AN ANALYSIS OF THE RELATIONSHIP BETWEEN DIVIDEND CHANGES AND FUTURE PROFITABILITY OF COMPANIES QUOTED AT THE NAIROBI STOCK EXCHANGE

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DECLARATION

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

Signed..... Date 26/11/06

Mulwa Kennedy Kioko

This project has been submitted with my approval as University Supervisor.

Signed..... Date 27-11-06

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DEDICATION

TO DAD: FOR THE SACRIFICE. LOVE AND DAILY CHALLENGE IN ALL I DID. I AM WHAT I AM TODAY BECAUSE OF THE WISDOM YOU HAVE BESTOWED UNTO ME.

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ABSTRACT

This study sought to investigate whether or not there is a relationship between dividend changes and future profitability. The major source of data was financial records of publicly quoted companies obtained from the Nairobi Stock Exchange. Data from the various companies was gathered and analyzed using both physical comparison and also using the regression technique provided by SSPS package. The model was regressed and the resultant equations were obtained. Each variable present in the model was tested for its significance in the model using the T statistic and the F test. The model was then tested to see how much the variables explain the variations as opposed to other variables that were not being tested. The standard error for the model for each year was compared and the results obtained indicate that dividend changes reflect future profits in a company.

In conclusion it was obtained that a relationship does exist between dividend changes and future profitability of a company.

CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND

An alumnus of the University of Nairobi challenged the proceeding students to tackle his chosen topic of dividend practises of Publicly Quoted Companies in Kenya ***(Karanja (1987)*** in relation to different variables in the business set up. It is in light of this challenge that I decided to tackle dividend changes in relation to their predictability of the future profitability of a company.

Individuals invest in firms mainly because they expect some returns of some form later. Corporations view the dividend decision as quite important because it determines what funds flow to investors and what funds are retained by the firm for reinvestment (***Ambarish and Williams, (1987))***. Mostly the returns that investors receive come in terms of capital gains and dividends. Generally, dividends are the payments of all or part of a firm's net earnings that are given to the shareholders, whereas, capital gains are the net value realised when an individual invests in a stock for example and at a later date the value of that stock is higher. It is thus the difference between the higher value and the original price of that particular stock.

In Kenya, it is evident that most companies lack a systematic dividend setting procedure. ***(Karanja, (1987)).*** It is such that most companies end up considering not more than two factors, namely; cash and earnings, when deciding how much of their earnings to distribute.

A firm's dividend decision is a critical one. According to ***Weston and Brigham (1981, p.700)*** *'dividend policy determine the extent of internal financing by a firm. The Finance Manager decides whether to release corporate earnings from the*

control of the enterprise. Because dividend policy may affect such areas as the finance structure, the flow of liquid funds, corporate liquidity, stock prices and investor satisfaction, then it is clearly an important aspect of financial management."

Different authoritative scholars in the field of finance have come up with different solutions concerning what is popularly referred to as the "***dividend puzzle"*** that is, the relevancy or the irrelevancy of the dividend payments by a firm.

One of the earliest and influential studies was by ***Modigliani and Miller (MM) of 1961*** who concluded that dividends were irrelevant in the valuation of firms, but the conclusion was arrived at in the idealistic world of perfect capital markets, no taxes, no transaction costs, perfect competition and costless information. Other renowned finance scholars who agreed with ***Modigliani and Miller*** include ***DeAngelo, DeAngelo and Stinner (1996), Lang and Litzenberger (1989).*** On the opposing side there are other scholars who hold that dividends are relevant. They include ***Watts (1973), Lintner (1956), Miller (1987), Aharony and Swary (1980), Asquith and Mullins (1983), Pettit (1972), Benartzi, Michealy and Thaler (1997).***

Thus the dividend debate has two schools of thought: The school that believes that dividends are irrelevant and the other school that believes that dividends are in fact relevant.

Adherents of the relevance school argue that dividend policy affects the value of the firm because it conveys very important information to shareholders about the

prospects of the firm in the future. The policy signals to investors management's confidence about company's future profitability thus the potential investment opportunities.

Investors' belief that managers who are better informed about the firm only increase dividend payout rate because the managers have an insight into the companies' future of which the investors do not have. This declaration of the dividends is seen as a signal of positive returns into the future and this is what investor might base on to make their investment decisions. It has also been argued that managers are reluctant to recommend dividend increment unless they are confident that the future profitability of the company will expand in order to comfortably support the increment. Consequently it has been hypothesised that a dividend increment is a harbinger of improved future profitability. (This is so in spite of the fact that the normal direction of the causable relationship is from earnings to dividends **(Lintner, 1956)**)

In Kenya studies on the determinants of dividend policies include **Karanja (1987), Farida (1993), Iminza (1997), Onyango (1999), Njoroge (2001), Maina (2002) and Mbugua (2004).** They find that a company's profitability determines the dividends paid. This is also in consistence with the Company's Act requirement that dividends be paid only out of profits. No study has tested the dividend signalling theory applicability in Kenya. In this theory we use dividend increments to predict future profitability.

1.2 STATEMENT OF THE PROBLEM

Many of the studies on dividends were conducted in developed countries whose market characteristics differ a lot with those of the developing nations. In developing countries, markets are small in size, thin in trading, inefficient and not automated.

There is a lot of difficulty in trying to get finances to undertake investment in developing countries. Firms are thus forced to retain their funds or incomes so as to be able to grow, and again they would like to satisfy their major objective which is to maximise the shareholders wealth. Dissatisfied shareholders are a major threat even to the existence of the firm itself.

In modern times, the payment of dividends by a company is done with serious consideration of its implications especially to investors. It is a balance between reinvestment of cash or payment of dividends, which both have their own ramifications.

Whereas some studies on the dividend changes in relation to future profitability of a company have been done in the developed countries (see **Nissim and Ziv (1999)** and **Benartzi, Michealy, and Thaler (1997)** among others), no such studies to the best of my knowledge have been done in Kenya.

The goal of this study was to find out whether there exists a relationship between dividends changes and future profitability for companies quoted on the Nairobi Stock Exchange.

1.3 OBJECTIVES OF THE STUDY

To establish the signalling efficiency of dividend changes on the future profitability of quoted companies at the Nairobi Stock Exchange.

1.4 IMPORTANCE OF THE STUDY

1. **FINANCIAL ANALYSTS**
   a) This will help enrich their collection of knowledge and hence they can be able to positively give advice to their clients with more confidence.
   b) They can be able to realise that what works in the developed nation's can work or not work in the developing nations.
2. **ACADEMICIANS**
   a) It is good for academicians to continue the study in relation to new environments e.g. developing countries like Kenya. Thus more additions to the body of knowledge in finance and create room for further research.
3. **INVESTORS**
   a) The study will help Kenyan investors to be at a better position to make decisions on companies they would prefer to invest in.
   b) To reduce the chances of investors being misinformed in their decision making.
4. **MANAGERS**
   a) The study will assist managers to declare dividends that give a positive future image of the company.
   b) To come up with an optimum dividend policy that is good for their company.

5. **CREDITORS**

a) All creditors have an obligation to issue their services and goods to companies that they are sure will pay up.

b) The study will give knowledge that can form a basis for formulating lending policies for different firms.

6. **GOVERNMENT**

a) The knowledge from the study will be used as a means of monitoring public quoted companies thus protecting investors in the process.

b) An advance warning on company future is seen and prevention of "surprises" is done by the responsible government bodies.

CHAPTER TWO: LITERATURE REVIEW

The relationship between dividends and future profitability has drawn the attention of many schools of thought. This chapter will highlight some findings on dividends and also their relation to future profitability according to past studies.

2 DEFINITION OF TERMS

2.1 DEFINITIONS

a) ***Dividends*** - These are the percentage of earnings paid to stockholders in cash dividends, stock dividends or stock splits (***Van Horne, (1997***). It is the net earnings that remain after the companies operations and is distributable to the shareholders. The Webster Dictionary defines dividends as a "share in a pro-rata distribution (as of profits) to stockholders.

b) ***Earnings*** - Defined as the required return to owners based on the cost and level of invested equity capital. (***Edward and Bell (1961***)).

2.2 DIVIDEND RELEVANCE

Dividends are important. The controversy about dividend policy has three diverse schools of thought. The schools of thought are as follows:

a) One group that believes that an increase in payout, i.e. dividends, reduces the value meaning that dividends are irrelevant.

b) The second group which believes that an increase in dividends payments will lead to an increase in value of the firm, thus meaning that dividends are relevant.

c) A third group that is quite indifferent. This group believes that firm value is not affected at all by dividend payments.

In my study however, I do succumb to the school of thought that dividends are relevant.

1. The bird-in-the-hand explanation

One argument that a relationship exists between firm value and dividend payout is that dividends represent a sure-thing relative to share price appreciation. Because dividends are supposedly less risky than capital gain, firms should set a high dividend payout ratio and offer a high dividend yield to maximise stock price. ***Modigliani and Miller (1961).***

2. The signalling explanation

Another possible reason for paying dividends is the use of dividend policy to communicate information about a firm's future prospects to investors. According to the information content of dividends or basically the signalling explanation, cash dividend announcements convey valuable information about management assessment of a firm's future profitability that other means cannot fully communicate (***Ross, (1973***).

In studies carried out by ***Lintner, (1956***), he found out that directors used dividend policy to convey to the shareholders their expectations about the firms' future performance. The traditional view was that dividends do convey valuable information to the investors and other market participants. The argument is that, management to signal their future expectations on performance uses dividends.

In ***1961, M&M*** disagree with the signalling hypothesis but the set conditions were not realistic in a market. It is only theoretical. Subsequent to ***M&M***, many studies which purport to test the "information content" of dividends hypothesis empirically have been carried out. The results are somewhat inconclusive since some researchers do agree with the hypothesis while others do reject it.

Pettit in ***1972*** used quarterly dividend announcements to test their accuracy in predicting firms' future earnings. He sampled **625 NYSE** firms and found clear support for the hypothesis that dividend announcements provide investors with information.

Information asymmetry suggests that corporate managers have an information advantage over outside investors. If managers have information that investors do not have, they may use a change in dividends as a way to signal this private information and thus reduce information asymmetry.

Dividend signalling models also suggest that managers increase dividends only when they are confident that higher dividends can be maintained with higher subsequent cash flow.

Models developed by ***Bhattachanja (1980), John and Williams (1988)*** predict that higher dividends will be associated with higher subsequent cash flow. ***Ross (1977)*** developed a capital structure signalling model that also predicts a higher advantage being associated with higher cash flow.

Signalling models have been tested empirically in two ways. First, event studies examine changes in a signalling variable and observe the market

reaction. Thus, such studies can investigate whether expected cash flow responds systematically.

A second set of empirical studies uses a time – series methodology to investigate the dynamic linkage between the signalling variable and earnings cash flows e.g. studies by ***Fama and Babiak (1968), Ofer and Siegel (1987)*** among others find support for the signalling hypothesis.

3. The Tax-clientele explanation

Another explanation of why dividend policy matters involves the tax effect. According to the tax-preference theory, investors may favour retention of funds over the payments of dividends (and the vice-versa is true) due to the tax related reasons. The favourable treatment of capital gains over dividends may lead investors to prefer a low dividend payout as related to a high payout. That is, keep dividends payments low if you want to maximise prices.

Because the tax effect differs among various types of investors, they may be attracted to firms that have dividend policies appropriate to their particular tax circumstances. ***M&M (1961)*** wanted to find out whether dividends do influence the value of a firm when differential tax rates for dividend income and capital gains exists. However the results were conflicting, but as ***Farrar and Selwyn (1967)*** put it "*in general, the best form of payment is the one which is subject to least taxation.*"

Most scholars who have studied effects of taxes on dividend decisions have come up with either positive or negative results. The important point to note is that the board of directors should be very careful when formulating a dividend policy so as to be able to satisfy the interest of most if not all of the investors.

4. The Agency explanation

Another popular view of dividend relevance, advanced by ***Jensen & Meckling (1975)*** and, in addition, extended by ***Rozeff (1982)*** and ***Easterbrook (1984)*** is agency theory. This theory derives from the conflict of interests between corporate managers (agents) and outside shareholders (principals).

One way to reduce agency costs is to increase dividends. Paying larger dividends reduces the internal cash flows subject to management discretion and forces the firm to seek more external financing. Raising costly outside capital subjects the firm to scrutiny of the capital market for new funds and reduces the possibility of sub-optimal investments.

Thus, dividend payments may serve as a means of monitoring or bonding management performance. ***Rozeff (1982)*** finds support for the role of dividends in resolving agency costs in minority manager controlled firms. ***Frank and Sholefield (1977)*** and ***Graham, Dodd, and Cottee (1962)*** concluded that managers make financial policy trade off such as paying dividends to control agency costs. ***Jensen (1986)*** argues that firms can mitigate manager's ability to over invest by committing to a higher level of dividends thus reducing the free cash flow available for over investment in not so good project.

5. Lack of investment opportunities

As ***Karanja (1987)*** puts it that, a firm may declare dividends if it lacks investment opportunities. This is referred to as the "residual theory of dividends". The theory holds that dividends are declared only after the firm has exhausted its needs for investing funds. The traditional theorists on dividend policies like ***Walter (1956)*** and ***Gordon (1959)*** have advocated this line of

reasoning. They recognise that dividend payments do reduce the amount of funds available for investment purposes.

They state that dividends should only be declared when there are "unattractive" investment opportunities. It is noted that dividend payments do reduce the amount of funds available to the firm for investment purposes when external opportunities for investment funds are ignored.

It follows that in times when a firm has abundant opportunities for investments, then it should not declare any dividends and the investors should be content with the level of capital gains that their shares attract. Investors want to invest their funds in companies that are growing and this can only be achieved if the company undertakes investment projects. The cheapest source of funds is the internally generated ones. Thus the more funds, the more investments it should undertake and the last option available should be to pay up dividends.

2.3 DIVIDEND DISTRIBUTION MECHANISM

Dividends are distributed quarterly, semi-annually or annually (***Healy and Palepu, (1988)***. The following procedures are followed when paying dividends: The management sets up a date of declaration of the dividends. Then the date of record is set. This is the resolution that is passed by Board of Directors on when the dividends will be paid. Also the amount of dividends to be paid is resolved. The B.O.D also sets out the class of shareholders who will receive dividend and the medium of payment to used, and thus dividends are then given.

2.4 FACTORS INFLUENCING DIVIDEND POLICY

There exists a number of factors to consider before setting of a dividend policy for a firm. A firm in setting its dividend policy should consider as many factors as possible. The factors included are:

1. Legal Rules

Although state statutes and court decisions governing dividend policy are complicated, their essential nature may be stated briefly. The legal rules provide that dividends must be paid from earnings either from the current year's earnings or past year's earnings as reflected in the balance sheet account.

In Kenya, the **Companies Act (CAP 486)** recognises the shareholders right to receive dividends and gives the directors the discretion of declaring dividends "*the company in a general meeting may declare dividends but no dividends may exceed the amount recommended by directors,..., no dividends shall be paid otherwise than out of profits,..., the directors may from time to time pay to the members such dividends as appear to the directors to be justified by profits of the company.*"

2. Liquidity position

Profits held as retained earnings are generally invested in assets required for the conduct of business. Retained earnings from proceeding years are already invested in plant and equipment, inventories etc. They are not held in cash. Thus, although the firm has a record of earnings, it may not be able to pay its dividends because of its liquidity position (***Kent, (1960)***).

Furthermore, a firm must not only consider its present cash requirements but also the future. Hence, a growing firm is usually in need of cash to finance its investment projects and hence even though its cash assets may be substantial, it may never the less maintain a low dividend payout ratio (***Karanja, (1987***).

3. Need to repay debt

When a firm has sold debt to finance expansion or to substitute for other forms of financing, it is faced with two alternatives. It may choose to repay a debt, then this will generally require the retention of its earnings so as to be able to repay back the borrowed funds. This would automatically lead to a low payout dividend policy during that particular period **(Deshmukh, *(2003).***

4. Restrictions in Debt contracts

According to ***Mathur (1979)***, debt contracts, particularly when long term debt is involved, frequently restrict firms ability to pay cash dividends. Such restrictions to defend the lender may include:

a) Future dividends are paid out of the future earnings.

b) Dividends cannot be paid out when working capital is below a specified limit

Similar types of restrictions are to be found when a firm utilises preferred stocks. Preferred stock agreements will usually require that cash dividends be paid to ordinary shareholders only when all accrued preferred dividends have been paid. This affects the dividend policy of a firm.

5. Profit Rate

The rate of return on assets determines the relative attractiveness of paying out earnings in the form of dividends to stockholders, who will use them elsewhere, compared with the productivity of their use in the present enterprise **(Mathur, *(1979)*.**

6. Stability of Earnings

If earnings are relatively stable, a firm is better able to predict what its future earnings will be. A stable firm is therefore more likely to pay out a higher percentage of its earnings than a firm with fluctuating earnings. The unstable firm is not certain that the hoped for earnings will be realised, so it is more likely to retain a high proportion of earnings as to giving out dividends. According to ***Gardner (1962)***, the firms with widely fluctuating dividends may adopt a policy of low regular dividends plus extra. The extra (or special) dividend has the connotation that the dividend is "temporary" and hence does not indicate a new level of dividends.

7. Control

Another important variable is the effect of alternative sources of financing on the control situation in the firm. Some corporations. as a matter of policy, will expand only to the extend of their internal earnings. This policy is defined on the grounds that raising funds by selling additional common stock dilutes the control of the dominant group in the company.

At the same time. selling debt increases the risks of fluctuating earnings to the present owners of the company. Reliance on internal financing in order to

maintain control reduces the dividend payout (***Mathur (1979)***). Firms will thus pursue low dividend payout ratios policies when the existing shareholders prefer to maintain control rather than pay high dividends and issue new equity simultaneously.

8. Tax position of Stockholders

The tax position of the owners of the corporation greatly influences the desire of wanting dividends. For example, a corporation closely held by a relatively few number of taxpayers in high-income brackets is likely to pay relatively low dividends. This is because the owners of the corporation are interested in taking their income in the form of Capital gains rather than as dividends that is subject to higher personal income tax rates. Thus, to at least some extent a firm's payout policy determines its stockholders types **(Gardner , *(1982)*).**

The above reasoning about the influence of tax laws (rules) on dividends is easily said than done in large corporations with thousands or millions of shareholders. This is so because it is difficult to ascertain the wishes of the shareholder. All this implies that it is difficult for a large corporation to follow a policy that pleases all.

9. Tax on improperly accumulated earnings

The tax authorities, usually the state, can be denied enormous revenues if most firms withheld the payment of dividends. If the company doesn't release payment of dividends, then it is liable to be charged tax for unauthorised excess funds being held by the firm. In Kenya, a firm should disburse 40% of its earnings to the shareholders, and that is the law. A wise management would

try to avoid violating this rule and resulting to penalties. Instead they would shift that tax burden from the firm to the shareholders in the form of the dividends they are paid ***(Karanja, (1987)).***

10. Business Outlook

" Suppose, for example, that a firm's long term economic forecast suggests that double digit inflation, uncontrolled government spending and increased bitter competition for world markets will turn the next recession into a major depression of the 1930's variety. Then directors would seriously consider an increase in its regular dividends to be untimely", ***Gardner, (1982).***

A firm will have to issue dividends that do convey information that is accurate thus; the investors can convince themselves on the company's future. When the economy is good, the company should look strong economically. If the economy is weak, then the company should portray so. Investors are highly to refuse investing in a company that portrays the opposite of what the market indicators are showing. They might assume the reports are false and an illustration of the *last kicks of a dying horse.*

11. Working Capital Needs

As quoted in ***Karanja, (1987).*** In the works by ***Walker*** state that any firm that weakens its working capital position by paying dividends not only undermines its entire capital structure, but may very well cause creditors and investors to raise the price of their funds.

In such cases, the interest of existing shareholders is harmed. Thus, before committing the company to a certain dividend policy, its effect on the working

capital needs to be evaluated. Always the company should set enough funds to cater for its working capital before declaring or issuing out any dividends. Without working capital, the operations of a company are stalled and it may even go solvent.

12. Inflation

It can also influence dividend policy. Inflation means a general increase in price level.

Inflation serves to reduce the purchasing power of a currency. Inflation serves to reduce the purchasing power of a currency. Inflation has been and will always remain a problem for both individual consumers and businesses. The presence of inflation in an economy implies that a company's profits will be overstated when the companies account are prepared using the Generally Accepted Accounting Principles (GAAP) or the Internationally Accepted Standards (IAS).

Thus, the amounts required for replacing these assets far exceeds the depreciation flows. Consequently, more earnings may be retained in the business to cater for future replacements of assets. This implies that dividends will be affected when inflation is present in the economy. ***Martin et al (1979).***

2.5 TYPES OF DIVIDENDS

Dividends are classified into four types, namely;

2.5.1 Cash dividends

These are the most frequent mode of dividend payment. They are normally paid from Retained earnings. However, this is not to say they may never be paid from the capital account or share premium account.

The payment of cash dividends requires that a company have enough cash to meet the declaration required. The funds can either be from internal or external sources ***(Gardner, (1982)).***

2.5.2Stock dividends

A stock dividend can be defined as a distribution of surplus earnings through a private issuance of additional shares (***Doris, (1956***)). It increases the number of shares outstanding. Since the distribution is on a pro-rata basis, it then means that a shareholders' ownership in the firm is unaffected by the distribution.

Companies usually prefer stock dividends, as they do not alter a firm's cash position. All a stock dividend involves is the making of simple bookkeeping entries which transfer some funds from the firms retained earnings account to its permanent capital accounts (***Christy, (1981***)).

2.5.3Scrip dividends

A scrip dividend is a distribution of a firms retained earnings to the shareholders in the form of notes or promises to pay the amount of the dividend at some future date. Several factors support payment of scrip dividends.

They include.

a) Lack of sufficient cash to warrant payment

b) Where the firm's future prospects is not bright.

c) Where the firm wishes to maintain an established dividend policy without paying out cash immediately.

2.5.4Dividends in kind

A firm has the option of distributing its retained earnings to its shareholders in the form of property (or a firms' other non cash assets). Hence, a firm may distribute merchandise, investments held on other company's etc. This form is unpopular and rarely used in paying dividends.

2.6 REVIEW OF EMPIRICAL WORKS

2.6.1Ross Watts Study

Watts (1973) examined the association between the signs of the unexpected Change in dividends and the abnormal rate of return as reflected in stock price changes. His sample consisted of **310** firms common in the **COMPUSTAT** and **CRSP** for which dividends and earnings data were available for the twenty three-- (23) year period of study.

Watts computed the error term for each firm in the sample for each year in the test period. The error term represented the unexpected change in dividends or simply the dividend information variable.

Using the familiar market model, abnormal monthly security returns were computed for all firms over the period of study. In each year the abnormal security returns were cumulated by categories that were predetermined.

Under the dividend information hypothesis an API value less than zero for any category at the month of the dividend announcement or an API value greater than zero for the other category both imply information content in dividend

change announcements. Thus, the argument could be strengthened to say that such results would imply information content in dividends over and above that contained in earnings.

Due to some aspects, namely;

a) Method of classification of firms

b) Use of a single – factor market model

Watts did get some relationship though very small and trivial, thus implying little information content to dividends.

2.6.2Richardson Pettit's study

Richardson Pettit (1972) examined the relationship between the dividends announcements and security performance in presence of capital markets efficiency. The primary purpose of the research was to offer further evidence about the validity of the efficient market hypothesis by estimating the speed and accuracy with which market prices react to announcement changes in the level of dividend payments. He states that announcement of changes in dividends would be immediately and unbiased reflected in the security's price resulting in a one time actual return that exceeds (if a dividend increase) or falls short (if a dividend decrease) the expected security return.

A market that is inefficient would be characterized by firms with abnormal returns that tend to exist over a period of time after the announcement; implying either that it takes considerable time for the information to be disseminated across the market, or that there is tendency to either

systematically understate or overstate the effects of such information on the price of the security.

He sampled a data of a sample of 625 New York Stock Exchange firms for the period January 1964 to June 1968. He recorded all the dividend changes which were approximately 1000, exclusive of extra or special dividends issued. The results of the empirical tests of the hypothesis were presented in two ways. First the abnormal performance which is averaged over all firms in each dividend earnings class for the period surrounding the dividend announcement date. The figure represented the unexpected monthly return that would have accrued to an investor with an equal investment in each security class. Second, an index of performance was calculated by compounding the periodic average unexpected return from a number of periods before to a number of periods after the announcement date.

The results gotten tend to support the proposition that market participants make considerable use of the information implicit in announcements of changes in dividend payments. The market reacts very dramatically to the announcements when dividends are reduced or when a substantial increase takes place. Thus he did conclude that the investigation clearly did support the hypothesis that the market does make use of changes in dividend payments in assessing the value of a security. Thus, the signaling effects of dividends are evident in the markets, depending on the variable in use or study.

2.6.3Ofer Aharon and Daniel Siegel study.

Ofer, Aharon and Siegel, Daniel (1987) document a relationship between announcements of unexpected changes in financial policy and unexpected changes in performance of the form. Using a methodology that combines analysis of stock price movements and earnings forecast data, they do provide evidence that analysts revise their earnings forecasts following announcement of an unexpected dividend change by the amount positively related to the size of the unexpected dividend change.

The methodology differs in important ways from event-study methodology, which has been employed to test for the information content of changes in financial policies. Event-study methodology attempts to identify information content by examining security price reactions to announcements of policy changes. The method in use by the two scholars allows them to gain insight into the characteristics of the information that is being released by changes in a particular financial policy variable. The model developed is used to test whether analysts update their forecasts of earnings following an announcement of an unexpected dividend change and whether they do so in a manner consistent with rationality.

They had collected data for over 2000 firms quoted at the NYSE between 1976 through 1984. After regression of the equation and the removal of error factors, they were able to conclude that following the announcement of an unexpected dividend change, analysts revise their forecasts of earnings and they do so in a manner consistent with rationality. The results they

obtained are consistent with the hypothesis that unexpected dividend changes contain information about the firm's expected performance and therefore provide support for dividend-signaling models. By combining price-reactions data with expectations data, we are able to examine whether changes in financial policy convey information about cash flows and whether this information is incorporated by market participants in a manner consistent with rationality.

2.6.4Other Studies

Empirical evidence largely confirms the hypothesis that firms use dividends to convey private information. The first major thrust in the dividend signalling literature set out to empirically test the hypothesis that dividends convey information about future earnings. The results of such studies are conflicting but, in general, are supportive of the contention that dividends convey information about future earnings.

Asquith and Mullins (1986) document that the magnitude of abnormal returns accruing to stockholders is directly proportional to the size of the dividend measured as dividend yield or payout ratio.

Kane, Lee and Marcus were among the first to suggest that effects of dividend announcements should be examined in conjunction with earnings announcements. They show that abnormal stock returns surrounding earnings and dividend announcements indicate the existence of a significant interaction effect.

Lobo, Nair and Song (1986) tested the information content hypothesis with respect to future earnings by investigating whether more accurate forecasts of earnings can be obtained by utilising dividend information.

Their conclusion was that it was possible to estimate forecasts of earnings using dividend information. However, the results obtained are not perfect, i.e., not exact but a relative image of the hypothesis.

Partington (1985) found that the managers of Australian companies consider the signalling effect, that is, the use of the dividend payment as a mechanism to signal their view of future profitability. The study concludes that it is an important factor in motivating the dividend decision.

Though not an empirical study but a case study, ***Gill and Green (1994)*** and ***Green, Pogue and Watson (1975)*** found that the financial directors of both listed firms in the U.K. (United Kingdom) and Irish Republic perceive the signalling effect to be an important factor in monitoring the dividend decision.

Charest (1978) and ***Dielman and Oppenheimer (1984)*** do use a naïve expectation model as a proxy for a dividend expectation model. A naïve dividend expectation model is widely used because managers are reluctant to change dividends unless they foresee a permanent change in the future performance of firms. Empirical evidence suggests that a naïve expectation model performs as well as more sophisticated models in predicting the abnormal returns associated with unexpected dividend changes.

Lintner (1958) first proposed that dividend changes convey useful information about future earnings. He argued that managers will only commit themselves to higher dividends when they believe that the firms have permanently increased. Thus, investors believe a dividend change is definitely used to convey information about future earnings of the firm.

Daniels, Shin and Lee (1997) agree to the fact that dividends do serve as a surrogate for future earnings. They do provide empirical evidence that the dividends act as surrogates of earnings, if earnings consist of permanent and transitory components and if dividends depend on permanent earnings.

Bhattacharya (1979) suggests that, if stockholders have imperfect information about a firm's profitability and if there is a tax rate difference between capital gains and dividends, then dividends will be a surrogate for a signal expected cash flows.

According to ***Arnoff & Asness*** they state that, " Historical evidence strongly suggests that expected future earnings growth is a factor when current payout are high and slowest when payout rations are low."

Bar-Yosef and Huffman (1988) also support this theory by stating that the size of the declared dividend is an increasing function of expected cash flow.

Akhigbe and Madura (1996) did find out that firm experience higher growth, ..., and higher dollar amounts of earnings after dividend initiations. In this same respect firms that omit dividends do experience lower growth and lower earnings.

Lee Hei-Wai and Ryan P.A. state examination they did on earnings performance in relation to dividend initiations or omissions do agree with the hypothesis that dividends convey important future information on the earnings of the firm.

Lamb (1976) compared the mean squared forecast errors of several earnings forecasting models, with and without lagged information, and concluded that the inclusion of dividend information resulted in lower forecast errors meaning dividend changes do play a vital role in determining an organisations future profitability.

Miller and Rock (1985) in addition do conclude that the announced dividend does convey information about the firm's future earnings but only indirectly. They argue that dividend announcement establishes the firms current earnings and the current earnings serve as a basis for future earnings estimates.

2.6.5Studies Done in Kenya on Dividends.

Dividend policies have been studied well in the past by MBA students in their unpublished projects. Some like ***Karanja (1987)*** studied the dividend practises of public companies in Kenya. He found out there are many reasons why firms should pay dividends. He found out that cash position was the most important consideration when paying dividends. He also showed that dividend payment considers mode of payment, if to pay etc, and this makes the dividend decision more complicated.

Farida (1993) examined empirically the parameters for determination of dividends for firms in the Nairobi Stock Exchange. Her results supported firm liquidity as the most prevalent parameter.

Iminza (1997) carried out research to find out whether dividend payments affect stock prises and found out that they actually affect share prices.

Onyango (1999) researched on factors managers consider before declaring bonus issues and estimation of the benefits to shares of a firm. He concluded that stock dividends (bonus issues) benefit the firm.

Njoroge (2001) examined the relationship between dividend pay outs and some financial ratios such as return on assets. The results obtained were that the most significant variables in making dividend decisions is return on assets while return on equity and growth on assets are not considered in making dividend decisions.

Maina (2002) carried out studies to establish whether their exists a relationship between dividend and investment decisions. The results show that investment decisions affect dividend decisions.

Mbugua (2004) carried event studies to establish whether there is information content in stock dividend announcement. Her research supported the study and she concludes that stock dividends announcements have an informational content in them.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research design

This chapter sets to explain the population interest, the type of secondary data used, the sources of the data, and the techniques of analysis used. An event study is done for each year, to establish whether a relationship between dividend changes and future profitability exists.

3.2 The Population

The population of interest in this study comprises of companies quoted on the Nairobi Stock Exchange (NSE). A long period of study is needed to establish a worthwhile relationship between dividend changes and future profitability. The period is from 1998-2002.

3.3 Research Hypothesis

Null Hypothesis (H_o)

There does not exist a relationship between dividend changes and future profitability

Alternate Hypothesis (H_A)

There exists a relationship between dividend changes and future profitability

3.4 Sampling approaches

The sample shall consist of the firms listed on the stock exchange.

3.5 Data collection

Data for the study was secondary data of firms quoted at the Nairobi Stock Exchange. These was be obtained from the Nairobi Stock Exchange, stockbrokers, Kenya Bureau of Statistics and the Capital Markets Authority.

3.6 Data analysis

I used two methods in the analysis of my data. The first method I used was to compare actual dividend changes in relation to changes in the earnings of the firms. I collected the dividend changes for the above study years. I also collected data on the changes of earnings before extra ordinary items of those years. It is after collecting this information that I compared the dividend changes of each year to the earnings changes of the dividend change year and the following two years. This enabled me to determine if there exists any relationship between dividend changes and earnings changes of firms, and for how long the effect of the dividend changes was felt in company earnings.

The second method I used was regression analysis to test the above data and the conclusions that I came to using the first method. The following model which has also been used by **Benartzi, Michealy, and Thaler** (1997) was the one I used for the regression analysis.

$$(E_t - E_{t-1}) / B_{-1} = a + b_1 * \Delta Div_o + b_1 * DNC * \Delta Div_o + \sum_t$$

Where:

E_t = Current earnings in dividend event year

E_{t-1} = Past earnings of year before dividend event

ΔDiv_o = Change in dividends

B_{-1} = the book value of common equity for year before dividend change

$\sum_t$ = error term.

t = year of study

t-1= past year before study

DNC = A dummy Variable that equals one for divided increase and decrease.

According to the information content of dividends hypothesis, dividends trigger stock returns because they convey new information about the firm's future profitability, which in turn determines equity price reactions in the market. It is this signalling effect that I was investigating.

The model that was constructed by **Bernartzi, Michealy and Thaler (1997)**, did test the primary formula used and they found that signalling effects are evidenced by companies that had changes in dividends.

In the regression model, the dependent variable, $(E_t - E_{t-1}) / B_{-1}$ is the annual change in earnings before extraordinary items, deflated by the market value at the end of year before dividend change. $\Delta \mathbf{Div_o}$ is the difference between last years dividend and this years dividends. DNC is a dummy variable that takes the value of 1 for dividend decreases and 0 otherwise. a and b is the OLS estimate of the coefficient. With the regression of the above, I expected to find if in fact dividends do convey information about future profitability of a company.

Statistical tests.

I used the T- test statistic to test for the correctness of the results of the data for dividend changes in relation to earnings of the dividend change year, the following year and the second year after the dividend change has occurred.

CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 Introduction

The aim of this study was to determine whether a relationship exists between changes in dividends and future predictability of companies, with the changes in dividends being used as a gauge of future profitability of a company i.e. its predictability strength. The study focuses on firms that were quoted at the Nairobi Stock Exchange between the years 1998 and 2002. The companies quoted during the period were forty nine (49) with two companies being eliminated for lack of information. Thus the study is based on forty eight companies.

Data on dividends per share for each year and the earnings for the companies were extracted from the Nairobi Stock Exchange. The lag for variables such as earnings and dividends change were obtained from the data extracted. A calculation of the changes in earnings and also in dividends is done so as to obtain the required figures for the study.

For dividend changes, this was done by subtracting last year(s) dividend with this years dividend and the preceding next two years. That is

$$\Delta D = (D_t - D_{t-1})$$

$$\Delta D = (D_{t+1} - D_{t-1})$$

$$\Delta D = (D_{t+2} - D_{t-1})$$

The above formulae gives us the changes in dividends for year one in comparison to last year, this year and next year.

4.2Analysis of the change in dividends to profits

For earnings changes, this was done by subtracting last year(s) earnings with the earnings of this year and the preceding two years earnings.

A table showing the earnings for all the firms is at Appendix 1

A table showing the dividends for all the firms is at Appendix 2

A table showing other raw data used is at Appendix 4

From the tables the changes of both dividends and earnings is calculated and a summary

1998 - 1999

COMPANY	1998 – 1999 Dividend Change	1998 – 1999 Earnings Change	1999 – 2000 Earnings Change	2000 – 2001 Earnings Change
AFRICAN LAKES CORPORATIONS	No Change	No Change	Increase	Decrease
ATHI RIVER MINING COMPANY	No Change	Increase.	Increase	Increase
BAMBURI CEMENT COMPANY LTD	Decrease	Increase	Decrease	Increase
BARCLAYS BANK OF Kenya LTD	Decrease	Decrease	Decrease	Increase
BAT Kenya LTD	Decrease	Increase	Decrease	Increase
BOC Kenya LTD	No Change	Decrease	Decrease	Increase
BROCKE BOND Kenya LTD	No Change	Decrease	Increase	Decrease
CAR AND GENERAL Kenya LTD	No Change	Increase	Decrease	Decrease
CARBACID INVESTMENT LTD	Increase	Increase	Decrease	Decrease
CFC BANK	No Change	Decrease	Increase	Decrease
CMC HOLDINGS LTD	No Change	Increase	Decrease	Decrease
CROWN BERGER Kenya LTD	Increase	Increase	Decrease	Increase
DIAMOND TRUST BANK Kenya LTD	No Change	Decrease	Increase	Decrease

LOP Kenya LTD	No Change	Increase	Decrease	Increase
AFRICAN BREWERIES	Increase	Increase	Increase	Increase
AFRICAN CABLES LTD	Increase	Decrease	Increase	Decrease
AFRICAN PORTLAND ENT COMPANY	No Change	Decrease	Increase	Increase
STONE (E.A) LTD	No Change	Decrease	Decrease	Increase
SING FINANCE PANY LTD	Decrease	Decrease	Decrease	Decrease
CHINGS BIEMER LTD	No Change	No Change	No Change	No Change
C INVESTMENT COMPANY	Increase	Increase	Decrease	Decrease
LEE INSURANCE PANY LTD	No Change	Decrease	Decrease	Increase
UZI LTD	Decrease	Decrease	Decrease	Decrease
a AIRWAYS LTD	Increase	Decrease	Increase	Decrease
a COMMERCIAL BANK	Decrease	Decrease	Increase	Increase
a OIL COMPANY LTD	Decrease	Increase	Decrease	Increase
a POWER AND LIGHTING MPANY LTD	Decrease	Decrease	Decrease	Increase
RSHALLS (E.A) LTD	No Change	Increase	Decrease	Increase
MIAS SUGAR COMPANY	No Change	No Change	Increase	Decrease
TION MEDIA GROUP LTD	Increase	Decrease	Decrease	Increase
TIONAL BANK OF Kenya	No Change	Decrease	Increase	Increase
BANK LTD	Increase	Increase	Decrease	Decrease
N AFRICAN INSURANCE MPANY LTD	Decrease	Decrease	Decrease	Increase
A VIPINGO PLANTATIONS	No Change	Decrease	Decrease	Increase
SINI TEA AND COFFEE LTD	Decrease	Decrease	Increase	Decrease
ANADARD CHARTERED NK Kenya LTD	Increase	Increase	Increase	Increase
ITAL Kenya LTD	Decrease	Increase	Decrease	Decrease
URISM PROMOTION RVICES	No Change	Increase	Increase	Increase
HUMI SUPERMARKETS D	Decrease	Decrease	Increase	Decrease
GA GROUP LTD	Decrease	Increase	Decrease	Increase
BAUMANN AND COMPANY D	Decrease	Increase	Decrease	Decrease
TY TRUST LTD	No Change	Decrease	Decrease	Decrease
AGADS LTD	**Decrease**	Decrease	Decrease	Decrease
PRESS Kenya LTD	Decrease	Decrease	Increase	Decrease
APCHORUA TEA COMPANY TD	No Change	Decrease	Decrease	Decrease
nya ORCHARDS LTD	Decrease	Increase	Decrease	Increase
MURU TEA COMPANY LTD	Decrease	Decrease	Increase	Decrease
TANDARD NEWSPAPERS TD	No Change	Decrease	Decrease	Increase
Williamson Tea Kenya td	No Change	Decrease	Increase	Increase

1999 – 2000

Company	1999 – 2000 Dividend Change	1999 – 2000 Earning Change	2000 – 2001 Earnings Change	2001 – 2002 Earnings Change
AFRICAN LAKES CORPORATIONS	No change	Increase	Decrease	Increase
ATHI RIVER MINING COMPANY	No change	Increase	Increase	Increase
BAMBURI CEMENT COMPANY LTD	Increase	Decrease	Increase	Decrease
BARCLAYS BANK OF Kenya LTD	No change	Decrease	Increase	Decrease
BAT Kenya LTD	No change	Decrease	Increase	Increase
BOC Kenya LTD	No change	Decrease	Increase	Increase
BROOKE BOND Kenya LTD	Increase	Increase	Decrease	Decrease
CAR AND GENERAL Kenya LTD	No change	Decrease	Decrease	Increase
CARBACID INVESTMENT LTD	Decrease	Decrease	Decrease	Increase
CFC BANK	No change	Increase	Decrease	Increase
CMC HOLDINGS LTD	No change	Decrease	Decrease	Increase
CROWN BERGER Kenya LTD	Decrease	Decrease	Increase	Increase
DIAMOND TRUST BANK Kenya LTD	Decrease	Increase	Decrease	Increase
DUNLOP Kenya LTD	No change	Decrease	Increase	Decrease
EAST AFRICAN BREWERIES LTD	Increase	Increase	Increase	Increase
EAST AFRICAN CABLES LTD	Decrease	Increase	Decrease	Decrease
EAST AFRICAN PORTLAND CEMENT COMPANY	Increase	Increase	Increase	Decrease
FIRESTONE (E.A) LTD	No change	Increase	Decrease	Decrease
HOUSING FINANCE COMPANY LTD	Decrease	Decrease	Decrease	Increase
HUTCHINGS BIEMER LTD	No change	No Change	No Change	No change
ICDC INVESTMENT COMPANY LTD	Decrease	Decrease	Decrease	Increase
JUBILEE INSURANCE COMPANY LTD	No change	Decrease	Increase	Increase
KAKUZI LTD	Decrease	Decrease	Decrease	Increase
Kenya AIRWAYS LTD	No change	Increase	Decrease	Decrease
Kenya COMMERCIAL BANK LTD	No change	Increase	Increase	Decrease
Kenya OIL COMPANY LTD	Increase	Increase	Increase	Decrease
Kenya POWER AND LIGHTING COMPANY LTD	Decrease	Decrease	Increase	Increase
MARSHALLS (E.A) LTD	No change	Increase	Decrease	Increase
MUMIAS SUGAR COMPANY LTD	Increase	No change	Increase	Decrease

NATION MEDIA GROUP LTD	No change	Decrease	Increase	Increase
NATIONAL BANK OF Kenya LTD	No change	Increase	Increase	Increase
NIC BANK LTD	No change	Decrease	Decrease	Decrease
PAN AFRICAN INSURANCE COMPANY LTD	Decrease	Decrease	Increase	Decrease
REA VIPINGO PLANTATIONS	No change	Decrease	Increase	Increase
SASINI TEA AND COFFEE LTD	Increase	Increase	Decrease	Decrease
STANADARD CHARTERED BANK Kenya LTD	Increase	Increase	Increase	Decrease
TOTAL Kenya LTD	No change	Decrease	Decrease	Increase
TOURISM PROMOTION SERVICES	Increase	Increase	Increase	Increase
UCHUMI SUPERMARKETS LTD	Decrease	Increase	Decrease	Decrease
UNGA GROUP LTD	No change	Decrease	Increase	Increase
A BAUMANN AND COMPANY LTD	No change	Decrease	Decrease	Decrease
CITY TRUST LTD	No change	Decrease	Decrease	Decrease
EAAGADS LTD	Increase	Decrease	Decrease	Increase
EXPRESS Kenya LTD	No change	Increase	Decrease	Decrease
KAPCHORUA TEA COMPANY LTD	No change	Decrease	Decrease	Decrease
Kenya ORCHARDS LTD	No change	Decrease	Increase	Decrease
LIMURU TEA COMPANY LTD	Increase	Increase	Decrease	Increase
STANDARD NEWSPAPERS LTD	No change	Decrease	Increase	Decrease
Williamson Tea Kenya Ltd	Increase	Increase	Increase	Decrease

2000 – 2001

Company	2000 – 2001 Dividend Change	2000 – 2001 Earnings Change	2001 – 2002 Earnings Change
AFRICAN LAKES CORPORATIONS	No Change	Decrease	Increase
ATHI RIVER MINING COMPANY	Increase	Increase	Increase
BAMBURI CEMENT COMPANY LTD	Increase	Increase	Increase
BARCLAYS BANK OF Kenya LTD	Increase	Increase	Decrease
BAT Kenya LTD	Increase	Increase	Increase
BOC Kenya LTD	Increase	Increase	Increase
BROCKE BOND Kenya LTD	Decrease	Decrease	Decrease
CAR AND GENERAL Kenya LTD	No Change	Decrease	Increase

CARBACID INVESTMENT LTD	No Change	Decrease	Increase
CFC BANK	No Change	Decrease	Increase
CMC HOLDINGS LTD	Increase	Decrease	Increase
CROWN BERGER Kenya LTD	No Change	Increase	Increase
DIAMOND TRUST BANK Kenya LTD	Decrease	Decrease	Increase
DUNLOP Kenya LTD	Decrease	Increase	Decrease
EAST AFRICAN BREWERIES LTD	Increase	Increase	Increase
EAST AFRICAN CABLES LTD	No Change	Decrease	Decrease
EAST AFRICAN PORTLAND CEMENT COMPANY	Increase	Increase	Decrease
FIRESTONE (E.A) LTD	No Change	Increase	Decrease
HOUSING FINANCE COMPANY LTD	Decrease	Decrease	Increase
HUTCHINGS BIEMER LTD	No Change	No Change	No change
CDC INVESTMENT COMPANY LTD	No Change	Decrease	Increase
JUBILEE INSURANCE COMPANY LTD	No Change	Increase	Increase
KAKUZI LTD	Decrease	Decrease	Increase
Kenya AIRWAYS LTD	Decrease	Decrease	Decrease
Kenya COMMERCIAL BANK LTD	No Change	Increase	Decrease
Kenya OIL COMPANY LTD	Increase	Increase	Increase
Kenya POWER AND LIGHTING COMPANY LTD	No Change	Increase	Increase
MARSHALLS (E.A) LTD	No Change	Decrease	Increase
MUMIAS SUGAR COMPANY LTD	Decrease	Increase	Decrease
NATION MEDIA GROUP LTD	Decrease	Increase	Increase
NATIONAL BANK OF Kenya LTD	No Change	Increase	Increase
NIC BANK LTD	Decrease	Decrease	Decrease
PAN AFRICAN INSURANCE COMPANY LTD	No Change	Increase	Decrease
REA VIPINGO PLANTATIONS	No Change	Increase	Increase
SASINI TEA AND COFFEE LTD	Decrease	Decrease	Decrease
STANADARD CHARTERED BANK Kenya LTD	Decrease	Increase	Decrease
TOTAL Kenya LTD	Increase	Decrease	Increase
TOURISM PROMOTION SERVICES	No Change	Increase	Increase
UCHUMI SUPERMARKETS LTD	Decrease	Decrease	Decrease
UNGA GROUP LTD	No Change	Increase	Increase
A BAUMANN AND COMPANY LTD	Decrease	Decrease	Decrease
CITY TRUST LTD	No Change	Decrease	Decrease
EAAGADS LTD	**No Change**	Decrease	Increase
EXPRESS Kenya LTD	No Change	Decrease	Increase
KAPCHORUA TEA COMPANY LTD	Decrease	Decrease	Decrease
Kenya ORCHARDS LTD	No Change	Increase	Decrease

LIMURU TEA COMPANY LTD	Decrease	Decrease	Increase
STANDARD NEWSPAPERS LTD	No Change	Increase	Decrease
Williamson Tea Kenya Ltd	Decrease	Increase	Decrease

2001 – 2002

Company	2001 – 2002 Dividend Change	2001 – 2002 Earnings Change
AFRICAN LAKES CORPORATIONS	No Change	Increase
ATHI RIVER MINING COMPANY	Increase	Increase
BAMBURI CEMENT COMPANY LTD	Decrease	Increase
BARCLAYS BANK OF Kenya LTD	Decrease	Decrease
BAT Kenya LTD	Increase	Increase
BOC Kenya LTD	No Change	Increase
BROOKE BOND Kenya LTD	Increase	Decrease
CAR AND GENERAL Kenya LTD	Increase	Increase
CARBACID INVESTMENT LTD	Decrease	Increase
CFC BANK	No Change	Increase
CMC HOLDINGS LTD	No Change	Increase
CROWN BERGER Kenya LTD	Increase	Increase
DIAMOND TRUST BANK Kenya LTD	Increase	Increase
DUNLOP Kenya LTD	No Change	Decrease
EAST AFRICAN BREWERIES LTD	Increase	Increase
EAST AFRICAN CABLES LTD	Decrease	Decrease
EAST AFRICAN PORTLAND CEMENT COMPANY	Increase	Decrease
FIRESTONE (E.A) LTD	Decrease	Decrease
HOUSING FINANCE COMPANY LTD	No Change	Increase
HUTCHINGS BIEMER LTD	No Change	No change
ICDC INVESTMENT COMPANY LTD	Increase	Increase
JUBILEE INSURANCE COMPANY LTD	No Change	Increase
KAKUZI LTD	No Change	Increase
Kenya AIRWAYS LTD	Decrease	Decrease
Kenya COMMERCIAL BANK LTD	No Change	Decrease
Kenya OIL COMPANY LTD	Increase	Increase
Kenya POWER AND LIGHTING COMPANY LTD	No Change	Increase

MARSHALLS (E.A) LTD	No Change	Increase
MUMIAS SUGAR COMPANY LTD	Decrease	Decrease
NATION MEDIA GROUP LTD	Increase	Increase
NATIONAL BANK OF Kenya LTD	No Change	Increase
NIC BANK LTD	Increase	Increase
PAN AFRICAN INSURANCE COMPANY LTD	No Change	Decrease
REA VIPINGO PLANTATIONS	Increase	Increase
SASINI TEA AND COFFEE LTD	Decrease	Decrease
STANADARD CHARTERED BANK Kenya LTD	No Change	Decrease
TOTAL Kenya LTD	Increase	Increase
TOURISM PROMOTION SERVICES	No Change	Increase
UCHUMI SUPERMARKETS LTD	Decrease	Decrease
UNGA GROUP LTD	No Change	Increase
A BAUMANN AND COMPANY LTD	No Change	Decrease
CITY TRUST LTD	Increase	Decrease
EAAGADS LTD	**Decrease**	Increase
EXPRESS Kenya LTD	No Change	Increase
KAPCHORUA TEA COMPANY LTD	Increase	Decrease
Kenya ORCHARDS LTD	No Change	Decrease
LIMURU TEA COMPANY LTD	Increase	Increase
STANDARD NEWSPAPERS LTD	No Change	Decrease
Williamson Tea Kenya Ltd	Increase	Decrease

The above analysis is done by comparing the actual changes in dividends to the actual changes in earnings for both the current year, year after and the year after that.

The total number of observations in relation to a dividend change total to 432 which are broken into

a) 144 observations for year 1998 – 1999 dividend changes

b) 144 observations for year 1999 – 2000 dividend changes

c) 96 observations for year 2000 – 2001 dividend changes

d) 48 observations for year 2001 – 2002 dividend changes

For the year 1998 – 1999, we have 38.7% of the observations relating to the dividend year change agreeing with the hypothesis. For the first year after the dividend change, only 36.7% agree to the hypothesis, while for the second year after the dividend change only 28.6% agree.

For the year 1999 – 2000, we have 34.7% of the observations to the dividend year change agreeing with the hypothesis. For the first year after the dividend change, only 32.7% agree to the hypothesis, while for the second year after the dividend change only 16.3% agree.

For the year 2000 – 2001, we have 40.8% of the observations to the dividend year change agreeing with the hypothesis. For the first year after the dividend change, only 40.8% agree.

For the year 2001 – 2002, we have 40.8% of the observations agreeing with the hypothesis.

In conclusion, it is evident that from the observation our hypothesis is supported though not very strongly. For the dividend change year, it is seen that it is most likely that a profit will be reported, but in the years after the relationship is not strong and thus it is not very advisable to use dividend paid this year as the only determinant of the future profitability of a company.

4.3Regression of the model

The model to be used in the analysis was as follows

$$(E_t - E_{t-1}) / B_{-1} = a + b_1 * \Delta Div_o + b_1 * DNC * \Delta Div_o + \sum_t$$

The workings of all the explanations explained below are contained in the **appendix section three** of this paper.

1998/99, 99/00 and 00/01 Change in Earnings to 1998/99 Change in Dividends

The dependent variable, i.e. Earnings, of 1998/99 and the dividend changes were regressed against the independent variables, namely the Dividends and the dummy variable of 1998 – 1999.

The regressed models were found to be fit since the F computed was greater than the F Critical. This means that the variations of changes in earnings can be explained by a change of dividends of a given year.

For the year 1998 – 1999 Earnings changes to 1998 – 1999 Dividend changes, I got a model validated as below

$$(E_t - E_{t-1}) / B_{-1} = -36449.4 + 2071.55 * \Delta Div_o + 2071.55 * 29667.04 * \Delta Div_o + \sum_t$$

The Error term shows us that 96.2 percent of the changes in earnings are not as a result of the dividend changes but due to other factors not being tested in the model. This is because the model variable used one predictor at a time, namely dividends in the same year. The model did not capture other parameters that have explainable power on Change in earnings except change on dividends.

Also as the graph shows, from normal plot of regression for the change in Earnings, there is a relationship between the earnings and the dividends because of observed variables moving together with the Forty-Five degree line.

For the year 1999 – 2000 Earnings changes to 1998 – 1999 Dividend changes, I got a model validated as below

$$(E_t - E_{t-1}) / B_{-1} = 4293.9 - 27639.4 * \Delta Div_o - 27639.4 * 2088.995 * \Delta Div_o + \sum_t$$

The Error term shows us that 96.1 percent of the changes in earnings are not as a result of the dividend changes but due to other factors not being tested in the model. This is because the model variable used one predictor at a time, namely dividends in the same year. The model did not capture other parameters that have explainable power on Change in earnings except change on dividends.

Also as the graph shows, from normal plot of regression for the change in Earnings, there is a relationship between the earnings and the dividends because of observed variables moving together with the Forty-Five degree line.

For the year 1999 – 2000 Earnings changes to 1999 – 2000 Dividend changes, I got a model validated as below

$$(E_t - E_{t-1}) / B_{-1} = 5153 + 2118.83 * \Delta Div_o + 2118.83 * - 20713.2 * \Delta Div_o + \sum_t$$

The Error term shows us that 98.3 percent of the changes in earnings are not as a result of the dividend changes but due to other factors not being tested in the model. This is because the model variable used one predictor at a time, namely dividends in the same year. The model did not capture other parameters that have explainable power on Change in earnings except change on dividends.

Also as the graph shows, from normal plot of regression for the change in Earnings, there is a relationship between the earnings and the dividends because of observed variables moving together with the Forty-Five degree line.

For the year 2000 – 2001 Earnings changes to 1999 – 2000 Dividend changes, I got a model validated as below

$$(E_t - E_{t-1}) / B_{-1} = 10292.123 + 49.202 * \Delta Div_o + 49.202 * 22034.459 * \Delta Div_o + \sum_t$$

The Error term shows us that 98.3 percent of the changes in earnings are not as a result of the dividend changes but due to other factors not being tested in the model. This is because the model variable used one predictor at a time, namely dividends in the same year. The model did not capture other parameters that have explainable power on Change in earnings except change on dividends.

Also as the graph shows, from normal plot of regression for the change in Earnings, there is a relationship between the earnings and the dividends because of observed variables moving together with the Forty-Five degree line.

For the year 2001 – 2002 Earnings changes to 1999 – 2000 Dividend changes, I got a model validated as below

$$(E_t - E_{t-1}) / B_{-1} = -6295.189 - 523.137 * \Delta Div_o - 523.137 * 3943.85 * \Delta Div_o + \sum_t$$

The Error term shows us that 99.9 percent of the changes in earnings are not as a result of the dividend changes but due to other factors not being tested in the model. This is because the model variable used one predictor at a time, namely dividends in the same year. The model did not capture other parameters that have explainable power on Change in earnings except change on dividends.

Also as the graph shows, from normal plot of regression for the change in Earnings, there is a relationship between the earnings and the dividends because of observed variables moving together with the Forty-Five degree line.

For the year 2000 – 2001 Earnings changes to 2000 – 2001 Dividend changes, I got a model validated as below

$$(E_t - E_{t-1}) / B_{-1} = 9670.414 + 834.197 * \Delta Div_o + 834.197 * 2909.483 * \Delta Div_o + \sum_t$$

The Error term shows us that 99.4 percent of the changes in earnings are not as a result of the dividend changes but due to other factors not being tested in the model. This is because the model variable used one predictor at a time, namely dividends in the same year. The model did not capture other parameters that have explainable power on Change in earnings except change on dividends.

Also as the graph shows, from normal plot of regression for the change in Earnings, there is a relationship between the earnings and the dividends because of observed variables moving together with the Forty-Five degree line.

For the year 2001 – 2002 Earnings changes to 2000 – 2001 Dividend changes, I got a model validated as below

$$(E_t - E_{t-1}) / B_{-1} = -5310.615 + 158.238 * \Delta Div_o + 158.238 * 1308.132 * \Delta Div_o + \sum_t$$

The Error term shows us that 100 percent of the changes in earnings are not as a result of the dividend changes but due to other factors not being tested in the model.

Also as the graph shows, from normal plot of regression for the change in Earnings, there is a relationship between the earnings and the dividends because of observed variables moving together with the Forty-Five degree line.

For the year 2001 – 2002 Earnings changes to 2001 – 2002 Dividend changes, I got a model validated as below

$$(E_t - E_{t-1}) / B_{-1} = -5890.455 + 8039.724 * \Delta Div_o + 8039.724 * 3798.003 * \Delta Div_o + \sum_t$$

The Error term shows us that 97.6 percent of the changes in earnings are not as a result of the dividend changes but due to other factors not being tested in the model. This is because the model variable used one predictor at a time, namely dividends in the same year. The model did not capture other parameters that have explainable power on Change in earnings except change on dividends.

Also as the graph shows, from normal plot of regression for the change in Earnings, there is a relationship between the earnings and the dividends because of observed variables moving together with the Forty-Five degree line.

From the correlations done above, we can see that the relationship does definitely exists but it is very insignificant.

My analysis agrees with the Alternate Hypothesis of the existence of a relationship between future profitability and changes in dividends though the relationship is not strong.

CHAPTER FIVE: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1Conclusion

The main objective of this study was to establish whether there exists a relationship between dividend changes to future profitability of companies and to establish whether you can use dividend changes to predict the future profitability of a company. To achieve this objective I used a relationship model to establish if in deed the relationship does exists. To further support my findings I regressed my data to determine if any significance exists.

From the comparison it was established that at least in the year of the dividend change a relationship exists. However for the first and second year after the dividend what was observed was that though a relationship exists, it is very insignificant.

From earlier research, Bernartzi, Michealy and Thaler (1997), my analysis agrees with the three scolars in that a relationship indeed does exist, but it is not significant.

5.2Limitations of the study

One of the limitations faced during the study was unavailability of data on the companies that are quoted at the Nairobi stock exchange. Data that was available was only up to 2002 but after that no data had been compiled.

Also the study is limited to a very minimal population of only 48 companies in the market. This may not be a good representation in the study I undertook. Also I was

unable to get information from unquoted companies meaning that my results are biased to one group.

The amount of period covered in the study also is not enough. A research like this one would be most ideally taken for a long period of time for the researcher to come up with a strong conclusion of whether a relationship exists or does not exist.

The period of this research was at such a time that the economy was not doing well due to political reasons. This means that the results posted and dividends paid had many more factors playing part in the determination.

5.3Recommendations of the study

The results of this study have shown that dividend changes and future profitability have a relationship. It would very eye opening for such a study to be repeated in the future when more companies are involved and data for the research covers a wider time frame.

The research could also be undertaken with introduction of controls for other factors that help in determining both dividends and profits of a company. This way the results gotten would only be attributable to the factors being researched on and a more conclusive conclusion would be reached at.

With the development of our companies and more information being readily available, similar researches but relating different aspects of company financial reports should be analysed for a better view of investment decision making e.g. studying relationships between dividends to investments in relation to cash flows, management, cadre of employees among others.

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Appendix 1

DIVIDENDS

AN INVESTMENT MARKET					
COMPANY	1998	1999	2000	2001	2002
AFRICAN LAKES CORPORATIONS	-	-	-	-	-
ARM RIVER MINING COMPANY	-	-	-	0.20	0.40
BAMBURI CEMENT COMPANY LTD	0.75	1.00	0.75	1.12	3.50
BARCLAYS BANK OF Kenya LTD	11.00	10.00	10.00	14.00	9.00
CMC Kenya LTD	7.50	10.50	7.90	7.90	9.00
CMAC Kenya LTD	3.49	3.55	3.55	3.55	4.35
CFC STOKE BOND Kenya LTD	4.00	4.00	6.00	2.00	2.50
CFC AND GENERAL Kenya LTD	-	-	-	-	-
CARBACID INVESTMENT LTD	2.20	5.00	2.75	2.75	2.30
CFC BANK	0.67	0.67	0.67	0.67	0.67
CIC HOLDINGS LTD	0.50	0.75	0.75	0.75	1.00
CROWN BERGER Kenya LTD	1.00	2.00	0.50	0.50	1.50
DIAMOND TRUST BANK Kenya LTD	0.80	0.80	0.60	0.40	0.60
DUNLOP Kenya LTD	0.40	0.40	0.40	-	-
EAST AFRICAN BREWERIES LTD	6.00	7.00	7.50	9.00	11.50
EAST AFRICAN CABLES LTD	2.00	4.50	1.10	1.10	0.50
EAST AFRICAN PORTLAND CEMENT COMPANY	1.00	-	-	1.00	1.50
FIRESTONE (E.A) LTD	1.50	1.00	1.00	1.00	1.00
HOUSING FINANCE COMPANY LTD	1.50	0.50	0.38	-	-
HUTCHINGS BIEMER LTD	-	-	-	-	-
IDC INVESTMENT COMPANY LTD	3.00	2.50	3.00	2.00	2.00
JUBILEE INSURANCE COMPANY LTD	1.75	1.75	1.75	1.75	1.75
KAKUZI LTD	2.75	2.00	0.40	-	-
Kenya AIRWAYS LTD	1.00	-	1.25	1.25	0.60
Kenya COMMERCIAL BANK LTD	6.00	-	-	-	-
Kenya OIL COMPANY LTD	6.00	7.50	6.00	7.50	9.50
Kenya POWER AND LIGHTING COMPANY LTD	8.00	8.00	2.00	-	-
MARSHALLS (E.A) LTD	1.00	-	-	-	-
MUMIAS SUGAR COMPANY LTD	-	-	-	0.71	0.10
NATION MEDIA GROUP LTD	1.65	1.75	1.75	1.60	2.50
NATIONAL BANK OF Kenya LTD	-	-	-	-	-
NIC BANK LTD	1.00	1.80	1.80	1.60	2.00
PAN AFRICAN INSURANCE COMPANY LTD	1.75	0.75	-	-	-
REA VIPINGO PLANTATIONS	-	-	-	-	0.25
SASINI TEA AND COFFEE LTD	3.00	0.50	2.00	1.00	0.50
STANADARD CHARTERED BANK Kenya LTD	5.00	7.40	11.00	8.25	8.25
TOTAL Kenya LTD	3.00	3.40	-	-	1.70
TOURISM PROMOTION SERVICES	1.00	1.00	1.10	1.10	1.10

UMI SUPERMARKETS LTD	3.35	3.05	3.00	1.60	0.50
GA GROUP LTD	1.20	-	-	-	-

TERNATIVE WESTMENT MARKET					
AUMANN AND COMPANY TD	0.50	1.25	1.00	1.00	-
Y TRUST LTD	2.00	2.00	2.00	2.00	2.00
AGADS LTD	4.75	1.25	-	0.50	0.50
PRESS Kenya LTD	1.70	-	-	-	-
APCHORUA TEA COMPANY TD	7.50	2.50	2.50	2.50	0.50
enya ORCHARDS LTD	0.28	-	-	-	-
MURU TEA COMPANY LTD	60.00	30.00	55.00	-	3.00
ANDARD NEWSPAPERS LTD	-	-	-	-	-
LLIAMSON TEA Kenya LTD	1.50	2.50	2.50	5.00	0.50

ONINGS

INVESTMENT MARKET					
ANY	1998	1999	2000	2001	200
AN LAKES CORPORATIONS	-	-	123.00	(4,025.00)	-
VER MINING COMPANY	12,866.00	19,925.00	45,601.00	51,027.00	82,136.00
RI CEMENT COMPANY LTD	569,000.00	890,000.00	487,000.00	1,340,000.00	2,083,000.00
AYS BANK OF Kenya LTD	4,242,000.00	3,361,000.00	3,035,000.00	4,235,000.00	2,550,000.00	
ya LTD	1,751,790.00	1,874,466.00	682,970.00	851,343.00	1,310,423.00
nya LTD	249,682.00	180,691.00	110,159.00	118,175.00	154,990.00
OE BOND Kenya LTD	473,386.00	343,146.00	664,664.00	328,031.00	217,603.00
ND GENERAL Kenya LTD	(33,697.00)	13,564.00	10,005.00	(11,069.00)	20,074.00
SCO INVESTMENT LTD	130,678.00	169,801.00	133,511.00	70,813.00	78,859.00
BANK	425,681.00	298,194.00	360,622.00	260,467.00	323,093.00
OLDINGS LTD	246,993.00	250,607.00	183,904.00	139,806.00	241,150.00
N BERGER Kenya LTD	37,738.00	86,642.00	40,663.00	58,514.00	93,412.00
OND TRUST BANK Kenya LTD	207,599.00	155,259.00	200,346.00	51,407.00	112,799.00
OP Kenya LTD	9,588.00	12,327.00	10,162.00	21,812.00	-
AFRICAN BREWERIES LTD	493,858.00	1,506,962.00	1,798,105.00	2,499,117.00	3,400,411.00
AFRICAN CABLES LTD	94,860.00	32,842.00	46,698.00	24,112.00	(4,954.00)
AFRICAN PORTLAND ENT COMPANY	499,452.00	(1,294,643.00)	(538,860.00)	974,384.00	212,934.00
STONE (E.A) LTD	901,241.00	576,945.00	396,412.00	448,879.00	310,834.00
SING FINANCE COMPANY LTD	428,247.00	114,316.00	78,618.00	(255,765.00)	95,318.00
CHINGS BIEMER LTD	-	-	-	-	-
C INVESTMENT COMPANY LTD	151,255.00	355,016.00	321,767.00	227,160.00	306,611.00
LEE INSURANCE COMPANY	206,344.00	138,885.00	117,281.00	169,791.00	213,413.00
UZI LTD	146,286.00	(16,615.00)	(85,766.00)	(95,934.00)	8,471.00
a AIRWAYS LTD	1,436,000.00	1,425,000.00	2,853,000.00	2,044,000.00	1,509,000.00
a COMMERCIAL BANK LTD	1,410,598.00	(2,244,854.00)	(765,631.00)	182,958.00	(4,178,557.00)
a OIL COMPANY LTD	255,420.00	316,544.00	250,991.00	595,097.00	679,174.00
a POWER AND LIGHTING MPANY LTD	2,005,343.00	1,721,924.00	(4,157,793.00)	(4,105,915.00)	(2,849,116.00)
RSHALLS (E.A) LTD	60,400.00	(211,118.00)	(104,028.00)	(356,066.00)	1,799.00
MAS SUGAR COMPANY LTD	-	-	-	685,221.00	104,552.00
TION MEDIA GROUP LTD	497,700.00	342,200.00	296,100.00	390,200.00	635,200.00
TIONAL BANK OF Kenya LTD	(2,821,773.00)	(3,470,826.00)	(1,619,719.00)	(322,580.00)	390,142.00
C BANK LTD	435,558.00	461,569.00	451,165.00	377,040.00	340,224.00
N AFRICAN INSURANCE MPANY LTD	126,619.00	56,959.00	(54,661.00)	158,103.00	(6,452.00)
A VIPINGO PLANTATIONS	8,773.00	(7,723.00)	(46,292.00)	8,955.00	47,108.00
ASINI TEA AND COFFEE LTD	209,182.00	50,002.00	161,594.00	36,436.00	(68,415.00)
TANDARD CHARTERED BANK nya LTD	2,290,584.00	2,566,268.00	3,147,004.00	3,231,694.00	3,212,008.00
TAL Kenya LTD	515,021.00	856,686.00	333,498.00	(318,899.00)	604,776.00
URISM PROMOTION SERVICES	89,216.00	103,813.00	117,113.00	138,699.00	168,987.00
CHUMI SUPERMARKETS LTD	485,354.00	375,097.00	462,530.00	151,802.00	80,206.00
NGA GROUP LTD	(708,239.00)	(331,055.00)	(778,312.00)	(292,157.00)	(135,858.00)
ALTERNATIVE INVESTMENT MARKET					
BAUMANN AND COMPANY LTD	5,097.00	16,149.00	5,463.00	1,060.00	(51,494.00)
TY TRUST LTD	41,458.00	11,322.00	10,257.00	9,869.00	7,283.00
AAGADS LTD	71,573.00	9,762.00	3,115.00	2,656.00	6,391.00
EXPRESS Kenya LTD	16,574.00	(37,405.00)	(5,969.00)	(32,908.00)	-
APCHORUA TEA COMPANY LTD	109,787.00	25,545.00	20,283.00	11,710.00	(18,019.00)
Kenya ORCHARDS LTD	(7,069.00)	(140.00)	(7,809.00)	6,729.00	-
MURU TEA COMPANY LTD	30,169.00	14,242.00	16,998.00	(3,991.00)	4,082.00
STANDARD NEWSPAPERS LTD	1,388.00	(120,571.00)	(126,226.00)	21,393.00	14,550.00

Appendix 3

Regression of the Model

1. 1998 – 1999 Change in Earnings to 98/99 Change in Dividends

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Change in dividend in the year 1998 - 1999, dummy variable for year 1998 - 1999[a]		Enter

a. All requested variables entered.

b. Dependent Variable: Change in earnings for year 1998 - 1999

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.196[a]	.038	-.003	81553.5519

a. Predictors: (Constant), Change in dividend in the year 1998 - 1999, dummy variable for year 1998 - 1999

b. Dependent Variable: Change in earnings for year 1998 - 1999

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.22E+10	2	6095721681	.917	.407[a]
	Residual	3.06E+11	46	6650981822		
	Total	3.18E+11	48			

a. Predictors: (Constant), Change in dividend in the year 1998 - 1999, dummy variable for year 1998 - 1999

b. Dependent Variable: Change in earnings for year 1998 - 1999

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-36349.4	17387.276		-2.091	.042		
	dummy variable for year 1998 - 1999	29667.004	23911.342	.183	1.241	.221	.960	1.042
	Change in dividend in the year 1998 - 1999	2071.546	2654.971	.115	.780	.439	.960	1.042

a. Dependent Variable: Change in earnings for year 1998 - 1999

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	dummy variable for year 1998 - 1999	Change in dividend in the year 1998 - 1999
1	1	1.889	1.000	.10	.10	.07
	2	.858	1.484	.06	.02	.91
	3	.253	2.730	.85	.88	.02

a. Dependent Variable: Change in earnings for year 1998 - 1999

Casewise Diagnostics[a]

Case Number	Std. Residual	Change in earnings for year 1998 - 1999
17	-3.954	-358819
25	-4.248	-365545

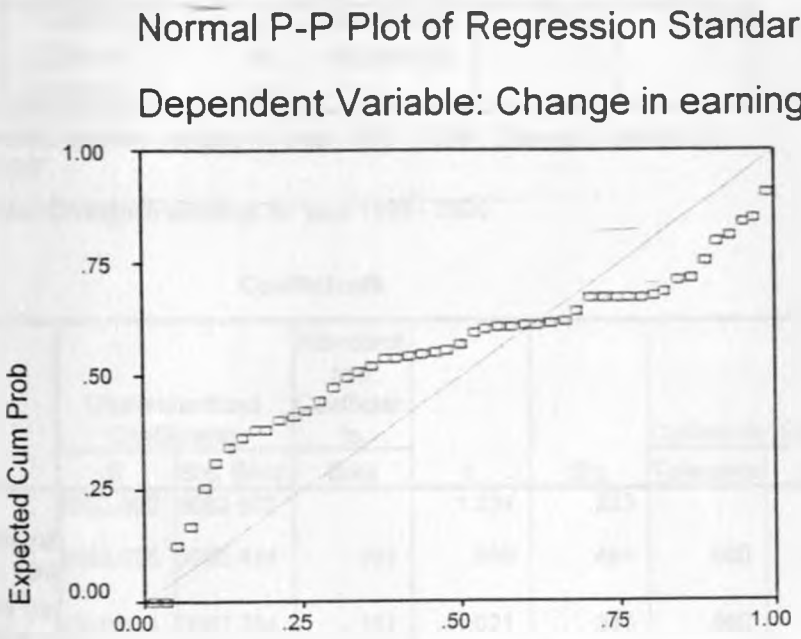
a. Dependent Variable: Change in earnings for year 1998 - 1999

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-68828.7	-882.0401	-22068.7	15937.0136	49
Residual	-346434	106957.0	-5.64E-12	79836.4427	49
Std. Predicted Value	-2.934	1.329	.000	1.000	49
Std. Residual	-4.248	1.311	.000	.979	49

a. Dependent Variable: Change in earnings for year 1998 - 1999

Chart for 1998 – 1999 Change in Earnings



2. 1999 – 2000 Change in Earnings to 98/99 Change in Dividends

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	dummy variable for year 1998 - 1999 , Change in dividend in the year 1998 - 1999[a]		Enter

a. All requested variables entered.

b. Dependent Variable: Change in earnings for year 1999 - 2000

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.199[a]	.039	-.002	92319.1159

a. Predictors: (Constant), dummy variable for year 1998 - 1999 , Change in dividend in the year 1998 - 1999

b. Dependent Variable: Change in earnings for year 1999 - 2000

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.61E+10	2	8042989892	.944	.397[a]
	Residual	3.92E+11	46	8522819152		
	Total	4.08E+11	48			

a. Predictors: (Constant), dummy variable for year 1998 - 1999 , Change in dividend in the year 1998 - 1999

b. Dependent Variable: Change in earnings for year 1999 - 2000

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4293.929	9682.502		1.234	.223		
	Change in dividend the year 1998 - 199	2088.995	3005.444	.103	.695	.491	.960	1.042
	dummy variable for year 1998 - 1999	-27639.4	7067.784	-.151	-1.021	.313	.960	1.042

a. Dependent Variable: Change in earnings for year 1999 - 2000

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Change in dividend in the year 1998 - 1999	dummy variable for year 1998 - 1999
1	1	1.889	1.000	.10	.07	.10
	2	.858	1.484	.06	.91	.02
	3	.253	2.730	.85	.02	.88

a. Dependent Variable: Change in earnings for year 1999 - 2000

Casewise Diagnostics[a]

Case Number	Std. Residual	Change in earnings for year 1999 - 2000
24	3.102	285600.0
27	-3.012	-293986
31	3.747	370221.4

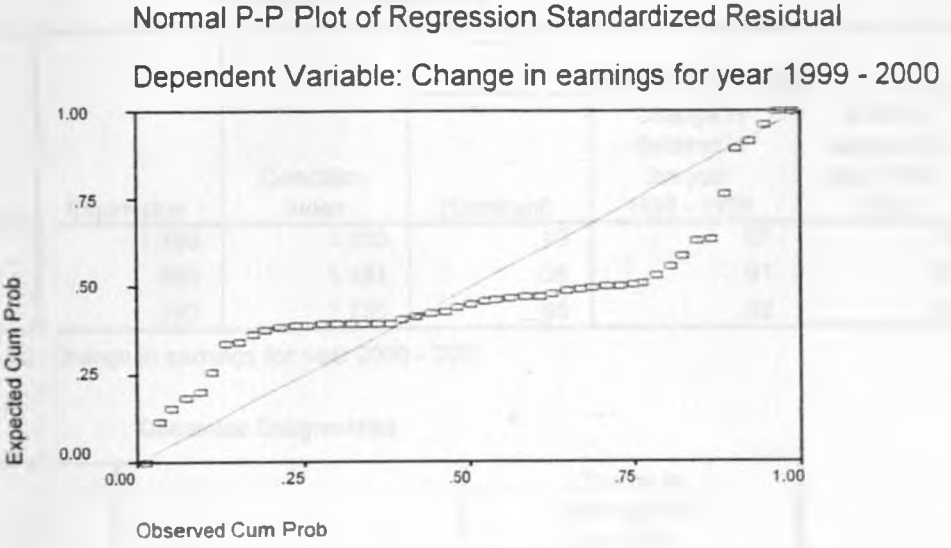
a. Dependent Variable: Change in earnings for year 1999 - 2000

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-66015.3	24293.93	6980.1955	18306.4081	49
Residual	-278106	345927.5	-1.86E-12	90375.3378	49
Std. Predicted Value	-3.987	.946	.000	1.000	49
Std. Residual	-3.012	3.747	.000	.979	49

a. Dependent Variable: Change in earnings for year 1999 - 2000

Chart for 1999 – 2000 change in Earnings



3. 2000 – 2001 Change in Earnings to 98/99 Change in Dividends

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	dummy variable for year 1998 - 1999 , Change in dividend in the year 1998 - 1999[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Change in earnings for year 2000 - 2001

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.86E+09	2	4430539308	.600	.553[a]
	Residual	3.40E+11	46	7384771379		
	Total	3.49E+11	48			

a. Predictors: (Constant), dummy variable for year 1998 - 1999 , Change in dividend in

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	35062.603	18321.338		1.914	.062		
	Change in dividend in the year 1998 - 1999	-241.397	2797.599	-.013	-.086	.932	.960	1.042
	dummy variable for year 1998 - 1999	-27389.4	25195.884	-.162	-1.087	.283	.960	1.042

a. Dependent Variable: Change in earnings for year 2000 - 2001

Collinearity Diagnostics [a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Change in dividend in the year 1998 - 1999	dummy variable for year 1998 - 1999
1	1	1.889	1.000	.10	.07	.10
	2	.858	1.484	.06	.91	.02
	3	.253	2.730	.85	.02	.88

a. Dependent Variable: Change in earnings for year 2000 - 2001

Casewise Diagnostics [a]

Case Number	Std. Residual	Change in earnings for year 2000 - 2001
17	3.114	302648.8

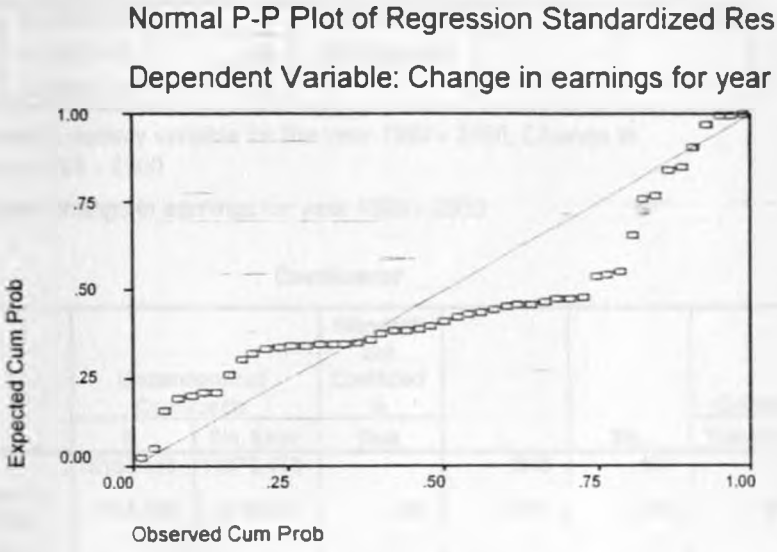
a. Dependent Variable: Change in earnings for year 2000 - 2001

Residuals Statistics [a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	6997.3315	35062.60	20211.31	13586.9719	49
Residual	-169172	267586.2	1.411E-12	84125.3385	49
Std. Predicted Value	-.973	1.093	.000	1.000	49
Std. Residual	-1.969	3.114	.000	.979	49

a. Dependent Variable: Change in earnings for year 2000 - 2001

Chart for 2000 – 2001 Earnings Change



4. 1999 – 2000 Change in Earnings to 99/00 Change in Dividends

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	dummy variable for the year 1999 - 2000, Change in dividend in the year 1999 - 2000[a]		Enter

a. All requested variables entered.

b. Dependent Variable: Change in earnings for year 1999 - 2000

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.131[a]	.017	-.026	93387.7103

a. Predictors: (Constant), dummy variable for the year 1999 - 2000, Change in dividend in the year 1999 - 2000

b. Dependent Variable: Change in earnings for year 1999 - 2000

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.96E+09	2	3478748294	.399	.673[a]
	Residual	4.01E+11	46	8721264439		
	Total	4.08E+11	48			

a. Predictors: (Constant), dummy variable for the year 1999 - 2000, Change in dividend in the year 1999 - 2000

b. Dependent Variable: Change in earnings for year 1999 - 2000

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	15153.118	17972.473		.843	.404		
	Change in dividend in the year 1999 - 2000	2118.830	3648.957	.086	.581	.564	.975	1.026
	dummy variable for the year 1999 - 2000	-20713.2	27168.247	-.113	-.762	.450	.975	1.026

a. Dependent Variable: Change in earnings for year 1999 - 2000

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Change in dividend in the year 1999 - 2000	dummy variable for the year 1999 - 2000
1	1	1.754	1.000	.14	.05	.14
	2	.920	1.380	.05	.93	.02
	3	.326	2.319	.82	.02	.84

a. Dependent Variable: Change in earnings for year 1999 - 2000

Casewise Diagnostics[a]

Case Number	Std. Residual	Change in earnings for year 1999 - 2000
27	-3.043	-293986
31	3.802	370221.4

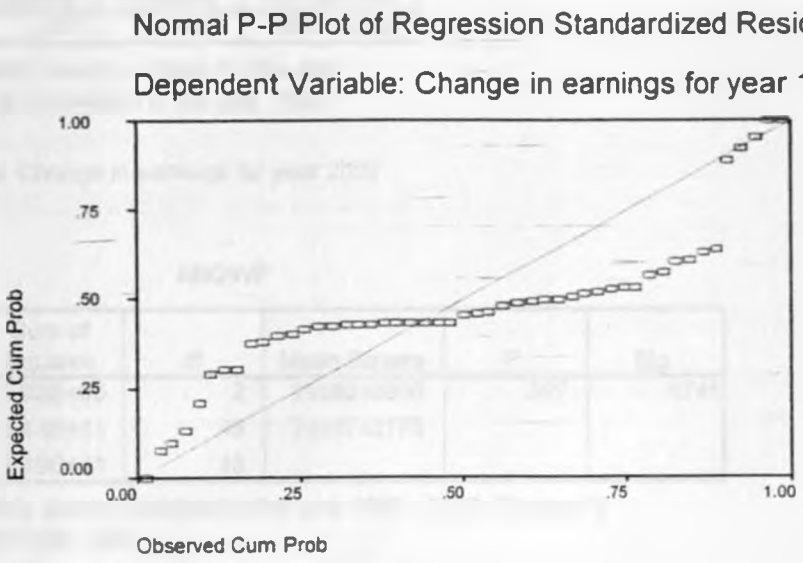
a. Dependent Variable: Change in earnings for year 1999 - 2000

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-12764.1	47410.69	6980.1955	12039.4288	49
Residual	-284188	355068.3	-5.94E-13	91421.4330	49
Std. Predicted Value	-1.640	3.358	.000	1.000	49
Std. Residual	-3.043	3.802	.000	.979	49

a. Dependent Variable: Change in earnings for year 1999 - 2000

Chart for Change in earnings for 1999 - 2000



6. 2000 – 2001 Change in Earnings to 99/00 Change in Dividends

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	dummy variable for the year 1999 - 2000, Change in dividend in the year 1999 - 2000[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Change in earnings for year 2000 - 2001

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.130[a]	.017	-.026	86306.0958

a. Predictors: (Constant), dummy variable for the year 1999 - 2000, Change in dividend in the year 1999 - 2000

b. Dependent Variable: Change in earnings for year 2000 - 2001

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.92E+09	2	2959210960	.397	.674[a]
	Residual	3.43E+11	46	7448742176		
	Total	3.49E+11	48			

a. Predictors: (Constant), dummy variable for the year 1999 - 2000, Change in dividend in the year 1999 - 2000

b. Dependent Variable: Change in earnings for year 2000 - 2001

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	10292.123	16609.616		.620	.539		
	Change in dividend in the year 1999 - 2000	49.202	3372.255	.002	.015	.988	.975	1.026
	dummy variable for the year 1999 - 2000	22034.459	25108.072	.130	.878	.385	.975	1.026

a. Dependent Variable: Change in earnings for year 2000 - 2001

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Change in dividend in the year 1999 - 2000	dummy variable for the year 1999 - 2000
1	1	1.754	1.000	.14	.05	.14
	2	.920	1.380	.05	.93	.02
	3	.326	2.319	.82	.02	.84

a. Dependent Variable: Change in earnings for year 2000 - 2001

Casewise Diagnostics[a]

Case Number	Std. Residual	Change in earnings for year 2000 - 2001
17	3.132	302648.8

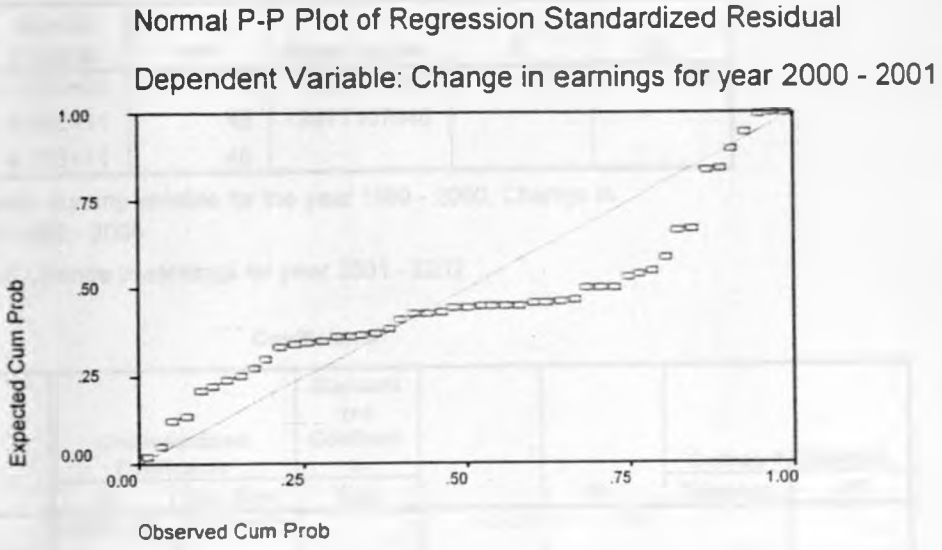
a. Dependent Variable: Change in earnings for year 2000 - 2001

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	10292.12	33556.63	20211.31	11104.0739	49
Residual	-172092	270273.0	-4.53E-12	84488.9219	49
Std. Predicted Value	-.893	1.202	.000	1.000	49
Std. Residual	-1.994	3.132	.000	.979	49

a. Dependent Variable: Change in earnings for year 2000 - 2001

Chart for Change in Earnings for 2000 - 2001



7. 2001 – 2002 Change in Earnings to 99/00 Change in Dividends

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	dummy variable for the year 1999 - 2000, Change in dividend in the year 1999 - 2000[a]		Enter

a. All requested variables entered.

b. Dependent Variable: Change in earnings for year 2001 - 2002

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.027[a]	.001	-.043	95273.8529

a. Predictors: (Constant), dummy variable for the year 1999 - 2000, Change in dividend in the year 1999 - 2000

b. Dependent Variable: Change in earnings for year 2001 - 2002

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.12E+08	2	156242798.9	.017	.983[a]
	Residual	4.18E+11	46	9077107040		
	Total	4.18E+11	48			

a. Predictors: (Constant), dummy variable for the year 1999 - 2000, Change in dividend in the year 1999 - 2000

b. Dependent Variable: Change in earnings for year 2001 - 2002

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-6295.189	18335.462		-.343	.733		
	Change in dividend in the year 1999 - 2000	-523.137	3722.654	-.021	-.141	.889	.975	1.026
	dummy variable for the year 1999 - 2000	3934.850	27716.962	.021	.142	.888	.975	1.026

a. Dependent Variable: Change in earnings for year 2001 - 2002

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Change in dividend in the year 1999 - 2000	dummy variable for the year 1999 - 2000
1	1	1.754	1.000	.14	.05	.14
	2	.920	1.380	.05	.93	.02
	3	.326	2.319	.82	.02	.84

a. Dependent Variable: Change in earnings for year 2001 - 2002

Casewise Diagnostics[a]

Case Number	Std. Residual	Change in earnings for year 2001 - 2002
25	-4.512	-436152

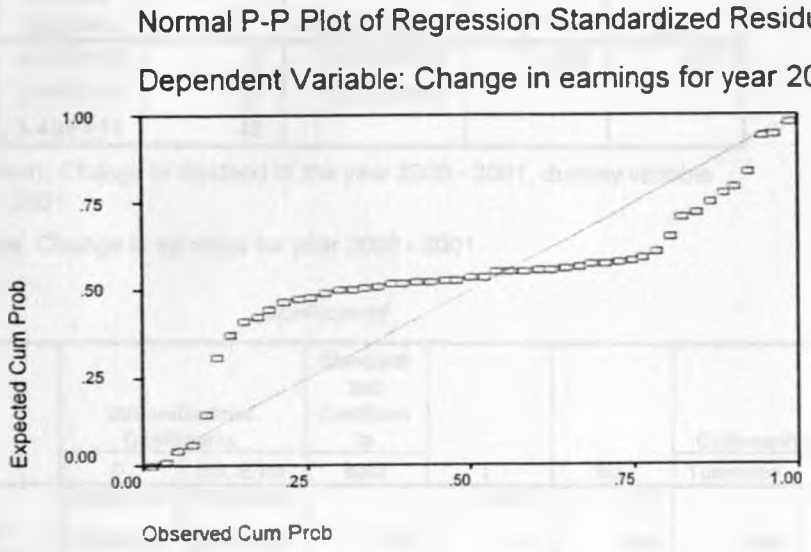
a. Dependent Variable: Change in earnings for year 2001 - 2002

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-15438.8	-581.6736	-4806.74	2551.4930	49
Residual	-429856	191030.2	2.970E-13	93267.8629	49
Std. Predicted Value	-4.167	1.656	.000	1.000	49
Std. Residual	-4.512	2.005	.000	.979	49

a. Dependent Variable: Change in earnings for year 2001 - 2002

Chart for Change in Earnings for 2001 - 2002



8. 2000 – 2001 Change in Earnings to 00/01 Change in Dividends

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Change in dividend in the year 2000 - 2001, dummy variable for the year 2000 - 2001[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Change in earnings for year 2000 - 2001

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.077[a]	.006	-.037	86787.2848

a. Predictors: (Constant), Change in dividend in the year 2000 - 2001, dummy variable for the year 2000 - 2001

b. Dependent Variable: Change in earnings for year 2000 - 2001

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.09E+09	2	1043526509	.139	.871[a]
	Residual	3.46E+11	46	7532032805		
	Total	3.49E+11	48			

a. Predictors: (Constant), Change in dividend in the year 2000 - 2001, dummy variable for the year 2000 - 2001

b. Dependent Variable: Change in earnings for year 2000 - 2001

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	19670.414	18096.400		1.087	283		
	dummy variable for the year 2000 - 2001	2909.483	25102.687	.017	.116	908	.979	1.021
	Change in dividend in the year 2000 - 2001	834.197	1589.576	078	.525	602	.979	1.021

a. Dependent Variable: Change in earnings for year 2000 - 2001

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	dummy variable for the year 2000 - 2001	Change in dividend in the year 2000 - 2001
1	1	1.808	1.000	.12	.12	.05
	2	.923	1.400	.03	.01	.94
	3	.269	2.591	.85	.87	.01

a. Dependent Variable: Change in earnings for year 2000 - 2001

Casewise Diagnostics[a]

Case Number	Std. Residual	Change in earnings for year 2000 - 2001
17	3.222	302648.8

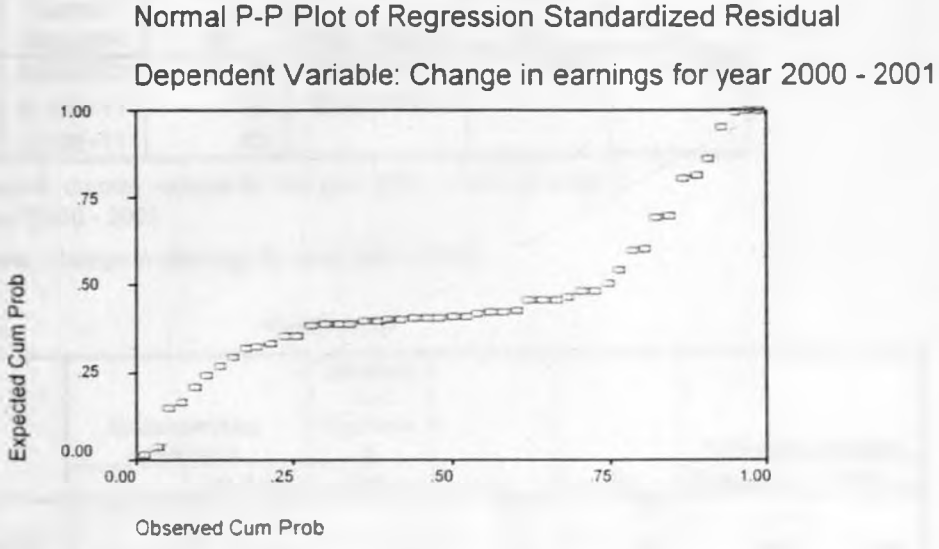
a. Dependent Variable: Change in earnings for year 2000 - 2001

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-23300.9	25916.68	20211.31	6593.9572	49
Residual	-183838	279651.8	-6.24E-12	84959.9794	49
Std. Predicted Value	-6.599	.865	.000	1.000	49
Std. Residual	-2.118	3.222	.000	.979	49

a. Dependent Variable: Change in earnings for year 2000 - 2001

Chart for Change in Earnings for 2000 - 2001



9. 2001 – 2002 Change in Earnings to 00/01 Change in Dividends

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	dummy variable for the year 2000 - 2001, Change in dividend in the year 2000 - 2001[a]		Enter

a. All requested variables entered.

b. Dependent Variable: Change in earnings for year 2001 - 2002

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.014[a]	.000	-.043	95299.7291

a. Predictors: (Constant), dummy variable for the year 2000 - 2001, Change in dividend in the year 2000 - 2001

b. Dependent Variable: Change in earnings for year 2001 - 2002

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	85644672	2	42822336.01	.005	.995[a]
	Residual	4.18E+11	46	9082038364		
	Total	4.18E+11	48			

a. Predictors: (Constant), dummy variable for the year 2000 - 2001, Change in dividend in the year 2000 - 2001

b. Dependent Variable: Change in earnings for year 2001 - 2002

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-5310.615	19871.367		-.267	.790		
	Change in dividend in the year 2000 - 2001	158.238	1745.488	.014	.091	.928	.979	1.021
	dummy variable for the year 2000 - 2001	1308.132	27564.859	.007	.047	.962	.979	1.021

a. Dependent Variable: Change in earnings for year 2001 - 2002

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Change in dividend in the year 2000 - 2001	dummy variable for the year 2000 - 2001
1	1	1.808	1.000	.12	.05	.12
	2	.923	1.400	.03	.94	.01
	3	.269	2.591	.85	.01	.87

a. Dependent Variable: Change in earnings for year 2001 - 2002

Casewise Diagnostics[a]

Case Number	Std. Residual	Change in earnings for year 2001 - 2002
25	-4.521	-436152

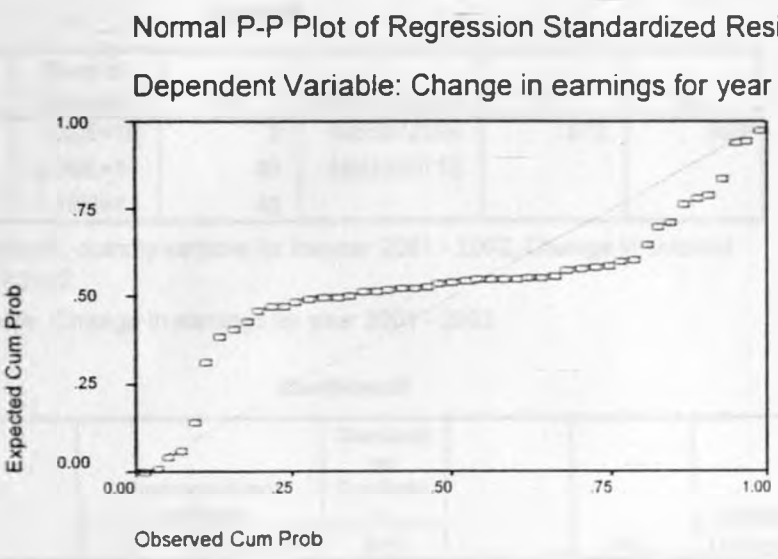
a. Dependent Variable: Change in earnings for year 2001 - 2002

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-12705.6	-3369.53	-4806.74	1335.7635	49
Residual	-430841	188468.5	-1.34E-12	93293.1943	49
Std. Predicted Value	-5.913	1.076	.000	1.000	49
Std. Residual	-4.521	1.978	.000	.979	49

a. Dependent Variable: Change in earnings for year 2001 - 2002

Chart for Change in Earnings for 2001 - 2002



10. 2001 – 2002 Change in Earnings to 01/02 Change in Dividends

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	dummy variable for theyear 2001 - 2002. Change in dividend in the year 2001 - 2002[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Change in earnings for year 2001 - 2002

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.156[a]	.024	-.018	94143.4688

a. Predictors: (Constant), dummy variable for theyear 2001 - 2002, Change in dividend in the year 2001 - 2002

b. Dependent Variable: Change in earnings for year 2001 - 2002

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.02E+10	2	5080872196	.573	.568[a]
	Residual	4.08E+11	46	8862992718		
	Total	4.18E+11	48			

a. Predictors: (Constant), dummy variable for theyear 2001 - 2002, Change in dividend in the year 2001 - 2002

b. Dependent Variable: Change in earnings for year 2001 - 2002

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-5890.455	20071.455		-.293	.770		
	Change in dividend in the year 2001 - 2002	8039.724	7525.780	.156	1.068	.291	.996	1.004
	dummy variable for theyear 2001 - 2002	3798.003	27093.556	.020	.140	.889	.996	1.004

a. Dependent Variable: Change in earnings for year 2001 - 2002

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	Change in dividend in the year 2001 - 2002	dummy variable for theyear 2001 - 2002
1	1	1.760	1.000	.12	.01	.12
	2	.983	1.338	.01	.99	.00
	3	.257	2.615	.87	.00	.87

a. Dependent Variable: Change in earnings for year 2001 - 2002

Casewise Diagnostics[a]

Case Number	Std. Residual	Change in earnings for year 2001 - 2002
25	-4.098	-436152

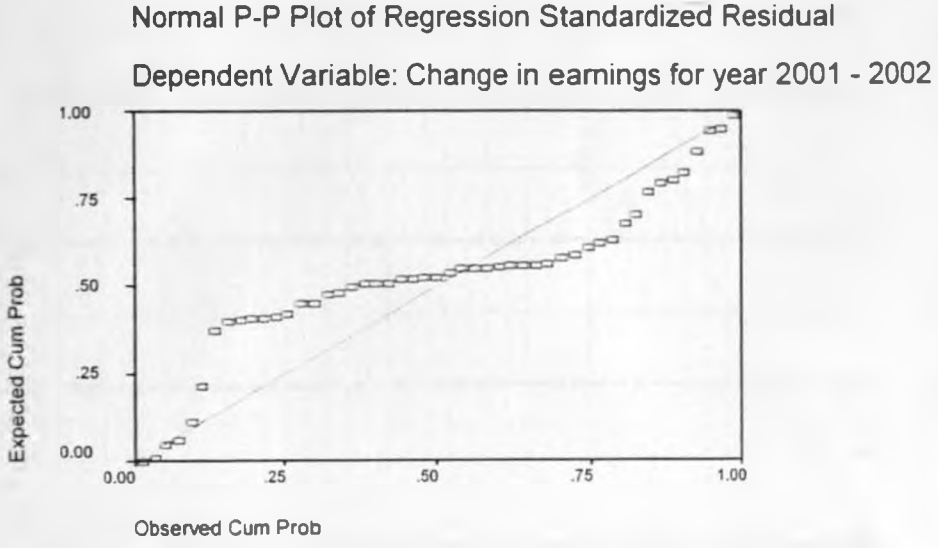
a. Dependent Variable: Change in earnings for year 2001 - 2002

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-50330.8	24036.65	-4806.74	14550.0175	49
Residual	-385821	214162.5	-1.78E-12	92161.2790	49
Std. Predicted Value	-3.129	1.982	.000	1.000	49
Std. Residual	-4.098	2.275	.000	.979	49

a. Dependent Variable: Change in earnings for year 2001 - 2002

Chart for Change in Earnings 2001 - 2002



APPENDIX 4

DATA USED IN REGRESSION MODEL

	CHANGE IN DIVIDENDS		
COMPANY	1998-1999	1999-2000	2000 - 20
AFRICAN LAKES CORPORATIONS	0	0	
ATHI RIVER MINING COMPANY	0	0	
BAMBURI CEMENT COMPANY LTD	-0 25	0 37	
BARCLAYS BANK OF Kenya LTD	-1	0	
BAT Kenya LTD	-2 6	0	
BOC Kenya LTD	0	0	
BROOKE BOND Kenya LTD	0	2	
CAR AND GENERAL Kenya LTD	0	0	
CARBACID INVESTMENT LTD	2 8	-2 25	
CFC BANK	0	0	
CMC HOLDINGS LTD	0	0	
CROWN BERGER Kenya LTD	1	-1 5	
DIAMOND TRUST BANK Kenya LTD	0	-0 2	
DUNLOP Kenya LTD	0	0	
EAST AFRICAN BREWERIES LTD	0 5	1 5	
EAST AFRICAN CABLES LTD	2 5	-3 4	
EAST AFRICAN PORTLAND CEMENT COMPANY	0	1	
FIRESTONE (E A) LTD	0	0	
HOUSING FINANCE COMPANY LTD	-1	-0 12	
HUTCHINGS BIEMER LTD	0	0	
ICDC INVESTMENT COMPANY LTD	0 5	-1	
JUBILEE INSURANCE COMPANY LTD	0	0	
KAKUZI LTD	-0 75	-1 6	
Kenya AIRWAYS LTD	1 25	0	
Kenya COMMERCIAL BANK LTD	-6	0	
Kenya OIL COMPANY LTD	-1 5	1 5	
Kenya POWER AND LIGHTING COMPANY LTD	-6	-2	
MARSHALLS (E A) LTD	0	0	
MUMIAS SUGAR COMPANY LTD	0	0 71	
NATION MEDIA GROUP LTD	0 1	0	
NATIONAL BANK OF Kenya LTD	0	0	
NIC BANK LTD	0 8	0	
PAN AFRICAN INSURANCE COMPANY LTD	-1	0 75	
REA VIPINGO PLANTATIONS	0	0	
SASINI TEA AND COFFEE LTD	-2 5	1 5	
STANADARD CHARTERED BANK Kenya LTD	2 4	3 6	
TOTAL Kenya LTD	-3 4	0	
TOURISM PROMOTION SERVICES	0	0 1	
UCHUMI SUPERMARKETS LTD	-0 05	-1 4	
UNGA GROUP LTD	-1 2	0	
A BAUMANN AND COMPANY LTD	-0 25	0	
CITY TRUST LTD	0	0	
EAAGADS LTD	-1 25	0 5	
EXPRESS Kenya LTD	-1 7	0	
KAPCHORUA TEA COMPANY LTD	0	0	
Kenya ORCHARDS LTD	-0 28	0	
LIMURU TEA COMPANY LTD	-30	25	
STANDARD NEWSPAPERS LTD	0	0	
WILLIAMSON TEA Kenya LTD	0	2 5	

01	2001 - 2002	1998 - 1999 DNC	1999 - 2000 DNC	2000 - 2001 DNC	2001 - 2002 DNC
0	0	0	0	0	0
0 2	0	0	0	1	0
2 38	-0 25	1	1	1	1
4	-1	1	0	1	1
1 1	-2 6	1	0	1	1
0 8	0	0	0	1	0
-4	0	0	1	1	0
0	0	0	0	0	0
0	2 8	1	1	0	1
0	0	0	0	0	0
0 25	0	0	0	1	0
0	1	1	1	0	1
-0 2	0	0	1	1	0
-0 4	0	0	0	1	0
2 5	0 5	1	1	1	1
0	2 5	1	1	0	1
0 5	0	0	1	1	0
0	0	0	0	0	0
-0 38	-1	1	1	1	1
0	0	0	0	0	0
0	0 5	1	1	0	1
0	0	0	0	0	0
-0 4	-0 75	1	1	1	1
-0 65	1 25	1	0	1	1
0	-6	1	0	0	1
2	-1 5	1	1	1	1
0	-6	1	1	0	1
0	0	0	0	0	0
-0 61	0	0	1	1	0
-0 15	0 1	1	0	1	1
0	0	0	0	0	0
-0 2	0 8	1	0	1	1
0	-1	1	1	0	1
0	0	0	0	0	0
-1	-2 5	1	1	1	1
-2 75	2 4	1	1	1	1
1 7	-3 4	1	0	1	1
0	0	0	1	0	0
-1 1	-0 05	1	1	1	1
0	-1 2	1	0	0	1
-1	0	1	0	1	0
0	0 25	0	0	0	1
0	-0 5	1	1	0	1
0	0	1	0	0	0
-2	3 25	0	0	1	1
0	0	1	0	0	0
-55	3	1	1	1	1
0	0	0	0	0	0
-4 5	3 25	0	1	1	1

APPENDIX 4

DATA USED IN REGRESSION MODEL

COMPANY	Share Book Value
AFRICAN LAKES CORPORATIONS	28.75
ATHI RIVER MINING COMPANY	5
BAMBURI CEMENT COMPANY LTD	5
BARCLAYS BANK OF Kenya LTD	10
BAT Kenya LTD	10
BOC Kenya LTD	5
BROOKE BOND Kenya LTD	10
CAR AND GENERAL Kenya LTD	5
CARBACID INVESTMENT LTD	5
CFC BANK	5
CMC HOLDINGS LTD	5
CROWN BERGER Kenya LTD	5
DIAMOND TRUST BANK Kenya LTD	4
DUNLOP Kenya LTD	5
EAST AFRICAN BREWERIES LTD	10
EAST AFRICAN CABLES LTD	5
EAST AFRICAN PORTLAND CEMENT COMPANY	5
FIRESTONE (E A) LTD	5
HOUSING FINANCE COMPANY LTD	5
HUTCHINGS BIEMER LTD	5
ICDC INVESTMENT COMPANY LTD	5
JUBILEE INSURANCE COMPANY LTD	5
KAKUZI LTD	5
Kenya AIRWAYS LTD	5
Kenya COMMERCIAL BANK LTD	10
Kenya OIL COMPANY LTD	5
Kenya POWER AND LIGHTING COMPANY LTD	20
MARSHALLS (E A) LTD	5
MUMIAS SUGAR COMPANY LTD	2.5
NATION MEDIA GROUP LTD	5
NATIONAL BANK OF Kenya LTD	5
NIC BANK LTD	5
PAN AFRICAN INSURANCE COMPANY LTD	5
REA VIPINGO PLANTATIONS	5
SASINI TEA AND COFFEE LTD	5
STANADARD CHARTERED BANK Kenya LTD	5
TOTAL Kenya LTD	5
TOURISM PROMOTION SERVICES	5
UCHUMI SUPERMARKETS LTD	5
UNGA GROUP LTD	5
A BAUMANN AND COMPANY LTD	5
CITY TRUST LTD	5
EAAGADS LTD	1.25
EXPRESS Kenya LTD	5
KAPCHORUA TEA COMPANY LTD	5
Kenya ORCHARDS LTD	5
LIMURU TEA COMPANY LTD	20
STANDARD NEWSPAPERS LTD	5
WILLIAMSON TEA Kenya LTD	5

CHANGE IN EARNINGS DIVIDED BY BOOK VALUE OF SHARES

1998 - 1999	1999 - 2000	2000 - 2001	2001 - 2002
0	4 27826087	-144 2782609	140
1411 8	5135 2	1085 2	6221 8
64200	-80600	170600	148600
-88100	-32600	120000	-168500
12267 6	-119149 6	16837 3	45908
-13798 2	-14106 4	1603 2	7363
-13024	32151 8	-33683 3	-11042 8
9452 2	-711 8	-4214 8	6228 6
7824 6	-7258	-12539 6	1609 2
-25497 4	12485 6	-20031	12525 2
722 8	-13340 8	-8819 6	20268 8
9780 8	-9195 8	3570 2	6979 6
-13085	11271 75	-37234 75	15348
547 8	-433	2330	-4362 4
101310 4	29114 3	70101 2	90129 4
-12403 6	2771 2	-4517 2	-5813 2
-358819	151158 6	302648 8	-152280
-64859 2	-36106 8	10493 4	-27609
-62786 2	-7139 6	66876 6	70216 6
0	0	0	0
40752 2	-6649 8	-18921 4	15890 2
-13491 8	-4320 8	10502	8724 4
-32580 2	-13830 2	-2033 6	20881
-2200	285600	-181800	-107000
-365545 2	147922 3	94858 9	-436151 5
12224 8	-13110 6	68821 2	16815 4
-14170 85	-283985 85	2593 9	62839 85
-54303 6	21418	-50407 6	71573
0	0	274088 4	-232267 6
-31100	-9220	18820	49000
-129810 6	370221 4	259427 8	142544 4
5202 2	-2080 8	-14825	-7363 2
-13932	-22324	42552 8	-32911
-11299 2	-7713 8	11049 4	7630 6
-31836	22318 4	-25031 6	-20970 2
55136 8	116147 2	16938	-3937 2
68333	-104637 6	-130479 4	184735
2919 4	2880	4317 2	6057 6
-22051 4	17486 6	62145 6	-14319 2
75436 8	-89451 4	97231	31259 8
2210 4	-2137 2	-880 6	-10510 8
-6027 2	-213	-77 6	-517 2
-49448 8	-5317 6	-367 2	2988
-10795 8	6287 2	-5387 8	8581 6
-16848 4	-1052 4	-1714 6	-5945 8
1385 6	-1533 8	2907 6	-1345 8
-786 35	137 8	-1049 45	403 65
-24391 6	-1131	29523 8	-1368 6
-69484 8	7091 2	20815 6	-50787 8