

PREDICTING EARNINGS GROWTH USING EARNINGS TO PRICE RATIOS FOR
COMPANIES QUOTED AT THE NAIROBI STOCK EXCHANGE.

BY

KIHARA SALOME WANGARI

RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE
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DECLARATION

I hereby declare that this project is my original work and has not been submitted for a degree any university.

Signed— _____ Date—-----^v—i-

Salome W. **Kihara**

Reg. No. D61/P/8621/04

This project has been submitted for examination with my approval as the university supervisor.

Signed— _____ **Date—**

J.M. Gichana

DEDICATION

This work is dedicated to my future children, may this serve as an inspiration for them to excel and lead a life with a purpose.

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ACKNOWLEDGEMENT

My sincere thank is to the Almighty God who granted me the strength, grace and power to accomplish this work. All glory and honour unto Him.

To my supervisor J.M Gichana, the completion of this work could not have been achieved without your contribution.

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To you all, God bless you.

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ABBREVIATIONS

ATS	Automated Trading System
CAPM	Capital Asset Pricing Model
CDS	Central Depository System
E/P	Earnings Price ratio
EPS	Earnings per Share
MVA	Market Value Added
NPV	Net Present Value
j*	i
NSE	Nairobi Stock Exchange
P/E	Price Earnings ratio
SPSS	Statistical Package for Social Science
US	United States

ABSTRACT

This study was conducted to determine whether earnings growth can be predicted by Earnings to Price ratios of the companies listed at the Nairobi Stock.

Similar studies have been conducted elsewhere in other stock markets in the world, but no such study has been carried out in the NSE. Hence there was need for an empirical study to find out if NSE exhibits same results as in USA and Australia.

The E/P ratios for companies for companies whose financial year end on December 31st were computed and assigned in to quintiles. The tests conducted were based on the quintiles just like the study conducted in USA and Australia.

The findings showed that E/P ratios can be used to predict earnings changes. This indicates that "investors can be used E/P ratio to establish the potential of growth of their investment.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Investment strategies using earnings-price ratio (EP), often referred to as price-earnings ratio have long been documented as approaches that generate significant abnormal returns. Basu (1977) was one of the first to document the significant performance of stocks based on EP. In another study, Banz (1981) examined the size effect of stocks and found that size helped produce abnormal returns. Thereafter, Cook and Rozeff (1984), Fama and French (1992, 1995) among others have re-examined the two effects - EP and size. They found that their three-factor model enabled them to capture the effects of EP and size. More recently, Yook and McCabe (2001) created portfolios using market value-added per share (MVA) defined as the total market value of the firm minus invested capital divided by total shares outstanding and found that low MVA per share led to higher average portfolio returns.

The association of subsequent period earnings to contemporaneous financial statement components provide investors, creditors, financial analysts, and others useful information for projecting future profitability potential, assessing investment opportunities, and for firm valuation. Previous studies have used financial statement ratios to forecast earnings numbers (Line, 1986; Ou, 1990; Qu and Penman, 1989; Lev and Thiagarajan, 1993; Fairfield et al., 1996).

Investors are motivated to invest in a given asset by its expected return. The return is the level of profit from an investment, which is the reward for investing. There are many indicators that investors consider in order to determine the value of their investments. One such indicator would be growth in earnings. Investors would choose a certain investment depending on the growth potential for its earnings (Fama and French 1992).

Earnings are important to stockholders as they provide the cash flow necessary for paying dividends. Miller and Modigliani (1961) argued that the underlying source of value of a share of common stock is earnings, not dividends. A firm can use part of its earnings to finance any investment opportunity whose NPV is positive and the other portion of earnings is distributed to its stockholders in form of dividends.

Income motivated investors, are interested in knowing whether a firm is able to make dividend payments. On the other hand, capital gains motivated investors are interested in the number of investment opportunities with a positive NPV that the firm has. The portion of earnings of the firm that is not paid out as dividends is used to finance these positive NPVs investments opportunities, thus raising the value of the stock. Stock prices reflect what investors think a company will be worth and so the future growth is already accounted for in the stock price (Fama and French 1992).

Investors often seem to buy growth stocks primarily for the expectation of capital gains, and they are interested in the future growth of earnings rather than in next year's dividends. On the other hand, they buy income stocks primarily for the cash dividends. The expected return for growing firms can also equal the earnings-price ratio (Brealey and Myers, 2000).

The Earnings/Price Ratio (E/P) is a reciprocal of Price/Earnings (P/E) Ratio which is used by investors to assess how many years it will take them to get the value of their investment back. Assuming that the earnings of the company are not growing and that the earnings are positive, then the P/E Ratio of the stock will equate to the "payback period" on the investment. Past growth rates are often used to predict future growth rates. Evidence suggests that companies with little variation in their earnings in the past will have more predictable growth rates in the future (Umartl3 ,2009)

The importance of E/P ratios as earnings predictors was recognized by Ou and Penman (1989). The study found that E/P ratios were relatively good predictors while price changes were poor predictors of future earnings. Fama and French (1992) found that on average the larger the size

Studies at NSE include Ndeti (2000) on testing whether the price earnings ratio is an indicator of investment performance of ordinary shares at NSE. The study concluded that lower E/P ratios were associated with higher earnings growth. The results were in line with findings of the studies performed by Malkiel and Cragg (1970), Bower and Bower (1969) and Whitbeck and Kisor (1963) as quoted by Ndeti (2000)

Muthui (2003) conducted a study on Price Earnings Ratio and share performance at NSE. The study was conducted by use of one-way ANOVA to test the hypothesis. The study sought to find out whether stocks with high and low E/P ratio stocks produced different results in terms of risk and return. The conclusion was that there is no statistically significant difference in returns of share with low and high E/P ratios for companies quoted at the NSE. High E/P stocks registered higher returns than the low E/P ratio stocks but with a significantly high risk.

Makara (2004) revealed that the high E/P portfolios outperformed the low E/P portfolios during the period under study (1994-2003). This was depicted by the three evaluative measures whose ratios are higher for the high E/P portfolio indicating a superior performance.

Nairobi Stock Exchange as an example of emerging stock market is expected to grow. According to Ndegwa (2006), the stock market experienced robust activity and high returns on investment. Thus resulting to a number of changes in form of the number of listed companies, number of CDS account opened and the volume of shares traded among others. In 2006, the exchange implemented the automated trading system (ATS). The NSE clearing, settlement and trading processes are now supported by a robust and modern information technology infrastructure as explained by Mbaru (2007).

1.2 Statement of the Problem

Companies that have had high growth rates in the past generally have Low E/Ps. They are expected to have higher earnings in the future. This implies that investors expect the higher growth rates to persist in such companies. However earlier studies by Little (1962), Rayner and Little (1966), Brealey (1983), and Lintner and Glauber (1967) reported that earnings growth rates are randomly distributed, thus such growth rates cannot be predicted. These earlier studies indicated that there existed no relationship between E/P ratios and earnings changes. That is, past earnings changes are essentially uncorrected with future earnings changes. This implies that past earnings changes cannot be forecast on the basis of simple time series models of earnings changes.

However, Fuller et. al (1992) in their study which covered the period 1973-1990 and Allen et al. (1998) study conducted in the US and Australia respectively challenged the earlier studies that earnings growth rates cannot be predicted. These studies utilized the earnings - to price ratio as the market's implicit forecast of future earnings changes. Their findings suggested that investors can predict future earnings changes using historical growth rates of earnings. The results further suggested that high E/P stocks tend to have relatively lower earnings changes while low E/P stocks tend to have higher earnings changes thus earnings changes are predictable on the basis of E/P ratios.

Fuller et.al (1992), provide evidence that earnings changes are not randomly distributed. They argue that stocks sell at widely different price-to-earnings ratios because they are a reflection of consensus earnings growth forecasts and that these forecasts have value. Their results revealed that low P/E (high E/P) stocks tended to subsequently generate low earnings growth whilst high P/E (low E/P) stocks provided high future earnings growth. Thus there was a negative relationship between E/P ratios and subsequent earnings growth rates. They argued that earnings changes, conditioned on E/P ratios, did not appear to be randomly distributed. This is contrary to early studies of Little, (1962) and Brealey (1967 and 1983) which would imply that there existed no relationship between E/P ratios and earnings changes.

Fuller et.al (1992) suggests that these early studies did not observe long-run growth rates of earnings across the price-to-earnings ratio categories. They contend that if the earlier studies had examined long-run growth rates across E/P quintiles, it is likely that they would not have concluded that earnings behaved as if they were randomly distributed over time.

In Kenya, very few studies have been done on earnings to price ratio. Related studies include the ones for Makara S. 2004, Muthui S. 2003 and Ndeti M. 2000 while no study has been done on how earnings to price ratio predicts the earning growth. For instance, Ndeti (2000) sought to seek if there was any relationship between Prices - Earnings Ratio with the rate of growth of earnings at Nairobi Stock Exchange by using multiple regression to establish this relationship. The study concluded that lower E/P ratios were associated with higher earnings growth. However the study considered all the stocks in the market regardless of the end of their financial year. The study also disregarded all stocks with negative P/E ratios. Hence the results obtained may have been inconclusive as different periods of the year experience different market conditions.

The purpose of this study therefore, is to fill the knowledge gap in the Kenyan context by investigating whether earnings growth can be predicted using earnings to price ratios. Unlike Ndeti (2000), this study will use only the companies whose financial years end at the end of the year and consider companies that have traded at the NSE for 7 consecutive years; since the beginning of 2001 to eliminate the possibility of a survivorship bias. The objective of the study hence is to establish the predictability of earnings growth using earnings to price ratio.

1.3 Objective of the Study

To determine whether earnings growth can be predicted by Earnings to Price ratios of the companies listed at the Nairobi Stock Exchange

1.4 Significance of the Study

The study will be important to various categories of stakeholders;

Investors: The study will assist both current and potential investors at NSE in the evaluation of various quoted companies' shares, whether to rely on E/P ratio or not and whether the shares are overvalued or undervalued.

Stockbrokers and investment banks: These institutions act as intermediaries for investors. The study will guide them on how to advise their clients for better returns. Thus the investors will be in a better position to know which investment strategy to apply.

Financial Advisors: E/P ratios can be used as indicators of business performance and valuation. This is especially when considering the buying and selling of businesses in mergers and acquisitions. Hence the study will enable financial advisors to make informed decisions.

Scholars: The study will provide a source for reference and will form a base for further research and improvement.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter summarizes the information from other researchers who have earned out their research in the same or related area of study on earnings to price ratio. The specific areas covered here are Earnings to Price Ratio, E/P anomaly, E/P Ratio as a predictor of earnings growth, stock valuation based on earnings, Empirical studies and finally a conclusion.

2.2 Earnings to Price Ratio

Earnings price ratio (E/P) is an estimate of the current rate of return on the market value of the owner's equity. However E/P is a poor estimate of the rate of return on the market value of the owners' equity because net income is based on accrual accounting. Most companies do not pay 100% of their earnings as dividends so the E/P ratio would overstate the owner's current return even if net income equaled net cash flow per share (Gary, 1998).

E/P is a reciprocal of P/E ratio. It is influenced by the earnings and sales growth of the firm, the risk (or volatility in performance), the debt - equity structure of the firm, the dividend policy, the quality of management and a number of other factors (Block and Hirt, 1992)

Low earnings to price ratio shows that an investor thinks that the firm has good growth opportunities. Thus its earnings are relatively safe and deserve a low capitalization rate or both (Brealey and Myers, 1991). E/P ratios are lower for firms with strong growth prospects, other things held constant but are higher for riskier firms (Brigham and Houston, 2004). However, firms can have low earnings-price ratio not because price is high but because earnings are low. A firm which earns nothing (EPS = 0) in a particular period will have a zero E/P (an infinite P/E) as long as its shares retain any value at all.

Earnings that firms report are book or accounting figures and as such reflect a series of more or less arbitrary choices of accounting methods. Almost any firm's reported earnings can be changed substantially by adopting different procedures. For example a switch in the depreciation method used for reporting purposes directly affects EPS, yet it has no effect on cash flow since depreciation is a non-cash charge (Block and Hirt, 1992).

A low E/P ratio may indicate that investors expect high dividend growth, or the stock has low risk and therefore investors are content with a low prospective return. It may also indicate that the company is expected to achieve average growth while paying out a proportion of earnings. Earnings - Price ratio is therefore a common measure of the esteem in which investors hold the company (Brealey and Myers, 1991). Relatively low values of E/P ratio characterize growth stocks, and relatively high values characterize value stocks (Sharpe, Alexander and Bailey, 2006).

Cragg and Malkiel (1982) interpreted E/P ratio as an earnings growth indicator. Litzenberger and Rao (1971) interpreted this ratio as a risk measure. Ball (1978) interpreted the ratio as an earnings capitalization rate. Beaver and Morse (1978) showed that this ratio indicates transitory-earnings the "Molodovsky effect" from Molodovsky (1953). Basu (1977) interpreted it as an indicator of mispriced stocks while Jaffee, Keim and Westerfield (1989) interpreted it as a product of accounting principles.

Pandey (1990) states that a negative P/E ratio is an inconsistent situation because it is like saying that the inventor pays an amount equivalent to the P/E ratio for every loss made or that the inventor take away an amount equivalent to P/E for every rupee profit made, neither of which makes sense.

2.2.1 Calculation of E/P ratio

To calculate the E/P ratio, first the accounting value of the firm's earnings per share is determined by using the most recent income statement and dividing the firm's earnings after taxes by the number of shares outstanding. Second, the market price of the firm's common stock

is determined by taking the most recent price at which the firm's common stock was traded. Last, the earnings per share figure is divided by the market price of the stock to arrive at the E/P ratio (Sharpe, Alexander and Bailey, 2006).

2.2.2 Share Price Adjustments

To reduce any potential 'look-ahead bias', which follows from a timing problem, (in effect the financial year end's earnings number might not be released until several months after the year's end), Banz and Breen (1986) suggested that in calculating the earnings-to-price (E/P) ratios, the EPS figure should be divided by the share price reported at the end of the three months after the balance date. The reason being that data reported at the end of the year is not actually available to the investor until sometime later in the next year. The lag is typically of the order of three months according to these authors. So, for example, to calculate the E/P ratio for the year ending > 30 June 2000, the EPS figure for the year ending 30 June 2000 should be divided by the share price as at 30 September 2000. The share price data also had to be adjusted for any capitalization changes. Thus, the share prices collected should be divided by the cumulative dilution factor to "reflect any capitalization changes in more recent years.

2.3 E/P Anomaly

High E/P tends to be followed by lower E/P ratios in later years, as documented by Beaver and Morse (1978). The E/P ratio can be seen as a comparison of two information sets, the information about current and future earnings that is summarized in price (the denominator) and the information in current earnings alone (the numerator). Accordingly, the mean-reverting behavior of E/P ratios has been interpreted as prices providing indications of future earnings relative to current earnings. High E/P ratios indicate that earnings will be lower in the future, and low E/P ratios indicate that earnings will be higher in future. When these higher or lower subsequent earnings are ultimately recorded, observed E/P ratios revert toward the mean.

2.4 E/P Ratio as a Predictor of Earnings Growth

The E/P effect was first reported by Nicholson (1960) who discovered that high E/P stocks seemed to earn higher returns than the average stocks. Basu (1977) also reported that high E/P stocks yielded higher average returns than the low E/P stocks. Beaver and Morse (1978), by grouping common stocks into portfolios on the basis of price-earnings ratios, found that differences in P/E ratios among the portfolios persisted for up to 14 years. The importance of E/P ratios as earnings predictors was recognized by Ou and Penman (1989). They found that E/P ratios were relatively good predictors while price changes were poor predictors of future earnings.

Stocks prices reflect what investors think a company will be worth and so the future growth is already accounted for in the stock price. EPS figure is usually based on earnings from the last four quarters and if a company is expected to grow then one would assume earnings would as well grow. As a result, a better interpretation is that the E/P ratio is actually a reflection of the market's optimism concerning a firm's growth prospects (Muthui 2003).

2.5 Stock valuation based on Earnings

A continual controversy in the investment community concerns the relevance of dividends versus earnings as the underlying source of value of a share of common stock. Earnings are important to stock holders as they provide the cash flow necessary for paying dividends. Reported earnings can be viewed as having two components, the permanent and transitory components. The permanent component is the component that is likely to be repeated in the future, whereas the transitory component is not likely to be repeated. The intrinsic value of a share depends on the firm's earnings prospect. This suggests that changes in a stock's intrinsic value, and in turn its price, will be correlated with changes in the permanent component of its earnings. Stocks with the highest returns typically have earnings that are substantially greater than expected, whereas those with the lowest returns have earnings substantially below expectations. (Sharpe et. al (2006). Miller and Modigliani (1961) argued that the underlying source of value of a share of

common stock was earnings, not dividends. Their conclusion implied that the dividend decision is irrelevant to the stock holders, as it will not affect the value of their investments in the firm.

2.6 Empirical Studies

Allen et al (1998) examined whether or not earnings changes can be predicted by means of past earnings growth rates. The study was set out to test whether Fuller et.al (1992) reported success in predicting earnings in the US study could be applied to Australian data. The results of the study suggested that Australian company earnings changes are predicted on the basis of E/P ratios. However the results were not as strong as for Fuller et.al (1992). They found out that earnings changes can be predicted on the basis of E/P ratios. The study indicated that there existed an inverse relationship between E/P ratios and the subsequent earnings growth rates. The study argued that earnings changes, conditioned on E/P ratios did not appear to be randomly distributed. This was contrary to earlier studies of Little (1962), Brealey (1967, 1983), and Lintner and Glauber (1967) which implied that there existed no relationship between E/P ratios and earnings changes. The results of this study suggested that Australian company earnings changes are predicted on the basis of E/P ratios. Allen et.al. (1998) ranked stocks by their E/P ratios and assigned them into 5 quintiles (Q1 - Q5). The first quintile (Q1) included those 20% of the stocks with the highest E/P ratios in that year and the fifth quintile (Q5) included 20% of the stocks with the lowest E/P ratios.

Fuller et.al (1992) in the US study, which covered the period 1973-1990, provided evidence that earnings changes are not randomly distributed. The study argued that stocks sell at widely different earnings-to-price ratios because they are a reflection of consensus earnings growth forecasts and that these forecasts have value. The results revealed that high E/P stocks tended to subsequently generate low earnings, growth while low E/P stocks provided high future earnings growth. Thus there was an inverse relationship between E/P ratios and subsequent earnings growth rates. The study argued that earnings changes, conditioned on E/P ratios, did not appear to be randomly distributed. The study also reported that high E/P stocks tend to have low subsequent earnings growth, and low E/P stocks tend to have high subsequent growth. This

suggests that investors can discriminate across companies according to future growth rates of the companies' earnings, and they set prices and E/P ratios accordingly.

The same authors also investigated E/P strategies to determine whether high E/P stocks have generated positive alphas and, if so, why. Their study investigated not only the subsequent growth rate of earnings for stocks grouped by E/P quintile, but also analyst forecast errors. The study also explored whether "omitted risk factors" might account for any abnormal returns associated with high E/P investing. The study found that high E/P stocks did generate positive alphas. The results indicated that there is an even more pronounced negative alpha associated with low E/P stocks. According to the study neither earnings growth subsequent to forming E/P portfolios, nor analysts' forecast errors, nor omitted risk factors account for these abnormal returns. The conclusion of the study was that the "E/P effect" remains an enigma. They argued that stocks sell at widely different earnings to price ratios because they are a reflection of K consensus earnings growth forecasts and that these forecasts have value. Their results revealed that high E/P stocks tended to subsequently generate low earnings growth while low E/P stocks provided high future earnings growth. Thus there was an inverse relationship between E/P ratios and subsequent earnings growth rates. They argued that earnings changes, conditioned on E/P ratios, did not appear to be randomly distributed. Fuller et.al (1992) reported that high E/P stocks tend to have low subsequent earnings growth, and low E/P stocks tend to have high subsequent growth. This suggests that investors can discriminate across companies according to future growth rates of the companies' earnings, and they set prices and E/P ratios accordingly.

Basu (1977) reported that high E/P stocks yielded higher average returns than the low E/P stocks. Using a sample period that stretched from 1957 to 1971, the study showed that stocks with high earnings/price ratios earned significantly higher returns than stocks with low earnings/price ratios. Basu (1983) and Jaffe, Keim, and Westerfield (1989) indicated that the earnings predictor, E/P, also predicts stock returns, after controlling for beta, "size," and "January" effects in returns.

Beaver and Morse (1978), by grouping common stocks into portfolios on the basis of price-earnings ratios, found that differences in P/E ratios among the portfolios persisted for up to 14

years. However growth appears to explain little of the persisting P/E differences. They found that E/P ratios are negatively correlated with subsequent earnings changes. They also found that E/P ratios are negatively correlated with current earnings changes. Thus, E/P ratios indicate reversals in the direction of earnings changes. Beaver and Morse (1978) showed that E/P ratios not only predict future earnings changes but they also identify transitory aspects of current earnings. Investors utilize other information in setting prices, which provides both a prediction of future earnings and an indication of whether current earnings are representative of future earnings. Thus a comparison of price to earnings in an E/P calculation can indicate the extent to which current earnings are transitory.

Ball (1992) reviewed the earnings-price anomalies and delineated two classes of explanation for the anomalies. The first involved the failure of the capital market and suggests that the market truly is inefficient. The second involved the failure of researchers to construct either adequate theory or adequate empirical measures of price behaviour in an efficient market. Ball (1978) suggested that the E/P ratio operates as a risk measure. Penman (1996) demonstrated that the E/P ratio indicates future growth in earnings, which is current return on equity. The study provided further empirical evidence, consistent with Fuller et.al (1992) that portfolios based on E/P ratios rank-order ex-post changes in future earnings from current earnings for a number of years ahead.

Kim (1987) showed that E/P ratios are positively correlated with "unexpected (current) earnings" and the returns to an E/P strategy are positively correlated with those based on these "unexpected earnings". Foster et.al (1984) and Bernard and Thomas (1989) have documented "abnormal" returns following the announcement of (unexpected) earnings that are in the direction of those earnings. This implies that the market is slow to reflect the information in current earnings.

Beaver et.al (1980) interpreted their findings and concluded that earnings reflect information in prices with a lag as an indication that accounting earnings measure "true earnings" (dubbed "permanent earnings") implicit in prices with error. They explained that this is because accounting earnings are perturbed by transitory influences. High E/P stocks tend to generate low

subsequent earnings growth, and low E/P stocks tend to generate high subsequent earnings growth. This is consistent with correct pricing of stocks across E/P groups, not incorrect pricing.

Wan (2007) examined the association between forward E/P ratio and subsequent realized growth. He found a nonlinear relationship between the forward E/P ratio and subsequent realized growth, whether risk was held constant or not. The study further stated that while firms in the lowest forward E/P portfolio were most able to deliver extremely high growth, they also reported losses the most frequently. The findings also suggested a U-shaped relationship between the forward E/P ratio and volatility of earnings growth. Compared to firms in the highest forward E/P portfolio, which are inherently financially distressed, firms in the lowest forward E/P portfolio were more likely to report losses and have higher volatility of earnings growth. Further analysis showed that the earnings growth of firms in the lowest forward E/P portfolio is not sufficient to justify their high valuation in the base years.

Ou and Penman (1989) found that the accounting numbers that contain similar information about future earnings as E/P ratio also predict stock returns. This predictability is not due to these accounting items capturing differential risk attributes that are identified with E/P ratios. Rather, prices may capture the information about future earnings that is in financial statements with a lag.

Fama and French (1992) in their study on the cross section of expected returns observed that E/P ratio effect could be used in the extensions of the CAPM model in the attempt to predict returns. The study noted that by holding beta constant in the extended model, observed returns tend to be higher for high E/P ratio stocks and lower for low E/P ratio stocks. Expressed differently high E/P stocks earn excess returns above what CAPM would predict and low E/P ratio stocks earn less than what the CAPM would predict. Similar to the E/P ratios, the ratio of market to book value was used to explain security returns.

In Kenya, Ndeti (2000) sought to determine the nature and type of relationships between the P/E ratio and the rate of growth of earnings; variations in earnings growth and the dividend pay out ratios. Fifty five firms in NSE were analyzed. The firms were grouped into samples and each

sample comprised of firms whose fiscal years end was the same. P/E ratio was taken to be at a particular point in time. Annual earnings growth rates for each company were obtained in two ways for comparison. This was computed by dividing the increase in earnings in one year by the previous year's earnings. That is the following year earnings growth rate for every year of study and by computing the five year average of earnings growth, to eliminate the effects of short term considerations according. The results indicated that lower E/P (higher P/E) ratios were associated with higher earnings growth.

Muthui (2003) conducted a study on Price Earnings Ratio and share performance at NSE. The study was conducted by use of one-way ANOVA to test the hypothesis. The study sought to find out whether stocks with high and low P/E ratio stocks produced different results in terms of risk and return. The conclusion was that there is no statistically significant difference in returns of share with low and high P/E ratios for companies quoted at the NSE. High E/P (Low P/E) stocks registered higher returns than the low E/P (high P/E) ratio stocks but with a significantly high risk.

[-As in the Allen et. al (1998) and Fuller etal (1992) studies, the E/P ratio is used rather than the usual P/E ratio. One of the advantages of this approach as explained by Allen etal. (1998) is that sorting stocks by their E/P ratios naturally ranks companies with negative earnings as having the lowest E/P, whereas sorting by P/E ratios will not naturally rank such companies as having the highest P/E. Another advantage is that, with price as the denominator, the E/P ratios do not 'blow up' as earnings approach zero, which might happen if P/E ratios were used. For example a stock whose price (P) is Ksh. 10 and earnings (E) is 0.01 implies that the P/E ratio = $10/0.01 = 1000$ while the E/P ratio = $0.01/10 = 0.001$

Muthui (2003) quotes Victor Niedershoffer and Laurel Kanner having used E/P ratio in their study of Nasdaq 100 for the period of 1997 -99. They used earnings price ratio or the earnings yield rather than the P/E ratio as this does away with the discontinuities when a company loses money, as well as the meaningless of the P/E when earnings are very small. Hence this study adopts E/P ratio rather than the P/E ratio.

2.7 Conclusion

The above literature indicates that there has been conflicting results regarding the relationship between earnings growth and E/P ratio. The earlier studies reported that earnings changes over time appear to be randomly distributed Allen et.al. (1998) which has been replicated in this study and its results are consistent to the study of Fuller et.al (1992) indicates that an inverse relationship existed between earnings changes and E/P ratios. These results agree with those of Beaver and Morse (1978), Ou and Penman (1989) and Ndege (2000).

Other studies investigated the relationship between E/P ratios and stock returns. These includes the studies conducted by Nicholson (1960), Basu (1977), Fama and French (1992) and Muthui ' (2003). All these studies indicated that there was a positive relationship between E/P and stock returns.

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This study replicates that of Allen et.al. (1998) but differs in the following ways. The study of Allen et.al. (1998) used a sample of listed Australian companies from 1972 - 1984. This study uses a sample of listed companies in NSE from 2001 - 2007. Allen et. al. (1998) mentioned that the long period could result to survivorship bias hence this study considers a shorter period. Their study considers all companies regardless of the end of their financial year. This study considers only those companies whose financial year ends in December. This is so because NSE as an emerging market experiences different market conditions for different periods unlike USA and Australia market which is a developed market.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets out various stages and phases that were followed in completing the study. It involves a blueprint for the collection, measurement and analysis of data. This section is an overall scheme, plan or structure conceived to aid the researcher in answering the raised research question. In this stage, most decisions about how research will be executed and how respondents will be approached, as well as when, where and how the research will be completed. Therefore in this section the research identifies the procedures and techniques that were used in the collection, processing and analysis of data. Specifically the following subsections are included; research design, population, sampling, data collection, variables and variable measurement, portfolio formation and finally data analysis.

3.2 Research Design

This study took on a time series design. A time series design collects data on the same variable at regular intervals (weeks, months, years) in the form of aggregate measures of a population. Time series designs are useful for establishing a baseline measure, describing changes over time, keeping track of trends and forecasting future trends.

3.3 Population

The population of the study is all companies quoted at the NSE (see appendix I). All the currently listed stocks at NSE formed the population of this study, thus fifty six (56) companies.

3.4 Sampling Technique

The stocks included in the sample were selected on the following basis:

The stock must have been listed during the entire study period; 1st January of 2001 to 1st January 2008. Thus, all stocks listed after 1 January, 2001 were excluded;

The stock must have traded continuously during the entire period. Any stock that was suspended at any time during the period was excluded; and

The companies whose financial year ends on December 31st.

Out of the 56 companies listed at NSE (See appendix I), 8 companies were listed after January 1st 2001 hence excluded from the sample. These are Kengen Ltd, Scan Group, Equity Bank Ltd, Eveready East Africa Ltd, Access Kenya Group Ltd, Kenya Re Ltd, Co-Operative Bank Ltd and Safaricom Ltd. Four other companies were excluded for they have not traded continuously during the entire period; these included Hutchings Biemer Ltd, Uchumi Supermarket Ltd, B.O.C Kenya Ltd, and Carbacid Investments Ltd thus remaining with a sample size of 45 companies. Out of the 45, only 23 companies have their financial year ending on December 31st. Thus the sample size for the study was 23 listed companies at NSE.

3.5 Data Collection

This study used secondary data from the Nairobi stock exchange and the financial reports of the companies. The data used was taken from the 23 listed company's Annual Report Record and from Nairobi Stock Exchange. The required stock prices and list of earnings for the period of study was obtained from the NSE database.

Since the sample selection criteria required that the companies must have remained in existence for 7 consecutive years, there could be the possibility of a survivorship bias. This however, was not a problem because non-survivors were equally distributed across all E/P quintiles.

Information about the industry/sector classifications was taken from the NSE reports and journals. The study then involved grouping stocks into quintiles (according to their E/P ratios).

3.6 Variables and Variable Measurement

The EPS was calculated by dividing the net profit by the number of shares. The net profit figure was computed by deducting the preference dividends from the profit-adjusted figure. Thus,

$$\text{EPS} = \frac{\text{profit adjusted} - \text{preference dividends}}{\text{number of shares}} \quad (1)$$

The number of shares in the denominator was set to equal to the number of fully paid ordinary shares. •

Share price adjustments were undertaken to reduce any potential "look-ahead bias", which follows from a timing problem. Just as Allen et.al (1998) advanced, the EPS figure was divided by the share price reported at the end of the three months after the balance date; 1 April. The share price data was also adjusted for any capitalization changes, that is, the share prices collected were divided by the cumulative dilution factor to reflect any capitalization changes in more recent years.

3.7 Data Analysis

Data analysis involved three sets of tests based on the correlations of earnings changes, descriptive analysis and regression analysis.

In the first step, for each year of the study (from the beginning of 2001 through the beginning 2008), stocks were ranked by their E/P ratios (EPS/price) and assigned into quintiles. The first quintile (Q1) included those 20% of the stocks with the highest E/P ratios in that year and the fifth quintile (Q5) included 20% of the stocks with the lowest E/P ratios.¹ Having ranked each

¹ The E/P ratio will be used rather than P/E ratio since sorting stocks by their E/P ratios naturally ranks companies with negative earnings as having the lowest E/P, whereas sorting by P/E ratios will not naturally rank such

year's stocks by their E/P ratios and having assigned them into their appropriate quintiles, the yearly median E/P ratios for each quintile was then constructed.² Q1 contain 20% of the stocks with the highest E/P ratios in each industry and Q5 contain the lowest 20% of each industry in terms of E/P ratios. Since Q1 contained the highest 20% of each industry, it was possible that Q1 might have some stocks with lower E/P ratios than Q2, similarly some other stocks in Q2 might have lower ratios than Q3, et cetera. The quintiles were used as the foundation for all tests, some of which were based on stocks within the quintiles.

The next step was to determine whether or not earnings changes are randomly distributed across companies. Hence, correlation coefficients between earnings changes in adjacent years were then examined. If the correlation coefficients were close to zero, this indicated that earnings changes can not be predicted (randomly distributed). To conduct this test, earning changes for each year of the study were first calculated as the EPS for the current year minus the EPS for the previous year divided by the EPS for the previous year; that is:

$$[\text{EPS}_t] - [\text{EPSM}] / [\text{EPS}_{t-1}] \quad (2)$$

Next, the correlations for other lagged years were also examined. One difficulty with the measure defined in equation 2 is that small numbers in the base year will exaggerate the earnings change. This was, however, avoided if the earnings change were measured relative to the median earnings change.

Having examined the correlations of earnings changes for each of the stocks, descriptive analysis were conducted using the percentage changes in earnings for each stock. However, for the

companies as having the highest P/E and with price as the denominator, the E/P ratios do not "blow up" as earnings approach zero, which might happen if P/E ratios were used

² However, ranking stocks merely by their E/P ratios may result in the first quintile (Q1) being dominated by low-growth industries and the fifth quintile (Q5) by high-growth industries. To overcome this problem, 'industry diversified' E/P quintiles, which included 20% of each industry, will also be constructed. Fuller et.al (1902) suggested the use of the 'median' instead of the 'mean' to reduce the influence of extreme outliers.

purpose of this test, the median of the yearly percentage change for all of the stocks was calculated. Then the percentage change in earnings for each firm was compared to the median percentage change for all the stocks. If the firm's percentage change was greater than the median percentage change for all the stocks, an outcome for the year was defined as "good"¹; otherwise, it was defined as "bad". The actual number of companies experiencing a given number of good years was then considered to determine whether they are randomly distributed or not.

A linear regression analysis was then run in order to determine the relationship that exists between earnings growth and the E/P ratios. This was done using the following model.

$$\text{Earnings_growth} = b_0 + b_x EP + s_t$$

where earnings growth is the dependent value, E/P is the independent value, b_0 is the constant and b_i intercept and E_t is the error term.

The above analysis was undertaken so as to determine if earnings growth can be predicted using earnings to price ratios. The results of the analysis are presented in chapter 4.

CHAPTER FOUR

RESULTS AND INTERPRETATIONS

4.1 Introduction

The purpose of this study was to investigate whether earnings growth can be predicted using earnings to price ratios of the companies listed at the Nairobi Stock Exchange. Data analysis was done using Statistical Package for Social Science (SPSS) version 17 and it involved use of descriptive statistics, correlation analysis and regression analysis. All these were applied in order to assess predictability of earning growth by using earnings to price ratios. The results of the analysis are hereby presented in form of tables, and charts.

4.2 findings and Discussions

4.2.1 Pormation of Quintiles

The result in table 4.2.1 shows the classification of companies into quintiles by their earnings/price ratios. Stocks were ranked by their E/P ratios (EPS/price) and assigned into quintiles. The first quintile (Q1) included those 20% of the stocks with the highest E/P ratios in that year and the fifth quintile (Q5) included 20% of the stocks with the lowest E/P ratios.

Having ranked each year's stocks by their E/P ratios and having assigned them into their appropriate quintiles, the yearly median E/P ratios for each quintile was then constructed. Q1 contained 20% of the stocks with the highest E/P ratios in each industry and Q5 contained the lowest 20% of each industry in terms of E/P ratios.

The comparison of the averages of the yearly median for the non-diversified quintiles with the diversified quintiles reveals that the effect of diversifying across industries resulted in a narrower range of E/P ratios across the quintiles. The range for the non-diversified quintiles was 0.1219 to -0.0053. whereas the range for the industry-diversified quintiles was 0.0754 to 0.0510.

Table 4.2.1 Companies Classified into Quintiles by Their Earnings/ Price Ratios

	TotalCAU Stocks)	Q1	Q2	Q3	Q4	Q5
Non- Diversified E/P Quintiles	0.044342	0.1219	0.0753	0.0553	0.0436	-0.0053
Industry- Diversified E/P Quintiles	0.044342	0.0754	0.0578	0.0528	0.0552	0.0510

4.2.2 Correlation of Earning Changes

Table 4.2.2 shows the average correlation coefficients for the earning changes by quintile. To conduct this test, earning changes for each year of the study was first calculated as the EPS for the current year minus the EPS for the previous year, divided by the EPS for the previous year; that is:

$$[\text{EPS}_t] - [\text{EPS}_{t-1}] / [\text{EPS}_{t-1}]$$

Next, the correlations for other lagged years were examined.

According to the table, the average correlation coefficients are all close to zero for all quintiles. This indicates that earnings changes are randomly distributed. There are few stocks, marked with asterisk, where there are significant correlations between earnings changes in year T and earnings changes in year $T + 1$ and between year T and year $T + 2$. These results suggest that earnings changes are randomly distributed.

Table 4.2,2 Average Correlation Coefficients For Earnings Changes

	Total(All Stocks)	Q1	Q2	Q3	Q4	Q5
T+'r+1	0.050	0.077	-0.369	0.091	-0.491 (*)	0.155
X*T+2	0.158(*)	0.089	-0.059	0.3420	0.080	0.043

*Correlation coefficient is significantly different from zero at 5% level of significance.

4.2.3 Earnings Growth Rates

The earnings growth rates for each company over the seven-year period following the formation date were calculated. Then the percentage change in earnings for each firm was compared to the median percentage change for all the stocks. If the firm's percentage change was greater than the median percentage change for all the stocks, an outcome for the year was defined as 'good'; otherwise, it was defined as 'bad'. The actual number of companies experiencing a given number of good years over the seven year period is shown in table 4.2.3 below. The results show that most companies experienced between 1 and 3 good years. No company experienced seven good years over the period of analysis. Thus a typical company experience less than half of good years thus indicating that earnings changes are not randomly distributed. These results are not consistent with the results of Fuller et.al (1992) Allen et.al (1998). This could be explained by the fact that their results are based on a developed market while NSE is a developing market.

Table 4.2.3 Number of Companies reporting good years by Quarter

Number of Good Year	All Stocks	Q1	Q2	Q3	Q4	Q5
1	66	9	12	13	15	17
2	26	10	6	2	j	5
J	14	1	$\frac{7}{J}$	6	j	1
4	5	2	$\frac{9}{JL}$	0	1	0
5	1	0	0	1	0	0
6	1	1	0	0	0	0
1	0	0	0	0	0	0 ;

4.2.4 Regression Analysis

Linear regression analysis was used to assess the relationship between earnings growth and earnings-to-price ratio.

The regression equation is as below:

$$Earnings_growth = b_0 + b_x EP + s_t$$

The results of the regression analysis in table 4.2.4 below shows that there exists a significant negative relationship between firms' earnings growth and EP ratio.

There is a significant negative relationship between firm's earnings growth and EP ratio. The Adjusted R-square shows that the regression model explains about 2.5% of the dependent Earnings growth.

The Durbin-Watson test for serial correlation of the residuals and case wise diagnostics for the cases meeting the selection criterion shows that there is no serial correlation among the regression residuals since the value of Durbin Watson is below 7.0.

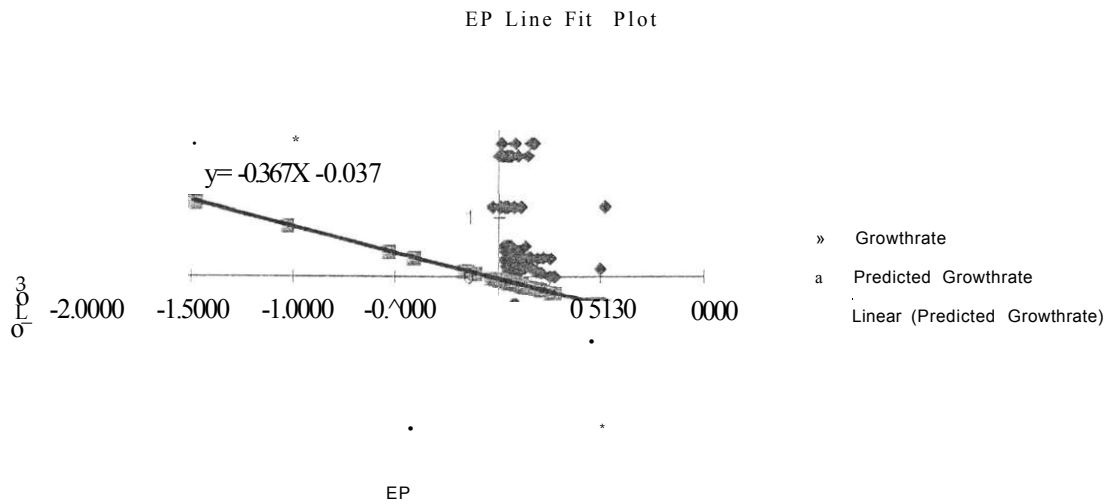
Therefore, to explain Earnings growth, our regression equation can then be expressed as;

$$\text{Earnings_growth} = -0.0378 - 0.8671\text{EP} + s,$$

The above model therefore indicates that earning's growth can be predicted by Earnings-to-Price.

Variables V -	B	t-statistics	P-value	Adj. R ²	Durbia-Watson
Intercept	-0.0378	-0.435	0.026	0.25	1.786
EP	-0.8671	-2.245			

Figure 4.2.4 Line fit of regression between Earnings Growth and EP



The figure shows a negative linear relationship indicating that the higher the E/P ratio the lower the expected earnings growth.

The three sets of tests were undertaken in order to assess the predictability of earnings growth using earnings to price ratios. The test based on correlations of earnings changes, indicated that earnings changes are randomly distributed. This is in consistent with studies of Little (1962), Rayner and Little (1966), Brealey (1967) and Lintner and Glauber (1967). These studies reported that earnings changes over time appear to be randomly distributed.

The other two tests based on descriptive analysis and regression analysis indicated that earnings changes are not randomly distributed and hence earnings growth can be predicted using earnings to price ratio. These results were consistent with the results of Fuller et.al (1992) and Allen et. al (1998).

CHAPTER 5

SUMMARY AND CONCLUSION

5.1 Summary

The data used in this study was taken from the 23 listed company's Annual Report Record and from Nairobi Stock Exchange. The required stock prices and list of earnings for the period of study were obtained from the NSE database. The study used only the companies whose financial years end at the end of the year and consider companies that have traded at the NSE for 7 consecutive years; since the beginning of 2001 to eliminate the possibility of a survivorship bias. The objective of the study hence is to establish the predictability of earnings growth using earnings to price ratio. The study utilized the earnings to price ratio instead of the commonly used price to earnings ratio.

The results presented in chapter four indicate that there is a significant relationship between E/P ratios and earnings growth for stocks quoted at NSE. These results imply that earnings growth can be predicted by E/P ratios. These results are consistent with the results of studies conducted by Fuller et.al (1992) and Allen et.al (1998) in USA and Australia respectively. In this chapter, the conclusions derived from the results are presented. In addition, the limitations of the study are highlighted and the recommendations for future research are suggested.

5.2 Conclusion

The findings suggest that investors can predict future earnings changes using historical growth rates of earnings. Therefore earnings changes for the stocks quoted at NSE are predictable on the basis of E/P ratio.

The results show a significant negative relationship between E/P ratios and earnings growth indicating that the higher the E/P the lower the earnings growth rate expected. This implies that companies that have had high growth rates in the past and exhibits low earnings to price ratios

are expected to have higher earnings in the future. The results reveal that stocks with high E/P ratio tends to subsequently generate low earnings growth while stocks with low E/P ratios provides a high future earnings growth. These findings are contrary to the findings of earlier studies that indicated that there existed no relationship between E/P ratios and earnings changes.

The implication of this study is that Financial Analysts and Investors may use E/P ratios to improve the returns on their investment. Since the intrinsic value of a share is earnings as earlier argued, then investors may make informed decisions concerning their investments as they can predict the earnings growth of a stock using the E/P ratio

5.3 Limitations of the study

The number of stocks studied was very small. This was due to the fact that the study needed to consider the prevailing market conditions and hence only those stocks whose financial year end is 31st December were considered.

Unlike the studies conducted in USA and Australia, the period of study was relatively short and this may explain why some results were not in consistent to the results obtained in those developed markets.

Inflation effects were not adjusted for in the variables under study. This would be subject of further research.

NSE as an emerging market has low level of trading and is in weak form efficiency and this may casts doubt on the reliability of the stock prices used in the study.

5.4 Suggestions for further research.

Further research will be required to establish the relationship that exists between earnings growth rate and the rate of returns.

A research can be carried out after some five years or so to find out whether the effect persists.

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APPENDIX 1

Companies Sampled

1. Crown Berger Ltd
2. Total Kenya Ltd
3. National Bank of Kenya
4. Standard Chartered Bank
5. Jubilee Insurance
6. Nation Media Group
7. Barclays Bank Ltd
8. Limuru Tea Company Ltd
9. NIC Bank
10. Diamond Trust Bank Kenya Ltd
11. Athi River Mining
12. British American Tobacco Kenya Ltd
13. Sameer Africa Ltd
14. Kenya Commercial Bank
15. CFC Stanbic Holdings Ltd
16. Housing Finance Kenya Ltd
17. Bamburi Cement Ltd
18. TPS East Africa (Serena)
19. Kakuzi
20. E.A Cables Ltd
21. Express Kenya Ltd
22. Eaagads Ltd
23. Pan Africa Insurance

APPENDIX 2

Data used for this study

Company	Year	EPSt	EPStJ	DEPS	Price	EP	NonDivQuintile	hulQuintile	Gbad	Crow III rate
Allii River Mining	2001	0.4	0.4	0.0000	4.00	0.1000	Q3	Q5	Good	0.423748179
Bambnri Cement Ltd	2001	2.01	0.8	1.5125	15.05	0.1336	Q3	02	Good	0.514146652
Barclays Bank Ltd	2001	16	11.2	0.4286	75.00	0.2133	Q1	01	Good	0.063505696
British American Tobacco Kenya Ltd	2001	6.04	5.83	0.0360	46.00	0.1313	Q3	03	Good	0.14434293
CFC Stanbic Holdings Ltd	2001	1.18	1.61	-0.2671	8.80	0.1341	03	01	Bad	0.250099336
Crown Berger Ltd	2001	1.08	0.9	0.2000	5.50	0.1964	Q2	01	Good	0.308683362

*

Company	Year	EPSt	EPSt 1	DEPS	Price	EP	NonDivQuintile	ludQuintile	Gbad	Growth rate
Diamond Trust Bank Kenya Ltd	2001	0.51	2.06	-0.7524	7.45	0.0685	Q4	Q4	Bad	0.281767233
E.A Cables Lid	2001	0.79	1.5	-0.4733	7.00	0.1129	Q3	Q4	Bad	1.167538683
Eaagads Ltd	2001	0.12	-1.33	-1.0902	19.00	0.0063	Q4	Q5	Bad	-1.114360175
Express Kenya Ltd	2001	-6.55	-1.24	4.2823	6.36	-1.0299	Q5	Q5	Good	2.229816352
i lousing Finance Kenya Ltd	2001	-1.62	0.45	-4.6000	3.05	-0.531	Q5	Q4	Bad	-0.770716297
Jubilee Insurance	2001	3.37	2.17	0.5530	15.10	0.2232	Q1	Q3	Good	0.3201 14878
Kakuzi	2001	-2.31	-1.44	0.6042	16.05	-0.1439	Q5	Q2	Good	-2.209407482
KCB	2001	1.31	-4.14	I -1.3164	14.00	0.0936	Q4	Q1	Bad	-2.562451465

Company	Year	EPSt	EPSt 1	DEPS	Price	EP	SoiiDivQuinlile	[ndQuintile	Gbad	Growthrate
Limuru Tea Company Ltd	2001	-4.97	59.12	-1.0841	394.00	-0.0126	Q5	Qi	Bad	-0.60972635
Nation Media Group	2001	4.8	5.7	-0.1579	61.00	0.0787	Q4	Q2	Good	0.182548749
NBK	2001	1.49	-11.03	-1.1351	3.00	0.4967	Qi	05	Bad	0.131298154
NIC	2001	3.12	3.79	-0.1768	12.20	0.2557	01	Q1	Bad	0.002823879
Pan Africa Insurance	2001	3.41	-1.36	-3.5074	7.30	0.4671	Qi	Q4	Bad	-1.077332457
Sameer Africa Ltd	2001	1.2	1.05	0.1429	6.85	0.1752	Q2	04	Good	-1.065507659
Standard Chartered Bank	2001	9.07	8.8	0.0307	47.25	0.1920	Q2	02	Good	0.086516468
Total Kenya Ltd	2001	-2.23	3.69	-1.6043	13.80	-0.1616	05	03	Bad	-0.474610246

Company	Year	EPSt	EPSt 1	DIPS	Price	EP	VonDivQuintile	[ndQuintile	Gbad	Growthrate
TPS	2001	2.5	2.15	0.1628	17.25	0.1449	Q2	Q5	Good	2.023592661
Atlii River Mining	2002	0.62	0.4	0.5500	14.30	0.0434	Q4	Q1	Good	0.423748179
Bambini Cement Ltd	2002	3.38	2.01	0.6816	67.00	0.0504	Q3	Q5	Good	0.514146652
Barclays Bank Ltd	2002	9.6	16	-0.4000	136.00	0.0706	Q3	Q3	Bad	0.063505696
British American Tobacco Kenya Ltd	2002	8.23	6.04	0.3626	87.50	0.0941	Q2	Q2	Good	0.14434293
CPC Stanbic Holdings Ltd	2002	1.45	1.18	0.2288	10.80	0.1343	Q1	Q1	Good	0.250099336
Crown Berger Ltd	2002	2.57	1.08	1.3796	10.00	0.2570	Q1	Q4	Good	0.308683362
Diamond Trust Bank Kenya Ltd	2002	0.95	0.51	0.8627	22.50	0.0422	Q4	Q2	Good	0.281767233

Company	Year	EPSt	EPSt 1	DEPS	Price	EP	NonDivQuintile	IndQuintile	Chad	Growthrate
E.A Cables Ltd	2002	-0.29	0.79	-1.3671	10.30	-0.0282	Q5	Q3	Bad	1.167538683
Eaagads Ltd	2002	0.48	0.12	3.0000	15.95	0.0301	Q4	Q4	Good	-1.114360175
Express Kenya Ltd	2002	-1.167	-6.55	0.7817	7.90	-1.4772	Q5	Q5	Good	2.229816352
Housing Finance Kenya Ltd	2002	0.49	-1.62	-1.3025	8.75	0.0560	Q3	Q4	Bad	-0.770716297
Jubilee Insurance	2002	4.57	3.37	0.3561	28.25	0.1618	Q1	Q5	Good	0.320114878
Kakuzi	2002	0.39	-2.31	-1.1688	20.25	0.0193	Q4	Q5	Bad	-2.209407482
KCB	2002	-20.06	1.31	-16.3130	49.50	-0.4053	Q5	Q4	Bad	-2.562451465
i imuru l ea Company Ltd	2002	3.46	-4.97	-1.£962	394.00	0.0088	Q5	Qi	Bad	-0.60972635

Company	Year	EPSt	EPSt 1	D)EPS	Price	EP	NonDivQuintile	ImlQuintile	Gbad	Growtlirate
Nation Media Group	2002	7.55	4.8	0.5729	93.00	0.0812	03	Q1	Good	0.182548749
NBK	2002	0.99	1.49	-0.3356	5.80	0.1707	Qi	01	Bad	0.131298154
NIC	2002	2.78	3.12	-0.1090	3 1.25	0.0890	Q2	Q5	Bad	0.002823879
I'an Africa Insurance	2002	-0.33	3.41	-1.0968	13.90	-0.0237	05	Q2	Bad	-1.077332457
Sameer Africa Ltd	2002	0.83	1.2	-0.3083	9.00	0.0922	02	04	Bad	-1.065507659
Standard Chartered Bank	2002	8.92	9.07	-0.0165	90.50	0.0986	Q1	02	Good	0.086516468
Total Kenya Ltd	2002	2.31	-2.23	-2.0359	31.50	0.0733	03	Q2	Bad	-0.474610246
TPS	2002	2.74	2.5	.0096C	28.00	0.0979	Q2	Q1	Good	2.023592661

Company	Year	EPSt	EPSt1	DEPS	Price	EP	NonDivQuintile	IiulQuiutile	Gbad	Growthrate
Atlii River Mining	2003	1.04	0.62	0.6774	19.35	0.0537	Q3	Q2	Good	0.423748179
Bambini Cement Ltd	2003	2.94	3.38	-0.1302	93.00	0.0316	Q4	Q4	Bad	0.514146652
Barclays Bank Ltd	2003	16.5	9.6	0.7188	235.00	0.0702	Q2	Q1	Good	0.063505696
British American Tobacco Kenya Ltd	2003	11.4	8.23	0.3852	225.00	0.0507	Q3	Q4	Good	0.14434293
CFC Stanbic Holdings Ltd	2003	2.49	1.45	0.7172	54.00	0.0461	Q4	Q1	Good	0.250099336
Crown Berger Ltd	2003	2.74	2.57	0.0661	36.00	0.0761	Q1	Q1	Bad	0.308683362
Diamond Trust Bank Kenya Ltd	2003	1.4	0.95	0.4737	30.00	0.0467	Q3	Q5	Good	0.281767233
E.A Cables Ltd	2003	0.46	-0.29	-2.5862	36.50	0.0126	Q5	Q1	Bad	1.167538683

Company	Year	EPS!	EPStJ	D)EPS	Price	EP	NonDivQuiiitile	IndQuintile	Chad	Growthrate
Eaagads Lid	2003	-0.53	0.48	-2.1042	17.00	-0.0312	Q5	Q4	Bad	-1.114360175
Express Kenya lid	2003	-14.2	-11.67	0.2168	9.55	-1.4869	Q5	Q5	Bad	2.229816352
1 lousing Finance Kenya Ltd	2003	0.45	0.49	-0.0816	11.75	0.0383	Q4	02	Bad	-0.770716297
Jubilee Insurance	2003	5.91	4.57	0.2932	56.00	0.1055	01	Q5	Good	0.320114878
Kakuzi	2003	-0.6	0.39	-2.5385	23.00	-0.0261	Q5	Q3	Bad	-2.209407482
KCB	2003	3.25	-20.06	-1.1620	60.00	0.0542	Q3	Qi	Bad	-2.562451465
Liniuru Tea Company Ltd	2003	13.41	3.46	2.8757	210.00	0.0639	Q2	02	Good	-0.60972635
Nation Media Group	2003	11.27	7.55	0.4927	200.00	0.0564	Q2	Q5	Good	0.182548749

Company	Year	EPSt	EPStI	DEPS	Price	EP	NoiiDivQuintile	IndQuintile	Gbad	Growthrate
NBK	2003	2.02	0.99	1.0404	17.55	0.1 151	Qi	Q4	Good	0.131298154
NIC	2003	2.94	2.78	0.0576	50.00	0.0588	Q2	Q4	Bad	0.002823879
Pan Africa Insurance	2003	-0.49	-0.33	0.4848	32.75	-0.0150	Q5	Q2	Good	-1.077332457
Sameer Africa Ltd	2003	0.56	0.83	-0.3253	10.60	0.0528	Q3	Q3	Bad	-1.065507659
Standard Chartered Bank	2003	11.28	8.92	0.2646	160.00	0.0705	Qi	QI	Good	0.086516468
Total Kenya Ltd	2003	3.1	2.31	0.3420	42.00	0.0738	Q1	Q3	Good	-0.474610246
TPS	2003	0.65	2.74	-0.7628	27.00	0.0241	Q4	Q5	Bad	2.023592661
Atlii River Mining	200 ^z	1.26	1.04	0.2115	16.40	0.0768	Q2	Q4	Good	0.423748179

Company	Year	EPSt	EPSt 1	DEPS	Price	EP	VonDivQuintile	IndQuintile	Gbad	Growthrate
Bamburi Cement Ltd	2004	4.73	2.94	0.6088	96.50	0.0490	Q5	Q1	Good	0.514146652
Barclays Bank Ltd	2004	18.1	16.5	0.0970	240.00	0.0754	Q3	Q1	Good	0.063505696
British American Tobacco Kenya Ltd	2004	12.1	11.4	0.0614	205.00	0.0590	Q4	Q1	Bad	0.14434293
CFC Stanbic Holdings Lid	2004	3.01	2.49	0.2088	70.00	0.0430	Q5	Q3	Good	0.250099336
Crown Berger Ltd	2004	2.15	2.74	-0.2153	28.00	0.0768	Q2	Q5	Bad	0.308683362
Diamond Trust Bank Kenya Ltd	2004	1.65	1.4	0.1786	28.00	0.0589	Q4	Q2	Good	0.281767233
E.A Cables Ltd	2004	6.11	0.46	12.2826	78.00	0.0783	Q2	Q2	Good	1.167538683
Haagads Ltd	2004	-0.1	-0.53	-0.6*604	17.00	-0.0106	Q5	Q5	Bad	-1.114360175

Company	Year	EPSt	EPSt 1	DEPS	Price	EP	Dividend	Quintile	Grade	Growthrate
Express Kenya Ltd	2004	0.14	-14.2	-1.0099	8.64	0.0162	Q5	Q4	Bad	2.229816352
Equity Finance Kenya Ltd	2004	0.52	0.45	0.1556	9.55	0.0545	Q4	Q4	Good	-0.770716297
Jubilee Insurance	2004	7.68	5.91	0.2995	63.00	0.1219	Q1	Q2	Good	0.320114878
Kakuzi	2004	4.27	-0.6	-8.1167	45.75	0.0933	Q1	Q1	Bad	-2.209407482
ICB	2004	3.94	3.25	0.2123	64.00	0.0616	Q3	Q5	Good	-2.562451465
Limuru Tea Company Ltd	2004	16.1	13.41	0.2006	360.00	0.0447	Q5	Q2	Good	-0.60972635
Nation Media Group	2004	11.99	11.27	0.0639	150.01	0.0799	Q1	Q3	Bad	0.182548749
NBK	2004	1.91	2.02	-0.0545	16.69	0.1144	Q1	Q4	Bad	0.131298154

Company	Year	EPS	EPS 1	DEPS	Price	EP	NonDivQuintile	IndQuintile	Chad	Growth rate
NIC	2004	3.17	2.94	0.0782	47.26	0.0671	Q3	Q3	Bad	0.002823879
Pan Africa Insurance	2004	1.95	-0.49	-4.9796	27.15	0.0718	Q3	Q2	Bad	-1.077332457
Samcer Africa Ltd	2004	0.99	0.56	0.7679	12.50	0.0792	Q2	Q1	Good	-1.065507659
Standard Chartered Bank	2004	6.74	11.28	-0.4025	125.49	0.0537	Q4	Q5	Bad	0.086516468
total Kenya lid	2004	3.34	3.1	0.0774	37.49	0.0891	Q1	Q5	Bad	-0.474610246
IPS	2004	3.37	0.65	4.1846	52.00	0.0648	Q3	Q4	Good	2.023592661
Allii River Mining	2005	2.15	1.26	0.7063	48.25	0.0446	Q4	Q1	Good	0.423748179
Bambini Cement lid	2005	5.94	4.73	0.2558	140.00	0.0424	Q4	Q2	Good	0.514146652

Company	Year	EPSt	EPS! 1	DEPS	Price	EP	NonDivQuintile	IndQuinlile	Gbad	Growth rate
Barclays Bank Ltd	2005	2.41	18.1	-0.8669	38.00	0.0634	Q3	Q1	Bad	0.063505696
British American Tobacco Kenya Ltd	2005	13.82	12.1	0.1421	202.00	0.0684	Q2	Q2	Good	0.14434293
CFC Stanbic Holdings Ltd	2005	3.54	3.01	0.1761	64.00	0.0553	Q3	Q3	Good	0.250099336
Crown Berger Ltd	2005	1.45	2.15	-0.3256	38.00	0.0382	Q4	Q5	Bad	0.308683362
Diamond Trust Bank Kenya Ltd	2005	2.37	1.65	0.4364	44.75	0.0530	Q3	Q4	Good	0.281767233
E.A Cables Ltd	2005	10.52	6.11	0.7218	20.30	0.5182	Q1	Q1	Good	1.167538683
Eaagads Ltd	2005	-0.18	-0.18	0.0000	17.00	-0.0106	Q5	Q3	Bad	-1.114360175
Express Kenya Ltd	2005	1.68	0.14	11.0000	20.45	0.0822	Q1	Q1	Good	2.229816352

Company	Year	EPS _t	EPS _{t-1}	DEPS	Price	EP	NoiiDivQuintile	IndQuintile	Gbad	Grow th rate
1 housing Finance Kenya Ltd	2005	0.51	0.52	-0.0192	23.25	0.0219	Q5	01	Bad	-0.770716297
Jubilee Insurance	2005	15.18	7.68	0.9766	98.50	0.1541	Q1	Q3	Good	0.3201 14878
Kakuzi	2005	-3.76	4.27	-1.8806	35.00	-0.1074	Q5	05	Bad	-2.209407482
KCB	2005	6.64	3.94	0.6853	117.00	0.0568	03	Q2	Good	-2.562451465
Umuru Tea Company Ltd	2005	-5.27	16.1	-1.3273	350.00	-0.0151	Q5	04	Bad	-0.60972635
Nation Media Group	2005	10.04	11.99	-0.1626	197.00	0.0510	03	Q5	Bad	0.182548749
NBK	2005	2.99	1.91	0.5654	32.25	0.0927	01	05	Good	0.131298154
NIC	2005	3.34	3.17	0.0536	50.00	0.0668	02	Q4	Bad	0.002823879

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Company	Year	EPSt	EPStJ	DIPS	Price	EP	NoiiDivQuintile	ImlQiiintile	Gbad	Growth rate
Pan Africa Insurance	2005	3.68	1.95	0.8872	40.00	0.0920	Q1	Q2	Good	-1.077332457
Sameer Africa Ltd	2005	0.74	0.99	-0.2525	17.80	0.0416	Q4	Q4	Bad	-1.065507659
Standard Cliartered Bank	2005	9.02	6.74	0.3383	139.00	0.0649	Q2	Q5	Good	0.086516468
Total Kenya Ltd	2005	3.07	3.34	-0.0808	40.00	0.0768	Q2	Q1	Bad	-0.474610246
TPS	2005	0.3	3.37	-0.91 10	101.00	0.0030	Q5	Q2	Bad	2.023592661
Allii River Mining	2006	2.84	2.15	0.3209	72.00	0.0394	Q4	Q2	Good	0.423748179
Bambin i Cement Lid	2006	7.2	5.94	0.2121	196.00	0.0367	Q4	Q4	Good	0.514146652
Barclays Bank Ltd	2006	3.31	2.41	0.3734	69.00	0.0480	Q3	Q4	Good	0.063505696

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Company	Year	EPSt	EPSt 1	D)EPS	Price	EP	NonDivQuintile	InilQuinlile	Gbad	Growth rate
British American Tobacco Kenya Ltd	2006	12.01	13.82	-0.1310	200.00	0.0601	Q2	05	Bad	0.14434293
CFC Stanbic Holdings Lid	2006	6.03	3.54	0.7034	115.00	0.0524	Q3	01	Good	0.250099336
Crown Berger Ltd	2006	2.69	1.45	0.8552	40.00	0.0673	Q2	Q4	Good	0.308683362
Diamond Trust Bank Kenya Ltd	2006	3.49	2.37	0.4726	74.00	0.0472	Q3	05	Good	0.281767233
E.A Cables Ltd	2006	1.41	10.52	-0.8660	40.00	0.0353	Q5	Q1	Bad	1.167538683
Eaagads Ltd	2006	0.85	-0.18	-5.7222	65.00	0.0131	Q5	04	Bad	-1.114360175
Express Kenya Ltd	2006	2.06	1.68	0.2262	13.00	0.1585	01	05	Good	2.229816352
Housing Finance Kenya Ltd	2006	0.88	0.51	0.7255	24.00	0.0367	Q4	05	Good	-0.770716297

Company	Year	EPSt	EPStJ	DEPS	Price	EP	VonDivQuintile	IndQuintile	Chad	Growth rate
Jubilee Insurance	2006	15.54	15.18	0.0237	214.00	0.0726	Q2	Q1	Bad	0.3201 14878
Kakuzi	2006	6.79	-3.76	-2.8059	36.25	0.1873	Q1	Q1	Bad	-2.209407482
KCB	2006	12.18	6.64	0.8343	25.00	0.4872	Q1	Q4	Good	-2.562451465
Limuru Tea Company Ltd	2006	8.05	-5.27	-2.5275	395.00	0.0204	Q5	Q3	Bad	-0.60972635
Nation Media Group	2006	10.98	10.04	0.0936	240.00	0.0458	Q4	Q1	Good	0.182548749
NRK	2006	3.12	2.99	0.0435	45.00	0.0693	Q2	Q2	Bad	0.131298154
NIC	2006	5.56	3.34	0.6647	20.00	0.2780	Q1	Q1	Good	0.002823879
Pan Africa Insurance	2006	1.96	3.68	-0.4674	82.00	0.0239	Q5	Q2	Bad	-1.077332457

Company	Year	EPSt	EPSt	D)EPS	Price	EP	NonDivQuintile	IndQuintile	G had	Growtlirate
Sameer Africa Ltd	2006	-0.08	0.74	-1.1081	15.00	-0.0053	Q5	Q5	Bad	-1.065507659
Standard Chartered Bank	2006	9.69	9.02	0.0743	195.00	0.0497	Q3	Q3	Bad	0.086516468
Total Kenya Ltd	2006	2.81	3.07	-0.0847	31.00	0.0906	Q1	Q3	Bad	-0.474610246
TPS	2006	3.7	0.3	11.3333	74.00	0.0500	Q3	Q2	Good	2.023592661
Ath i River Mining	2007	4.26	2.84	0.5000	96.00	0.0444	Q4	Q4	Good	0.423748179
Bambin i Cement Ltd	2007	10.5	7.2	0.4583	165.00	0.0636	Q2	Q4	Good	0.514146652
Barclays Bank Ltd	2007	3.62	3.31	0.0937	70.00	0.0517	Q3	Q4	Bad	0.063505696
British American Tobacco Kenya Ltd	2007	13.86	12.01	0.1540	160.00	0.0866	Q1	Q1	Good	0.14434293

Company	Year	EPSt	EPSt1	D)EPS	Price	EP	NonDivQuintile	IndQuintile	Gbad	Growth rate
C-FC Stanbic Holdings Ltd	2007	5.93	6.03	-0.0166	112.00	0.0529	Q3	Q2	Bad	0.250099336
Crown Berger I Ad	2007	3.23	2.69	0.2007	40.00	0.0808	Q2	Q1	Good	0.308683362
Diamond Trust Bank Kenya Ltd	2007	4.54	3.49	0.3009	95.00	0.0478	Q3	Q5	Good	0.281767233
L.A Cables Lid	2007	2.06	1.41	0.4610	44.00	0.0468	Q4	Q1	Good	1.167538683
Eaagads Ltd	2007	-0.19	0.85	-1.2235	39.00	-0.0049	Q5	Q5	Bad	-1.114360175
Express Kenya Ltd	2007	2.29	2.06	0.1117	13.00	0.1762	Q1	Q4	Good	2.229816352
1 lousing Finance Kenya Ltd	2007	0.64	0.88	-0.2727	33.00	0.0194	Q5	Q3	Bad	-0.770716297
Jubilee Insurance	2007	11.48	15.54	-0.2613	200.00	0.0574	Q3	Q1	Bad	0.320114878

Company	Year	EPSt	EPSt 1	D)EPS	Price	EP	NonDivQuintile	TiidQuiiitile	Gbad	Growth rate
Kakuzi	2007	9.78	6.79	0.4404	50.00	0.1956	Q1	Q1	Good	-2.209407482
KCB	2007	1.49	12.18	-0.8777	34.00	0.0438	Q4	Q5	Bad	-2.562451465
Limuru Tea Company Ltd	2007	2.34	8.05	-0.7093	305.00	0.0077	Q5	Q4	Bad	-0.60972635
Nation Media Group	2007	15.1	10.98	0.3752	335.00	0.0451	Q4	Q2	Good	0.182548749
NBK	2007	5.6	3.12	0.7949	53.00	0.1057	Q1	Q2	Good	0.131298154
NIC	2007	2.51	5.56	-0.5486	34.00	0.0738	Q2	Q2	Bad	0.002823879
Tan Africa Insurance	2007	4.19	1.96	1.1378	80.00	0.0524	Q3	Q3	Good	-1.077332457
Sameer Africa Ltd	2007	0.43	-0.08	-6.3750	10.00	0.0430	Q5	Q1	Bad	-1.065507659

Company	Year	EPS_t	EPS_{t J}	DEPS	Price	1
Standard Chartered Bank	2007	12.76	9.69	0.3168	212.00	
Total Kenya Ltd	2007	2.99	2.81	0.0641	34.00	
TPS	2007	3.93	3.7	0.0622	94.00	

p	NonDivQuintile	liidQuintile	Chad	Growthrate
0.0602	Q2	Q5	Good	0.086516468
0.0879	Q1	Q5	Bad	-0.474610246
0.0418	Q5	Q2	Bad	2.023592661