company	Bamburi Cement		Barclays Bank of Kenya	
Mean	21.23231347	5.286666667	33.33059226	15.83333333
Variance	111.6512954	1.588266667	612.812778	5.666666667
Observations	6	6	6	6
Pearson Correlation	0.69498373		-0.572909773	
Hypothesized Mean Diff	0		0	
df	5		5	
t Stat	4.013046577		1.63637635	
P(T<=t) one-tail	0.005095356		0.081343866	
t Critical one-tail	2.015048372		2.015048372	
P(T<=t) two-tail	0.010190713		0.162687733	
t Critical two-tail	2.570581835		2.570581835	

Company	British American		CFC Bank	
Mean	58.99041223	14.58333333	2.834966157	1.111666667
Variance	742.2656105	6.141666667	7.504754399	0.324896667
Observations	6	6	6	6
Pearson Correlation	0.114548947		-0.048306627	
Hypothesized Mean Diff	0		0	
df	5		5	
t Stat	4.017852009		1.494242209	
P(T<=t) one-tail	0.005071165		0.097671351	
t Critical one-tail	2.015048372		2.015048372	
P(T<=t) two-tail	0.01014233		0.195342702	
t Critical two-tail	2.570581835		2.570581835	

Company	City Trust Limited		CMC Holdings Limited	
Mean	4.19338418	3.1	3.057398661	2.56666667
Variance	17.8787283	3.59	18.94571211	3.36266667
Observations	6	6	6	6
Pearson Correlation	-0.7096203		0.905949504	
Hypothesized Mean Diff	0		0	
df	5		5	
t Stat	0.46736192		0.429129267	
P(T<=t) one-tail	0.32995049		0.342845324	
t Critical one-tail	2.01504837		2.015048372	
P(T<=t) two-tail	0.65990099		0.685690648	
t Critical two-tail	2.57058183		2.570581835	

Company	Diamond Trust Bank		East African Breweries	
Mean	2.10370342	0.983333333	42.68286826	9.85833333
Variance	2.12842508	0.117666667	591.7103869	29.0064167
Observations	6	6	6	6
Pearson Correlation	0.94178447		-0.5326645	
Hypothesized Mean Difference	0		0	
df	5		5	
t Stat	2.40373508		2.915990432	
P(T<=t) one-tail	0.03066848		0.01658395	
t Critical one-tail	2.01504837		2.015048372	
P(T<=t) two-tail	0.06133696		0.033167899	
t Critical two-tail	2.57058183		2.570581835	

Company	East African Cables		Centum Investment Company Limited	
Mean	8.63698772	0.591666667	3.543680689	3.53333333
Variance	73.6827119	0.116416667	5.617562334	0.88666667
Observations	6	6	6	6
Pearson Correlation	0.49024032		0.720730528	
Hypothesized Mean Difference	0		0	
df	5		5	
t Stat	2.33997761		0.013979542	
P(T<=t) one-tail	0.03319101		0.49469348	
t Critical one-tail	2.01504837		2.015048372	
P(T<=t) two-tail	0.06638203		0.989386959	
t Critical two-tail	2.57058183		2.570581835	

Company	Jubilee Insurance		Kapchorua Tea Company	
Mean	7.36391674	3.583333333	0.658079628	3.08333333
Variance	45.0805418	0.891666667	5.978393799	4.31666667
Observations	6	6	6	6
Pearson Correlation	0.75498952		0.212920813	
Hypothesized Mean Diff	0		0	
df	5		5	
t Stat	1.53493835		-2.08324444	
P(T<=t) one-tail	0.09269467		0.045841596	
t Critical one-tail	2.01504837		2.015048372	
P(T<=t) two-tail	0.18538933		0.091683191	
t Critical two-tail	2.57058183		2.570581835	

Company	Kenya Airways Limited		Limuru Tea	
Mean	1.74209211	1.291666667	28.63389064	9.16666667
Variance	4.01684859	0.310416667	1100.027073	14.1666667
Observations	6	6	6	6
Pearson Correlation	0.72572518		-0.55735915	
Hypothesized Mean Difference	0		0	
df	5		5	
t Stat	0.67064658		1.346925529	
P(T<=t) one-tail	0.26608613		0.117914627	
t Critical one-tail	2.01504837		2.015048372	
P(T<=t) two-tail	0.53217227		0.235829254	
t Critical two-tail	2.57058183		2.570581835	

Company	Nation Media Group		NIC Bank Limited	
Mean	34.9934647	8.416666667	3.774121577	1.85833333
Variance	840.709064	9.441666667	4.109605034	0.90641667
Observations	6	6	6	6
Pearson Correlation	0.70035372		-0.43425864	
Hypothesized Mean Difference	0		0	
df	5		5	
t Stat	2.41714407		1.813994181	
P(T<=t) one-tail	0.03016482		0.064702728	
t Critical one-tail	2.01504837		2.015048372	
P(T<=t) two-tail	0.06032963		0.129405455	
t Critical two-tail	2.57058183		2.570581835	

Company	Rea Vipingo		Standard Chartered Bank	
Mean	1.02572428	0.633333333	41.72696217	8.5
Variance	0.5544525	0.070666667	232.9735331	1.9
Observations	6	6	6	6
Pearson Correlation	0.0776372		-0.08689597	
Hypothesized Mean Diff	0		0	
df	5		5	
t Stat	1.24669767		5.269807762	
P(T<=t) one-tail	0.1338636		0.001636149	
t Critical one-tail	2.01504837		2.015048372	
P(T<=t) two-tail	0.2677272		0.003272297	
t Critical two-tail	2.57058183		2.570581835	

Company	Total Kenya Ltd		Williamson Tea Kenya	
Mean	4.16174967	2.5	1.052612764	3.08333333
Variance	6.30093387	0	1.179210898	4.31666667
Observations	6	6	6	6
Pearson Correlation			-0.81769745	
Hypothesized Mean Diff	0		0	
df	5		5	
t Stat	1.62158145		-1.64124056	
P(T<=t) one-tail	0.08290978		0.080835464	
t Critical one-tail	2.01504837		2.015048372	
P(T<=t) two-tail	0.16581957		0.161670928	
t Critical two-tail	2.57058183		2.570581835	

Appendix III
Summary of paired t-test difference between dividends declared and recomputed figures

Company	Bamburi Cement	Barclays Bank	British American	CFC Bank
Mean	15.94564681	17.49725892	44.4070789	1.723299491
Standard Error	3.973451716	10.69268627	11.05244265	1.153293275
Median	17.67416587	14.79221445	46.44122388	0.545097653
Standard Deviation	9.732929222	26.19162533	27.0728449	2.824980048
Sample Variance	94.72991124	686.0012376	732.9389308	7.980512273
Kurtosis	-1.544652937	-0.719173628	0.606406679	3.533210455
Skewness	-0.36803239	0.624978994	-0.807964083	1.864397891
Range	24.48244062	68.31969197	75.93189479	7.658611794
Minimum	2.984134434	-9.876776007	-0.675788648	-0.528406214
Maximum	27.46657506	58.44291596	75.25610614	7.13020558
Sum	95.67388084	104.9835535	266.4424734	10.33979694
Count	6	6	6	6
Confidence Level (95.0%)	10.2140828	27.48642508	28.4112083	2.964634743

Company	City Trust	CMC Holdings	Diamond Trust	E. African Breweries
Mean	1.093384183	0.490731994	1.12037009	32.82453492
Standard Error	2.339480686	1.143552845	0.466095493	11.25673615
Median	0.223457138	-0.485546782	0.721610704	26.21756031
Standard Deviation	5.730533944	2.801120965	1.14169613	27.57325975
Sample Variance	32.83901929	7.846278658	1.303470053	760.2846531
Kurtosis	3.464555824	5.747993303	-0.589657111	-0.904691692
Skewness	1.528149601	2.380625574	0.535530247	0.095509254
Range	17.10285139	7.338996968	3.138475798	72.4059317
Minimum	-5.276317757	-1.165857947	-0.324220968	-5.7957172
Maximum	11.82653363	6.173139021	2.81425483	66.6102145
Sum	6.560305099	2.944391964	6.722220537	196.9472095
Count	6	6	6	6
Confidence Level (95.0%)	6.013826555	2.939596171	1.198136608	28.93636148

Company	E. African Cables	Centum Investment	Jubilee Insurance	Kapchorua Tea
Mean	8.045321056	0.010347355	3.780583409	-2.425253705
Standard Error	3.438204291	0.740178425	2.463019708	1.164171454
Median	7.12865609	-0.838419098	2.118095336	-3.183238557
Standard Deviation	8.421846145	1.813059459	6.033141511	2.851626035
Sample Variance	70.9274925	3.287184602	36.39879649	8.131771042
Kurtosis	1.547504788	2.873828822	0.134133888	0.477513884
Skewness	1.130503133	1.769806377	0.989886916	1.005872747
Range	23.32038395	4.712245514	15.54772213	7.8076712
Minimum	-0.48337132	-1.292090367	-1.690782802	-5.448732341
Maximum	22.83701263	3.420155147	13.85693932	2.358938859
Sum	48.27192633	0.062084132	22.68350045	-14.55152223
Count	6	6	6	6
Confidence Level (95.0%)	8.838185495	1.902689213	6.33139372	2.992597991

Company	Kenya Airways	Limuru Tea	Nation Media	NIC Bank
Mean	0.45042544	19.46722397	26.57679799	1.915788244
Standard Error	0.67162862	14.45308115	10.99512366	1.056115981
Median	-0.389571567	19.72989953	13.1356704	1.166063245
Standard Deviation	1.645147416	35.40267403	26.93244262	2.586945264
Sample Variance	2.706510019	1253.349328	725.3564654	6.692285796
Kurtosis	-0.211919676	0.7454198	-1.347356016	2.832252288
Skewness	1.189513529	-0.587070401	0.879263188	1.426508685
Range	4.021762421	102.8226876	66.3021003	7.621918792
Minimum	-0.85603753	-38.27811012	-0.182911658	-0.950173962
Maximum	3.165724891	64.54457746	66.11918865	6.67174483
Sum	2.702552637	116.8033438	159.460788	11.49472946
Count	6	6	6	6
Confidence Level (95.0%)	1.72647633	37.15282786	28.26386514	2.714832557

Company	Rea Vipingo	Standard Chartered	Total Kenya	Williamson Tea
Mean	0.39239095	33.22696217	1.661749674	-2.030720569
Standard Error	0.314744271	6.305156407	1.02477102	1.237308303
Median	0.392985962	32.41314395	1.032796611	-3.297711548
Standard Deviation	0.770962864	15.44441595	2.510166103	3.030773998
Sample Variance	0.594383737	238.5299839	6.300933866	9.185591025
Kurtosis	-2.396847084	-0.824439718	4.224129669	-1.820736067
Skewness	0.017577652	0.280327137	1.880442371	0.688945568
Range	1.838596839	42.09073616	7.260815449	7.04210253
Minimum	-0.514092669	13.72545182	-0.73671847	-5.188830137
Maximum	1.32450417	55.81618798	6.524096979	1.853272393
Sum	2.354345699	199.361773	9.970498045	-12.18432341
Count	6	6	6	6
Confidence Level (95.0%)	0.809075906	16.20792053	2.63425777	3.180602248