

MARKET EFFICIENCY AT THE NAIROBI STOCK EXCHANGE: A TEST
OF PRICE EARNINGS RATIO EFFECT. //

A RESEARCH PROJECT PRESENTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF
BUSINESS ADMINISTRATION, FACULTY OF COMMERCE, UNIVERSITY OF
NAIROBI.

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D/61/7173/02

DECLARATION

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

Signed.......... Date.....26/11/04.....

Sarah Makara.

This research project has been submitted for examination with my approval.

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DEDICATION

With great joy and love, I dedicate this research work to my dear mum Agnes, who has been such a blessing in my life as she strived to fulfill our late dad's dreams concerning our education.

To my sisters and brothers, may this be an inspiration to you to ascend higher in your academics.

ACKNOWLEDGEMENT

I Sincerely thank the Almighty God, the Creator of heaven and earth and my Creator, the Son Jesus Christ my Saviour, and the Holy Spirit my Counselor. Surely, this far it has taken God.

Special thanks to my supervisor, Mr. Lishenga for his continuous guidance, constructive criticism and inspiration, he accorded me throughout the research project.

I also wish to thank Ba and Ma Caleb for sponsoring me, God richly increase you. My sisters suzie, Maggie, Laura and Lucy for the assistance and encouragement they accorded me throughout the M.B.A. programme. Finally, I appreciate the encouragement I received from my colleagues and friends Atiti, Irene, Helen, Rhoda, M.B.A. Fellowship and my fellow classmates at large.

To you all, God bless.

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ABSTRACT

This study was conducted to find out whether price earnings ratio effect is existent in the Nairobi Stock Exchange.

Various studies have been conducted on the existence of price earning ratio effect in different stock markets in the world, but no such study has been carried out in the Nairobi Stock Exchange. Hence, there was need for an empirical study to find out the situation in our market. (NSE)

The share returns and risk of all the companies in the NSE were computed and then matched to their P/E portfolio, either low or high P/E portfolio. I used three evaluative measures developed by Jensen, Sharpe and Treynor to test the existence of the effect.

The findings showed that the low P/E portfolio outperformed the High P/E portfolio and the market as from 1994-2003. This indicates that the P/E ratios are information content. Thus, I drew the conclusion that the effect is existent and investors should pay attention to the P/E ratios when forming or revising portfolios.

CHAPTER 1

1.0 INTRODUCTION

The price to earnings ratio is the current stock price divided by trailing annual earnings per share or expected annual earnings per share (P/E) or PER).

Earnings per share for the P/E ratio are determined by dividing earnings for the past 12 months by the number of common shares outstanding. A higher multiple means investors have higher expectations for future growth, and have bid up the stock's price. Higher expectations of future profits leads to high demand for shares leading to high share price and thus high P/E ratio. The P/E ratio is an increasing function of the payout ratio and the growth rate and a decreasing function of the riskiness of the firm.

Price to earnings ratio effect is an occurrence that has been detected in stock markets, where stocks with low P/E ratio earned high returns in the future than the high P/E ratio stocks, and yet they had lower risk. This is often due to exaggerated investor expectations about stock performance, thus bidding up its price relative to its intrinsic value.

With prices initially biased by either excessive optimism or pessimism, prior "losers" would be more attractive investment than prior "winners".

This is contrary to the notion of risk averse investor (rational investor), who expects that stocks with higher risk will have higher returns and vice versa. Thus the high P/E stocks, which exhibit higher risk should have higher return.

1.1 Background of Research problem

The topic of market efficiency has been and is likely to continue to be a matter of intense debate. First of all, most financial economists would agree that it is desirable to see that capital is channeled to the place where it will do the most good. That is, a reasonable goal of government policy is to encourage the establishment of allocationally efficient markets, in which the firms with the most promising investment opportunities have access to the needed funds. However, in order for markets to be allocationally efficient, they need to be both internally and externally efficient .

In an externally efficient market, information is quickly and widely disseminated, thereby allowing each security's price to adjust rapidly in an unbiased manner to new information so that it reflects investment value. An internally efficient market is one in which brokers and dealers compete fairly so that the cost of transacting is low and the speed of transacting is high. (Sharpe, 2003).

External market efficiency has been the subject of much research since the 1960s. and it has generated the most interest among practitioners and academicians. Fama (1970), published an article entitled "Efficient capital markets", in which he reviewed theory and empirical work. He concluded that the interactions among market participants, and the frictionless dissemination of information, prevent individuals from making assured gains in competitive capital markets.

Risk is considered the major factor determining prices and hence returns. The higher the risk, the higher the expected returns. It's classified as either systematic or unsystematic risk. The unsystematic risk can be reduced or even eliminated through diversification, whereas the systematic risk cannot be diversified away. The total risk (δ) is comprised of the systematic risk measured by β and the unsystematic risk ($\delta - \beta$). Diversification can thus reduce the risk of a portfolio by reducing the unsystematic component of the total risk (Copeland and Weston, 1992).

There has been documented failure of traditional finance, which asserts that markets are efficient. Volatility in equity market, market anomalies and seasonalities has become prevalent. Smidt (1972) argues that one potential source of market inefficiency is inappropriate market responses to information. Inappropriate responses to information implicit in price earning ratios are believed to be caused by exaggerated investor expectations regarding growth in earnings and dividends; that is exaggerated optimism leads, on average to high price earnings ratio securities and exaggerated pessimism leads, on average to stocks with low price earning ratios.

The price ratio hypothesis claims that low price earning ratio securities will tend to outperform high price earning ratio stocks. In short, prices of securities are biased, and the price-earning ratio is an indicator of this bias. Williams noted in his paper "Theory of investment value" that prices have been based too much on current earning power and too little on long-term dividend paying power (Williams, 1956). Findings that returns on stocks with low price earning ratios tend to be larger than warranted by the underlying risks are inconsistent with the efficient market hypothesis.

Several studies have been conducted to find out the price earnings ratio (PER) effect on stocks and to establish relation with other variables.

Basu [1977] examined the relationship between price earnings ratios and investment performance of equity securities between April 1957- March 1971, and showed that stocks of companies with low price earning ratios earned a premium for investors during the period under consideration.

Martin and Senchack (1987) found out that for portfolios ranked by PER, returns are generally inverse to PER value and risk is directly related to PER value.

Campbell and Shiller (1988) and Leibowitz (1999) show that the ratio of the earnings variable to the current stock price is a powerful predictor of the return on stock, and that P/E ratios exhibit orbits. Francisco and Luis (2003) have documented a strong price earning ratio effect in the Spanish stock market.

Ndete (1999) Conducted a study of thirty quoted companies to find out whether the price earning ratio is an indicator of investment performance of ordinary shares by using the multiple regression analysis to establish the nature and type of relationships between the price earnings ratio and the rate of growth of earnings, the variations in earnings and the dividend payout ratios of companies quoted at the NSE. He found out that there was a weak relationship between the price earnings ratio and the earnings growth, dividend payout and variation in earnings growth.

Muthui (2003) Conducted a study of 20 quoted companies which make up the Nairobi 20 share index, relating the price earnings ratio to share performance. He used the one way ANOVA to test the results, and concluded that for these companies the returns of the low P/E stocks are not significantly higher.

While his study focused on the relation between the share performance and the P/E ratio of the selected companies, I went a step further and established whether the P/E ratio effect is existent in the NSE. This was done by analyzing the returns of all the common stocks over a ten-year period, which has been shown to be an adequate span to detect the effect.

Nairobi stock exchange (NSE) plays an important role in mobilizing domestic savings thereby bringing about the reallocation of financial resources from dormant to active agents. Currently, 48 companies are listed in the main and alternative investment market segment of NSE.

1.2 Statement of Research Problem

The price earnings ratio hypothesis poses that the PERs are indicators of the future investment performance of a security. Thus, one can earn abnormal profits by paying attention to them even though they are public information.

Muthui(2003) Conducted a study of the quoted companies which make up the Nairobi 20 share index, and concluded that for these companies the returns of the low P/E stocks are not significantly higher. He used a three-year holding period for analysis. While his sample and sample period are adequate for his study, it cannot be used to show the P/E ratio effect since it's not representative of the whole market. The results of a one time holding period are also not a solid ground for drawing conclusion on the effect.

My concern therefore, was to establish the probability of the PER effect on stocks traded in the equity section of the NSE, by analyzing the returns of all the common stocks over a ten year period based on their P/E ratios, using a one year holding period.

I also sought to determine whether the PER effect if present, could be explained by risk.

1.3 Objectives

1. To establish whether the NSE common stocks exhibit the price earnings ratio effect.
2. To find out whether the PER effect (if present) can be explained by risk.

1.4 Hypothesis

1. H_0 : Stocks at the NSE do not exhibit PER effect.
 H_A : Stocks at the NSE exhibit PER effect.
2. H_0 : Low P/E stocks do not exhibit higher risk.
 H_A : Low P/E stocks exhibit higher risk.

1.5 Importance of Study

To investors and Investment analysts:

This study will indicate whether PER has information content which should be considered at the time of portfolio formation or revision to ensure efficiency of their portfolios and to optimize their returns.

To Management:

This study will act as a guide in setting the companies' policy regarding the price-earnings ratio, so as not to introduce a bias.

To Scholars:

The knowledge will act as a basis for further research on stock market variations, and in particular PER effect.

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Introduction

A market is said to be efficient if it is impossible to make abnormal profits (other than by chance) by using a set of information to formulate buying and selling decisions. (Alexander et al, 2003). In efficient capital market prices fully and instantaneously reflect all available relevant information. This means that when assets are traded, prices are accurate signals for capital allocation (Copeland and Weston (1992). Nevertheless, empirical studies have depicted variations from this notion of efficient market hypothesis.

In this paper, I look at the efficient market hypothesis and stock market anomalies briefly, and PER effect in detail.

2.2 The Efficient Market Hypothesis

Fama (1970, 1976) defines three types of efficiency, each of which is based on a different notion of exactly what type of information is understood to be relevant in the phrase "all prices fully reflect all relevant information". These forms of the efficient market hypothesis are the weak form, the semistrong form, and the strong form.

Weak form efficiency. No investor can earn excess returns by developing trading rules based on historical price or return information. That is, information in past prices or returns is not useful or relevant in achieving excess returns. This weak form of the efficient market hypothesis is popularly known as the random walk theory.

Semi- strong form efficiency. No investor can earn excess returns from trading rules based on any publicly available information. Such information is from annual reports of companies, investment advisory data or from journals. The semistrong form of the efficient market hypothesis maintains that as soon as information becomes publicly available, it is absorbed and reflected in stock prices. Even if this adjustment is not the correct one immediately it will in very short time be properly analyzed by the market. Thus the analyst would have great difficult trying to profit using fundamental analysis.

Strong form efficiency. No investor can earn excess returns using any information, whether publicly available or not. Specifically, no information that is available be it public or "inside", can be used to earn consistently superior returns. If markets were efficient in their strong form, prices would fully reflect all information even though exclusively a corporate insider might hold it.

The semi-strong form of market efficiency has formed the basis for most empirical research because most markets exhibit this form of efficiency. When new information is released, it is fully incorporated into the price rather speedily. The availability of intraday data enabled tests, which offer evidence of public information impacting on stock prices within minutes (Patell and Wolfson, (1984) Gosnell et al, (1996).

Even with the considerable evidence regarding the existence of efficient markets, researchers have challenged their reality. Roll (1988), studied individual stocks and aggregate stock market respectively and argued that most price movements cannot be traced to public announcements.

Haugen and Baker (1996) in their analysis of determinants of returns in five countries concluded, "none of the factors related to sensitivities to macro economics variables seem to be important determinants of expected stock returns". These deviations from the expected norm of market efficiency have led to a number of studies on stock variations. One such study is the study of P/E ratio effect, which we shall consider in detail.

2.3 Possible causes of the PER effect.

It has been documented that the stocks with low price to earnings ratio, tend to outperform the market and the high price to earnings ratio stocks in future. Scholars have attempted to explain this in the following hypotheses.

The overreaction hypothesis: This hypothesis states " In revising their beliefs, individuals tend to overweight recent information and underweight prior (or base rate) data". People seem to make predictions according to a simple matching rule. The predicted value is selected so that the standing of the case in the distribution of outcomes matches its standing in the distribution of impressions (De Bondt and Thaler (1985).

There is considerable evidence that the actual expectations of professional security analysts and economic forecasters display the same overreaction bias. As a consequence of investor overreaction to earnings, stock prices may temporarily depart from their underlying fundamental value. With prices initially biased by either excessive optimism or pessimism, prior “losers” would be more attractive investment than prior “winners”.

Joint test hypothesis: An improperly specified asset-pricing model can invalidate a test. Thus empirical studies involving the use of models simultaneously test the model’s validity (Sharpe et al, 2003).

Ball (1978) emphasizes the effects of omitted risk factors in the model. The P/E ratio is presumed to be a proxy for some omitted factor, which if included in the ‘correct’ equilibrium valuation model, would eliminate the anomaly.

Reinganum (1983) has claimed that the size effect subsumes the P/E effect and that both are related to the same set of missing factors.

Price-ratio hypothesis: An alternative behavioral explanation of the anomaly based on investor overreaction is the price-ratio hypothesis.

This asserts that companies with very low P/E are thought to be temporarily ‘undervalued’ because investors are excessively pessimistic after a series of bad earnings report or other bad news. Once future earnings turn out to be better than the unreasonably gloomy forecasts, the price adjusts.

Similarly, the equity of companies with very high P/E’s is thought to be ‘overvalued’, before (predictably) falling in price.

2.4 Review of Prior Research on Per Effect

Basu (1977) examined the relationship between P/E ratios and investment performance of equity securities. The database represented over 1400 industrial firms, which actually traded on the NYSE between September 1956- August 1971, with about 500, on average, qualifying for inclusion in each of the 14 years. Beginning with 1956, the P/E ratio of every sample security was computed. The ratios were ranked and five portfolios were formed consisting of securities with similar P/E ratios. Since over 90% of firms release their financial reports within three months of the fiscal year end, the P/E portfolios were assumed to be purchased on the following April 1.

The monthly returns on each of these portfolios were then computed for the next twelve months assuming an equal initial investment in each of their respective securities and then a buy-and-hold policy. Three evaluative measures that were developed by Jensen, Sharpe and Treynor were found appropriate to measure portfolio (security) performance because they take into consideration both risk and return.

The results reported in their paper are consistent with the view that P/E ratio information is not "fully reflected" in security prices in as rapid a manner as postulated by the semi-strong form of the efficient market hypothesis. Instead, it seems that disequilibria persisted in capital markets during the period studied. Securities trading at different multiples of earnings on average, seem to have been inappropriately priced vis-avis one another, and opportunities for earning "abnormal" returns were afforded to investors.

Thus the propositions of the price-ratio hypothesis on the relationship between investment performance of equity securities and their P/E ratios seem to be valid.

De Bondt and Thaler (1985) used monthly returns data for New York Stock Exchange common stocks, as compiled by the center for research in security prices (CRSP) of the university of Chicago, for the period between January 1926 and December 1982, to investigate the return behavior of specific portfolios over the extended periods of time.

The empirical analysis was based on three types of return residuals: market-adjusted excess returns; market model residuals; and excess returns that are measured relative to the Sharpe-Lintner version of the CAPM.

The results of the test are consistent with the overreaction hypothesis. Over the last half-century, loser portfolio of 35 stocks outperformed the market by, on average, 19.6% thirty-six months after portfolio formation. Winner portfolio, on the other hand, earns about 5.0% less than the market, so the difference in cumulative average residual between the extreme portfolios was 24.6%.

With respect to the P/E effect, the results support the price ratio hypothesis, which asserts that the high P/E stocks are "overvalued". However, this implies that the P/E effect is also, for the most part, a January phenomenon because of the persistent positive relationship between dividend yield (a variable that is correlated with the P/E ratio) and January excess returns, an effect which is observed as late as five years after portfolio formation.

De Bondt and Thaler, (1987) in an effort to re-evaluate the overreaction hypothesis, discusses new empirical findings that are relevant to the winner-loser, size, and January effects, as well as to the broader issues of time-varying risk premium and market efficiency. Based on CRSP data, they extended the earlier results and further discussed the seasonality in the return behavior of extreme winner and loser portfolio.

The results for the portfolio formed are consistent with the overreaction hypothesis. Both winners and losers show the predicted reversion as earnings realization systematically diverges from earlier expectations. Therefore, paradoxical extreme stock prices increases and decreases should be predictive of subsequent earnings reversals.

Martin J.D and Senchack A.J (1987) Randomly selected New York Stock Exchange and America Stock Exchange firms from the compustat Quarterly Industrial file for the 1975-84 reporting period. With a sample of approximately 400 to 450 firms each quarter, they computed each firm's price-sales (PSR) and price-earnings ratios (PER) at the end of each calendar quarter. The computed PSR and PER values for each quarter were ranked in ascending order.

Three groups of five ranked portfolios were then constructed for each holding periods. One group, labeled PSR, included all stocks regardless of whether they had reported a profit or a loss over the latest 12 months. The other two groups, labeled PSR and PER, contained only companies that had reported positive earnings in the most recent 12-month period.

They found out that for portfolios ranked by PER, returns are also generally inverse to PER value and risk is directly related to PER value. That is, risk increases as return decreases. Moreover, the range of average returns from the lowest to highest PER portfolios is somewhat less than that found with PSR stocks, yet the range in risk is greater. The lowest PSR and lowest PER and PSR portfolios tend to outperform the market. With Treynor measure, the quarterly performance of 0.0440 and 0.0492 compared with the equally weighted market index's 0.0317.

In contrast, the higher PSR stocks decidedly under perform the market. The low PER stocks outperform low PSR stocks. In addition, the PER strategy appeared better able to distinguish between above average and below average performers; the range of risk-adjusted returns is larger for the PER portfolios than for the two PSR portfolio groups.

Finally, their results indicated that three of the five quarterly and the entire annual abnormal return measures for the PER stocks are statistically different from zero.

Campbell J.Y and Shiller R.J (1988) Used data from Standard and poor composite index and associated dividend and earnings series for 1871-1987, to indicate to what extent dividend-price ratios and returns on this index behave in accordance with simple present value models, and to allow them to shed new light on earlier claims that stock prices are too volatile to accord with such models. They introduced earnings measured either annually or as an average over a number of years, an information variable in a vector-autoregressive (VAR) framework.

They derived an approximation to the log return on stock that is linear in log dividend-price ratios and dividend-growth rates. Exploiting the linearity, they analyzed stock price movements.

The results indicated that a long moving average of real earnings helps to forecast future real dividends. The ratio of the earnings variable to the current stock price is a powerful predictor of the return on stock, particularly when the return is measured over several years.

Leibowitz M.L (1999) In analyzing earlier work on Franchise value and the price-earning ratio, and how a company's long-term prospects determine fair value under equilibrium conditions, found out that high growth stocks can induce a P/E myopia that can lead otherwise thoughtful analysts to an overestimation of holding period returns.

He analyzed the P/E on short-term holding period return, in low growth stocks and in high growth stocks and showed that they exhibit P/E orbits, that is stocks with high P/E now exhibit a low P/E in future as people's expectations change due to the stocks' performance. The high P/E stocks, which investors expect to earn higher returns, end up earning lower returns as compared to the low P/E stocks.

Neil J.D and Pfeiffer G.M (1999) demonstrated empirically that the P/E for a company that has potentially dilutive securities in its capital structure are understated. In their analysis, they used warrants to illustrate the effects of dilutive securities on P/Es because warrants have characteristics that are shared by most types of dilutive securities.

Most importantly, when warrants, options, or rights are exercised, or when convertible securities are converted, the number of shares of stock outstanding increases. Thus the level of this understatement is in direct proportion to the level of potential dilution present.

They used a sample period of 24 years from 1971-1994, and came up with 4,662 company year observations. They used simple regression model to test the hypothesis that P/Es decrease as the level of potential dilution present in a company's capital structure increases. The results are consistent with the hypothesis, thus dilution could be the cause of the low P/E and yet their performance in the long run is better.

Francisco and Luis (2003) In their paper "explaining the role of the price earnings ratio in the Spanish stock market", used ordinary least squares method and least trimmed squares to explain the cross sectional stock returns for the period (1988-2000). They calculated the stock returns of firms using CAPM and compared the observed and the required returns, they found out that CAPM could not adequately explain the difference in returns between the high P/E, and low P/E stocks. They concluded that there is a strong price earning ratio effect in the Spanish stock market.

Muthui(2003) Conducted a study of the quoted companies which make up the Nairobi 20 share index. He examined the price earnings ratio and share performance of the stocks for the period 1999-2001, basing them on the years 1996,1997, and 1998. He used ANOVA to analyze his results and concluded that for these companies the returns of the low P/E stocks are not significantly higher.

2.5 Conclusion of PER Effect Review

The PER ratio can be used to identify the “out of favor” stocks; contrarian thinking holds that such stocks will ultimately recover and reward the patient investor. The opponents of the PER effect argue that blindly following a low PER strategy can result in two investment errors.

(1) Eliminating firms with low earnings that have a temporarily high PER because they are expected to turn around in the future and (2) Purchasing cyclical stocks when their PERs are low but their profits are peaking during an economic growth period and shunning stocks selling at a high PER whose profits are bottoming during an economic downturn.

2.6 Other Stock Market Seasonalities and anomalies

Some of the seasonalities and anomalies that have been documented are briefly outlined below.

The January effect. Stocks have historically generated high returns during the month of January. Evidence showing this effect was discovered as early as [1976] by Rozeff and Kinney, who found that the average for January was 3.48 percent for the other eleven months was 0.42 percent. Elsewarapu and Reinganum used data on stocks from New York Stock Exchange for the period 1961-1990 and found that the effect was persistent.

Kingori (1995) concluded that such seasonal anomalies as monthly and quarterly effects are not present in the NSE.

The Turn of Month Effect. Stocks consistently show higher returns on the last day and the first four days of the month.

This effect has been documented across countries and over a period of time. In 1987, Ariel showed that returns tend to be higher on the last day of the month.

Cadsby and Ratner [1992] find similar turn of month effects. Exploiting this effect could lead to abnormal returns shown by (Hensel and Ziemba 1996) and (Kunkei and Compton 1998). Kamau (2003) concluded that the effect was non-existent in the NSE.

The Weekend effect (Or Monday effect). Studies have shown that returns on Mondays are worse than all other days of the week. An analysis of daily returns of stocks for the period 1953-1977 by French, found out that there is a tendency for returns negative on Mondays whereas they are positive on the other days of the week. He noted that these negative returns are caused by the weekend effect and not by a general closed market effect.

Agrawal and Tandom [1994] found significantly negative returns on Monday in nine countries and on Tuesday in eight countries, yet large and positive returns on Friday in 17 of the 18 countries studied. Mooka (2003) found out that Monday returns were not significantly low than the other days, nor were Friday returns significantly higher than other days of the trading week.

The holiday effect. Studies have also shown that returns are on average higher the day before a holiday. Lakonishok and Smidt [1988

Brockman and Michayluk [1998] describe the pre-holiday effect as one of the oldest and most consistent of all seasonal regularities.

Size or Small Firm Effect

Banz (1981) Used a sample of all common stocks quoted on the NYSE for at least five years between 1926 and 1975, to examine the relationship between the total market value of the common stock of a firm and its return. He found out that holding stocks of low capitalization companies would have earned excess returns.

Book to Market Equity Ratio.

The stocks with low book to market equity (BE/ME) showed higher future returns as compared to their counterparts with high book to market equity. One prominent explanation of the book to market equity premium in returns is that high book to market equity firms are assigned a higher risk premium because of the greater risk of distress. Consistent with this view, Fama and French (1995) show that firms with high book to market equity (BE/ME) have persistently low earnings, higher financial leverage, more earnings uncertainty, and are more likely to cut dividends compared to their low BE/ME counterparts.

Price to Sales Ratio.

Evidence from a sample of NYSE and AMEX stocks over the 1975-84 period indicates that stocks with low price to sales (P/S) ratio, exhibit both higher absolute returns and risk and produce superior performance compared with higher P/S ratio stocks as well as with an equally weighted market portfolio of comparable risk. Furthermore, the PSR screen seems to work even on companies that are losing money.

CHAPTER 3

3.0 METHODOLOGY

3.1 Research Design

This was an exploratory study meant to establish whether the stock returns in NSE exhibit price earning ratio effect, by examining portfolios of P/E ratios and their performance over a span of ten years.

The research design used for collecting data is a time series and cross sectional survey of firms quoted at the NSE from 1994-2003.

3.2 Population and sample of Study

The population of study comprised of companies that actually traded in the equity section of NSE between January 1994 to December 2003. The sample of study was chosen from the companies which actually traded on the NSE as of the beginning of the portfolio-holding period and whose data on stock prices and P/E ratio is available. The fiscal year end of the firms is December 31 (fiscal years being considered are 1994-2003). The fiscal year assumption was imposed since the P/E ratios are calculated at the end of the fiscal year, and the ranking of the ratios is to be done at year -end. There are 48 companies listed at the NSE equity section.

3.3 Data Description

Secondary data on stock prices and the respective P/E ratio was obtained from Nairobi Stock Exchange. The bid prices were used as an approximation of the transaction prices. The P/E ratios of the 48 companies were used to rank them, the top and bottom 15 companies formed the high and low P/E portfolios.

3.4 Data Analysis

The P/E ratios were ranked in an ascending order, and 3 portfolios formed. The portfolios consisted of stocks with high P/E ratios (top15), median P/E ratios and low P/E ratios (Bottom 15), in the year 1994, and were revised each year to form new portfolios according to P/E ratios. Each of these portfolios was viewed as a mutual fund with a policy of acquiring securities in a given P/E class on January, holding them for an year, and then reinvesting the proceeds from disposition in the same class on the following January. I assumed an equal investment in each of the respective securities.

Method of Analysis

The monthly returns were computed using the closing prices of the stocks. It was assumed that dividend data would not affect the results, as shown by (Coutts, (1997), Draper and Paual, (1997). Who state that dividend payment is unlikely to affect the results of the anomalies study.

$$R_{i,t} = \frac{(P_{i,t+1} - P_{i,t})}{P_{i,t}}$$

Where

$R_{i,t}$ = Return on stock i for month t, where $t=1,2,3,\dots$

$P_{i,t}$ = Market price of stock i at the beginning of the month t,

$P_{i,t+1}$ = Market price of stock i at the end of month t.

Equal weighting the stock monthly returns in each P/E portfolio computed the portfolio return.

$$R_{Pl,t} = (\sum_{i=1}^{15} R_{i,t}) / 15$$

Where $R_{Pl,t}$ = Return for portfolio l for month t, where t = 1,2,3

The monthly stock returns were equal weighted to get the market return.

$$R_{m,t} = (\sum_{i=1}^n R_{i,t}) / n$$

Where $R_{m,t}$ = Market return for month t, where t = 1,2,3...

The mean annual returns was calculated by summing the monthly returns and dividing by 11.

$$\bar{R}_p = \frac{\sum R_{pl,t}}{11}$$

$$\bar{R}_m = \frac{\sum R_{m,t}}{11}$$

The total risk (δ) and β (systematic risk) were calculated for each portfolio.

$$\delta_p = \sqrt{(\sum_{i=1}^n (R_{p,t} - \bar{R}_p)^2) / n}$$

Where R_p = Mean portfolio returns.

$$\beta_p = \text{Cov}(p, m) / \delta_m^2$$

$$\text{Cov}(p, m) = \frac{\sum (R_{p,t} - \bar{R}_p)(R_{m,t} - \bar{R}_m)}{n}$$

$$\delta_m^2 = \frac{\sum (R_{m,t} - \bar{R}_m)^2}{n}$$

Where $\text{Cov}(p, m)$ = Covariance between portfolio and market.

$$\delta_m^2 = \text{Variance of market.}$$

The annual average rate of the 91-day Treasury bill in December was used as a proxy for the riskfree rate at year-end.

Basu(1977) stated that if capital markets are dominated by risk averse investors and portfolio (security) returns incorporate a risk premium, then the appropriate measures of portfolio performance are those that incorporate both risk and return. Three such evaluative measures have been developed by Jensen, Sharpe and Treynor, and were employed to achieve objective 1.

$$\text{Sharpe measure} = \frac{\bar{R}_p - R_f}{\delta_p}$$

$$\text{Treynors measure} = \frac{\bar{R}_p - R_f}{\beta_p}$$

$$\text{Jensen measure} = (\bar{R}_p - R_f) - \beta_p (\bar{R}_m - R_f)$$

A higher measure depicted better performance.

T statistics was applied to find out any significant difference in the mean returns of the portfolios at 95% level of confidence.

To achieve objective 2, the Coefficient of Variation was calculated for the low P/E and the high P/E portfolios.

$$C.V = (S/\bar{X})$$

Where

C.V = Coefficient of Variation

S= δ_p is the Standard deviation of each portfolio.

$\bar{X}=\bar{R}_p$ is the Mean of each portfolio.

A higher C.V depicted higher risk per unit of return.

CHAPTER 4

4.0 FINDINGS AND INTERPRETATIONS

4.1 Introduction

Data on stock prices and their respective ratios was obtained from Nairobi Stock Exchange. The Treasury bill rate- Monthly average was obtained from Central Bank of Kenya (Appendix 2). The companies were ranked in a descending order on the basis of their P/E ratios at the end of the previous year (Appendix 4).

The month of January was the portfolio formation month, and was therefore not considered in monthly return analysis. The top and bottom 15 companies formed the high and low P/E portfolios in each year under consideration.

4.2 Share Returns

The closing prices of stocks were used to generate a time series of monthly returns for each company (Appendix 3) for the 10- year period. Portfolio and market returns were then calculated.

4.3 Portfolio Returns

4.3.1 1994 Portfolios

In the year 1994, the low P/E portfolio outperformed both the market and the high P/E portfolio. The annual rate of return was 0.15 compared to 0.11 for high P/E portfolio and 0.12 for the market. The t-score of the difference between the means of the two portfolios was 0.976 and the critical value + or - 2.048. Thus the difference between the mean returns is not significant.

The differential returns for each P/E portfolio as determined by Jensen and Treynor measures; show that the high P/E portfolio outperformed the low P/E portfolio (As shown below)

SUMMARY STATISTICS OF P/E PORTFOLIOS IN 1994

	Low P/E	High P/E	Market
Annual rate of return	0.15	0.11	0.12
Total risk	0.28	0.38	0.24
Systematic risk	0.56	0.94	1
Riskfree rate	0.256	0.256	0.256
Jensen ratio	-0.03	-0.016	
Treynor's ratio	-0.189	-0.155	
Sharpe's ratio	-0.379	-0.384	
Coefficient of Variation	1.87	3.45	2

The Sharpe measure indicates a better performance for the low P/E portfolio. The high P/E portfolio has a higher coefficient of variation, that is; its risk per unit of return is higher than the low P/E portfolio. This could explain the better performance in the high P/E portfolio.

4.3.2 1995 portfolios

The high P/E portfolio outperformed the market and the low P/E portfolio. The mean returns were 0.0268, 0.012, 0.005 for the high P/E, market, and low P/E portfolios respectively.

The high P/E portfolio had the highest risk of 0.107 while the market risk was 0.05 and the low P/E portfolio had a risk of 0.031.

The t-score for the difference between the mean returns of the portfolios was 9.622 while the critical value is + or - 2.048. Thus the difference between the mean returns is significant.

The differential returns for each P/E portfolio show that the high P/E portfolio outperformed the low P/E portfolio as shown by the three measures (Sharpe, Treynor and Jensen). The low P/E portfolio depicts higher risk per unit of return than the high P/E portfolio, thus the performance of the high P/E portfolio cannot be fully explained by risk. See summary.

SUMMARY STATISTICS OF P/E PORTFOLIOS IN 1995

	Low P/E	High P/E	Market
Annual rate of return	0.005	0.0268	0.012
Total risk	0.031	0.107	0.05
Systematic risk	0.59	1.64	1
Riskfree rate	0.1909	0.1909	0.1909
Jensen ratio	0.385	1.316	
Treynor's ratio	0.473	0.624	
Sharpe's ratio	9.003	9.562	
Coefficient of Variation	6.2	3.99	4.17

4.3.3 1996 Portfolios

The low P/E portfolio outperformed the market and the high P/E portfolio with a mean return of 0.005, while the market return was -0.002 and the high P/E portfolio mean return was 0.001. The market had the lowest risk of 0.015 while the low and the high P/E portfolios had risks of 0.025 and 0.027 respectively. The t-score for the difference between the mean returns of the low and high P/E portfolios was 16.18 while the critical value is + or -2.048. Thus the difference between the mean returns is significant.

The high P/E portfolio outperformed the low P/E portfolio, as determined by the three evaluative measures. The high P/E portfolio has a higher coefficient of variation which is in line with its superior performance as shown by the evaluative measures. This is summarized below.

SUMMARY STATISTICS OF P/E PORTFOLIOS IN 1996

	Low P/E	High P/E	Market
Annual rate of return	0.005	0.001	-0.002
Total risk	0.025	0.027	0.015
Systematic risk	0	4.444	1
Riskfree rate	0.23	0.23	0.23
Jensen ratio	-0.225	0.802	
Treynor's ratio	0	-0.051	
Sharpe's ratio	-9	-8.481	
Coefficient of Variation	5	27	7.5

4.3.4 1997 Portfolios

The low P/E portfolio had a mean return of 0.018 outperforming the market and the high P/E portfolio with mean returns of 0.012 and -0.004 respectively.

The low P/E portfolio had the highest risk of 0.061 while the market had a risk of 0.050, and the high P/E portfolio had a risk of 0.040.

The t-score of the difference between mean returns of the low P/E and the high P/E portfolios was 22.6 against a table value of + or - 2.048. Thus there is significant difference between the mean returns.

The differential returns show that the low P/E portfolio outperformed the high P/E portfolio. The coefficient of variation is higher for the high P/E portfolio.

Thus risk doesn't fully account for the higher differential returns in the low P/E portfolio.

SUMMARY STATISTICS OF P/E PORTFOLIOS IN 1997

	Low P/E	High P/E	Market
Annual rate of return	0.018	-0.004	0.012
Total risk	0.061	0.04	0.05
Systematic risk	1.333	0.667	1
Riskfree rate	0.2249	0.2249	
Jensen ratio	0.077	-0.087	
Treynor's ratio	-0.155	-0.343	
Sharpe's ratio	-3.392	-5.723	
Coefficient of Variation	3.39	10	4.17

4.3.5 1998 Portfolios

The mean returns of the low P/E and high P/E portfolios are similar at -0.022 and -0.021 respectively.

The market return is -0.014 . Low P/E portfolio has the highest risk of 0.053 while the market and high P/E portfolio have a risk of 0.046 and 0.048 respectively. The t-score of the difference between the mean returns of the low and high P/E portfolio is -1.071 . Thus is not significant.

The low P/E portfolio continued to outperform the high P/E portfolio.

The risk per unit of return in both portfolios is almost similar, thus it doesn't fully account for the performance observed. See summary

SUMMARY STATISTICS OF P/E PORTFOLIOS IN 1998

	Low P/E	High P/E	Market
Annual rate of return	-0.022	-0.021	-0.014
Total risk	0.053	0.048	0.046
Systematic risk	0.474	0	1
Riskfree rate	0.2332	0.2332	0.2332
Jensen ratio	-0.138	-0.254	
Treynor's ratio	-0.538		
Sharpe's ratio	-4.816	-5.296	
Coefficient of Variation	2.41	2.29	3.29

4.3.6 1999 Portfolios

In the year 1999 the low P/E portfolio outperformed the market and the high P/E portfolio, attaining a mean return of 0.043 against -.002 and -0.016 for the market and the high P/E portfolio respectively.

The low P/E portfolio had a risk of 0.197 while the high P/E portfolio had a risk of 0.026. The market risk was 0.059. The t-score of the difference between means is 8.18 while the critical value is 2.048. Thus the difference is significant.

The differential returns show that the low P/E portfolio is the better performer of the two. The low P/E portfolio has a higher risk per unit of return, which could account for the higher differential returns.

SUMMARY STATISTICS OF P/E PORTFOLIOS IN 1999

	Low P/E	High P/E	Market
Annual rate of return	0.043	-0.016	-0.002
Total risk	0.197	0.026	0.059
Systematic risk	6.667	1	1
Riskfree rate	0.1329	0.1329	0.1329
Jensen ratio	0.809	-0.014	
Treynor's ratio	-0.013	-0.1488	
Sharpe's ratio	-0.456	-5.727	
Coefficient of Variation	4.58	1.63	29.5

4.3.7 2000 Portfolios

The high P/E portfolio outperformed the low P/E portfolio with mean returns of -0.011 and -0.018 respectively. The market return was -0.016. The risks of the high and the low P/E portfolios were 0.034 and 0.033, while the market risk was 0.019. The t-score of the difference between the means is -17.08.

The differential returns in the year 2000 are almost similar for both portfolios. This can be attributed to the risk, which is similar, but the coefficient of variation is higher for the high P/E portfolio. See summary below

SUMMARY STATISTICS OF P/E PORTFOLIOS IN 2000

	Low P/E	High P/E	Market
Annual rate of return	-0.018	-0.011	-0.016
Total risk	0.033	0.034	0.019
Systematic risk	2.5	2.5	1
Riskfree rate	0.1207	0.1207	0.1207
Jensen ratio	0.203	0.232	
Treynor's ratio	-0.055	-0.043	
Sharpe's ratio	-4.203	-3.874	
Coefficient of Variation	1.83	3.09	1.19

4.3.8 2001 Portfolios

The mean returns were -0.005, -0.022, and -0.016 for the low P/E portfolio, high P/E portfolio and the market respectively.

The low P/E portfolio had the highest risk of 0.053, while the market and the high P/E portfolio had risks of 0.042 and 0.037. The t-score of the difference between means is 22.29. Thus the difference is significant.

The low P/E portfolio outperformed the high P/E portfolio. It also recorded a higher risk per unit of return, which could possibly explain the higher differential returns. As shown below

SUMMARY STATISTICS OF P/E PORTFOLIOS IN 2001

	Low P/E	High P/E	Market
Annual rate of return	-0.005	-0.022	-0.016
Total risk	0.053	0.037	0.042
Systematic risk	0.563	0.563	1
Riskfree rate	0.1273	0.1273	0.1273
Jensen ratio	-0.07	-0.087	
Treynor's ratio	-0.235	-0.265	
Sharpe's ratio	-2.496	-4.035	
Coefficient of Variation	10.6	1.68	2.63

4.3.9 2002 Portfolios

The low P/E portfolio outperformed the high P/E portfolio and was at par with the market at 0.009. The high P/E portfolio's mean return is 0.003. The risk of the low P/E portfolio is 0.105 and for the market and high P/E portfolio is 0.067 and 0.031 respectively. The t-score of the difference between means is 2.742, which is significant.

The low P/E portfolio continued to outperform the high P/E portfolio as determined by the evaluative measures. The coefficient of variation of the low P/E portfolio is higher and could account for the higher differential returns. See summary below.

SUMMARY STATISTICS OF P/E PORTFOLIOS IN 2002

	Low P/E	High P/E	Market
Annual rate of return	0.009	0.003	0.009
Total risk	0.105	0.031	0.067
Systematic risk	0.4	0.4	1
Riskfree rate	0.0894	0.0894	0.0894
Jensen ratio	-0.048	-0.054	
Treynor's ratio	-0.201	-0.216	
Sharpe's ratio	-0.766	-2.787	
Coefficient of Variation	11.67	10.33	7.44

4.3.10 2003 Portfolios

The low P/E portfolio had the highest mean return of 0.077, while the market and the high P/E portfolio had returns of 0.069 and 0.073 respectively. The risk of the low P/E portfolio was 0.079 while the market risk and high P/E portfolio risk were equal at 0.064.

The t-score of the difference between the means is 2.12, which is significant. In the year 2003, which was the year following the change of government; the high P/E portfolio outperformed the low P/E portfolio, which had dominated for six years.

This can be attributed to the optimism that people had after the change. The risk per unit of return is higher for the low P/E portfolio. This is summarized below.

SUMMARY STATISTICS OF P/E PORTFOLIOS IN 2003

	Low P/E	High P/E	Market
Annual rate of return	0.077	0.073	0.069
Total risk	0.079	0.064	0.064
Systematic risk	0.5	0.25	1
Riskfree rate	0.0373	0.0373	0.0373
Jensen ratio	0.0238	0.0278	
Treynor's ratio	0.0794	0.143	
Sharpe's ratio	0.503	0.558	
Coefficient of Variation	1.026	0.877	0.928

Averaging the yearly mean returns, I came up with the composite results of the period under study 1994-2003.

The low P/E portfolio had the highest mean return of 0.026, while the market and the high P/E portfolio had mean returns of 0.017 and 0.014 respectively. The risk of the low P/E portfolio was 0.092 while the market had the lowest at 0.065, and 0.079 for the high P/E portfolio.

The t-score of the difference between the means is 4.17 which is significant, and the three evaluative measures depicted a higher ratio for the low P/E portfolio. Thus the P/E ratio effect is evident. See summary below.

SUMMARY STATISTICS FOR THE PERIOD 1994-2003.

	Low P/E	High P/E	Market
Annual rate of return	0.026	0.014	0.017
Total risk	0.092	0.079	0.065
Systematic risk	1.359	1.24	1
Riskfree rate	0.164	0.164	0.164
Jensen ratio	0.061	0.049	
Treynor's ratio	-0.1	-0.12	
Sharpe's ratio	-1.5	-1.89	
Coefficient of Variation	3.54	5.64	3.8

CHAPTER 5

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Summary

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

The difference in returns is statistically significant at 4.17 compared to the table value of 2.048. Thus I reject the first null hypothesis; that stocks in Nairobi Stock Exchange do not exhibit price earnings ratio effect, and say that the P/E ratio should be considered when revising or forming portfolios because it has information content.

The coefficient of variation is lower for the better performer, which is the low P/E portfolio. Thus I fail to reject the second null hypothesis and say that the low P/E stocks do not exhibit higher risk. Therefore, the PER effect is not fully explained by risk.

A probable explanation of these results is the price ratio hypothesis, as Basu (1977) concluded in his study. This asserts that companies with very low P/E ratios are thought to be temporarily 'undervalued', because investors are excessively pessimistic after a series of bad earnings report or other bad news. Once future earnings turn out to be better than the unreasonably gloomy forecasts, the price adjusts.

5.2 limitations of the study

- The Nairobi stock exchange is an emerging market that has low level of trading and is in weak form efficiency, this casts doubt on the reliability of the stock prices used in the study.
- The investors are also hardly informed about the different securities, and the need to keep revising their portfolios, this could affect returns irrespective of their P/E ratios.
- There was a big range in the security's P/E ratios in the same portfolio, which could affect the accuracy of the results.
- The long period of study required heavy investment in resources such as time and money, which are scarce.

5.3 Suggestions for further research

- Researchers can extend the study by factoring in the size effect in the analysis to know whether the P/E effect is as a result of the size of the firm or size of stock.
- A research can be carried out after some five or so years to find out whether the effect persisted after the year 2003.
- More portfolios could be formed, to cater for all the P/E ranges and improve on accuracy.

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APPENDIX 1

Companies Listed At The Nairobi Stock Exchange Equity Section.

1. Brooke Bond ltd.
2. Kakuzi
3. Rea Vipingo Plantations
4. Sasini Tea & Coffee ltd
5. Car & General (K) ltd
6. CMC Holdings ltd
7. Hutchings Biemer ltd
8. Kenya Airways ltd
9. Marshalls (E.A) ltd
10. Nation Media Group
11. TPS ltd
12. Uchumi Supermarket ltd
13. Barclay's Bank ltd
14. C.F.C Bank ltd
15. Diamond Trust Bank Kenya ltd
16. Housing Finance Co ltd
17. I.C.D.C investments Co ltd
18. Jubilee Insurance Co ltd
19. Kenya Commercial Bank ltd
20. National Bank of Kenya ltd
21. NIC Bank ltd
22. Pan Africa Insurance Holdings ltd
23. Standard Chartered Bank ltd
24. Athi River Mining
25. B.O.C Kenya ltd
26. Bamburi Cement ltd
27. BAT Kenya ltd
28. Carbacid Investments ltd
29. Crown Berger ltd
30. Dunlop Kenya
31. E.A. Cables ltd
32. E.A Portland Cement ltd
33. E.A Breweries ltd
34. Firestone E.A ltd
35. Kenya oil Co
36. Mumias Sugar Co.
37. Kenya Power & lighting ltd
38. Total Kenya ltd
39. Unga Group ltd
40. A. Baumann & Co. ltd
41. City Trust ltd

42. Eaagads ltd
43. Express ltd
44. Williamson Tea Kenya ltd
45. Kapchorua Tea Kenya Co. ltd
46. Kenya Orchard ltd
47. Limuru Tea Co. ltd
48. Standard Newspapers Group

Treasury Bill Rate - Monthly Average

Month	91 - Days		182-days
	Rate (%)	Annual average	Rate (%)
Jan-94	33.5500		
Feb-94	23.9300		
Mar-94	27.6600		
Apr-94	30.8500		
May-94	31.2400		
Jun-94	32.3800		
Jul-94	29.7800		
Aug-94	23.6000		
Sep-94	23.3700		
Oct-94	16.7200		
Nov-94	15.6300		
Dec-94	18.6400	25.6125	
Jan-95	18.0900		
Feb-95	17.6300		
Mar-95	16.8400		
Apr-95	15.1600		
May-95	15.0900		
Jun-95	16.3900		
Jul-95	18.4800		
Aug-95	19.6500		
Sep-95	21.1600		
Oct-95	24.0700		
Nov-95	24.8700		
Dec-95	21.6700	19.0917	
Jan-96	21.2500		
Feb-96	25.9600		
Mar-96	26.6800		
Apr-96	24.1600		
May-96	21.9600		
Jun-96	21.8500		
Jul-96	21.7600		
Aug-96	21.6300		
Sep-96	23.1000		
Oct-96	24.0800		
Nov-96	22.0900		
Dec-96	21.5300	23.0042	
Jan-97	21.6100		
Feb-97	21.4400		
Mar-97	21.4200		
Apr-97	21.0200		
May-97	20.3500		
Jun-97	19.4400		
Jul-97	18.4500		
Aug-97	19.6900		
Sep-97	26.2000		
Oct-97	27.1500		
Nov-97	26.7800		
Dec-97	26.3600	22.4925	

Jan-98	26.2800		
Feb-98	26.3300		
Mar-98	26.7400		
Apr-98	26.9800		
May-98	26.3800		
Jun-98	25.4800		
Jul-98	24.6700		
Aug-98	23.7400		
Sep-98	22.4700		
Oct-98	20.5900		
Nov-98	17.6600		
Dec-98	12.5600	23.3233	
Jan-99	10.7000		10.5200
Feb-99	8.9500		8.3400
Mar-99	8.8400		8.7100
Apr-99	9.0300		9.5000
May-99	9.6300		9.5900
Jun-99	11.4400		10.3300
Jul-99	14.4700		12.3500
Aug-99	14.8400		15.1800
Sep-99	15.7800		15.3600
Oct-99	17.6300		16.1300
Nov-99	18.1400		17.5700
Dec-99	19.9700	13.2850	18.8000
Jan-00	20.3000		19.6700
Feb-00	14.8400		15.2200
Mar-00	11.2800		11.6100
Apr-00	12.4400		
May-00	11.2200		11.7500
Jun-00	10.4700		
Jul-00	9.9000		
Aug-00	9.2500		
Sep-00	10.3600		
Oct-00	10.6500		
Nov-00	11.1700		
Dec-00	12.9000	12.0650	12.0997
Jan-01	14.7600		14.4040
Feb-01	15.3000		15.3588
Mar-01	14.9700		14.8790
Apr-01	12.8999		12.9024
May-01	10.5168		11.3120
Jun-01	12.0695		
Jul-01	12.8732		12.5777
Aug-01	12.8388		
Sep-01	12.3933		
Oct-01	11.6286		
Nov-01	11.4975		
Dec-01	11.0124	12.7300	
Jan-02	10.8548		
Feb-02	10.6110		11.1185
Mar-02	10.1440		10.5968
Apr-02	10.0100		10.4744

May-02	9.0398		9.9793
Jun-02	7.3380		8.8030
Jul-02	8.6336		9.3624
Aug-02	8.3395		9.4883
Sep-02	7.6008		8.6204
Oct-02	8.0653		8.5438
Nov-02	8.2985		8.7585
Dec-02	8.3776	8.9427	8.7858
Jan-03	8.3840		8.7283
Feb-03	7.7738		8.1383
Mar-03	6.2394		6.6382
Apr-03	6.2538		6.8318
May-03	5.8433		6.6770
Jun-03	2.9982		4.1158
Jul-03	1.5370		2.9485
Aug-03	1.1808		2.1153
Sep-03	0.8296		1.3500
Oct-03	1.0025		1.6143
Nov-03	1.2800		1.8803
Dec-03	1.4582	3.7317	2.0858

APPENDIX 3

COMPANIES' RETURNS IN THE YEAR 1994

LISTED COMPANIES	Feb-94	Mar-94	Apr-94	May-94	Jun 94	Jul-94	Aug-94
Brooke bond	0.150	-0.043	-0.439	-0.008	0.200	0.092	-0.065
Eaagad's	0.000	0.000	0.000	0.000	0.000	5.083	1.740
George Williams Kenya Ltd	0.000	0.008	-0.077	-0.017	-0.009	0.309	0.092
Kakuzi	0.427	-0.011	-0.083	-0.115	-0.075	0.133	0.000
Kapchorua Tea Co. Ltd	0.000	12.152	0.000	0.000	0.000	0.005	0.000
Limuru Tea Co Ltd	0.000	0.000	0.000	0.000	0.111	0.118	0.000
Ol pejeta Ranching	0.151	0.148	0.000	0.000	0.000	0.314	0.315
Sasini Tea & Coffee	0.000	0.070	-0.003	-0.684	0.198	0.058	0.000
Theta Group Ltd	0.000	0.000	0.000	0.000	0.000	0.000	-1.000
A. Baumann & Co Ltd	1.609	0.000	0.000	-0.296	0.000	0.000	0.089
A. Tours & Hotels Ltd	6.429	0.000	0.295	0.040	0.000	0.000	0.143
Car & General (k) Ltd	0.096	0.075	-0.140	0.000	0.000	0.000	-0.400
C.M.C Holdings	-0.213	0.093	0.013	0.045	0.198	0.144	0.072
Express Kenya	0.231	0.050	-0.048	0.000	0.088	0.040	0.180
Hutchings Biemer Ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Marshalls(E.A) Ltd	1.000	0.205	0.132	0.083	0.108	0.271	0.301
Motor Mart Group	0.325	-0.020	0.010	0.089	0.145	-0.048	0.042
Nation Printers & Publishers	1.140	-0.033	-0.411	0.086	0.576	-0.025	-0.017
Pearl Dry Cleaners Ltd	0.362	0.151	0.000	0.000	-0.334	0.000	-0.082
Phillips International Ltd	0.444	0.000	0.000	0.000	0.000	-0.073	0.000
Uchumi Supermarket Ltd	0.100	0.187	-0.162	0.086	0.099	-0.036	0.065
Standard Newspapers							
Barclays Bank Ltd	0.077	-0.166	-0.171	-0.058	0.096	-0.024	0.123
City Trust	0.396	0.027	0.000	0.000	0.000	-0.342	0.000
Credit Finance Corporation	1.000	0.025	-0.200	0.050	0.029	-0.019	0.085
Diamond Trust of Kenya Ltd	0.946	-0.236	-0.200	-0.063	0.236	0.029	-0.348
Housing Finance Co.	-0.441	0.324	-0.259	-0.289	0.257	-0.170	0.047
I.C.D.C Investments Co. Ltd	1.122	-0.202	-0.042	-0.182	0.154	0.047	0.045
Jubilee insurance	0.902	-0.257	-0.108	-0.224	0.456	0.000	-0.206
K C B Ltd	0.538	-0.131	0.007	0.000	-0.086	-0.023	-0.040
K Finance Corporation Ltd	0.000	0.179	-0.144	-0.381	0.247	-0.113	0.300
National Industrial Credit Ltd	0.452	0.676	-0.172	0.000	-0.064	-0.017	-0.548
Pan Africa Insurance Co. Ltd	0.643	0.188	0.018	0.000	0.126	0.170	0.000
Standard Chartered Bank	0.033	-0.361	-0.174	0.226	0.104	-0.056	0.518
National Bank of Kenya							
Bamburi Portland Cement Co. Ltd	0.091	-0.025	-0.094	-0.236	0.605	-0.138	0.000
B A T Kenya	1.699	-0.644	-0.355	-0.086	0.146	0.015	-0.148
Carbacid Investment Ltd	0.921	0.000	-0.381	0.000	-0.027	-0.082	0.030
Crown Berger Ltd	0.053	0.010	-0.200	0.000	0.000	0.063	0.035
Dunlop Kenya Ltd	3.314	0.000	0.023	0.027	0.039	0.000	0.021
E.A. Cables	0.074	-0.009	-0.070	0.065	-0.079	0.038	0.064
E.A Oxygen Ltd	-0.067	-0.332	-0.091	0.012	0.047	0.056	-0.016
E.A Packaging	0.787	0.020	0.013	-0.045	0.000	0.020	0.020
E.A Portland Cement Ltd	2.692	0.000	0.000	0.000	0.000	-0.375	-0.020
K B L	1.000	-0.098	-0.416	0.341	-0.086	0.179	-0.032
K National Mills	0.782	-0.378	-0.344	0.500	0.075	-0.101	-0.034
K Oil Co. Ltd	0.857	0.008	-0.279	-0.101	0.247	0.000	-0.057
K Orchards	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K.P.L.C Ltd	1.000	-0.172	-0.235	-0.254	0.424	-0.091	0.055
Total Kenya	0.414	-0.283	-0.238	0.184	0.335	-0.085	0.054
Unga Group Ltd	4.032	-0.103	0.000	0.000	-0.393	0.071	0.000

Sep-94	Oct-94	Nov-94	Dec-94	Mean Return	STDEV	VAR
-0.223	0.000	0.013	0.140	-0.017	0.183	0.034
0.000	0.000	0.000	-0.005	0.620	1.570	2.464
-0.565	-0.241	0.009	0.281	-0.021	0.235	0.055
-0.072	-0.239	0.028	0.099	0.008	0.173	0.030
-0.197	0.000	0.000	0.000	1.087	3.670	13.470
-0.285	0.000	0.000	-0.029	-0.008	0.104	0.011
0.000	0.041	0.048	0.144	0.108	0.120	0.014
-0.094	-0.095	-0.019	0.126	-0.040	0.231	0.053
		0.000	5.767	0.530	1.992	3.966
0.000	0.000	0.000		0.140	0.526	0.276
-0.621	2.165	0.042	0.000	0.772	1.999	3.995
0.135	0.071	0.078	0.320	0.021	0.179	0.032
0.059	0.135	-0.091	0.077	0.048	0.115	0.013
0.000	-0.038	-0.010	-0.045	0.039	0.089	0.008
0.000	0.000	0.000	0.000	0.000	0.000	0.000
-0.378	0.027	0.000	0.079	0.166	0.330	0.109
0.056	0.030	0.106	0.041	0.068	0.102	0.010
0.044	0.000	-0.025	0.552	0.172	0.424	0.179
0.000	-0.066	0.000	0.000	0.030	0.125	0.016
0.000	0.000	0.000	0.000	0.034	0.136	0.019
0.114	-0.031	-0.089	0.214	0.050	0.116	0.013
-0.257	-0.205	0.183	0.932	0.183	0.549	0.301
0.131	-0.077	0.028	0.265	0.020	0.134	0.018
0.030	0.010	0.000	0.000	0.011	0.166	0.027
-0.035	0.171	-0.015	0.055	0.104	0.311	0.097
-0.197	-0.073	0.000	0.608	0.064	0.393	0.154
0.000	0.175	-0.168	0.407	-0.011	0.278	0.077
-0.037	0.019	-0.019	0.443	0.123	0.374	0.140
-0.019	-0.020	0.020	0.422	0.088	0.359	0.129
0.042	-0.080	0.043	0.500	0.070	0.229	0.052
-0.098	0.194	-0.047	0.268	0.011	0.194	0.038
-0.019	-0.108	0.143	0.067	0.037	0.319	0.102
-0.055	0.000	0.000	0.144	0.112	0.195	0.038
-0.442	-0.215	0.071	0.240	-0.005	0.283	0.080
		0.000	0.381	0.190	0.269	0.072
-0.036	-0.074	-0.020	0.327	0.036	0.236	0.056
-0.088	-0.084	0.063	0.483	0.091	0.603	0.364
-0.029	-0.040	0.021	-0.015	0.036	0.315	0.099
-0.057	-0.133	0.028	0.473	0.025	0.169	0.029
0.020	0.020	-0.020	0.000	0.313	0.995	0.991
-0.103	-0.173	0.000	0.017	-0.016	0.080	0.006
-0.043	-0.061	0.024	0.163	-0.028	0.124	0.015
0.032	-0.248	0.331	-0.056	0.078	0.265	0.070
-0.272	0.000	0.000	0.000	0.184	0.842	0.709
-0.256	-0.228	0.187	0.394	0.090	0.395	0.156
-0.223	0.598	-0.165	0.474	0.108	0.409	0.167
-0.025	0.056	0.000	0.194	0.062	0.292	0.085
0.000	0.000	0.000	0.000	0.000	0.000	0.000
0.034	-0.117	0.085	0.652	0.126	0.402	0.161
-0.140	0.054	0.036	0.252	0.053	0.228	0.052
-0.198	0.137	-0.223	1.202	0.411	1.270	1.612

COMPANIES RETURNS IN THE YEAR 1995

LISTED COMPANIES	Feb-95	Mar-95	Apr-95	May-95	Jun-95	Jul-95	Aug-95	Sep-95
Brooke bond	-0.081	0.005	-0.005	0.024	-0.062	0.000	-0.041	-0.312
Eaagad's	0.000	0.005	0.000	0.000	0.000	0.000	0.000	-0.350
George Williams Kenya ltd	-0.038	0.024	-0.094	-0.190	0.074	-0.203	-0.130	-0.107
Kakuzi	-0.068	-0.082	-0.040	-0.010	0.042	0.000	0.000	-0.290
Kapchorua Tea Co. ltd	0.000	-0.100	0.000	0.000	-0.185	0.000	0.000	0.000
Limuru Tea Co ltd	-0.006	0.207	0.000	0.000	0.037	0.000	0.000	0.000
Ol pejeta Ranching	-0.020	0.054	0.141	-0.101	0.000	-0.019	0.185	0.032
Sasini Tea & Coffee	-0.017	-0.051	-0.143	-0.097	0.077	0.007	-0.035	-0.066
Theta Group ltd	-0.015	0.075	0.000	0.000	-0.070	0.000	0.000	0.000
A. Baumann & Co ltd	0.012	0.059	0.000	0.000	0.028	0.016	0.021	0.000
A. Tours & Hotels ltd	0.020	0.000	0.242	0.005	0.000	0.068	0.029	0.000
Car & General (k) ltd	-0.014	0.017	-0.003	0.025	0.220	-0.111	0.025	-0.044
C.M.C Holdings	0.000	-0.171	-0.138	0.000	-0.055	-0.079	-0.092	-0.006
Express Kenya	-0.206	-0.067	0.021	0.014	0.069	0.071	-0.068	-0.077
Hutchings Bierner ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Marshalls(E.A) ltd	0.037	-0.029	0.042	-0.047	-0.037	-0.038	-0.053	0.056
Motor Mart Group	-0.026	-0.014	0.027	0.013	0.026	0.038	0.019	-0.091
Nation Printers & Publishers	0.146	0.018	0.024	-0.128	0.193	-0.061	-0.161	-0.043
Pearl Dry Cleaners ltd	0.143	0.000	0.000	0.000	0.000	-0.193	0.022	-0.048
Phillips International ltd	0.000	0.000	0.000	0.000	0.000	-0.170	0.000	0.000
Uchumi Supermarket ltd	0.073	-0.085	0.000	-0.111	-0.052	-0.011	-0.022	0.006
Standard Newspapers	0.238	-0.074	-0.124	-0.062	0.314	-0.057	0.000	-0.136
Barclays Bank ltd	0.061	-0.173	0.007	-0.056	0.066	-0.110	0.000	0.124
City Trust	-0.037	0.019	0.019	0.037	0.000	0.018	-0.035	-0.018
Credit Finance Corporation	3.444	-0.950	0.183	0.021	-0.186	-0.076	-0.037	-0.010
Diamond Trust of Kenya ltd	-0.017	0.008	0.092	-0.077	0.033	-0.214	0.046	0.078
Housing Finance Co.	0.126	0.147	-0.383	0.220	0.020	0.137	-0.147	0.010
I.C.D.C Investments Co. ltd	0.024	-0.442	0.385	-0.150	0.080	-0.180	0.250	0.024
Jubilee insurance	0.054	-0.145	0.000	-0.040	-0.057	-0.105	0.068	0.052
K C B ltd	0.278	-0.176	-0.143	0.175	0.007	-0.014	0.029	0.014
K Finance Corporation ltd	0.100	-0.080	-0.062	0.000	-0.126	-0.151	-0.078	0.077
National Industrial Credit ltd	-0.040	-0.119	-0.018	-0.024	0.049	-0.017	-0.008	0.024
Pan Africa Insurance Co. ltd	-0.025	-0.025	0.000	0.293	-0.280	-0.093	-0.015	0.036
Standard Chartered Bank	0.042	-0.136	-0.056	0.000	0.069	-0.096	-0.036	0.116
National Bank of Kenya	0.023	-0.011	-0.139	0.097	0.095	-0.011	-0.011	0.067
Bamburi Portland Cement Co.ltd	-0.033	0.121	0.031	-0.474	-0.007	-0.007	-0.223	0.185
B.A.T Kenya	-0.125	-0.050	-0.023	-0.115	-0.061	-0.130	0.043	0.010
Carbacid Investment ltd	-0.045	-0.105	-0.141	0.000	0.103	0.062	-0.064	0.025
Crown Berger ltd	-0.045	-0.071	0.015	-0.091	0.056	0.105	0.071	0.022
Dunlop Kenya ltd	0.004	0.016	-0.016	0.016	-0.020	0.020	-0.008	0.000
E.A. Cables	-0.016	0.044	-0.149	-0.025	-0.295	0.173	0.101	0.028
E.A.O (BOC) K	0.021	-0.141	-0.135	-0.184	0.000	0.192	-0.049	0.044
E.A Packaging	0.000	-0.250	-0.070	-0.038	-0.049	-0.175	-0.075	-0.054
E.A Portland Cement ltd	0.106	-0.005	0.051	-0.038	0.090	-0.073	0.040	0.019
K B L	-0.113	-0.121	0.014	0.000	0.000	-0.136	0.149	0.036
K National Mills	0.057	0.054	0.113	-0.036	-0.032	0.087	-0.100	0.189
K Oil Co.ltd	0.043	-0.008	0.034	0.041	-0.078	-0.017	-0.017	0.035
K Orchards	0.000	0.000	0.667	0.100	0.000	0.000	2.127	-0.535
K.P.L.C ltd	0.021	0.186	-0.087	0.229	-0.070	-0.083	-0.036	0.085
Total Kenya	0.077	-0.338	-0.036	0.030	0.051	-0.179	-0.050	0.239
Unga Group ltd	-0.013	0.184	0.067	0.094	0.095	-0.070	-0.009	0.132
Firestone (EA) ltd	-0.136	-0.009	-0.115	0.040	-0.144	0.079	0.010	-0.031
Market Returns	0.077	-0.054	0.001	-0.012	0.001	-0.035	0.031	-0.009

Oct-95	Nov-95	Dec-95	Mean Return	STDEV	VAR
0.215	0.203	0.000	-0.005	0.140	0.019724
0.000	-0.123	0.053	-0.038	0.112	0.012475
0.200	0.173	-0.023	-0.028	0.136	0.018368
0.141	0.142	0.016	-0.014	0.117	0.013705
0.000	0.000	0.055	-0.021	0.085	0.004243
0.000	0.000	0.045	0.026	0.063	0.003908
0.021	0.020	0.000	0.029	0.078	0.006085
0.134	-0.007	-0.098	-0.027	0.080	0.006391
0.000	0.000	0.000	-0.001	0.033	0.00107
0.000	-0.027	0.001	0.010	0.022	0.000472
0.000	0.000	0.000	0.033	0.072	0.005232
0.046	-0.012	0.012	0.015	0.080	0.006425
0.516	-0.078	-0.018	-0.011	0.184	0.033715
0.126	0.242	-0.120	0.001	0.125	0.015678
0.000	0.000	0.000	0.000	0.000	0
0.000	0.000	-0.026	-0.009	0.038	0.001468
0.147	0.244	0.028	0.037	0.089	0.007906
0.296	0.097	0.010	0.036	0.138	0.019066
0.050	0.000	0.000	-0.002	0.079	0.00628
0.000	0.000	0.000	-0.015	0.051	0.002631
0.040	-0.065	-0.070	-0.027	0.055	0.003078
-0.091	0.177	0.004	0.017	0.154	0.02379
0.041	-0.007	0.033	-0.001	0.085	0.007176
-0.009	0.047	0.000	0.004	0.027	0.000747
-0.010	2.718	-0.700	0.400	1.377	1.896292
0.100	-0.116	-0.028	-0.008	0.097	0.009328
0.120	0.134	-0.157	0.021	0.181	0.032594
0.133	-0.124	0.039	0.003	0.224	0.050337
0.066	0.113	-0.125	-0.011	0.089	0.007879
0.205	-0.034	0.000	0.031	0.139	0.019366
-0.071	0.048	-0.040	-0.035	0.081	0.006617
0.110	-0.028	0.054	-0.001	0.060	0.003555
0.060	0.075	0.088	0.010	0.138	0.019146
0.009	-0.047	0.039	-0.009	0.074	0.005496
0.031	-0.131	0.081	0.008	0.082	0.006724
-0.016	0.143	-0.007	-0.028	0.184	0.03385
0.010	0.000	-0.110	-0.050	0.062	0.003902
0.024	0.071	0.050	-0.002	0.078	0.006039
0.065	-0.061	-0.087	-0.002	0.071	0.005096
0.000	0.000	0.000	0.001	0.013	0.00016
0.055	0.117	-0.163	-0.012	0.139	0.019441
0.000	0.239	-0.594	-0.055	0.221	0.048989
0.007	0.071	0.000	-0.058	0.089	0.007915
0.028	0.000	-0.045	0.015	0.056	0.003083
-0.014	-0.092	-0.109	-0.035	0.087	0.007638
0.037	-0.081	0.000	0.026	0.086	0.007476
0.034	0.000	-0.008	0.005	0.037	0.001357
0.063	1.000	0.000	0.311	0.721	0.520546
0.087	0.120	0.250	0.064	0.124	0.015486
0.107	0.097	0.006	0.000	0.154	0.023765
0.050	0.111	0.014	0.060	0.074	0.005477
0.011	0.063	-0.020	-0.023	0.078	0.006027
0.061	0.105	-0.032	0.012	0.050	0.002528

COMPANIES RETURNS IN THE YEAR 1996

LISTED COMPANIES	Feb-96	Mar-96	Apr-96	May-96	Jun-96	Jul-96	Aug-96	Sep-96
Brooke Bond	-0.395	0.478	0.059	-0.033	-0.011	0.041	-0.017	0.006
Eaaga'da ltd	-0.075	0.000	0.009	-0.027	-0.009	0.009	0.000	0.000
George Williams Kenya ltd	-0.007	-0.057	-0.015	-0.136	0.071	0.092	0.000	0.008
Kakuzi	0.042	-0.050	0.053	-0.040	-0.021	-0.043	0.028	0.043
Kapchorua Tea Co. ltd	0.000	0.000	0.000	0.000	0.000	-0.440	0.046	0.000
Limuru Tea	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OI Pejeta Ranching	-0.300	0.486	-0.038	0.400	0.029	0.069	0.000	0.000
Rea Vipingo Plantations ltd					0.000	0.018	-0.026	-0.036
Sasini Tea & Coffee	-0.100	-0.162	0.122	0.091	-0.017	-0.034	-0.105	0.039
Theta Group ltd	0.000	0.000	0.000	-0.118	0.000	0.000	0.000	0.000
A. Baumann & Co. ltd	-0.032	-0.231	0.143	-0.131	0.007	0.000	-0.029	0.029
African Tours & Hotels ltd	0.143	0.000	0.000	0.000	0.000	0.013	-0.004	0.012
Car & General (K) ltd	0.000	0.000	0.000	0.000	0.000	0.071	-0.033	-0.080
C.M.C Holdings	0.000	0.102	0.000	-0.077	0.017	0.057	-0.054	0.033
Express Kenya ltd	-0.136	-0.014	-0.029	0.119	0.027	0.104	-0.059	0.006
Hutchings Blomer ltd	1.063	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Marshalls (E.A) ltd	0.014	0.033	0.000	-0.013	0.013	-0.019	0.237	0.000
Kenya Airways ltd							0.383	0.036
Motor Mart (Lonrho Motors EA)	-0.089	-0.020	-0.020	0.041	0.020	0.106	0.043	0.000
Nation Printers & Publishers	0.000	-0.200	-0.025	0.090	0.024	0.172	0.000	0.049
Pearl Dry Cleaners ltd	0.000	0.000	0.000	-0.066	0.042	-0.044	-0.184	0.021
Phillips International ltd	0.235	0.000	0.000	0.113	0.018	-0.018	0.000	0.000
Uchumi Supermarket ltd	0.000	-0.094	-0.034	0.000	0.057	0.014	0.040	0.026
Standard Newspapers Group	0.000	-0.050	-0.032	-0.142	0.068	-0.091	-0.095	-0.122
Barclays Bank ltd	-0.027	-0.241	-0.091	0.180	-0.042	-0.018	-0.009	-0.055
City Trust ltd	-0.045	0.047	-0.036	-0.037	0.038	0.185	-0.031	-0.032
Credit Finance Corporation	0.000	-0.065	-0.010	-0.110	-0.011	0.000	-0.145	-0.008
Diamond Trust Of Kenya ltd	-0.058	-0.113	-0.047	0.006	0.042	0.035	-0.169	0.034
Housing Finance Co. ltd	-0.087	-0.196	-0.058	0.292	0.118	0.279	-0.278	-0.021
I.C.D.C. Investment Co. ltd	0.037	-0.114	-0.032	0.125	-0.081	-0.161	0.221	-0.031
Jubilee Insurance Co. ltd	0.032	0.061	0.038	-0.255	0.019	0.030	-0.124	0.068
Kenya Commercial Bank ltd	0.065	-0.133	-0.038	-0.253	0.000	0.027	-0.026	-0.071
Kenya Finance Bank ltd	-0.083	-0.182	-0.111	0.125	0.000	0.000	0.000	0.000
National Bank OF Kenya	-0.193	0.000	-0.030	-0.075	0.021	0.018	0.040	-0.122
National Industrial Credit ltd	0.047	0.020	0.010	-0.226	0.019	0.012	-0.078	0.046
Pan Africa Insurance co. ltd	0.024	0.000	0.016	0.069	0.007	-0.100	-0.008	-0.088
Standard Chartered Bank	-0.038	-0.120	-0.045	0.161	0.026	-0.080	0.022	-0.037
Bamburi Portland Cement Co. ltd	0.182	-0.353	-0.089	0.217	0.071	0.000	-0.017	-0.017
B.A.T. Kenya ltd	-0.207	-0.085	-0.031	0.095	0.029	0.000	-0.042	-0.022
Carbacid Investments ltd	0.000	0.000	0.000	-0.168	0.024	-0.012	0.012	0.035
Crown Berge ltd	-0.047	0.000	0.000	-0.268	0.133	-0.074	-0.365	0.025
Dunlop Kenya ltd	0.000	0.000	0.000	-0.008	0.000	0.024	0.004	0.012
E.A Cables	0.000	0.000	0.000	-0.178	0.000	0.133	0.007	0.007
BOC (K) Formaly E.A.O	-0.064	-0.025	-0.038	-0.067	0.029	-0.139	0.000	0.048
E.A Packaging ltd	0.000	-0.040	-0.014	-0.028	0.014	0.014	-0.014	0.000
E.A Portland Cement ltd	1.339	-0.038	0.016	-0.016	0.000	0.000	-0.024	-0.811
Kenya Breweries ltd	-0.053	-0.147	-0.048	0.081	0.040	0.072	-0.031	-0.016
Kenya National mills	0.000	-0.020	-0.020	-0.021	0.043	0.020	-0.040	0.042
Kenya Oil Co. ltd	0.000	0.022	0.000	-0.014	0.029	-0.028	0.000	0.000
Kenya Orchards	0.059	0.000	0.056	-0.053	0.111	-0.500	0.950	0.000
Kenya Power & Lighting ltd	-0.478	-0.062	-0.006	-0.006	0.030	-0.024	0.277	0.132
Total Kenya ltd	0.000	0.000	0.000	-0.444	0.053	-0.185	-0.067	-0.059
Unga Group ltd	0.035	0.007	0.007	0.013	0.000	0.020	-0.006	0.032
Firestone E.A. ltd	0.000	-0.083	0.000	0.057	-0.011	0.163	-0.112	0.179
Market Return	0.015	-0.032	-0.008	-0.014	0.020	-0.004	0.002	-0.012

Oct-96	Nov-96	Dec-96	Mean Return	STDEV	VAR
0.000	0.006	0.000	0.012	0.197	0.038965
0.000	0.000	0.000	-0.008	0.024	0.000581
0.061	0.029	0.014	0.005	0.064	0.004068
-0.005	0.016	0.005	0.003	0.037	0.001372
0.000	0.000	0.000	-0.036	0.135	0.018135
0.000	0.000	0.000	0.000	0.000	0
0.000	0.000	0.000	0.059	0.213	0.045518
-0.065	0.040	0.019	-0.007	0.037	0.00134
0.019	0.074	0.017	-0.005	0.089	0.007954
0.000	0.061	0.000	-0.005	0.042	0.001746
0.030	-0.057	0.000	-0.027	0.094	0.008871
0.000	0.000	0.000	0.015	0.043	0.00183
0.013	-0.012	0.013	-0.003	0.036	0.001307
0.032	0.000	0.000	0.010	0.049	0.002377
0.019	0.146	0.021	0.019	0.082	0.006716
0.000	0.010	0.000	0.098	0.320	0.102442
0.011	-0.011	0.000	0.024	0.072	0.005196
-0.074	-0.048	0.011	0.062	0.185	0.034245
0.030	0.000	0.000	0.007	0.048	0.002329
-0.009	0.019	0.000	0.011	0.090	0.008051
-0.005	0.005	0.005	-0.021	0.061	0.003775
0.000	0.000	0.000	0.032	0.076	0.005767
0.250	-0.110	0.056	0.019	0.095	0.008965
-0.044	0.059	-0.006	-0.041	0.069	0.0047
-0.067	-0.005	0.005	-0.034	0.098	0.009695
0.067	-0.141	0.055	0.006	0.084	0.007136
0.000	0.005	0.000	-0.031	0.052	0.002702
-0.085	-0.086	0.063	-0.034	0.075	0.005652
-0.096	-0.059	0.050	-0.005	0.179	0.031864
0.179	-0.131	0.016	0.002	0.128	0.016301
-0.063	-0.101	0.053	-0.022	0.102	0.010403
0.067	0.126	0.008	-0.021	0.105	0.010989
0.000	0.000	0.000	-0.023	0.079	0.006223
-0.085	-0.100	0.154	-0.034	0.095	0.008965
0.013	0.025	-0.012	-0.011	0.079	0.00619
0.000	0.000	0.000	-0.007	0.048	0.002289
0.017	0.005	-0.005	-0.009	0.072	0.005218
-0.034	0.009	-0.009	-0.004	0.148	0.021943
-0.053	-0.016	0.016	-0.029	0.076	0.005729
0.169	-0.212	0.049	-0.009	0.102	0.010494
0.000	-0.024	0.000	-0.056	0.140	0.019695
0.000	0.000	0.000	0.003	0.008	6.99E-05
-0.101	0.000	0.000	-0.012	0.076	0.005832
0.000	0.023	-0.008	-0.022	0.053	0.002845
0.014	-0.028	0.029	-0.005	0.022	0.000479
-0.118	0.159	0.053	0.051	0.497	0.246733
0.087	0.030	0.010	0.002	0.071	0.004991
0.000	-0.100	0.044	-0.005	0.043	0.001854
0.000	0.000	0.000	0.001	0.015	0.000231
0.000	0.000	0.000	0.057	0.337	0.113889
0.017	0.131	0.014	0.003	0.186	0.034424
-0.026	-0.101	-0.024	-0.076	0.137	0.018745
0.031	-0.030	0.000	0.010	0.019	0.000378
-0.107	0.040	0.000	0.011	0.096	0.009312
0.000	-0.007	0.013	-0.002	0.015	0.000225

COMPANIES RETURNS IN THE YEAR 1997

LISTED COMPANIES	Feb-97	Mar-97	Apr-97	May-97	Jun-97	Jul-97	Aug-97
Brooke Bond	-0.027	-0.069	-0.059	-0.024	0.000	-0.008	0.000
Eaagad's ltd	-0.009	-0.037	0.000	0.000	0.000	0.000	0.000
George Williams Kenya ltd	0.000	0.000	-0.034	-0.028	0.014	0.271	0.180
Kakuzi	0.020	0.010	0.000	0.010	0.000	0.178	0.083
Kapchorua Tea Co. ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Limuru Tea	0.000	0.000	0.000	0.000	-0.231	0.000	0.000
Oi Pejeta Ranching	0.000	0.000	-0.091	0.000	0.243	0.057	0.054
Rea Vipingo	0.167	0.071	0.000	0.000	0.133	0.000	0.059
Sasini Tea & Coffee	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Theta Group ltd	0.121	0.095	-0.136	-0.257	0.000	-0.077	-0.083
A. Baumann & Co. ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Car & General (K) ltd	0.000	0.000	0.000	-0.195	0.358	0.000	-0.059
C.M.C Holdings	0.071	0.080	-0.049	-0.058	0.138	-0.006	-0.012
Express Kenya ltd	0.026	0.051	-0.061	-0.026	-0.253	-0.056	-0.075
Hutchings Biemer ltd	0.120	0.259	0.000	0.000	0.000	0.000	0.000
Marshalls (E.A) ltd	0.011	0.000	0.250	0.100	0.167	-0.065	-0.375
Kenya Airways ltd	0.172	0.333	-0.500	-0.275	-0.138	-0.088	-0.088
Lonrho Motors (EA) ltd	-0.027	0.009	0.135	0.333	-0.310	0.017	0.017
Nation Printers & Publishers	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pearl Dry Cleaners ltd					0.000	0.000	0.000
Uchumi Supermarket ltd	-0.063	-0.054	0.085	0.052	0.000	0.000	0.000
Standard Newspapers Group	0.933	0.966	0.000	0.000	0.754	0.000	0.000
Tourism Promotion Services ltd	-0.043	-0.073	0.049	0.075	-0.043	0.019	0.027
Barclays Bank ltd	0.000	0.000	0.000	0.061	0.000	0.000	0.000
City Trust ltd	-0.033	-0.045	-0.048	0.000	0.000	0.000	0.000
Credit Finance Corporation	-0.068	-0.110	0.025	0.008	-0.032	-0.008	-0.100
Diamond Trust Of Kenya ltd	0.000	0.000	0.000	0.000	-0.021	0.000	0.000
Housing Finance Co. ltd	0.050	0.101	-0.027	0.000	0.111	-0.100	-0.111
I.C.D.C. Investment Co. ltd	0.039	0.031	-0.030	-0.125	0.186	-0.036	-0.050
Jubilee Insurance Co. ltd	0.022	0.022	0.011	0.011	0.198	-0.043	-0.045
Kenya Commercial Bank ltd	-0.020	-0.005	0.026	0.100	0.091	-0.083	-0.036
National Bank Of Kenya	0.020	0.019	0.000	0.038	0.145	-0.032	-0.016
National Industrial Credit ltd	-0.074	-0.080	0.000	0.000	0.022	0.000	0.000
Pan Africa Insurance co. ltd	0.000	0.000	0.000	0.000	-0.050	-0.013	-0.067
Regent U. A.A. Fund	0.000	0.000	0.000	-0.006	-0.057	0.067	0.025
Standard Chartered Bank	-0.072	-0.195	0.000	0.016	-0.032	-0.016	-0.150
Athi River Mining ltd	0.012	0.030	-0.018	-0.006	0.006	-0.036	-0.037
B.A.T. Kenya ltd	-0.080	-0.096	0.058	0.000	-0.036	0.019	0.019
Bamburi Portland Cement Co. ltd	0.018	0.054	-0.017	-0.017	-0.053	0.296	0.157
BOC (K) Formaly E.A.O	-0.054	-0.157	0.051	0.048	0.015	0.000	-0.030
Carbacid Investments ltd	-0.286	-0.200	0.000	0.150	0.101	-0.026	-0.027
Crown Berge ltd	-0.014	-0.022	0.000	0.000	-0.007	-0.075	-0.032
Dunlop Kenya ltd	0.102	0.093	0.051	0.048	0.015	0.030	0.029
E.A Cables	0.086	0.088	-0.032	-0.025	0.026	-0.083	-0.091
E.A Packaging ltd	0.007	0.029	0.000	-0.021	0.333	-0.894	7.600
E.A Portland Cement ltd	-0.014	-0.029	-0.059	-0.039	0.138	-0.071	-0.046
Firestone E.A. ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Kenya Breweries ltd	0.111	0.130	0.327	0.133	0.000	0.000	0.012
Kenya Orchards	-0.043	-0.311	0.081	0.067	0.098	-0.039	-0.032
K.Power & Lighting	-0.042	-0.035	0.081	0.017	0.230	0.033	0.032
Kenya National mills	-0.067	-0.071	0.000	0.077	0.000	-0.071	0.000
Market Return	0.021	0.018	0.011	0.005	0.038	-0.018	0.132

Sep-97	Oct-97	Nov-97	Dec-97	Mean Return	STDEV	VAR
-0.016	-0.008	-0.083	-0.045	-0.031	0.029	0.000844
0.000	0.654	-0.035	-0.012	0.051	0.200	0.040175
0.229	-0.023	-0.317	-0.012	0.025	0.160	0.025474
0.154	-0.033	-0.338	0.042	0.011	0.133	0.017801
0.000	0.000	0.000	0.000	0.000	0.000	0
-0.150	-0.118	0.000	0.000	-0.045	0.082	0.006701
0.082	0.000	0.038	0.000	0.035	0.083	0.006833
0.089	-0.041	0.000	0.000	0.043	0.065	0.004289
0.000	0.000	-0.441	0.000	-0.040	0.133	0.017707
-0.136	-0.032	-0.155	-0.035	-0.063	0.110	0.012191
0.000	0.000	0.000	0.000	0.000	0.000	0
0.000	0.000	0.000	0.000	-0.018	0.064	0.004105
-0.012	-0.063	-0.093	0.000	0.000	0.070	0.004933
-0.065	0.009	0.009	-0.034	-0.025	0.042	0.001789
0.000	0.000	0.000	0.000	0.034	0.083	0.006839
-0.289	0.477	-0.132	-0.024	0.011	0.239	0.057282
-0.096	-0.170	0.000	0.000	-0.077	0.218	0.047331
0.050	0.008	0.031	0.015	0.025	0.149	0.022319
0.000	0.000	0.000	0.000	0.000	0.000	0
0.000	0.000	0.000	0.000	0.000	0.000	0
0.008	-0.088	0.054	0.000	0.000	0.052	0.002724
-0.430	2.368	0.104	0.000	0.427	0.786	0.617299
-0.070	0.009	0.065	0.017	0.003	0.052	0.002745
-0.029	0.000	0.000	0.000	0.003	0.021	0.00044
0.000	0.000	-0.120	-0.034	-0.025	0.037	0.001385
-0.056	-0.118	-0.033	-0.034	-0.048	0.048	0.002259
-0.149	-0.050	0.000	0.000	-0.020	0.048	0.002073
-0.144	0.000	0.000	0.000	-0.011	0.082	0.006753
-0.028	-0.054	0.050	0.034	0.002	0.080	0.006458
-0.087	-0.051	-0.043	-0.135	-0.011	0.084	0.007005
-0.057	-0.020	0.020	0.000	0.001	0.056	0.003161
-0.333	0.050	0.000	-0.048	-0.014	0.118	0.013825
-0.043	-0.022	0.045	0.022	-0.012	0.040	0.001587
-0.064	0.153	-0.172	-0.040	-0.023	0.077	0.005996
0.024	-0.119	-0.155	-0.040	-0.024	0.065	0.004263
0.000	-0.020	0.000	-0.040	-0.046	0.068	0.004567
-0.038	-0.027	-0.055	-0.109	-0.025	0.038	0.001414
0.045	-0.213	0.061	-0.063	-0.026	0.083	0.00685
0.123	0.000	-0.771	0.000	-0.019	0.269	0.072539
0.000	0.000	-0.148	-0.009	-0.026	0.070	0.004846
-0.014	-0.014	0.000	-0.029	0.014	0.201	0.040485
-0.042	0.096	-0.040	-0.008	-0.013	0.042	0.001798
0.000	0.000	-0.271	-0.020	0.007	0.100	0.009944
-0.055	-0.005	0.074	-0.109	-0.012	0.072	0.005156
-0.035	-0.036	-0.050	0.000	0.630	2.330	5.430553
-0.056	-0.128	-0.049	-0.031	-0.035	0.065	0.004188
-0.005	0.000	0.000	0.000	0.000	0.002	2.39E-06
0.017	0.029	0.050	-0.153	0.060	0.119	0.014239
-0.050	-0.105	0.020	-0.038	-0.050	0.105	0.01098
0.025	-0.037	0.008	-0.245	0.006	0.112	0.01284
-0.010	-0.078	-0.095	0.047	-0.024	0.056	0.003129
-0.033	0.043	-0.058	-0.023	0.012	0.050	0.002534

COMPANIES RETURNS IN THE YEAR 1998

LISTED COMPANIES	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98
Brooke Bond	-0.038	-0.040	-0.008	0.017	0.099	0.068	0.056	-0.013
Eaagad's ltd	-0.069	0.000	0.000	0.000	0.000	0.000	0.000	0.291
George Williams Kenya ltd	0.130	0.115	0.110	0.013	-0.085	-0.086	0.016	0.015
Kakuzi	0.173	0.008	-0.077	0.000	0.192	0.014	0.034	-0.067
Kapchorua Tea Co. ltd	0.157	0.000	0.000	0.000	0.000	0.160	0.000	0.000
Limuru Tea	0.007	-0.007	0.007	0.000	0.000	-0.008	0.000	0.015
Oi Pejeta Ranching	0.055	-0.009	0.000	-0.035	0.000	0.000	0.000	0.000
Rea Vipingo	-0.006	-0.125	0.000	0.007	-0.007	-0.114	0.048	0.000
Sasini Tea & Coffee	0.263	-0.258	-0.208	0.106	-0.038	0.000	0.000	0.040
Theta Group ltd	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000
A. Baumann & Co. ltd	0.000	0.029	0.000	0.016	-0.046	0.000	0.000	0.000
Car & General (K) ltd	0.000	0.000	0.000	0.000	-1.000			
C.M.C Holdings	-0.017	-0.347	0.000	-0.077	-0.083	0.091	0.000	0.000
Express Kenya ltd	-0.546	-0.102	-0.182	-0.056	0.037	0.000	0.021	0.000
Hutchings Blomer ltd	0.019	-0.073	-0.147	-0.172	-0.167	0.000	0.000	0.000
Marshalls (E.A) ltd	0.000	-0.426	0.000	0.000	0.000	0.000	0.000	0.000
Kenya Airways ltd	-0.056	0.000	-0.018	0.000	0.030	-0.106	-0.276	-0.082
Lonrho Motors (EA) ltd	0.096	-0.088	-0.041	0.000	0.007	0.170	-1.152	0.021
Nation Printers & Publishers	-0.054	-0.113	0.014	-0.217	-0.018	-0.009	-0.009	-0.037
Pearl Dry Cleaners ltd	0.023	0.081	0.408	-0.599	0.398	0.034	0.025	0.016
Uchumi Supermarket ltd	0.000	0.000	0.000	0.000	0.025	-0.024	0.000	0.000
Standard Newspapers Group	0.047	-0.111	0.000	0.169	-0.016	-0.103	0.036	-0.018
Tourism Promotion Services ltd	-0.111	0.250	-0.467	-0.203	0.392	-0.437	-0.013	-0.392
Barclays Bank ltd	0.031	-0.176	0.029	-0.007	-0.065	0.004	0.004	-0.122
City Trust ltd	0.114	-0.248	-0.058	0.178	-0.038	-0.039	0.020	-0.020
Credit Finance Corporation	0.022	0.000	0.000	-0.064	-0.061	-0.187	0.020	-0.020
Diamond Trust Of Kenya ltd	-0.012	-0.048	-0.213	0.167	-0.026	-0.062	0.000	-0.031
Housing Finance Co. ltd	0.045	0.000	-0.098	0.060	0.000	-0.093	0.003	0.013
I.C.D.C. Investment Co. ltd	-0.045	0.071	-0.156	0.105	-0.233	0.056	-0.118	-0.067
Jubilee Insurance Co. ltd	-0.104	-0.169	0.007	0.007	0.083	-0.025	-0.059	-0.056
Kenya Commercial Bank ltd	0.075	0.047	-0.022	-0.091	-0.238	0.016	-0.032	0.000
National Bank Of Kenya	-0.018	-0.160	0.029	-0.029	0.029	0.007	-0.021	-0.101
National Industrial Credit ltd	0.012	-0.166	-0.043	0.035	0.105	-0.130	-0.104	-0.028
Pan Africa Insurance co. ltd	0.030	0.000	-0.340	0.250	-0.035	0.024	-0.214	0.000
Regent U. A.A. Fund	-0.028	-0.029	-0.088	-0.032	0.000	0.000	-0.033	-0.052
Standard Chartered Bank	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Athi River Mining ltd	-0.147	0.068	-0.098	0.103	-0.029	-0.042	0.000	-0.013
B.A.T. Kenya ltd	-0.005	0.000	-0.342	0.200	0.200	-0.222	-0.093	0.000
Bamburi Portland Cement Co. ltd	-0.047	-0.109	-0.022	0.023	0.000	-0.011	0.079	0.063
BOC (K) Formaly E.A.O	-0.138	0.159	-0.169	0.053	0.000	-0.171	0.017	-0.051
Carbacid Investments ltd	0.045	0.000	-0.014	-0.029	0.015	0.045	-0.029	0.029
Crown Berge ltd	-0.068	-0.101	-0.032	0.067	0.125	-0.097	0.031	-0.030
Dunlop Kenya ltd	0.082	-0.223	-0.024	-0.050	0.000	0.000	-0.026	0.081
E.A Cables	-0.020	-0.030	-0.021	-0.111	0.822	-0.818	-0.071	-0.221
E.A Packaging ltd	-0.033	-0.224	0.067	0.000	-0.073	-0.101	-0.025	0.013
E.A Portland Cement ltd	-0.209	-0.104	0.031	-0.158	-0.286	0.000	-0.025	0.026
Firestone E.A. ltd	-0.193	-0.050	-0.130	-0.200	0.150	-0.130	0.000	-0.050
Kenya Breweries ltd	0.198	-0.439	-0.113	0.012	-0.029	0.059	-0.056	-0.056
Kenya Orchards	0.000	0.000	-0.044	0.000	0.087	0.075	-0.035	-0.036
K.Power & Lighting	0.000	0.000	0.000	0.000	-0.021	0.066	-0.042	0.000
Kenya National mills	0.075	-0.100	-0.056	0.065	0.050	0.026	0.010	-0.066
Kenol	-0.049	0.409	0.000	0.032	-0.641	-0.130	-0.003	-0.033
Total Kenya ltd	0.125	-0.007	-0.179	-0.073	0.118	0.000	0.018	0.009
Unga Group ltd	-0.063	-0.167	-0.130	-0.057	0.024	0.000	-0.024	-0.098
Market Return	-0.004	-0.056	-0.053	-0.011	-0.005	-0.042	-0.019	-0.021

Oct-98	Nov-98	Dec-98	Mean Return	STDEV	VAR
-0.054	-0.093	0.110	0.009	0.066	0.004393
-0.099	0.000	0.000	0.011	0.099	0.009775
0.000	0.030	0.037	0.027	0.072	0.00517
-0.036	0.015	0.029	0.026	0.086	0.007332
0.000	0.011	0.000	0.030	0.064	0.004077
0.000	-0.013	0.000	0.000	0.008	5.85E-05
0.000	0.000	0.000	0.001	0.021	0.000433
-0.077	0.000	0.000	-0.025	0.055	0.003026
-0.038	-0.067	0.000	-0.018	0.140	0.019587
0.000	0.000	0.000	0.002	0.006	3.64E-05
0.097	0.090	-0.012	0.008	0.035	0.001208
			-0.200	0.447	0.2
0.000	0.029	-0.028	-0.039	0.112	0.012629
-0.014	-0.007	0.021	-0.075	0.169	0.028527
0.042	-0.048	-0.034	-0.053	0.077	0.005932
0.000	0.000	0.000	-0.039	0.128	0.016462
-0.010	0.010	-0.010	-0.047	0.086	0.007459
0.021	0.000	0.116	0.014	0.091	0.008288
-0.096	-0.043	-0.022	-0.055	0.066	0.004318
-0.024	0.025	0.096	0.044	0.261	0.068188
0.000	0.000	0.000	0.000	0.011	0.000122
0.024	-0.128	0.173	0.007	0.101	0.010202
0.304	0.150	0.194	-0.030	0.312	0.097533
0.004	0.013	0.239	-0.004	0.104	0.01092
0.010	0.040	0.262	0.020	0.134	0.017918
0.020	0.029	0.000	-0.022	0.063	0.004009
-0.032	0.000	0.007	-0.023	0.087	0.007622
-0.012	0.013	0.086	0.001	0.056	0.003186
0.000	0.018	0.126	-0.022	0.114	0.012926
-0.029	-0.008	0.282	-0.006	0.116	0.013366
0.000	-0.067	0.071	-0.022	0.089	0.007856
-0.048	-0.042	0.088	-0.024	0.067	0.004495
-0.086	-0.175	0.303	-0.025	0.139	0.01932
-0.015	-0.100	0.282	-0.011	0.178	0.031514
-0.127	0.042	0.000	-0.032	0.046	0.002116
0.000	0.000	0.000	0.000	0.000	0
-0.025	0.039	0.263	0.011	0.109	0.011907
-0.016	-0.040	0.100	-0.020	0.162	0.026259
0.078	0.000	0.391	0.040	0.129	0.016637
0.000	-0.071	1.423	0.096	0.451	0.20374
0.007	0.007	0.007	0.006	0.026	0.000657
-0.031	-0.159	0.179	-0.011	0.102	0.01043
-0.230	0.104	-0.053	-0.031	0.111	0.0123
-0.099	-0.014	0.111	-0.043	0.376	0.141601
-0.013	-0.028	0.055	-0.033	0.080	0.006421
-0.175	-0.030	-0.028	-0.067	0.106	0.011209
-0.047	-0.019	-0.011	-0.062	0.100	0.009935
-0.050	-0.010	0.066	-0.036	0.157	0.024645
-0.127	0.114	0.301	0.030	0.113	0.012733
-0.742	0.000	0.000	-0.067	0.225	0.050782
0.049	-0.430	0.136	-0.022	0.152	0.023126
-0.054	-0.255	0.250	-0.043	0.266	0.070932
-0.034	-0.027	0.000	-0.005	0.083	0.006891
-0.020	-0.048	0.420	-0.015	0.155	0.023957
-0.034	-0.023	0.114	-0.016	0.046	0.002

COMPANIES RETURNS IN THE YEAR 1999

LISTED COMPANIES	Feb-99	Mar-99	Apr-99	May-99	Jun-99	Jul-99	Aug-99	Sep-99
Brooke Bond	0.000	0.007	0.014	0.014	0.007	0.000	-0.223	-0.130
Eaagad's ltd	0.006	0.000	0.000	0.000	9.704	-0.906	-0.459	0.130
George Williams Kenya ltd	-0.021	0.000	0.007	0.007	0.007	-0.021	-0.179	0.000
Kakuzi	0.028	-0.172	-0.017	-0.017	0.043	0.000	0.000	-0.174
Kapchorua Tea Co. ltd	0.147	0.000	0.080	0.111	0.000	0.000	0.000	0.000
Limuru Tea	0.000	0.000	0.000	0.000	-0.133	0.000	0.000	0.000
Oi Pejeta Ranching	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Rea Vipingo	-0.048	-0.050	0.000	0.000	0.053	-0.100	0.065	-0.200
Sasini Tea & Coffee	-0.143	-0.033	-0.034	-0.071	0.038	0.000	0.065	-0.035
Theta Group ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
A. Baumann & Co. ltd	0.000	0.000	-0.052	-0.092	-0.051	0.071	-0.067	0.039
Car & General (K) ltd	0.042	0.016	0.000	-0.016	-0.200	0.000	0.000	0.000
C.M.C Holdings	-0.016	-0.067	0.000	0.000	0.009	0.062	0.008	-0.008
Express Kenya ltd	0.026	-0.125	-0.229	-0.056	-0.020	0.000	-0.080	-0.189
Hutchings Blerner ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Marshalls (E.A) ltd	0.000	0.000	-0.038	-0.030	0.000	0.000	0.031	0.000
Kenya Airways ltd	0.007	0.053	0.000	0.013	0.025	-0.187	-0.111	0.100
Lonrho Motors (EA) ltd	0.150	-0.304	0.031	0.014	0.006	0.000	-0.118	0.000
Nation Printers & Publishers	0.029	-0.036	-0.022	-0.038	0.016	-0.070	-0.083	-0.018
Pearl Dry Cleaners ltd	0.000	0.000	0.000	-0.025	0.000	0.000	-0.692	0.000
Uchumi Supermarket ltd	0.067	0.042	0.000	-0.040	0.000	0.052	0.020	-0.097
Standard Newspapers Group	0.000	-0.364	0.069	0.059	-0.256	-0.104	0.000	0.338
Tourism Promotion Services ltd	-0.038	0.040	0.000	0.046	0.000	0.029	0.032	-0.232
Barclays Bank ltd	-0.033	-0.076	-0.018	0.000	0.037	0.054	-0.153	0.000
City Trust ltd	0.000	-0.028	-0.077	-0.063	0.000	0.044	-0.021	-0.076
Credit Finance Corporation	-0.085	-0.180	0.000	-0.063	0.068	0.000	0.000	0.003
Diamond Trust Of Kenya ltd	0.040	-0.029	-0.010	-0.040	-0.021	0.032	-0.175	0.150
Housing Finance Co. ltd	-0.067	0.007	-0.007	-0.057	-0.053	0.200	-0.200	-0.204
I.C.D.C. Investment Co. ltd	0.030	0.040	0.000	0.067	0.000	0.052	-0.010	0.000
Jubilee Insurance Co. ltd	0.000	0.000	-0.061	-0.008	-0.073	0.053	-0.092	-0.009
Kenya Commercial Bank ltd	-0.064	-0.162	-0.081	-0.043	0.045	-0.016	-0.138	-0.013
National Bank Of Kenya	-0.056	-0.099	-0.051	-0.077	0.000	-0.075	-0.081	-0.020
National Industrial Credit ltd	-0.279	0.068	0.021	0.000	-0.172	-0.108	0.047	0.027
Pan Africa Insurance co. ltd	0.031	0.010	0.465	-0.054	0.029	0.000	0.111	-0.100
Regent U. A.A. Fund	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Standard Chartered Bank	0.016	-0.021	0.000	0.000	0.087	0.080	0.019	0.009
Athi River Mining ltd	0.000	-0.167	0.000	0.100	0.000	0.100	-0.083	0.081
B.A.T. Kenya ltd	-0.022	-0.046	0.024	0.129	-0.104	-0.116	0.053	0.044
Bamburi Portland Cement Co. ltd	0.000	-0.032	-0.067	-0.107	0.050	0.114	0.026	-0.125
BOC (K) Formaly E.A.O	0.038	0.036	0.000	0.000	0.007	-0.021	0.000	0.000
Carbacid Investments ltd	0.000	0.029	-0.014	0.000	-0.028	0.043	-0.111	-0.063
Crown Berge ltd	0.051	0.189	0.012	0.012	-0.006	0.040	0.456	0.015
Dunlop Kenya ltd	-0.060	-0.234	-0.056	-0.071	-0.051	0.000	-0.067	0.000
E.A Cables	-0.033	-0.142	-0.005	0.000	0.000	0.047	0.000	-0.060
E.A Packaging ltd	-0.016	0.070	-0.050	-0.053	0.056	-0.279	0.022	-0.286
E.A Portland Cement ltd	-0.036	-0.012	-0.200	-0.094	-0.034	0.000	0.004	-0.217
Firestone E.A. ltd	-0.003	-0.109	0.063	0.006	-0.035	0.000	-0.161	0.014
Kenya Breweries ltd	0.040	0.069	0.057	0.068	-0.013	0.019	0.044	0.000
Kenya Orchards	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K.Power & Lighting	0.000	-0.094	-0.017	-0.018	0.009	-0.027	-0.091	-0.040
Kenya National mills	-0.039	-0.191	0.000	0.000	0.000	0.000	-0.461	0.325
Kenol	0.077	0.071	0.133	0.118	-0.204	0.157	-0.086	-0.102
Total Kenya ltd	-0.026	-0.171	0.000	0.000	0.033	0.053	0.040	-0.115
Unga Group ltd	-0.067	-0.185	-0.066	-0.125	0.152	-0.279	-0.075	-0.116
Market Return	-0.006	-0.044	-0.003	-0.009	0.167	-0.019	-0.055	-0.025

Oct-99	Nov-99	Dec-99	Mean Returns	STDEV	VAR
0.020	0.020	0.000	-0.025	0.078	0.006126
0.000	0.000	0.000	0.771	2.978	8.868817
-0.043	-0.164	0.011	-0.036	0.069	0.004748
0.000	-0.095	-0.039	-0.040	0.075	0.005585
0.000	0.000	0.000	0.031	0.055	0.002991
0.000	0.000	0.000	-0.012	0.040	0.001616
0.000	0.000	-1.000	-0.091	0.302	0.090909
0.022	0.021	0.000	-0.022	0.076	0.005755
-0.063	-0.173	0.047	-0.037	0.075	0.005601
0.000	0.000	0.000	0.000	0.000	0
0.031	0.000	-0.020	-0.013	0.050	0.002451
0.000	0.000	0.000	-0.014	0.063	0.003997
0.000	0.000	0.000	-0.001	0.030	0.000875
-0.013	-0.022	0.056	-0.059	0.089	0.007928
0.000	0.000	0.000	0.000	0.000	0
0.000	0.000	-0.060	-0.009	0.025	0.000607
0.000	0.000	0.189	0.008	0.098	0.009597
-0.100	-0.015	0.000	-0.030	0.115	0.013116
-0.019	-0.028	-0.029	-0.027	0.032	0.001039
0.000	0.000	0.000	-0.065	0.208	0.043314
-0.156	-0.019	0.039	-0.008	0.088	0.004572
-0.377	0.120	-0.121	-0.058	0.216	0.046512
0.441	0.013	-0.009	0.029	0.157	0.024654
0.010	0.020	0.000	-0.014	0.057	0.003283
0.000	0.035	-0.034	-0.020	0.041	0.001687
-0.037	-0.034	0.018	-0.028	0.065	0.004239
0.000	0.054	0.072	0.007	0.082	0.006847
0.047	-0.025	0.082	-0.025	0.116	0.013492
0.000	0.000	0.000	0.016	0.028	0.000886
-0.065	0.030	-0.010	-0.021	0.045	0.002051
-0.117	0.059	-0.125	-0.058	0.073	0.005366
0.000	0.000	0.000	-0.042	0.039	0.001488
0.009	-0.086	0.019	-0.041	0.108	0.011878
0.389	-0.460	0.000	0.038	0.243	0.059043
0.000	0.000	0.000	0.000	0.000	0
0.059	-0.065	0.027	0.019	0.044	0.001949
-0.150	0.088	0.036	0.001	0.096	0.009276
-0.078	-0.026	0.033	-0.010	0.075	0.005576
-0.010	0.000	0.000	-0.014	0.068	0.004684
-0.029	-0.015	-0.037	-0.002	0.024	0.000564
0.083	0.000	0.031	-0.003	0.053	0.002776
0.008	-0.254	0.000	0.048	0.170	0.028758
-0.071	-0.385	0.250	-0.068	0.155	0.023873
0.000	-0.305	0.000	-0.045	0.099	0.009745
0.000	0.030	0.000	-0.046	0.123	0.015098
-0.223	0.287		-0.053	0.150	0.022511
-0.004	0.021	0.119	-0.008	0.075	0.005689
-0.133	-0.028	0.000	0.011	0.058	0.003355
0.000	0.000	0.000	0.000	0.000	0
-0.167	0.038	0.151	-0.023	0.081	0.006597
-0.160	0.195	-0.054	-0.035	0.202	0.040864
0.000	0.217	-0.043	0.031	0.129	0.016516
0.043	0.000	0.005	-0.013	0.070	0.00489
-0.276	0.891	0.000	-0.013	0.324	0.104667
-0.021	-0.001	-0.007	-0.002	0.059	0.003446

COMPANIES RETURNS IN THE YEAR 2000

LISTED COMPANIES	Feb-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00	Sep-00
Brooke Bond	0.000	-0.154	0.114	-0.224	-0.026	0.000	-0.007	0.116
Eaagad's ltd	-0.038	0.000	0.000	0.000	0.000	-0.020	0.000	0.000
George Williams Kenya ltd	-0.065	0.000	0.034	-0.144	-0.026	-0.047	-0.175	0.203
Kakuzi	-0.205	-0.097	-0.043	0.000	-0.007	-0.053	0.000	-0.159
Kapchorua Tea Co. ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Limuru Tea	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Rea Vipingo	-0.106	-0.036	0.000	0.000	-0.049	-0.065	0.028	0.000
Sasini Tea & Coffee	-0.200	-0.026	-0.116	0.177	-0.041	-0.029	0.000	0.022
Theta Group ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
A. Baumann & Co. ltd	0.000	-0.027	-0.021	0.000	0.000	-0.071	-0.077	-0.017
Car & General (K) ltd	0.000	0.000	0.000	0.025	-0.020	0.891	0.000	0.000
C.M.C Holdings	0.000	-0.167	-0.210	-0.099	-0.056	-0.003	-0.021	-0.024
Express Kenya ltd	0.013	0.016	-0.015	-0.016	0.000	-0.003	-0.105	-0.015
Hutchings Blomer ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Marshalls (E.A) ltd	0.000	0.000	0.000	0.000	-0.179	0.000	0.000	0.000
Kenya Airways ltd	-0.053	0.056	-0.027	0.110	-0.012	-0.125	0.171	0.061
Lonrho Motors (EA) ltd	0.000	0.000	0.000	0.000	0.000	-0.030	-1.000	
Nation Printers & Publishers	-0.027	-0.033	0.029	-0.178	0.014	0.000	-0.080	-0.007
Pearl Dry Cleaners ltd	0.000	0.000	0.000	0.000	0.000	-0.200	0.000	-0.146
Uchumi Supermarket ltd	0.088	0.000	0.000	-0.029	0.012	-0.029	0.080	0.028
Standard Newspapers Group	-0.023	0.000	0.000	-0.167	-0.303	0.033	-0.008	0.184
Tourism Promotion Services ltd	0.000	0.111	-0.053	-0.047	-0.015	0.003	0.069	-0.041
Barclays Bank ltd	0.139	-0.217	0.000	-0.033	-0.011	-0.047	0.061	0.017
City Trust ltd	0.023	0.000	0.000	-0.091	0.000	0.000	0.000	0.000
Credit Finance Corporation	-0.004	0.082	0.056	-0.147	-0.282	0.071	0.038	-0.083
Diamond Trust Of Kenya ltd	0.120	-0.045	-0.187	-0.023	-0.059	-0.003	-0.098	-0.167
Housing Finance Co. ltd	-0.223	0.105	-0.048	-0.111	-0.119	-0.007	-0.107	0.248
I.C.D.C. Investment Co. ltd	-0.100	-0.100	0.148	0.011	0.053	-0.086	0.105	0.000
Jubilee Insurance Co. ltd	0.039	0.000	-0.038	-0.167	0.035	0.000	-0.105	-0.086
Kenya Commercial Bank ltd	-0.100	-0.206	0.000	0.100	0.018	-0.152	0.053	0.080
National Bank Of Kenya	-0.200	-0.113	0.127	-0.013	-0.089	0.111	0.013	0.012
National Industrial Credit ltd	0.020	0.038	-0.056	0.088	-0.243	0.190	0.040	-0.058
Pan Africa Insurance co. ltd	-0.176	0.000	0.000	0.000	-0.048	-0.028	-0.023	-0.066
Standard Chartered Bank	0.325	-0.305	-0.038	-0.069	0.021	0.063	0.059	0.019
Athi River Mining ltd	0.011	0.313	0.016	-0.063	-0.242	-0.011	0.022	-0.022
B.A.T. Kenya ltd	0.288	-0.319	-0.031	-0.016	-0.066	0.053	0.075	0.085
Bamburi Portland Cement Co. ltd	-0.010	0.058	-0.036	0.075	0.026	0.094	-0.008	0.016
BOC (K) Formaly E.A.O	0.000	0.016	-0.031	-0.198	-0.064	0.021	-0.150	0.049
Carbacid Investments ltd	0.045	0.000	-0.014	-0.181	-0.115	-0.020	-0.020	0.042
Crown Berge ltd	-0.035	0.078	0.139	0.080	-0.023	-0.116	0.032	-0.066
Dunlop Kenya ltd	-0.123	-0.064	-0.125	0.214	-0.118	0.000	0.000	0.000
E.A Cables	-0.075	-0.191	0.005	-0.005	-0.158	-0.250	0.130	0.406
E.A Packaging ltd	0.123	0.036	-0.059	0.079	0.015	0.068	0.028	0.000
E.A Portland Cement ltd	0.013	-0.126	0.149	-0.039	0.117	0.020	-0.012	0.000
Firestone E.A. ltd	-0.194	-0.023	-0.008	-0.080	0.126	-0.073	-0.079	0.086
Kenya Breweries ltd	0.053	0.000	-0.014	-0.036	-0.015	0.038	0.118	0.039
Kenya Orchards	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K.Power & Lighting	-0.021	-0.038	-0.114	-0.359	0.030	-0.019	-0.079	-0.054
Kenya National mills	-0.037	0.845	-0.036	-0.286	-0.087	-0.190	-0.059	0.163
Kenol	0.129	-0.038	0.066	-0.056	0.072	-0.024	-0.025	0.038
Total Kenya ltd	0.327	-0.250	0.005	0.000	0.041	0.078	0.027	0.000
Unga Group ltd	0.000	0.331	0.061	0.057	-0.445	-0.058	-0.069	0.107
Market Return	-0.005	-0.009	-0.007	-0.036	-0.045	0.000	-0.022	0.020

Oct-00	Nov-00	Dec-00	Mean Returns	STDEV	VAR
0.122	0.054	0.000	-0.001	0.109	0.011891
-0.184	0.025	0.000	-0.020	0.057	0.003195
0.282	-0.005	0.072	0.012	0.138	0.018401
-0.038	0.078	0.000	-0.048	0.080	0.006402
0.000	0.000	0.000	0.000	0.000	0
0.000	0.000	0.000	0.000	0.000	0
0.014	0.000	-0.173	-0.035	0.060	0.003653
-0.022	0.029	-0.029	-0.021	0.093	0.008573
0.000	0.000	0.000	0.000	0.000	0
-0.195	0.000	0.000	-0.037	0.059	0.003533
-0.474	0.000	0.000	0.038	0.317	0.100224
0.000	-0.019	-0.029	-0.057	0.072	0.005123
0.075	-0.006	0.000	-0.005	0.042	0.001751
0.000	0.000	0.000	0.000	0.000	0
-0.076	0.000	0.000	-0.020	0.054	0.002906
0.029	-0.028	0.034	0.020	0.081	0.006617
0.000	0.000	0.000	-0.103	0.315	0.099422
0.022	-0.014	0.000	-0.025	0.059	0.003467
0.000	0.000	0.000	-0.031	0.071	0.005039
0.105	-0.070	0.054	0.020	0.053	0.002837
-0.027	0.042	-0.047	-0.029	0.123	0.01506
0.006	0.006	-0.048	-0.001	0.051	0.002848
0.090	-0.166	-0.062	-0.021	0.104	0.010863
0.163	0.000	0.000	0.009	0.059	0.003439
0.000	-0.025	0.031	-0.024	0.109	0.011976
0.067	-0.094	-0.034	-0.047	0.091	0.008232
-0.103	-0.114	-0.113	-0.054	0.129	0.016702
0.000	0.020	-0.088	-0.003	0.084	0.007134
0.056	0.000	-0.026	-0.026	0.068	0.004642
0.000	0.037	-0.089	-0.024	0.099	0.009834
0.220	-0.210	-0.203	-0.031	0.146	0.021194
-0.061	-0.130	-0.113	-0.026	0.118	0.01392
0.000	-0.099	-0.313	-0.068	0.097	0.009505
0.000	-0.100	0.000	-0.002	0.149	0.02225
0.000	-0.033	-0.080	-0.008	0.130	0.016827
0.014	-0.056	-0.097	-0.006	0.148	0.021815
0.054	-0.022	0.015	0.024	0.042	0.001766
0.023	0.011	0.062	-0.024	0.083	0.006836
0.180	-0.212	-0.140	-0.040	0.114	0.013035
-0.202	0.008	0.053	-0.005	0.098	0.009576
-0.067	-0.086	0.000	-0.033	0.097	0.009414
0.000	-0.175	0.156	-0.012	0.192	0.037033
-0.014	-0.552	0.172	-0.009	0.191	0.036569
0.040	-0.021	-0.004	0.005	0.075	0.005588
0.042	-0.040	-0.042	-0.028	0.088	0.007715
0.013	0.013	-0.080	0.012	0.052	0.002665
0.000	0.000	0.000	0.000	0.000	0
-0.068	0.091	-0.106	-0.067	0.114	0.012897
-0.183	-0.072	-0.007	0.005	0.302	0.091103
-0.025	-0.013	-0.064	0.005	0.061	0.00378
-0.009	0.018	-0.035	0.018	0.133	0.017563
-0.013	-0.017	-0.041	-0.008	0.183	0.033551
-0.004	-0.037	-0.027	-0.016	0.019	0.000378

COMPANIES RETURNS IN THE YEAR 2001

LISTED COMPANIES	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul-01	Aug-01
Brooke Bond	0.061	0.000	-0.067	0.021	0.020	0.000	-0.035
Kakuzi	-0.077	-0.063	-0.111	0.019	-0.018	-0.100	-0.056
Rea Vipingo	-0.313	0.200	0.000	-0.227	0.059	0.111	-0.050
Sasini Tea & Coffee	0.046	-0.029	-0.091	-0.033	-0.078	0.000	-0.065
Car & General (K) ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
African Lakes	0.014	-0.114	0.032	-0.055	0.000	-0.008	0.000
C.M.C Holdings	0.000	-0.142	-0.149	-0.120	0.000	0.062	0.070
Hutchings Biemer ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Kenya Airways ltd	0.006	-0.170	0.020	0.091	0.048	0.006	-0.107
Marshallis (E.A) ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nation Media Group	0.014	-0.155	-0.050	-0.211	0.056	0.042	-0.020
Tourism Promotion Services ltd	0.034	0.027	0.003	0.006	-0.035	-0.003	-0.030
Uchumi Supermarket ltd	-0.010	-0.079	-0.054	-0.023	0.056	-0.033	-0.091
Barclays Bank ltd	0.097	0.006	-0.107	0.021	0.131	-0.012	-0.062
C F C Bank	0.061	0.005	-0.063	-0.056	-0.006	0.005	0.000
Diamond Trust Bank	0.064	-0.075	0.000	-0.100	-0.017	-0.043	0.000
Housing Finance Co ltd	-0.026	-0.061	-0.065	0.000	0.000	0.000	-0.200
I.C.D.C Investments Co ltd	-0.010	0.039	-0.103	-0.135	0.133	-0.117	-0.036
Jubilee Insurance Co. ltd	-0.054	-0.034	-0.050	-0.062	0.003	-0.007	-0.020
Kenya Commercial Bank ltd	0.205	0.020	0.020	-0.269	0.003	0.089	-0.195
National Bank Of Kenya ltd	-0.120	0.061	-0.143	-0.117	0.132	0.017	-0.082
N I C Bank	-0.099	-0.156	-0.019	-0.073	0.089	0.049	-0.138
Pan Africa Insurance Ltd	0.000	-0.104	-0.023	0.124	0.059	0.076	0.004
Standard Chartered Bank	0.208	-0.203	0.103	0.020	0.096	-0.035	-0.159
Lonrho Motors (EA) ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Athi River Mining	0.000	0.125	0.000	-0.111	0.125	-0.111	0.000
B O C Kenya	-0.021	-0.087	-0.048	-0.238	0.016	-0.032	0.017
Bamburi Cement ltd	-0.107	-0.104	0.000	0.000	0.036	-0.034	-0.116
B.A.T Kenya	-0.054	-0.057	-0.034	-0.018	-0.009	0.009	-0.136
Carbacid Investments ltd	-0.111	0.013	-0.105	0.021	0.243	0.000	-0.239
Crown Berge ltd	-0.058	-0.072	-0.042	0.038	-0.283	0.092	-0.069
Dunlop Kenya ltd	-0.130	0.000	0.000	0.120	-0.107	0.060	-0.057
E.A Cables	0.173	-0.143	0.041	-0.068	0.047	0.010	0.015
E.A Portland Cement ltd	-0.013	0.056	0.004	-0.061	-0.043	-0.091	-0.100
East African Breweries ltd	0.033	0.025	-0.037	-0.026	0.039	0.032	-0.025
Firestone E.A. ltd	-0.170	-0.036	-0.113	-0.014	0.000	0.036	-0.021
Kenya Oil Co	0.098	0.033	-0.312	0.203	-0.045	-0.048	0.000
K.Power & Lighting	0.304	-0.219	-0.116	-0.228	0.045	-0.077	-0.185
Total Kenya ltd	-0.184	0.061	-0.266	-0.118	-0.033	-0.093	-0.071
Unga Group ltd	-0.269	0.140	-0.077	-0.111	-0.031	-0.067	-0.150
Kenya National mills	-0.100	0.111	-0.143	-0.167	-0.100	-0.111	-0.075
A. Baumann & Co. ltd	-0.109	-0.109	-0.007	0.000	0.232	0.000	0.000
City Trust ltd	0.000	-0.016	-0.096	-0.053	0.000	0.013	0.000
E.A Packaging ltd	0.000	0.000	-0.022	0.000	-0.068	0.012	0.024
Eaagad's ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Express Kenya ltd	-0.071	0.000	0.000	-0.038	0.000	-0.100	-0.404
Williamson Tea Kenya ltd	0.010	0.020	0.000	0.060	-0.009	-0.029	-0.020
Kapchorua Tea Co. ltd	0.000	-0.067	0.000	0.000	0.000	0.036	-0.014
Kenya Orchards	0.000	0.000	0.000	0.000	0.000	0.000	0.060
Limuru Tea	0.000	0.000	0.000	0.000	-0.015	0.000	0.000
Standard Newspapers Group	-0.014	0.000	0.000	0.550	-0.263	-0.044	0.007
Market Return	-0.013	-0.026	-0.045	-0.028	0.010	-0.009	-0.056

Sep-01	Oct-01	Nov-01	Dec-01	Mean Return	STDEV	VAR
-0.092	0.034	-0.016	-0.200	-0.025	0.073	0.005339
0.000	0.088	0.000	-0.027	-0.031	0.058	0.003367
0.018	0.052	0.018	-0.065	-0.018	0.145	0.021144
-0.218	-0.028	-0.073	-0.102	-0.061	0.067	0.004525
0.000	0.000	0.000	0.000	0.000	0.000	0
-0.042	-0.028	0.000	-0.054	-0.023	0.041	0.001689
-0.190	0.031	0.120	-0.037	-0.032	0.103	0.010685
0.000	0.000	0.000	0.000	0.000	0.000	0
-0.185	0.053	0.094	-0.039	-0.015	0.094	0.008923
0.000	0.000	0.000	0.000	0.000	0.000	0
-0.155	0.232	-0.168	0.030	-0.035	0.130	0.018962
-0.081	0.088	0.031	0.030	0.008	0.045	0.001998
-0.081	-0.068	-0.044	-0.038	-0.042	0.042	0.001767
-0.066	0.042	0.020	-0.040	0.003	0.071	0.005051
-0.053	0.056	0.029	0.029	0.001	0.043	0.001843
-0.045	-0.143	0.000	0.000	-0.033	0.057	0.003266
0.000	0.038	-0.157	0.143	-0.030	0.092	0.008523
0.006	-0.006	-0.050	0.013	-0.024	0.077	0.005937
0.003	0.020	0.023	0.006	-0.016	0.031	0.000932
-0.087	0.285	-0.222	0.072	-0.007	0.174	0.030408
-0.089	0.392	-0.099	-0.094	-0.013	0.160	0.025498
-0.185	0.387	-0.019	-0.020	-0.017	0.158	0.025048
0.015	-0.022	-0.022	0.000	0.010	0.060	0.003621
0.022	0.048	0.040	-0.087	0.005	0.120	0.014292
0.000	0.000	0.000	0.000	0.000	0.000	0
-0.150	0.191	-0.025	0.013	0.005	0.107	0.011547
-0.016	-0.067	0.071	0.000	-0.037	0.080	0.006324
-0.071	0.000	-0.230	-0.059	-0.062	0.076	0.005701
-0.005	0.037	0.041	-0.039	-0.024	0.050	0.002458
0.000	0.000	0.079	-0.086	-0.017	0.123	0.015072
-0.058	0.167	-0.015	-0.084	-0.035	0.114	0.013017
-0.050	0.105	-0.048	0.000	-0.010	0.080	0.006451
-0.044	0.000	-0.020	-0.042	-0.003	0.080	0.006352
-0.189	0.096	0.700	-0.066	0.027	0.236	0.055871
0.038	-0.006	-0.061	-0.039	-0.002	0.037	0.001353
-0.099	0.172	-0.067	0.000	-0.028	0.089	0.007967
-0.021	0.051	0.014	0.014	-0.001	0.125	0.015689
0.102	-0.134	-0.050	-0.045	-0.055	0.157	0.024799
-0.240	0.185	-0.024	-0.050	-0.074	0.132	0.017423
-0.261	0.955	-0.186	-0.029	-0.011	0.340	0.115652
-0.183	0.850	0.081	0.117	0.025	0.295	0.087015
0.000	-0.012	-0.006	-0.036	-0.004	0.089	0.007875
-0.074	0.267	0.011	0.000	0.005	0.094	0.008899
0.012	-0.070	0.000	0.000	-0.010	0.031	0.000974
0.000	0.000	-0.029	-0.045	-0.007	0.015	0.00024
0.000	-0.030	0.000	0.077	-0.052	0.126	0.015771
-0.050	0.011	-0.198	-0.143	-0.032	0.075	0.005665
-0.021	0.000	-0.021	0.000	-0.008	0.025	0.000612
0.000	0.000	0.000	0.000	0.005	0.018	0.000327
-0.375	0.000	0.000	-0.015	-0.037	0.112	0.012615
-0.286	0.327	-0.041	0.000	0.021	0.236	0.0559
-0.069	0.091	-0.010	-0.020	-0.016	0.042	0.001775

COMPANIES RETURNS IN THE YEAR 2002

LISTED COMPANIES	Feb-02	Mar-02	Apr-02	May-02	Jun-02	Jul-02	Aug-02
Brooke Bond	0.008	0.000	-0.088	-0.009	0.000	-0.027	-0.018
Kakuzi	0.000	-0.167	0.000	-0.033	-0.034	-0.116	-0.352
Rea Vipingo	0.017	-0.033	0.000	-0.052	0.091	0.000	-0.133
Sasini Tea & Coffee	-0.075	0.010	0.000	-0.117	0.132	-0.100	0.019
Car & General (K) Ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
African Lakes	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C.M.C Holdings	-0.056	-0.059	0.250	0.500	-0.213	-0.089	0.135
Hutchings Biemer Ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Kenya Airways Ltd	-0.058	-0.007	-0.007	0.028	-0.040	0.035	-0.108
Marshalls (E.A) Ltd	0.000	0.000	0.000	0.000	0.000	0.000	-0.727
Nation Media Group	0.057	0.344	-0.024	-0.344	-0.006	-0.019	0.077
Tourism Promotion Services Ltd	-0.006	-0.006	0.006	-0.029	-0.042	0.006	0.028
Uchumi Supermarket Ltd	-0.118	-0.232	-0.165	-0.064	-0.012	-0.096	-0.003
Barclays Bank Ltd	-0.006	-0.129	0.014	0.100	0.030	0.047	-0.056
C F C Bank	-0.016	0.000	-0.022	0.006	0.017	0.000	0.000
Diamond Trust Bank	-0.078	-0.072	-0.026	0.147	0.047	0.000	0.000
Housing Finance Co ltd	-0.125	-0.114	-0.016	0.066	0.138	-0.081	0.088
I.C.D.C Investments Co ltd	-0.072	-0.336	-0.047	-0.012	-0.050	0.000	-0.028
Jubilee Insurance Co. ltd	-0.061	-0.016	-0.010	0.026	0.013	-0.013	0.029
Kenya Commercial Bank Ltd	-0.029	-0.112	-0.073	-0.250	-0.010	-0.010	-0.029
National Bank Of Kenya Ltd	0.033	0.000	-0.032	-0.167	0.040	-0.038	0.040
N I C Bank	0.035	-0.077	-0.189	0.041	0.031	0.118	-0.010
Pan Africa Insurance Ltd	0.000	-0.308	-0.189	0.000	0.000	0.000	0.027
Standard Chartered Bank	-0.107	-0.075	0.016	0.053	0.051	0.038	-0.046
Athi River Mining	-0.150	0.044	0.014	0.028	0.000	0.216	0.111
B O C Kenya	0.000	-0.050	-0.018	0.000	-0.036	-0.056	-0.039
Bamburi Cement Ltd	0.000	0.000	-0.059	0.130	0.000	0.412	-0.104
B.A.T Kenya	0.020	-0.088	0.000	0.000	0.022	0.126	-0.065
Carbacid Investments Ltd	0.014	0.014	-0.014	0.014	-0.014	-0.007	0.007
Crown Berge Ltd	-0.042	0.043	-0.175	0.010	0.000	0.000	0.400
Dunlop Kenya Ltd	0.010	0.000	-0.105	0.064	0.000	0.000	0.000
E.A Cables	-0.100	-0.222	0.000	0.021	0.000	0.196	0.094
E.A Portland Cement Ltd	0.004	-0.147	-0.055	0.202	0.000	0.088	0.000
East African Breweries Ltd	0.026	0.006	-0.019	0.045	0.031	-0.036	0.075
Firestone E.A. Ltd	0.082	-0.101	-0.077	0.145	0.067	0.063	-0.088
Kenya Oil Co	-0.012	-0.024	-0.134	0.014	0.014	0.048	0.039
Mumias Sugar Co. Ltd	-0.159	-0.078	-0.205	-0.242	0.000	0.060	-0.057
K.Power & Lighting	-0.059	-0.375	-0.100	-0.044	0.006	-0.133	-0.133
Total Kenya Ltd	0.000	-0.147	-0.059	-0.348	0.157	0.476	-0.013
Unga Group Ltd	-0.059	-0.391	-0.231	0.333	0.025	0.061	0.172
Kenya National mills	-0.030	-0.523	-0.194	0.000	-0.020	0.000	-1.000
A. Baumann & Co. Ltd	0.111	0.000	-0.006	0.000	-0.039	-0.029	-0.395
City Trust Ltd	0.000	0.016	-0.005	0.000	-0.049	-0.041	0.000
E.A Packaging Ltd	-0.006	0.039	0.000	0.000	0.000	0.000	0.000
Eaagad's Ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Express Kenya Ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Williamson Tea Kenya Ltd	0.000	-0.059	-0.094	-0.034	-0.018	-0.127	-0.097
Kapchorua Tea Co. Ltd	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Kenya Orchards	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Limuru Tea	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Standard Newspapers Group	0.000	0.040	0.000	-0.420	0.053	0.263	0.743
Market Return	-0.021	-0.070	-0.045	0.000	0.004	0.032	-0.020

Sep-02	Oct-02	Nov-02	Dec-02	Mean Returns	STDEV	VAR
-0.139	-0.075	-0.070	0.350	-0.006	0.127	0.016083
-0.034	-0.013	-0.020	-0.023	-0.072	0.106	0.011233
-0.019	-0.059	-0.042	0.130	-0.009	0.072	0.005179
-0.040	-0.038	-0.055	0.133	-0.012	0.083	0.006939
0.000	-0.105	0.788	-0.441	0.022	0.286	0.082033
-0.094	0.000	-0.250	-0.122	-0.042	0.082	0.006655
0.414	0.101	-0.474	1.100	0.146	0.421	0.177107
0.000	0.000	0.000	0.000	0.000	-	0
-0.061	-0.032	-0.167	0.370	-0.004	0.137	0.018791
0.020	0.000	0.000	0.000	-0.064	0.220	0.048319
0.071	0.156	-0.038	0.680	0.087	0.256	0.065765
-0.033	0.016	0.046	0.118	0.009	0.045	0.001987
0.003	-0.033	0.021	0.740	0.004	0.256	0.065746
-0.048	0.050	-0.012	0.217	0.019	0.090	0.008131
0.033	-0.032	0.000	0.022	0.001	0.019	0.000372
0.222	0.000	-0.045	-0.048	0.013	0.093	0.00874
-0.189	0.167	0.000	0.486	0.038	0.187	0.035031
0.297	0.063	-0.059	0.208	-0.003	0.162	0.026271
-0.028	-0.029	0.000	0.000	-0.008	0.026	0.000684
-0.080	0.328	-0.180	0.700	0.023	0.267	0.071152
-0.115	0.130	0.058	0.327	0.025	0.130	0.016845
-0.078	0.015	-0.007	0.459	0.031	0.163	0.026615
0.000	-0.067	-0.036	0.037	-0.049	0.106	0.011222
0.068	0.064	-0.028	0.088	0.011	0.065	0.0042
-0.060	-0.128	-0.024	0.175	0.021	0.114	0.013097
0.092	0.243	0.211	-0.081	0.024	0.110	0.012057
0.023	0.182	-0.010	0.699	0.116	0.240	0.057589
0.000	0.080	-0.009	0.009	0.009	0.059	0.003465
-0.028	-0.057	-0.061	0.202	0.006	0.070	0.004896
-0.114	-0.032	0.067	0.094	0.023	0.147	0.021597
0.000	0.000	0.000	0.000	-0.003	0.039	0.001505
-0.091	0.000	0.000	0.082	-0.002	0.110	0.012195
-0.022	0.008	-0.030	0.000	0.004	0.086	0.007443
0.076	0.081	-0.073	0.380	0.054	0.119	0.014106
-0.084	0.056	0.067	0.067	0.020	0.088	0.007825
0.019	0.049	0.029	0.223	0.024	0.084	0.006982
-0.080	0.087	0.000	0.600	-0.007	0.226	0.051229
0.038	0.356	-0.016	0.928	0.042	0.341	0.118069
0.067	-0.063	0.067	0.422	0.051	0.237	0.055977
0.118	-0.035	0.000	-0.091	-0.009	0.194	0.037697
				-0.252	0.380	0.144431
-0.010	0.000	0.000	0.060	-0.028	0.129	0.016603
0.000	0.000	0.029	0.000	-0.005	0.022	0.000499
0.000	0.000	0.000	0.000	0.003	0.012	0.000146
0.000	-0.076	-0.031	0.024	-0.008	0.026	0.000672
0.000	0.000	0.000	-0.029	-0.003	0.009	7.42E-05
-0.262	0.146	0.600	-0.006	0.004	0.221	0.048869
0.000	0.000	0.000	0.000	0.000	-	0
0.000	0.000	0.000	0.000	0.000	-	0
0.000	0.000	0.000	0.000	0.000	-	0
0.068	-0.096	-0.118	0.347	0.080	0.296	0.087853
0.003	0.038	-0.011	0.211			

COMPANIES RETURNS IN THE YEAR 2003

LISTED COMPANIES	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03
Brooke Bond	0.000	-0.071	-0.054	0.114	0.124	-0.039
Kakuzi	0.045	-0.080	0.240	0.277	-0.184	0.008
Rea Vipingo	-0.264	-0.136	-0.057	0.591	-0.048	-0.120
Sasini Tea & Coffee	-0.020	-0.009	0.000	0.338	-0.055	-0.070
Car & General (K) Ltd	0.000	0.000	0.000	0.011	-0.011	0.011
C.M.C Holdings	0.000	0.042	0.160	0.466	0.053	-0.050
Hutchings Biemer Ltd	0.000	0.000	0.000	0.000	0.000	0.000
Kenya Airways Ltd	-0.008	-0.017	0.229	-0.103	0.000	0.015
Marshalls (E.A) ltd	0.078	0.100	0.000	0.000	0.000	0.322
Nation Media Group	0.035	-0.091	0.206	-0.016	0.053	0.040
Tourism Promotion Services Ltd	0.160	-0.153	0.141	0.009	-0.283	0.321
Uchumi Supermarket Ltd	-0.072	-0.017	0.053	0.075	-0.016	-0.024
Barclays Bank Ltd	0.091	0.000	0.133	0.066	-0.097	0.023
C F C Bank	0.185	-0.060	-0.064	0.773	-0.028	-0.087
Diamond Trust Bank	0.142	0.148	0.351	0.289	-0.259	-0.256
Housing Finance Co Ltd	0.082	0.061	0.236	0.133	0.122	-0.082
I.C.D.C Investments Co Ltd	0.041	0.013	0.039	0.088	0.172	0.029
Jubilee Insurance Co. Ltd	0.012	0.200	0.108	0.204	-0.118	0.000
Kenya Commercial Bank Ltd	-0.042	0.272	0.692	0.111	-0.155	-0.075
National Bank Of Kenya Ltd	0.008	-0.142	0.064	1.155	0.200	-0.093
N I C Bank	0.000	-0.031	0.333	-0.081	-0.088	0.212
Pan Africa Insurance Ltd	0.325	0.023	0.033	0.143	0.000	0.000
Standard Chartered Bank	0.029	0.042	0.221	0.027	-0.005	-0.011
Athi River Mining	0.382	0.560	0.286	0.004	0.190	-0.053
B O C Kenya	0.091	0.026	0.279	0.159	0.034	0.000
Bamburi Cement Ltd	0.033	0.161	0.241	-0.015	0.212	0.050
B.A.T Kenya	0.082	0.136	0.133	0.153	0.000	0.184
Carbacid Investments Ltd	0.011	0.022	0.116	0.132	0.042	-0.024
Crown Berge Ltd	-0.148	0.200	0.111	0.800	0.025	-0.133
Dunlop Kenya Ltd	0.000	0.000	0.000	0.000	0.190	0.126
E.A Cables	-0.095	0.000	0.116	0.406	-0.155	0.017
E.A Portland Cement Ltd	0.083	0.848	0.100	0.167	0.201	0.103
East African Breweries Ltd	0.148	0.174	0.209	-0.045	0.078	0.164
Firestone E.A. Ltd	-0.024	0.000	-0.100	0.528	-0.058	0.085
Kenya Oil Co	0.000	-0.031	0.032	0.546	-0.305	-0.050
Mumias Sugar Co. Ltd	0.160	-0.160	-0.203	0.111	-0.329	-0.029
K.Power & Lighting	-0.210	0.102	0.139	0.106	-0.359	0.070
Total Kenya Ltd	0.130	0.027	0.078	0.176	-0.027	-0.014
Unga Group Ltd	-0.125	0.029	0.688	-0.103	0.106	0.037
A. Baumann & Co. Ltd	-0.371	0.000	0.000	0.000	0.000	0.000
City Trust Ltd	0.000	0.000	0.000	0.125	0.000	0.037
Eaagad's Ltd	-0.003	0.000	0.000	0.113	0.000	0.000
Express Kenya Ltd	0.000	0.014	0.097	0.000	0.000	0.070
Williamson Tea Kenya Ltd	-0.090	0.148	0.164	0.325	-0.407	0.453
Kapchorua Tea Co. Ltd	0.000	0.000	0.000	0.000	-0.234	0.000
Kenya Orchards	0.000	0.000	0.000	0.000	0.000	0.000
Limuru Tea	0.000	0.000	0.000	0.000	0.000	0.000
Standard Newspapers Group	-0.305	-0.150	1.196	0.339	-0.136	0.028
Market Return	0.019	0.058	0.154	0.164	-0.013	0.034

Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Mean Return	STDEV	VAR
-0.014	-0.041	0.029	-0.049	-0.038	-0.003	0.066	0.004413
0.450	-0.378	0.547	-0.143	0.000	0.073	0.278	0.07743
0.068	0.149	-0.019	0.180	-0.081	0.022	0.228	0.051113
-0.050	-0.089	0.387	-0.167	0.000	0.024	0.175	0.030481
0.000	0.000	0.097	0.000	0.010	0.011	0.029	0.000855
0.294	0.236	0.088	-0.027	0.146	0.128	0.155	0.024147
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
0.015	0.343	-0.187	0.133	0.029	0.043	0.144	0.020802
0.100	0.000	0.000	0.000	0.000	0.055	0.099	0.009723
0.413	0.118	0.073	0.080	0.005	0.083	0.133	0.017881
0.019	0.037	0.035	0.068	-0.128	0.020	0.165	0.027161
-0.194	0.000	0.120	-0.036	0.037	-0.007	0.083	0.00887
-0.007	0.444	-0.010	0.347	0.086	0.098	0.161	0.026006
-0.061	0.508	0.041	0.129	0.184	0.137	0.275	0.075404
0.375	0.273	-0.107	0.190	-0.059	0.099	0.232	0.053982
-0.040	0.237	0.013	0.070	-0.077	0.069	0.111	0.012227
0.067	0.161	0.015	0.000	0.152	0.071	0.063	0.004024
0.150	0.812	-0.128	-0.055	-0.029	0.105	0.282	0.08872
0.023	0.193	-0.087	0.255	-0.122	0.099	0.247	0.081188
0.103	-0.040	-0.097	0.092	-0.120	0.103	0.365	0.133571
-0.056	0.403	-0.090	0.237	-0.037	0.073	0.185	0.034377
0.150	0.035	0.102	0.179	-0.051	0.085	0.108	0.011608
0.109	0.392	0.083	0.205	0.049	0.102	0.123	0.015219
0.063	0.441	-0.102	-0.023	-0.012	0.158	0.227	0.051653
0.099	0.193	0.192	0.195	0.007	0.116	0.093	0.008734
0.262	-0.057	0.050	0.000	0.190	0.103	0.113	0.012784
0.431	0.114	0.032	0.340	0.078	0.153	0.128	0.016408
0.025	0.480	-0.027	0.022	0.109	0.082	0.143	0.02031
0.719	0.073	0.034	0.197	-0.027	0.168	0.314	0.098368
0.037	0.194	0.090	0.492	0.285	0.129	0.155	0.02404
-0.098	0.091	0.042	0.100	-0.007	0.038	0.150	0.022558
0.471	-0.067	-0.057	-0.030	-0.086	0.157	0.279	0.077893
0.137	0.124	0.137	0.204	-0.039	0.117	0.087	0.007572
-0.267	0.136	-0.060	0.091	-0.008	0.029	0.198	0.039195
0.005	0.424	0.118	0.082	0.140	0.115	0.194	0.037819
0.258	-0.036	0.075	0.105	-0.042	0.019	0.137	0.018824
-0.066	0.328	-0.153	0.542	0.081	0.080	0.214	0.045808
-0.014	0.137	-0.044	-0.007	0.033	0.043	0.076	0.005713
0.000	0.292	0.080	0.066	-0.083	0.090	0.230	0.052684
0.000	0.055	0.052	0.189	0.103	0.002	0.138	0.018979
0.000	0.000	0.036	0.379	0.017	0.054	0.114	0.013038
0.000	0.000	0.000	0.014	0.000	0.011	0.034	0.001155
0.095	0.000	0.000	0.038	-0.063	0.023	0.048	0.002307
-0.038	-0.028	-0.011	0.000	-0.029	0.044	0.227	0.051542
0.000	0.000	0.000	0.000	0.000	-0.021	0.070	0.00496
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
0.000	0.000	0.000	-0.594	0.000	-0.054	0.179	0.032066
0.225	0.102	0.185	0.414	-0.127	0.161	0.410	0.167781
0.084	0.184	0.011	0.112	0.010	0.069	0.064	0.004119

1999 Rank	2000 Rank	2001 Rank	2002 Rank
23.61	3	10.56	3
22.82	3	-18.84	0
17.16	3	9.74	3
46.46	3	-38.13	0
38.05	3	39.47	3
13.98	3	10.99	3
-39.3	0	-6.53	0
141.61	3	11.92	3
0	0	0	0
4.45	1	12.8	3
4.54	1	3.17	1
		-98.74	0
-8.81	0		
3.12	1	1.24	1
-0.71	0		
-1.6	0	-3.24	0
14.27	3	12.11	3
7.82	1	7.36	1
-1.05	0	-1.01	0
9.82	2	8.01	1
7.05	1	0.89	1
11	3	7.45	1
7.53	1	6.23	1
		6.8	1
11.85	3	8.36	1
17.16	3	12.11	3
10.63	2	8.53	2
-2.27	0	-8.16	0
-0.4	0	-0.29	0
7.4	1	4.68	1
		-8.12	0
4.79	1	5.63	1
21.3	3	10.04	3
4.87	1	10.38	3
15.12	3	42.39	3
11.23	3	11.24	3
5.83	1	5.02	1
5.02	1	9.97	3
12	3	6.16	1
-4.56	0		
-1.2	0	-2.36	0
6.1	1	5.07	1
8.66	1	10.94	3
-1.5	0		
2.28	1	5.35	1
-13.7	0		
5.79	1	-1.28	0
		14.91	3
-4.3	0	-1.06	0
		6.71	2
		15.76	3
		174.03	3
		6.43	2
		-15.6	0
		87.52	3
		-79.25	0
		43.54	3
		48.9	3
		0	0
		-10.3	0
		2.52	1
		-37.96	0
		0	0
		0	0
		29.9	3
		4.17	1
		0.85	1
		9.01	3
		9	2
		11.12	3
		6.8	2
		1.12	1
		30.61	3
		0.88	1
		7.27	2
		7.64	2
		17.48	3
		14.02	3
		-3.7	0
		4.61	1
		12.5	3
		1.94	1
		4.81	1
		3.84	1
		5.18	1
		10.12	3
		8.11	3
		8.29	3
		7.8	2
		8.81	3
		4.65	1
		2.72	1
		11.69	3
		-31.33	0
		1.34	1
		5.34	1
		5.84	1
		1.84	1
		1.85	1
		-0.8	0
		-8.54	0
		-3.52	0
		6.71	2
		19.58	3
		19.16	3
		39.56	3
		-12.97	0
		37.82	3
		-33.57	0
		113.82	3
		6.17	1
		-72.29	0
		0	0
		-0.7	0
		2.74	1

Where 0= Negative or Zero P/E

1= Low P/E Portfolio

2= Median P/E

3= High P/E Portfolio