

**“ An Empirical Evaluation Of Equity Portfolios Held By
Insurance Companies In Kenya”**

By

Kamanda N. Stephen

**A research project submitted in partial fulfillment of the
requirements for the degree of Masters of Business
Administration in Finance.**

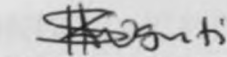
**University Of Nairobi
Faculty of Commerce**

October 2001

DECLARATION

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

Signed:



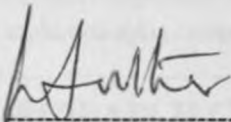
Kamanda N. Stephen

Date:

20/10/2001

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

Signed:



Otieno Othiambo Luther
Department Of Accounting
Faculty Of Commerce
University Of Nairobi.

Date:

20/10/2001

TABLE OF CONTENTS

DECLARATION	2
ACKNOWLEDGEMENTS.....	4
LIST OF TABLES	6
LIST OF APPENDICES.....	7
ABSTRACT.....	8
 CHAPTER 1-INTRODUCTION.....	 9
1.1 Background.....	9
1.2 Statement of problem.....	10
1.3 Objectives of the study	11
1.4 Hypothesis	11
1.5 The significance of the study	12
CHAPTER 2-LITERATURE REVIEW.....	14
2.1 Portfolio Theory.....	14
2.2 Portfolio selection.....	17
2.3 Portfolio evaluation	18
2.4 Other contributions to portfolio research.....	22
CHAPTER 3-RESEARCH METHODOLOGY.....	26
3.1 Population.....	26
3.2 Sample	26
3.3 Data collection.....	26
3.4 Data analysis.....	28
3.5 Ranking of portfolios.....	30
CHAPTER 4-RESEARCH FINDINGS AND INTERPRETATIONS.....	33
4.1 Introduction	33
4.2 Risk and return.....	35
4.3 Relationship between portfolio returns.....	39
4.4 Portfolio evaluation using composite measures.....	42
4.5 Summary.....	45
CHAPTER 5- RESEARCH CONCLUSION.....	46
5.1 Conclusion.....	46
5.2 Limitations of study	48
5.3 Suggestions for further research	49
REFERENCES.....	58

ACKNOWLEDGEMENTS

The finalization of this project would not have been possible without the assistance accorded to me directly or indirectly by various people.

To Otieno O. Luther, my supervisor, for guidance and great dedication he showed in this project.

To the MBA Lecturers, who provided me with various challenge for intuitive thinking.

To my colleagues in Finance class, who participated in various forums for discussion.

Finally, to my family, for their understanding and support during the whole period of study.

To all of you, thanks a lot.

DEDICATION

LIST OF TABLES

Table 1. Summary of study objectives and aims	36
Table 2. Summary of data and results	41
Table 3. Regression analysis of variables	79
Table 4. Summary of performance results	82

To my family,

Rosemary, Sheila, Ian and Lillian

LIST OF TABLES

Table 1- Insurance companies investment statistics	34
Table 2- Portfolio risk and return	35
Table 3- Relationship between portfolio returns	39
Table 4- Portfolios' performance ranking	42

LIST OF APPENDICES

Appendix I-	Capital Gains	50-51
Appendix II-	Dividend Yield	52-53
Appendix III-	Total Yield	54-55
Appendix IV-	List of Insurance companies in Kenya	56
Appendix V-	Companies quoted at the NSE	57

ABSTRACT

The study set out to evaluate quoted equity portfolios held by Kenyan insurance companies and the extent of their diversification. The relationship between different equity portfolios of respective insurance companies and the NSE 20 share index was to be determined.

In order to achieve these objectives, primary and secondary data was used to generate portfolio returns. Regression analysis was used to derive the beta. Four models: Sharpe, Treynor, Jensen and Coefficient of variation were utilized to determine relative performance and the extent of diversification.

The result of this study indicates that quoted equity portfolios held by insurance companies are poorly diversified. Thus, this study recommends that insurance companies need to reconsider aspects of portfolio management for example the timing of acquisition and disposal. The performance of portfolios needs to be evaluated within given time frames and appropriate action taken; moreover, investment managers should be appraised on the basis of optimal decision-making.

CHAPTER 1-INTRODUCTION

1.1 Background

The Kenyan insurance industry falls under Government regulatory framework as specified by "The Insurance Act-Chapter 487". Section 50 of the Act specifies the broad classes of investment, which these companies can invest in together with the solvency margins. This is mainly aimed at protecting the insuring public. Despite the above specifications, the government leaves the task of determining the composition of investments to insurance companies.

In this respect, one would expect the insurance companies to invest in profitable investment since they are commercial entities with obligation to their respective stakeholders. In Kenya, most insurance companies invest in both tangible and intangible assets. Investment in tangible assets includes; free hold property, lease hold property, quoted equity, unquoted equity, policy loans, debentures, government securities and mortgages. In this respect, one would expect performance to be a major factor in investment decision.

Based on the above, this study looks at the choice of insurance companies to invest at the Nairobi Stock Exchange. This study concentrates on the efficiency of the equity portfolios held by the insurance companies and does not try to compare them to other portfolios such as deposits and treasury bills. Without losing sight, it should be appreciated that investment managers will not be rewarded for investing in portfolios that perform worse than the risk free investment. In this respect, we expect the choice of equity portfolio to be based on portfolio efficiency, as determined by the risk and return profiles of individual shares.

1.2 Statement of problem

In order to invest at the NSE, insurance companies review the performance of individual shares. Most insurance companies will select what they anticipate to be the best performing shares. The timing of purchase and disposal decisions will depend on the preference of individual insurance companies. Their intention is to identify undervalued shares. Different methods are used in the selection and evaluation of equity shares.

On making investment decisions, investors will thus acquire different shares. The major question arising is whether in the process of making purchases and disposals, do investors realize that they are holding a portfolio? Is the purchase of additional equity merely an alternative form of investment? If so, to what extent do they diversify? Do investors realize the importance of diversification?

In the past, very little information has been published on the equity portfolio held by insurance companies in Kenya. In most cases, investment activities are concentrated on individual investors who undertake various evaluations based on individual needs. Thus, limited industry information is available on equity portfolios held by insurance companies in Kenya.

Most insurance companies tend to be very conservative in their investment pattern since they aim at long-term stability. Thus, shares providing long term stability will be acquired. In order to attain this, most investment managers in the insurance industry undertake various evaluations to determine the most rewarding shares in the market. This evaluation is mainly focused on the

performance of individual shares and the choice will normally vary depending on the investment policy being pursued by the respective insurance companies. Thus, a clear picture as to the performance of the actual portfolio being held by individual companies does not emerge. This raises the question as to whether insurance companies in Kenya do hold optimal equity portfolios.

Based on the above, this research will answer the question as to whether the Kenyan Insurance companies hold diversified portfolios.

In order to answer this question, this research studied the risk and return characteristics of equity portfolios held by insurance companies in Kenya in the period between 1/1/98 and 31/12/99.

1.3 Objectives of the study

- To establish the insurance companies which hold quoted equity portfolio.
- To determine the returns on equity investments held by insurance companies.
- To determine the risk of portfolios held by insurance companies.
- To evaluate the relationship between the returns on equity portfolios held by individual insurance companies
- To evaluate the relationship between the returns on equity portfolios held by insurance companies and the return on the market portfolio.
- To detect the industry factor in equity investment held by insurance companies.

1.4 Hypothesis

- a) First hypothesis

H_0 That the equity market index out performs the equity portfolio held by insurance companies.

H_1 That the equity portfolio held by insurance companies performs better than the equity market index.

b) Second hypothesis

H_0 That no relationship exists in the equity portfolio held by the insurance industry.

H_1 That relationship exists in the equity portfolio held by the insurance industry.

c) Third hypothesis

H_0 That no relationship exists between the equity portfolios held by the insurance industry versus the market index.

H_1 That relationship exists between the equity portfolios held by the insurance industry and the market index.

d) Fourth hypothesis

H_0 That the risk- return relationship is positive and linear.

H_1 That the risk- return relationship is not positive and linear.

1.5 The significance of the study

The study will: -

- Provide an insight into the current investment practice in the insurance industry especially as it relates to quoted equity shares.

CHAPTER 11 PORTFOLIO REVIEW

- Assist shareholders to assess the optimality of their quoted equity portfolio.

1.1.1. Introduction / Summary

- Assist policyholders to assess the optimality of their quoted equity portfolio.

- Create an avenue for future research.

- Create awareness of the importance of pursuing a diversification strategy.

CHAPTER 2-LITERATURE REVIEW

2.1 Portfolio Theory

Portfolio theory deals with the selection of optimal portfolio by risk -averse investors (**Weston and Coupeland-1998**). An optimal portfolio is a portfolio that provides the highest possible return for any specified degree of risk or the lowest possible risk for any specified degree of return.

An optimal portfolio is a well-diversified portfolio. Diversification reduces risk through combining assets with different covariance (**Markowitz-1952**). Investors are assumed to be risk averse; hence diversification pleases investors by offering expected returns at a lower risk than individual securities. Portfolio selection under conditions of uncertainty assumes that investors consider each category of asset by the characteristics of the probability distributions attached to it. The assumption is that combining different types of assets in different proportions can generate an efficient portfolio, that is to say a portfolio that provides the maximum return for a given level of risk (**Markowitz mean variance efficient portfolio**).

The return on an individual security is defined as the dividend yield plus capital gain over a given time period. The expected return on a portfolio is *the weighted average of the expected returns of all the individual assets making up the portfolio*.

The return of a portfolio is written as

$$\bar{R}_P = \sum_{i=1}^N X_i \bar{R}_i$$

where

\bar{R}_P = The expected return on the portfolio

X_i = The proportion of security i

\bar{R}_i = The expected return on security i

The risk of a security is the variability in its expected future returns. High-risk securities have high dispersion around the mean while low risk security will have a low dispersion around the mean. A securities total risk is measured by its standard deviation.

A portfolio risk is dependent upon the variations of a portfolios return. This will depend on the weights together with the covariance existing between the different combinations of assets held.

Normally, a portfolios risk is indicated as the standard deviation of returns. That is: -

$$\sigma_p = \left[\sum_{i=1}^N X_i^2 \sigma_i^2 + \sum_{i=1}^N \sum_{\substack{j=1 \\ j \neq i}}^N X_i X_j \sigma_i \sigma_j \rho_{ij} \right]^{1/2}$$

where

σ_p = risk of a portfolio

σ_i^2 = variance of individual security i

ρ_{ij} = covariance between security i and j

X_i = the proportion invested in security i

Portfolio risk is highly dependent on the correlation between assets in a portfolio. If negatively correlated, then combining these assets into a portfolio will reduce risk. But if positively correlated, then, the portfolio risk will not be reduced.

A portfolio's total risk is composed of systematic (**market/un-diversifiable**) risk and unsystematic (**diversifiable**) risk. Diversification occurs through combining assets, which have less than perfect correlation.

The single index model assumes that a relationship exists between the returns of an individual security and the stock market index. **Sharpe (1963)** indicates that relationship between securities occurs only through their individual relationships with an index of business activity such as Dow Jones Industrial (DJIA) and Standard and Poor 500 stock index. This simplifies the security analysis process since the number of covariances required in calculating portfolio risk is tremendously reduced.

$$R_i = \alpha_i + \beta_i R_m + e_i$$

where

R_i = Return on a stock

α_i = security's i 's return that is independent of market performance

β_i = beta of security i

R_m = Return of the market

e_i = error term

However, **Keith (1969)** found out that the use of economic indexes such as Gross National Product and Consumer Price Index led to poor estimates of covariances between securities. Despite this, **Cohen/Pogue (1967)** and **Wallingford (1967)** found that the index models using stock prices

indexes are preferable to those using economic indexes in approximating the full covariance frontier.

Multi index models attempt to capture some of the non-market influences that cause securities to move together. These are a set of economic factors or structural groups (industries) that accounts for common movements in stock prices beyond that accounted for by the market index. For example, we can hypothesize that the return on any stock is a function of the return on the market, changes in the level of interest rates, and a set of industry indexes. The return on stock "i" is: -

$$R_i = a_i + b_{i1} I_1 + b_{i2} I_2 + \dots + b_{iL} I_L + c_i$$

2.2 Portfolio selection

Establishing efficient portfolios comprising broad classes of assets; for example stocks, bonds, real estate; lends itself to the mean variance methodology suggested by **Markowitz**. Determining efficient portfolios within an asset class; for example stocks; can be achieved with the single index (beta) model proposed by **Sharpe**.

The construction of an optimal portfolio is simplified if there is a single number that measures the desirability of including a stock in the optimal portfolio. Thus the **Sharpe** index model comes in handy. In this case, the desirability of any stock is directly related to its excess return to beta ratio:

$$\frac{R_i - R_f}{\beta_i}$$

where

R_i = Expected return on stock i

R_f = return on a riskfree asset

β_i = expected change in the rate of return on stock i associated with a 1 percentage change in the market return

If stocks are ranked by excess return to beta (from highest to lowest), the ranking represents the desirability of any stocks inclusion in a portfolio. The number of stocks selected will depend on a unique cutoff such that all shares with higher ratios of $(\frac{R_i - R_f}{\beta_i})$ will be included and all shares with lower ratios excluded.

Proper diversification and the holding of a sufficient number of securities can reduce the unsystematic component of portfolio risk to zero by averaging out the unsystematic risk of individual shares (**Sharpe**). What is left is systematic risk, which is determined by the market (index). This cannot be eliminated through portfolio balancing.

2.3 Portfolio evaluation

Treynor Model (1965)

The Treynor Index (TI) indicates the risk premium return earned per unit of systematic risk. In terms of the capital market theory, this portfolio performance measure uses systematic risk to compare portfolios to the SML.

This is a composite measure of portfolio risk. Treynor indicates that risk components include risk produced by the general market fluctuations and risk resulting from unique fluctuations in the portfolio securities. To identify risk due to market fluctuations, he introduced the characteristic line, which defines the relationship between the rates of return for a portfolio over time and the rates of return for an appropriate market portfolio.

The slope of the characteristic line is the Beta. The characteristics line measures the relative volatility of the portfolio returns in relation to returns for the aggregate market. Deviations from the characteristic line indicate unique returns for the portfolio relative to the market.

$$T = \frac{\bar{r}_i - \bar{r}_f}{\beta_i}$$

where

T = Treynor's Index

\bar{r}_i = the average return for portfolio i during a specified time period

\bar{r}_f = the average rate of return on a risk free investment during the same time period

β_i = the slope of the funds characteristic line (portfolio's relative volatility)

The larger the T value, the better the portfolio to all the investors regardless of their risk preference.

The numerator $\left[\bar{r}_i - \bar{r}_f \right]$ is the risk premium while the denominator is a measure of systematic risk. Thus, the T Value indicates a portfolio's risk premium return per unit of risk. All risk averse investors would like to maximize this value. The beta value measures systematic risk and implicitly assumes a completely diversified portfolio.

Comparing a portfolio's T value to a similar measure for the market portfolio indicates whether the portfolio would plot above the SML. If a portfolio plots above the SML, then, it has a superior risk-adjusted performance.

Deviations from the characteristic line indicate unique returns for the portfolio relative to the market. These differences arise from the returns on individual shares in the portfolio. In a completely diversified portfolio, these unique returns for individual shares cancel out. As the correlation of the portfolio with the market increases, unique risk declines and diversification improves.

Sharpe Model (1966)

The Sharpe Index (SI) indicates the risk premium return earned per unit of total risk. In terms of the capital market theory, this portfolio performance measure uses total risk to compare portfolios to the CML. Risk premium is the excess return required by investors for the assumption of risk. The Sharpe index is defined as: -

$$S_t = \frac{\bar{r}_t - r_f}{\sigma_t}$$

where :

S_t = Sharpe Index

\bar{r}_t = average return on portfolio t

r_f = riskfree rate of return

σ_t = standard deviation(risk) of the returns of portfolio t

The index S_t measures the slope of the line emanating from the risk-free rate outward to the portfolio in question. The Sharpe index summarizes the risk and return characteristics of a portfolio

through a single index on a **risk-adjusted basis**. The larger the S_t the better the portfolio has performed.

Jensen Model (1968)

Jensen Model requires that we regress the monthly differences between portfolio returns and the Treasury bill rate for the particular portfolio. This gives us the return earned on the portfolio in excess of the risk free rate. The equation is thus,

$$(r_i - r_f) = \alpha_i + \beta_i (r_m - r_f)$$

The alpha coefficient represents a measure of the bonus performance owing to superior portfolio management.

The security market line equation can be used to estimate the Jensen index

$$R_p = R_f + \beta_p (R_m - R_f)$$

This is the expected return from the portfolio, given the risk free-rate, the portfolio beta, and the return on the market portfolio. To get Total returns on a portfolio, the alpha value is added to this return.

Coefficient of variation (CV)

Coefficient of variation is a relative measure, or ratio, of dispersion. This is unlike other absolute measures e.g. expected return and standard deviation. It is particularly useful in comparing assets that have different risk-return characteristics.

The lower the coefficient of variation, the lower the risk. This means that when comparing portfolios for different companies, the company with the highest CV will indicate the worst risk-return trade-off, while the company with the lowest CV will indicate a higher return for very low risk.

$$\text{Coefficient of Variation} = \frac{\sigma_p}{R_p} = \frac{\text{Standard Deviation of portfolio}}{\text{Average Return of the portfolio}}$$

2.4 Other contributions to portfolio research

Freeman Megbenu (1976) studied the changes in insurance companies portfolio together with influences on this portfolio in the period between 1950 and 1974. He indicates that the real justification of substantial holding of equities by insurance companies is to secure high-expected returns. But in doing this, insurance companies purchase and hold securities, thus making the capital market inefficient. In his research, he indicates that most companies review their equity holdings depending on their future prospects. He observes that the liquidity preference played a minor role in investment policy.

Bugo (1995) investigated into the factors that affect security portfolio holdings of Kenya's commercial banks in the period between 1993 and 1994. He also aimed at developing a model that would assist in determining a bank's portfolio composition. Bugo identified five factors affecting a

banks portfolio diversification; Deposits (D), Loans (L), Net worth (NW), Deposits less Loans (D -L) and how regular a bank trades in government securities. He applied multiple regression analysis on Net worth, deposits less loans and loans to develop his model. He concluded that 31 percent in 1993 and 67 percent in 1994 of variations were explained by the above three factors.

Muigai Thumbi (1996) sought to identify investment portfolios of Kenyan pension plans and provident funds in the period between 1992 and 1994. He observes that the avenues available in money market include bank deposits, treasury bills, commercial papers and treasury bonds. He does not attempt to quantify these individual alternatives. He concludes that most are held in either money market or real property investments.

Tesfamarian (1996) carried out a study to find out the correlation between the Swedish stock market index and other countries stock market indexes. He also investigated onto which factors: **world** (changes in the overall world economy for example worldwide depression), **country** (localized factors for example growth in GNP, Monetary and fiscal policy) and **industry** (factors peculiar to particular industry for example production) is the most significant in the covariance structure of the Swedish individual stock return. He utilized the multi index model to undertake his research. Multiple regression method was used to determine the correlation coefficients. A sample of 20 Swedish firms stock rate of returns from Stockholm stock market indexes during the time period 1982-1992 was used. The country, industry and world indexes were obtained from MSCI indexes.

Correlation between countries stock markets indicate a strong correlation indicating that the economies are closely linked for example USA/Canada (0.7853), witzerland/Germany (0.7364),

USA/UK (0.7339). However, the covariances between these countries indicate small opportunities for diversification.

Correlation results indicated that the Swedish stock market index has relatively low correlation with other 18 countries stock market indexes. This indicates that opportunities for diversification exist. A gain from international diversification exists for Swedish stocks.

Low correlation between individual stock returns and the world factors was observed.

Reilly and Keith (1997) indicate that the requirements of a portfolio manager include: -

The ability to derive above average returns for a given risk class and, the ability to diversify the portfolio completely, so as to eliminate all unsystematic risk.

They further state that an equity portfolio manager can do a superior job of predicting the peaks or troughs of the equity market by adjusting the portfolios composition to anticipate market trends, holding a completely diversified portfolio of high beta stocks through rising markets and favoring low stocks and money market instruments during declining markets. Bigger gains in rising markets and smaller losses in declining markets give the portfolio manager above average risk adjusted returns.

Ochung D.O (1999) carried out an empirical analysis on the relationship between deposit portfolio and profitability. He studied all quoted public banks and financial institutions in the period between 1994-1998. He used multiple regression analysis to establish the relationship between After-tax profit (ATP), current account (CA), Savings account (SA), Fixed deposit account (FDA), bearer

certificate of deposits (BCD), foreign currency account (FCA), call deposit (CD), trust funds (TF) and total deposits (TD). The research results indicate a positive correlation between the level of deposits and profitability other than BCD, CAD and FC, which showed little correlation.

Population

The population of the study consists of all banks operating in the country. The sample size is 100 banks. The sample is divided into 10 groups of 10 banks each, representing 10% of the population.

Sample

The sample is divided into 10 groups of 10 banks each, representing 10% of the population. The sample is divided into 10 groups of 10 banks each, representing 10% of the population.

The sample is divided into 10 groups of 10 banks each, representing 10% of the population. The sample is divided into 10 groups of 10 banks each, representing 10% of the population.

Data collection

The data is collected from the banks operating in the country. The data is collected from the banks operating in the country. The data is collected from the banks operating in the country. The data is collected from the banks operating in the country.

CHAPTER 3-RESEARCH METHODOLOGY

3.1 Population

The population is all the insurance companies operating in Kenya under "The Insurance Act; Chapter 487". See Appendix IV for a list of all insurance companies operating in Kenya in the period January 1998 to December 1999.

3.2 Sample

The study is based on 11 insurance companies resident in Kenya in the period January 1998 to December 1999. The sample was arrived at, by considering the companies, which held more than two types of shares in their portfolio during the full study period.

Table 1(Page 34) indicates that the 11 companies included in the research held 84 percent in 1999 and 72 percent in 1998 of all quoted equity held by the insurance sector as at 31st December. This provides a good base for this research.

3.3 Data collection

Two types of data were collected for the purpose of this research: primary data and secondary data. For Primary data, individual insurance companies submitted data on Shares outstanding as at 31/12/1997 and transaction details on share purchases and sales between 1/1/1998 and 31/12/1999. The purpose of collecting the primary data was to provide a basis for evaluating the equity shares held by the various insurance companies during the period of study. This aimed at identifying the companies that actually maintained equity portfolios during the period of study. Data

collection sheets were sent to the 28 insurance companies with equity in their balance sheets as at 31/12/1998 and 31/12/1999.

The secondary data was utilized to generate the adjusted monthly prices and hence capital growths. Dividend yield was also generated from the secondary data. Thus, the purpose of the secondary data was to provide a standard platform for comparing the entire insurance companies portfolio based on the outstanding shares at the end of each month.

Secondary data: - Data was collected from: -

- Published financial statements: - provided balance sheets for all insurance companies together with details of investments and assets.
- Nairobi Stock Exchange: - provided listing data together with dividends payments. Details on the specific "announcement date"; "closure date"; and "payment date" were also provided. This information was for confirming dividend data available.
- Financial Analyst and Advisors: - provided data on NSE 20 share index; Treasury bills rate; and market capitalization
- NSE Investors Handbook: - provided weekly data on the adjusted MPS which was transformed into monthly MPS.
- Business and Investment Journal: -Provided data on annual dividend payments. This annual dividend was used to derive monthly dividend by dividing the annual one into twelve equal parts.

3.4 Data analysis

3.4.1 Returns on individual shares

Return on individual shares has been based on dividend yield plus capital growth. A month-by-month computation on returns has been performed using the standard formulae.

$$\text{Return} = \left(\frac{P_1 - P_0 + D_1}{P_0} \right) \times 100$$

where

P_1 = Price at the end of the month

P_0 = price at the beginning of the month

D_1 = Dividend received during the period

The price used is the adjusted market prices. The "adjusted monthly market price" has been arrived at, by averaging the "adjusted weekly prices". The Ex bonus market price has been adjusted to take care of the bonus issues. Prices have been adjusted by multiplying the ex-bonus price with the ratio of the new shares (after the issue) to the old shares.

Dividend distribution between various months has been attained through prorating the annual dividends paid. A major assumption is that dividends announcement carry information content. On this basis, the Ex-Div. market Prices have been used to adjust for the bonus issue.

3.4.2 Return on Portfolios

The outstanding shares at the end of each month are multiplied by the corresponding adjusted market price of individual securities so as to arrive at the total market value of each type of equity

held. A total of each securities market value is divided by the overall total market value of all the securities held by the company to arrive at the relative market weight per security held. Thus, the total weight is equal to 100 percent.

The relative market weight per class of security held is subsequently multiplied with the total yield per class of security outstanding in the respective month. The aggregate total of all relative yields is the portfolio return.

In order to generate portfolio returns for the insurance industry portfolio, NSE portfolio and the market portfolio, the following assumptions are necessary: -

- That the outstanding shares of the insurance industry portfolio (IIP) at the end of each month are based on the total of the individual insurance companies under the study in the respective months.
- That the outstanding shares for NSE portfolio are based on the total shares of all companies that are included in the index for the respective months.
- That the outstanding shares for market portfolio are based on the total shares of all companies quoted at the NSE at the end of each period.

3.4.3 Risk of portfolios

This is based on the variability of actual monthly portfolio returns. It is computed as a total measure as follows: -

- Variance, Var $= \sum p(x - \bar{x})^2$
- Standard Deviation, σ $= \sqrt{Var}$

3.4.4 Portfolio Beta computation

The Beta has been derived by regressing individual portfolio returns, against the returns from the market portfolio, over the twenty-four months of study.

3.4.5 Establishing Relationships

One assumption of this study is that the return on individual portfolios is determined by the return on the market portfolio. A major assumption is that the NSE 20 share index represents the market portfolio.

In this respect, multiple regression analysis has been utilized to estimate the beta of the individual portfolios held by insurance companies. It is important to establish whether the relationship is more pronounced between insurance companies and also between the insurance industry and market index. The correlation coefficient is employed to detect such a relationship.

3.5 Ranking of portfolios

Ranking is important in this study since it provides a measure of performance based on a risk-adjusted basis. The four models used below are utilized to rank portfolios so as to ascertain the extent of diversification as indicated by the respective indexes. The interpretation of the results for the specific models is detailed below. Refer to Section 2.3 for the theory on these models.

- **Sharpe Portfolio Performance Index (Sharpe 1966):** - Market premium is divided by the total risk to arrive at the Sharpe index for the respective portfolios. These indexes are then

ranked in descending order. A higher ranking characterizes a portfolio with superior performance and hence greater diversification.

The advantage of the Sharpe measure is because it evaluates the portfolio manager on the basis of both the rate of return and diversification.

- **Treynor performance index (Treynor 1965):** - market premium is divided with the systematic risk of individual portfolios to arrive at the Treynor index. Ranking is made in descending order. A higher ranking characterizes a portfolio with superior risk adjusted performance, that is, higher risk premium return per unit of risk.
- **Jensen Alpha Coefficient (Jensen 1968):** - The alpha value is computed as the difference between the actual return minus the expected return, which is to say the excess return. The expected return is computed using the CAPM standard formulae. These are then ranked in descending order so as to obtain the portfolios with excess returns. The portfolio with the largest value of excess returns is considered to be an attractive portfolio because it offers greater prospects of growth due to its current diversification.
- **Coefficient of Variation (McMenamin 1999):** - the coefficient of variation has been computed as the standard deviation divided by the average return of a portfolio. Normally, the lower the coefficient of variation, the lower the risk, hence, the portfolios coefficient of variation have been ranked in ascending order. This means that the portfolio with the least coefficient of variation will be considered to be the best.

These models have been chosen because they are composite measures of comparison, that is, they utilize indexes based on the risk and return of the portfolio. In addition, these are relative measures, or ratios, of dispersion; hence, they are particularly useful in comparing portfolios that have different risk-return characteristics.

The Sharpe portfolio performance measure uses the standard deviation of returns as the measure of risk, whereas the Treynor performance measure uses systematic risk. The Sharpe measure therefore evaluates the portfolio on the basis of both rate of return performance and diversification.

For a completely diversified portfolio, that is, one without any unsystematic risk, Sharpe, Treynor and the coefficient of variation give identical rankings because the total variance of the completely diversified portfolio is its systematic risk. A poorly diversified portfolio could have a high ranking on the basis of the Treynor index but a much lower ranking on the basis of the Sharpe index. Difference in ranking is attributed to the difference in diversification.

The disadvantage with the Sharpe, Treynor and the coefficient of variation is that all are absolute measures of performance, that is, it is hard to statistically ascertain whether any difference between portfolio rankings is statistically significant.

The three models have been checked to confirm whether they provide consistent results.

CHAPTER 4-RESEARCH FINDINGS AND INTERPRETATIONS

4.1 Introduction

The study set out to determine and evaluate quoted equity portfolios of insurance companies. In order to attain this, the risk and return characteristics of the equity portfolios held by the individual company was to be evaluated. In addition, the study sought to establish the relationship between the insurance industry equity portfolios versus the market index.

We need an overview of investment by insurance companies in Kenya. This is summarized in Table 1 below. It covers the period 31/12/1999 to 31/12/1998. The table separates investment in quoted equity portfolio, so as to highlight the importance placed on them by insurance companies from other investments.

The quoted equity portfolio held by insurance companies in Kenya constituted only 8 percent in 1999 and 12 percent in 1998 of the total investment portfolio for the insurance industry (see Table 1). The ratio of quoted equity to total assets is 6 percent in 1999 and 9 percent in 1998. These statistics are important since they indicate that the insurance industry holds a wide range of portfolios other than equity.

Table 1- Insurance companies investment statistics

1999			
	Included	Not Included	Total Industry
Number	11	27	38
Equity Invest. Kshs.'000	2,949,276	570,460	3,519,736
Total Invest. Kshs.'000	21,799,781	20,633,002	42,432,783
Total Assets Kshs.'000	25,648,303	28,517,351	54,165,654
Q.Equity/ Total Investment	14%	3%	8%
Q.Equity/ Total Assets	11%	2%	6%
Eq.Inv/ Tot.Ins Eqty.	84%	16%	100%
Tot.Invest./ Tot.Ins.Inv.	51%	49%	100%
Tot.Asset/ Tot.Ins.Ass.	47%	53%	100%

1998			
	Included	Not Included	Total Industry
Number	11	27	38
Equity Invest. Kshs.'000	3,260,887	1,281,774	4,542,661
Total Invest. Kshs.'000	21,111,960	17,529,117	38,641,077
Total Assets Kshs.'000	24,239,419	27,536,199	51,775,618
Q.Equity/ Total Investment	15%	7%	12%
Q.Equity/ Total Assets	13%	5%	9%
Eq.Inv/ Tot.Ins Eqty.	72%	28%	100%
Tot.Invest./ Tot.Ins.Inv.	55%	45%	100%
Tot.Asset/ Tot.Ins.Ass.	47%	53%	100%

A major observation from the Table 1 is that, while total investments of the insurance industry increased by 10 percent, the quoted equity investment fell by 23 percent. This means that the relative importance of quoted equity portfolio decreased during the period of study. This might be explained by the falling prices at the NSE and the replacement of equity investment with money market investments.

4.2 Risk and return

The risk-return characteristics of equity portfolios included in this study are presented on Table 2 below.

Table 2- Portfolio risk and return

	Co.1	Co.2	Co.3	Co.4	Co.5	Co.6	Co.7	Co.8	Co.9	Co.10	Co.11	IIP	NSESI	NSEPR	R _m
Jan-98	16.96	7.83	15.21	18.57	9.51	16.96	11.55	15.73	10.90	10.70	12.34	12.49	6.62	12.95	13.47
Feb-98	(1.04)	3.77	21.62	2.76	8.96	8.70	8.89	9.93	6.01	9.00	3.34	7.57	2.67	4.24	4.29
Mar-98	(3.03)	(0.95)	0.09	(1.30)	(1.08)	6.89	0.21	4.01	3.04	(5.32)	0.16	1.81	(2.39)	(1.29)	(2.13)
Apr-98	(2.53)	(1.86)	(13.20)	(4.84)	(4.51)	(2.73)	1.12	0.40	(3.07)	(1.81)	(3.47)	(1.30)	(6.64)	(0.12)	(1.49)
May-98	3.61	0.76	(1.26)	0.23	4.91	6.78	0.46	8.77	2.20	4.80	1.10	3.24	(2.63)	2.57	1.43
Jun-98	4.15	4.25	5.30	5.36	11.44	16.70	8.15	12.71	9.41	11.41	8.37	9.85	(0.62)	7.89	7.27
Jul-98	4.19	0.66	7.34	4.17	4.43	7.29	3.82	4.17	3.35	2.01	1.02	3.55	(3.37)	2.33	1.61
Aug-98	1.70	1.35	2.46	3.45	5.22	9.00	3.13	8.01	3.41	6.07	2.65	4.51	0.40	3.70	2.54
Sep-98	(1.11)	(0.58)	3.81	0.92	1.24	3.57	3.01	3.88	2.75	2.22	1.82	2.90	(2.73)	1.89	0.86
Oct-98	(1.92)	0.31	(1.76)	0.39	2.11	4.40	1.25	6.20	2.37	3.74	1.89	2.85	(1.33)	1.66	0.78
Nov-98	(0.47)	(0.90)	(0.99)	2.07	5.81	2.49	2.01	1.91	1.44	0.29	2.07	1.51	(5.78)	0.94	(0.02)
Dec-98	7.75	6.07	3.90	9.27	16.92	15.07	11.17	11.54	13.86	23.01	11.05	13.20	5.06	13.90	13.25
Jan-99	10.58	11.74	7.36	10.62	12.18	18.01	10.71	18.35	13.20	10.16	14.63	13.34	11.24	14.14	14.66
Feb-99	(0.28)	0.34	5.66	10.05	2.91	6.32	0.28	8.04	0.50	10.69	2.50	2.91	(2.94)	1.33	0.68
Mar-99	(1.00)	(1.32)	(3.35)	(0.53)	(3.42)	7.92	2.02	4.09	4.65	(4.22)	0.17	3.08	(2.22)	(0.28)	(1.02)
Apr-99	(4.30)	(0.03)	4.21	1.02	1.20	7.12	1.30	2.63	3.29	4.56	2.45	2.63	(3.41)	1.19	0.47
May-99	(0.82)	1.55	16.33	1.97	3.58	8.82	1.92	4.86	3.59	4.22	2.77	3.40	(1.24)	2.00	1.49
Jun-99	1.86	2.30	4.64	4.98	4.74	7.78	4.37	6.96	4.63	4.24	4.72	4.95	0.48	5.40	4.77
Jul-99	2.20	1.58	(9.78)	4.39	8.86	9.79	5.19	6.22	4.68	6.80	7.04	5.35	0.15	7.45	5.95
Aug-99	(2.62)	0.11	1.88	1.26	1.97	8.71	3.28	5.04	3.97	1.03	3.97	3.74	(4.38)	3.38	2.23
Sep-99	(3.63)	(3.62)	(10.43)	(1.64)	(3.16)	0.57	(1.10)	(0.93)	1.37	(2.00)	(2.28)	(0.24)	(8.14)	(3.25)	(3.32)
Oct-99	(3.49)	2.10	(2.69)	2.39	4.12	4.27	0.02	7.69	1.22	1.80	2.29	1.89	(3.07)	1.69	2.44
Nov-99	(3.59)	(0.05)	10.66	(1.05)	1.67	(1.65)	(1.46)	(0.12)	(3.06)	4.45	(1.63)	(1.54)	(3.01)	1.17	0.63
Dec-99	4.04	5.43	12.23	4.67	5.09	12.63	3.29	14.78	2.06	6.30	3.49	5.25	0.29	4.94	5.50
Max.Ret	16.96	11.74	21.62	18.57	16.92	18.01	11.55	18.35	13.86	23.01	14.63	13.34	11.24	14.14	14.66
Min.Ret	(4.30)	(3.62)	(13.20)	(4.84)	(4.51)	(2.73)	(1.46)	(0.93)	(3.07)	(5.32)	(3.47)	(1.54)	(8.14)	(3.25)	(3.32)
Ave.Ret	1.13	1.70	3.30	3.30	4.36	7.73	3.53	6.87	3.99	4.76	3.43	4.46	(1.12)	3.74	3.18
Std Dev.	0.05	0.03	0.08	0.05	0.05	0.05	0.04	0.05	0.04	0.06	0.04	0.04	0.04	0.05	0.05
Beta	0.911	0.668	0.720	0.850	0.934	0.946	0.723	0.893	0.753	0.996	0.878	0.804	0.799	0.942	1.000

Key

IIP-Insurance industry portfolio

NSESI-NSE share index

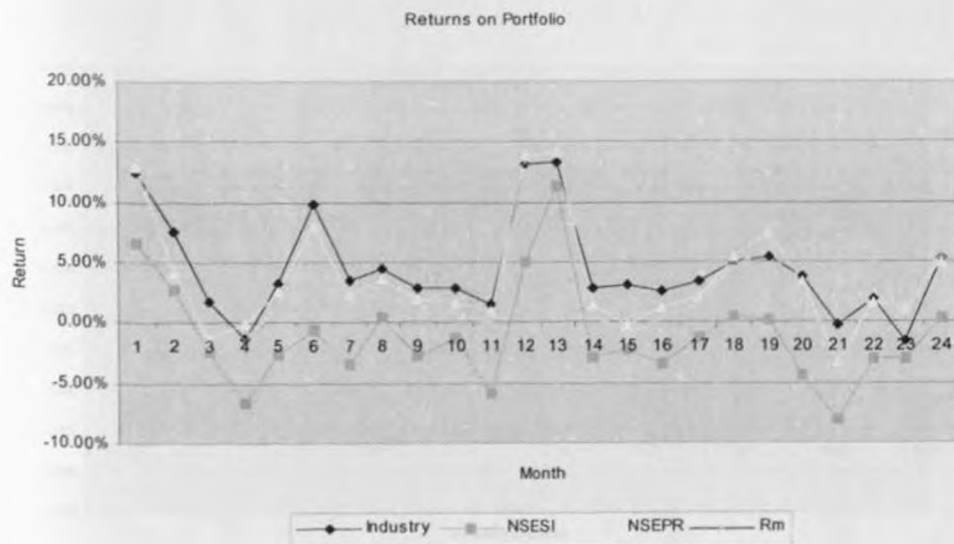
NSEPR-NSE portfolio

R_m=Market portfolio

The maximum return reported during the study period is 23.01 percent (Company thirteen) while Company three (3) attained the minimum return of negative 13.20 percent and also the biggest range in returns of 34.82 percent. This big range makes the average return to be low. Despite the big range in returns, the risk is very low.

All companies had a combination of both positive and negative returns over the study period. Owing to the high variation in the returns, the average return is very low in all companies. This means that the positive gains realized were equally off set by the negative losses. We report that no portfolio exceeded an average return of 7.73 percent. The NSE 20 Share index attained the least return of negative 1.12 percent. This is expected since it does not have dividend yield. All portfolios have risk of less than 0.085 indicating low risk.

The graph below is generated from data presented in Table 2 to compare the magnitude and trend of the return from the Insurance Industry portfolio (IIP), NSE 20 Share Index (NSESI), NSE portfolio (NSEPR) and the Market portfolio (R_m).



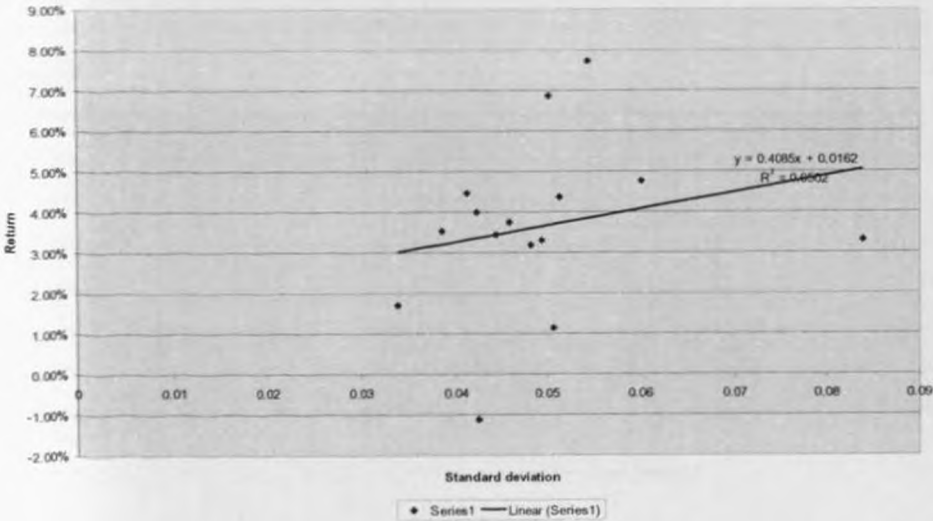
The above graph portrays a positive correlation between the Insurance industry portfolio and the market portfolio returns. This means that all the returns move in the same direction. A similar

relationship exists between the NSE 20 Share index and the NSE portfolio. In addition, the graph also indicates the upward and downward trend along the zero return. This means that on average, the return is very low.

It is important to note that the NSE 20 share index (NSESI) curve lies below the others since it is not an actual return index, that is, it is based on the capital gains alone.

The relationship between risk (as measured by standard deviation) and return of insurance companies portfolios is positive-see Graph 1. This is in line with the expectation that investors are rewarded for assuming high risk.

Graph 1-Risk-Return trade off



The graph above indicates that, the higher the return, the higher the risk and vice versa. This means that the shareholders in insurance companies are risk averse. They demand higher returns for adopting higher risks.

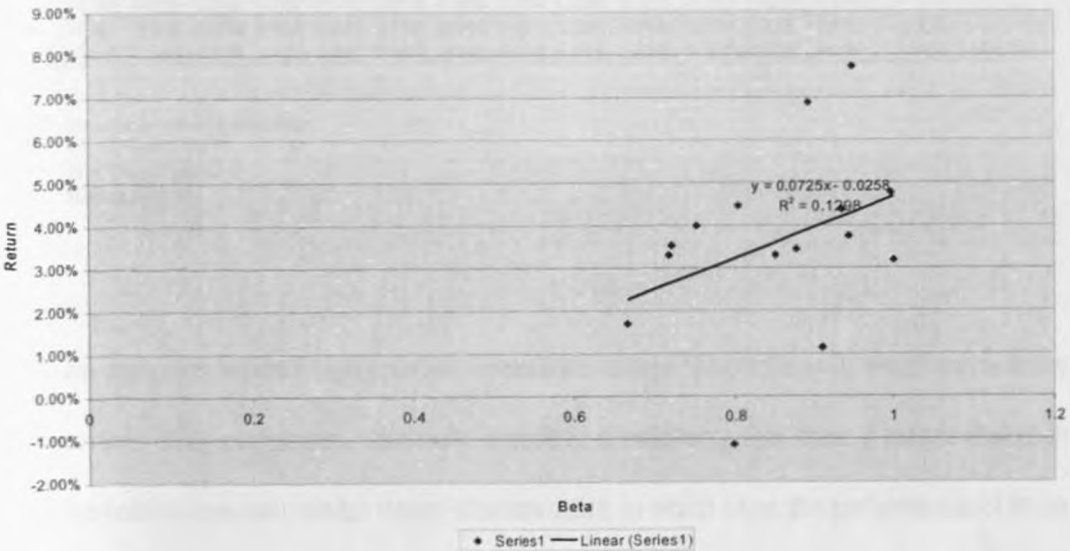
Relationship between portfolio returns

The portfolios in Table 2 have systematic risk (beta) ranging from 0.668 to 0.996. This means that the insurance company portfolios are less sensitive to movements in market returns.

Relationship between returns and systematic risk

The relationship between returns and the systematic risk (beta) of portfolios held by insurance companies is also positive.

Graph 2-Risk (Beta)-Return trade off



The graph indicates the general market proposition that rational investors might prefer higher returns on portfolios as compensation for adopting high risk. This is as described by the CAPM,

which indicates that, since systematic risk varies between companies, investors will require a higher return from shares in those companies with high systematic risk.

4.3 Relationship between portfolio returns

Table 3 shows the relationship between portfolios in this study using correlation coefficients.

Table 3- Relationship between portfolio returns

	Co.1	Co.2	Co.3	Co.4	Co.5	Co.6	Co.7	Co.8	Co.9	Co.10	Co.11	IIP	NSESI	NSEPR	Rm
Co.1	1.000														
Co.2	0.813	1.000													
Co.3	0.358	0.538	1.000												
Co.4	0.857	0.782	0.484	1.000											
Co.5	0.704	0.811	0.440	0.719	1.000										
Co.6	0.779	0.839	0.458	0.764	0.765	1.000									
Co.7	0.805	0.832	0.438	0.740	0.824	0.824	1.000								
Co.8	0.798	0.927	0.481	0.778	0.754	0.882	0.764	1.000							
Co.9	0.753	0.787	0.337	0.710	0.787	0.895	0.904	0.746	1.000						
Co.10	0.615	0.708	0.442	0.712	0.872	0.645	0.713	0.671	0.664	1.000					
Co.11	0.817	0.899	0.369	0.845	0.859	0.894	0.884	0.839	0.909	0.739	1.000				
IIP	0.841	0.894	0.444	0.811	0.864	0.929	0.951	0.874	0.960	0.773	0.949	1.000			
NSESI	0.785	0.935	0.518	0.752	0.762	0.814	0.839	0.856	0.824	0.675	0.879	0.893	1.000		
NSEPR	0.861	0.914	0.370	0.808	0.885	0.833	0.910	0.827	0.860	0.809	0.954	0.937	0.892	1.000	
Rm	0.866	0.946	0.414	0.829	0.877	0.840	0.905	0.858	0.858	0.798	0.955	0.940	0.907	0.992	1.000

Key

IIP	Insurance Industry Portfolio
NSESI	NSE Share Index
NSEPR	NSE Share portfolio
Rm	Market portfolio

The above portfolios indicate high positive correlations except for company 3, which indicate low correlation with other companies. Normally, if positive correlation exists, then, it means that such companies hold shares with similar return characteristics, in which case, the performance of these portfolios will move in the same direction.

Insurance companies with a large number of shares in their portfolio indicate a high positive correlation while those with a small number of shares in their portfolio indicate low positive

correlation. Company three (3) has a low correlation with other companies due to the nature of the portfolio it holds.

The correlation between the individual insurance companies versus the insurance industry portfolio (IIP) is positive other than with company three (3). Low correlation of company three (3) against the insurance industry portfolio is explained by the few securities held in its portfolio. This reasoning is relatively straight since the industry portfolio has been constructed from all shares held by the insurance industry. Thus, a company with fewer shares will be less represented in the insurance industry portfolio.

The relationship between the individual insurance companies and the NSE portfolio is very strong. Similar relationship exists with the market portfolio. The correlation coefficient between the NSE portfolio; Insurance industry portfolio and NSE 20 share index are 0.937 and 0.892 respectively. This means that the above insurance companies rely on the NSE 20 share index in making investment decision.

There exists a high correlation between the market portfolio and Insurance industry portfolio; NSE share index and NSE portfolio with correlation coefficients of 0.940, 0.907 and 0.992 respectively. Note that the NSEPR is perfectly correlated to the total market portfolio if rounded to one decimal point. This confirmation is of fundamental importance to this study since it indicates that the Market index influences the price of individual securities mainly due to systematic risk. They include the same shares and tell you the same thing. This is not surprising.

From the above observations, one can conclude that an industry factor exists in the portfolios held by the individual insurance companies. This is supported by: -

- High correlation between the insurance companies themselves
- High correlation between the IIP, NSESI and NSEPR,
- High correlation between the IIP and the Total market portfolio.

On the basis of the above one can assume that either investment managers in the insurance industry do not have much choice or that they do not carry out research.

4.4 Portfolio evaluation using composite measures

The capital market has a negative market premium; hence, negative Sharpe (S) and Treynor (T) index are expected- see Table 4.

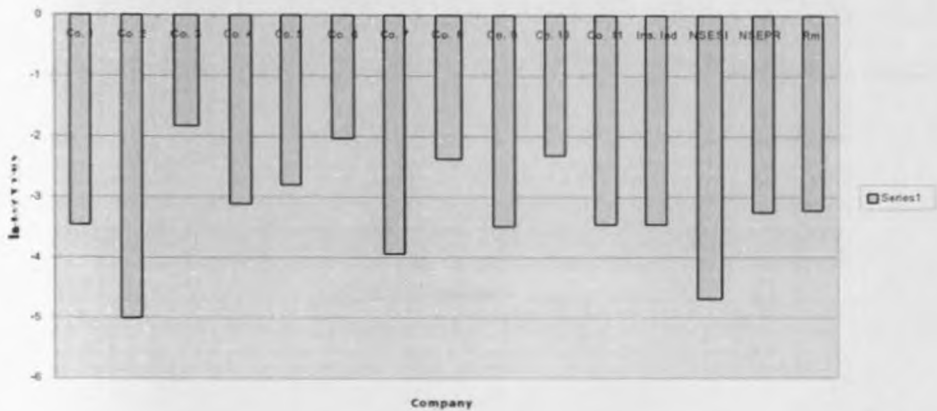
Table below ranks portfolios based on the single index performance. It indicates the comparative ranking using different methods.

Table 4- Portfolios' performance ranking

	Sharpe		Treynor		Jensen		Coef.Var.	
1	Co. 3	(1.838)	Co. 6	(0.116)	Co. 6	0.0371	NSESI	(3.777)
2	Co. 6	(2.023)	Co. 8	(0.133)	Co. 8	0.0203	Co. 6	0.703
3	Co. 10	(2.320)	Co. 10	(0.140)	Co. 10	0.0152	Co. 8	0.731
4	Co. 8	(2.360)	Co. 5	(0.154)	Co. 5	0.0016	IIP	0.924
5	Co. 5	(2.795)	Rm	(0.155)	Rm	0	Co. 9	1.060
6	Co. 4	(3.119)	NSESR	(0.159)	NSESR	-0.003	Co. 7	1.092
7	Rm	(3.223)	Co. 11	(0.174)	Co. 11	-0.016	Co. 5	1.178
8	NSESR	(3.271)	IIP	(0.177)	IIP	-0.018	NSESR	1.223
9	Co. 11	(3.448)	Co. 4	(0.181)	Co. 4	-0.022	Co. 10	1.265
10	IIP	(3.461)	Co. 1	(0.193)	Co. 9	-0.03	Co. 11	1.290
11	Co. 1	(3.468)	Co. 9	(0.196)	Co. 1	-0.034	Co. 4	1.498
12	Co. 9	(3.484)	Co. 7	(0.210)	Co. 7	-0.04	Rm	1.515
13	Co. 7	(3.945)	Co. 3	(0.214)	Co. 3	-0.042	Co. 2	2.000
14	NSESI	(4.673)	NSESI	(0.248)	Co. 2	-0.066	Co. 3	2.539
15	Co. 2	(5.000)	Co. 2	(0.255)	NSESI	-0.074	Co. 1	4.473

Table 4 shows that ranking by the **Sharpe Index**, the portfolios for companies three (3), six (6), ten (10), eight (8), five (5) and four (4) outperformed the market portfolio and NSE portfolio. Portfolio for companies eleven (11), one (1), nine (9), seven (7) and two (2) performed worse than the market. Company three (3), with an index of negative 1.838 indicates a superior risk adjusted performance than all the other portfolios under consideration. This information can easily be confirmed through graphical display as shown below.

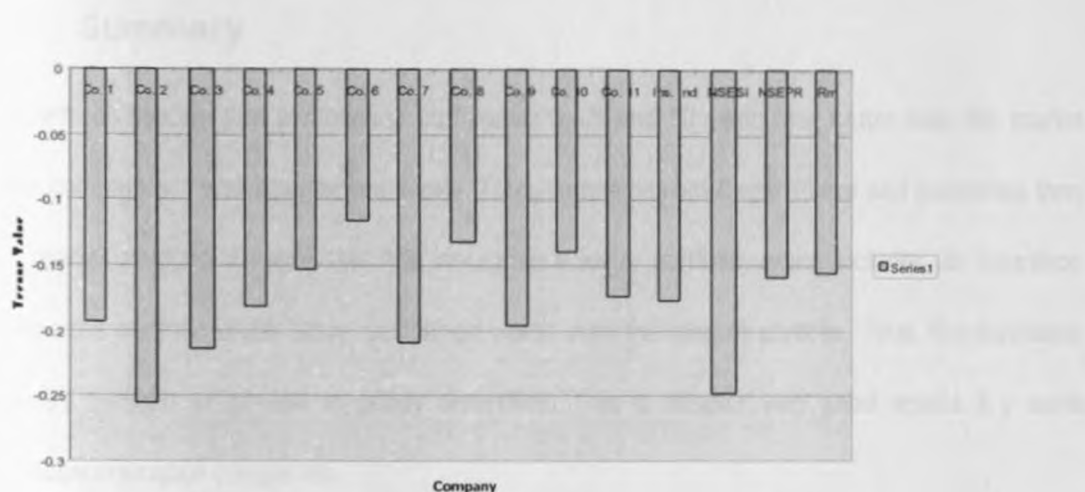
Graph 3- Sharpe Index



Ranking using the **Treynor Index** indicates that Company 6 had the lowest risk premium return per unit of systematic risk ($TI = \text{negative } 0.116$). Incidentally, this company also had the best average return 7.73 percent. Companies 8, 10 and 5 also had a superior portfolio compared to the market. Incidentally, the companies with high systematic risk seem to post better returns than those with low systematic risk.

Based on Treynor index, the market portfolio outperforms most of the insurance companies portfolios. This compares favorably with the Sharpe index, which ranks these companies above the market performance. Thus, the market outperforms the combined insurance industry portfolio. This is consistent with the Sharpe Index. The graph below provides a graphical display of this narration.

Graph 4- Treynor Index



Using the **Alpha value**, Table 4 indicates that portfolios for companies 5,6,8 and 10 out-performed their market expectations based on the CAPM model. This observation is similar to the results based on the Sharpe and Treynor index. Normally, if the alpha value is positive, it will attract investors into buying shares in this portfolio so as to benefit from the abnormal returns . Majority of the above portfolios have negative alpha values meaning they do not enjoy abnormal returns.

The **Coefficient Of Variation (CV)** indicates that company 6 has the lowest risk per unit of return in its portfolio. In this respect, a rational risk averse investor would prefer this portfolio even though his final decision will depend on the investors risk propensity or attitude to risk. Most insurance companies hold superior portfolios than the market. Thus, the insurance industry portfolio is more diversified than the market. The insurance industry portfolio has a CV of 0.924 while NSE portfolio has 1.223. The total NSE market has a CV of 1.515. This means that the insurance industry maintains a superior combination of shares than the NSE portfolio and the market in general.

4.5 Summary

All methods confirm that portfolios of companies 5,6,8 and 10 performed better than the market while companies 1 and 2 performed poorly. Thus, companies 5,6,8 and 10 are well diversified than the market portfolio. Despite this, the insurance industry portfolio, which includes all insurance companies portfolio under study, performed worse than the market portfolio. Thus, the insurance industry portfolio in general is poorly diversified. This is despite very good results by some individual insurance companies.

CHAPTER 5- RESEARCH CONCLUSION

5.1 Conclusion

The study aimed at evaluating equity portfolios held by insurance companies and the extent of their diversification. A further purpose was to establish the relationship between these portfolios. The issue as to whether insurance companies portfolios performed better than the market was to be examined.

This study found out that there are a few insurance companies, which are more objective when choosing shares for inclusion in portfolio and are thus able to deliver superior portfolios than both the Market portfolio and the NSE Portfolio. Otherwise, majority of insurance companies maintain poorly diversified portfolio. In general, both the Market portfolio and the NSE Portfolio outperform the insurance industry portfolio. Thus, the first null hypothesis in section 1.4 a) is accepted

Despite the poor diversification of insurance companies equity portfolios, these portfolios have similar return characteristics. This similarity is further manifested by the strong relationship to the returns from the market portfolio and the NSE portfolio (NSEPR). In this respect, one can conclude that they tailor their portfolios based on the shares contained in the NSE 20 shares index. In this respect, the null hypotheses in sections 1.4 b) and 1.4 c) are rejected.

This study confirmed that the risk- return relationship is positive and linear. This is consistent with the normal market condition; hence, the fourth null hypothesis is accepted.

Against this background, it follows that most insurance companies purchase shares in the NSE 20 shares index. Their intention is however not to actively participate in the activities of the NSE but to hold them for long-term strategic plans aimed at maximizing the capital gains. The reality is that shares in the NSE 20 share index do also suffer from erratic changes in their return pattern. Thus, most companies have to contend with high revaluation in their investments. Given this argument, one would assume that the insurance industry has thus contributed to the decline in activity at the NSE.

The Kenyan capital market has been characterized by very low average returns. This emanates from a mixture of both negative and positive returns for most shares. During the study period, the market average return was 3.18 percent. Most insurance companies performed better than the market average in absolute terms. But with the introduction of risk, most companies performed worse than the market portfolio. Since portfolio management is about diversification, then, it can be concluded that the insurance industry portfolio was poorly diversified than the market portfolio in terms of risk return trade off. In this respect, the null hypothesis in section 1.4 a) is accepted.

Although the focus of this research was on the performance of equity portfolios held by insurance companies in Kenya, it is important to note that this was based on investment at the Nairobi Stock Exchange (NSE). This study established that the market rate of return for NSE is less than the risk free rate during the study period. This raises the question of how efficient it is to invest at the NSE. Under normal circumstances, risk averse investors would be expected to invest in the money market at the risk free rate. This further complicates the issue of signaling effect between the capital market and the money market.

Recommendation

This research found out that most insurance companies maintained poorly diversified portfolios. This means that, there is need for insurance company managers to review the portfolio management process of adding new equities and disposing existing ones. This evaluation should aim at maintaining only shares with optimal performance in the portfolio. With good research, it would be easy to identify which shares to maintain in a portfolio and which ones not to. It is also necessary to appreciate timing judgment especially for shares that might perform poorly in the market.

5.2 Limitations of study

Only two insurance companies are quoted in the NSE while the other thirty-six are private companies. Most private companies had a problem with releasing the required research data, which they considered confidential especially considering the cutthroat competition in the market. This limits the information content that can be associated with the industry.

The portfolio betas have been calculated using the average monthly returns over a period of two years. Normally, betas are constantly changing and it is usually considered appropriate to generate betas over a period of five years. Since this study was limited to two years, it was considered that using five years betas would not reflect appropriately on portfolios under consideration especially given the falling market index.

The NSE is a weak form market. Much inefficiency is to be expected in this market and hence making the evaluation of portfolios difficult. The money market on the other hand has better returns thus affecting investment decisions for the risk adverse investors. This creates a problem especially when using capital market models that utilize the risk free rate .

5.3 Suggestions for further research

The above research was based on the quoted equity portfolio only. This is despite the fact that insurance companies hold other investments. Research can be undertaken on other portfolios such as property, deposits, mortgages, unquoted shares and debentures. It would be interesting to see how the different portfolios are optimized.

This research was also based on a two-year study period. However, it can be extended to cover a period of say five years. In view of the falling index, it would be interesting to widen the scope of this research into future periods. A clearer picture would thus emerge as to the investment policy of insurance companies.

APPENDIX

Appendix I- Capital Gains

	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98
	%	%	%	%	%	%	%	%	%	%	%	%
1 A. Bauman	-3.704	0.192	2.367	0.000	0.750	-2.916	-0.958	0.000	0.000	7.742	1.796	-0.294
2 African Lakes	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3 Athi River Mining	0.529	1.579	-1.554	-11.053	-19.527	32.353	-21.556	0.992	-11.220	0.474	-1.258	-3.662
4 Bamburi Cement	19.261	-10.412	7.108	-16.780	-1.031	7.475	-6.727	-12.042	0.000	-2.432	-8.476	20.739
5 BAT	-0.428	5.038	1.097	-0.723	-3.949	1.153	4.049	-0.548	-0.536	2.725	0.397	0.706
6 BBK	3.326	6.149	-15.883	-11.652	2.390	8.307	-5.010	1.472	-1.944	1.263	1.694	18.584
7 BOC Gas	19.261	-10.412	7.108	-16.780	-1.031	7.475	-6.670	-12.095	0.000	-2.432	-8.476	20.739
8 Brooke Bond	14.948	2.774	-8.781	-1.614	0.607	7.635	9.493	6.176	1.100	-1.699	-12.696	2.167
9 Car & General	18.137	5.047	-16.917	-25.602	3.806	-12.012	6.738	-0.332	0.000	0.000	1.667	-1.639
10 Carbacid	0.723	0.219	-7.900	-3.997	0.248	0.696	-0.290	5.725	4.272	8.803	2.535	19.455
11 CFC	8.636	4.864	0.150	-5.627	-13.879	3.860	0.177	-5.771	-1.063	-6.507	1.351	2.333
12 City Trust	24.176	-17.338	-3.209	3.612	-3.086	-5.071	-16.398	-5.275	0.000	0.471	1.874	0.000
13 CMC Holdings	23.630	11.000	-14.846	-10.619	-13.465	0.057	0.743	0.397	1.752	-2.333	1.394	-3.226
14 Crown Berger	17.769	12.281	-19.922	-3.415	-2.222	-1.550	-0.525	-2.954	7.935	-21.249	0.384	3.185
15 Diamond Trust	6.423	-1.322	-0.893	-8.784	8.840	2.223	-9.454	-3.676	-1.120	1.698	4.150	4.470
16 Dunlop Kenya	1.800	-1.031	-2.481	-2.036	-8.156	64.876	-0.995	-6.098	-13.727	-17.707	-7.848	3.948
17 E.A. Breweries	2.769	0.459	1.291	-5.453	-5.809	15.639	5.981	0.881	-3.973	-8.200	3.335	13.691
18 E.A. Cables	2.375	-2.387	-15.432	-1.018	0.165	-7.025	-6.496	-6.664	1.266	-2.000	-2.296	1.723
19 E.A. Packaging	-2.949	-13.405	-17.067	-3.478	-9.009	-22.508	-15.417	0.101	-0.402	-6.465	-13.067	-1.988
20 E.A. Portland Cement	57.400	-4.765	-6.104	-16.519	-8.085	-2.176	1.656	-6.890	-1.750	-4.326	-2.394	-4.905
21 Eaagads	-1.542	-7.660	-1.935	0.000	0.000	0.000	0.000	0.000	12.919	3.399	0.000	0.000
22 Express Kenya	7.864	-14.315	-4.585	-5.478	-19.845	-15.449	-10.231	1.370	22.651	-16.559	-0.677	-5.936
23 Firestone	12.674	9.955	1.176	-7.735	-3.452	0.057	-0.510	0.912	-9.040	-0.870	-5.075	2.508
24 George Williamson	14.633	20.186	13.003	12.329	2.927	0.546	-16.727	2.343	0.346	1.217	2.503	2.265
25 HFCK	11.258	-1.607	9.074	-12.091	0.568	-1.631	7.143	-6.548	-8.599	0.767	3.250	0.804
26 Hutchings Biemer	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27 ICDC Investments	27.894	6.748	-16.181	-9.575	8.682	3.143	-2.235	-1.351	-0.395	-12.345	-3.498	14.531
28 Jubilee Ins	9.488	5.978	6.125	1.154	-5.945	-10.327	-3.713	-0.229	-0.983	-0.430	-2.226	-1.971
29 Kakuzi	8.125	18.350	5.370	0.433	-5.569	9.718	8.796	1.795	0.854	-5.795	-2.482	2.471
30 Kapchorua Tea	0.000	3.929	3.780	0.000	0.000	0.000	11.338	11.825	0.000	0.000	0.798	0.264
31 KCB	10.392	-4.507	-10.967	-2.035	-3.250	1.971	0.100	0.644	-6.851	-10.728	-0.205	-3.392
32 Kenya Airways	12.466	-6.627	-3.226	-2.000	-2.313	-3.203	15.683	-3.234	-10.026	2.286	0.978	4.841
33 Kenya National Mills	14.516	7.277	24.617	10.536	2.145	11.120	-27.712	-2.807	-0.896	-7.337	-36.551	27.179
34 Kenya Oil Co.	13.042	22.157	-0.030	-17.122	-3.661	3.743	3.753	0.629	2.813	-4.797	-3.779	1.199
35 Kenya Orchards	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
36 KPL	11.479	3.508	-2.949	-11.684	3.334	9.748	-1.173	4.138	-3.988	0.301	-9.632	1.615
37 Limuru Tea	0.133	0.533	-0.109	0.109	0.000	0.000	-0.636	-0.160	1.469	0.000	0.000	0.000
38 Lonrho Motors	-0.154	4.597	-10.508	-3.073	-8.237	-17.335	-1.940	3.044	-17.356	8.311	-10.974	1.715
39 Marshalls(Ea)	1.888	6.301	-2.197	-0.606	-1.363	1.455	-2.079	1.135	-4.633	-5.123	0.320	0.279
40 Nation Media	1.394	2.484	4.647	42.741	-6.713	-33.943	-7.375	6.745	2.036	-9.002	7.814	7.321
41 NBK	7.160	-4.655	-7.480	-12.511	0.389	7.074	-9.502	-10.200	0.223	-12.889	-13.520	5.900
42 NIC	1.913	1.609	-4.511	-13.744	-9.642	5.835	3.198	-9.888	-9.433	-4.593	-12.434	11.818
43 Pan Africa Ins	-6.211	-6.739	-4.153	-10.745	-1.942	-1.238	0.251	-0.850	-6.051	-12.721	-1.107	3.545
44 Pearl Dry Cleaners	-1.905	-2.913	0.000	0.000	0.000	1.500	-0.887	-0.596	0.000	0.000	0.000	0.000
45 Rea Vipingo	5.093	-7.801	-6.667	-3.846	-5.429	2.417	-9.145	1.136	1.605	-2.054	-1.613	-1.639
46 Regent Undervalued Assets	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
47 Sasini Tea & Coffee	-0.351	15.125	20.993	-14.363	-2.241	5.517	-1.977	-0.544	1.041	-0.594	-8.037	1.011
48 Standard Chartered Bank	7.371	-8.299	-5.140	-2.709	-1.356	6.848	-5.674	-2.143	1.170	-4.846	2.327	16.726
49 Standard Newspapers	6.885	-6.721	-1.555	0.456	-9.674	-0.669	-16.240	-19.831	-10.035	-27.830	43.972	0.913
50 Theta Group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
51 Total Kenya	16.520	-1.924	-10.364	-14.069	-9.602	-0.939	-0.365	-0.244	-3.425	-6.890	-5.930	11.770
52 Tourism Promotion Serena	13.899	1.877	-2.641	-11.041	-6.950	2.515	-2.156	-1.596	-14.054	3.504	-0.174	10.435
53 Uchumi Super	17.911	-2.126	-1.403	-9.477	7.630	1.390	-2.578	0.143	2.214	0.676	-9.116	9.470
54 Unga Group	9.566	17.987	101.496	8.770	3.801	16.779	-13.151	0.333	-7.895	-4.608	-47.714	70.913

Jan-99	Feb-99	Mar-99	Apr-99	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99	Nov-99	Dec-99
%	%	%	%	%	%	%	%	%	%	%	%

1	A Bauman	-0.295	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.994	-2.471	-0.533
2	African Lakes	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	Athi River Mining	20.331	-13.049	-10.269	-5.634	12.873	-4.132	1.379	-15.306	7.028	12.570	-7.833	6.329
4	Bamburi Cement	19.368	-9.962	-9.805	-3.324	-15.750	8.286	8.858	2.943	-3.532	-7.950	-1.515	0.231
5	BAT	1.684	-1.104	-1.535	-1.105	1.189	1.161	-2.169	0.501	-0.356	-1.143	-3.540	-1.273
6	BBK	5.468	0.534	-11.146	-2.375	-0.649	0.203	6.550	-2.181	-10.948	1.138	-0.783	1.302
7	BOC Gas	19.368	-9.962	-9.805	-3.324	-15.750	8.286	8.858	2.943	-3.532	-7.950	-1.515	0.231
8	Brooke Bond	8.851	-0.021	0.422	1.044	1.463	0.526	-0.054	0.143	-30.449	-1.445	1.962	0.914
9	Car & General	0.000	2.917	2.429	1.186	-0.781	-16.299	-43.556	-16.667	0.000	80.000	5.556	-5.263
10	Carbacid	17.199	-6.494	16.778	5.804	8.622	-1.035	-11.806	-7.399	5.890	1.620	-7.984	-2.315
11	CFC	17.134	9.177	-15.537	-8.926	-7.086	4.419	4.710	-2.868	-4.362	41.193	-28.777	28.960
12	City Trust	-6.590	9.926	1.418	-6.181	-10.000	-1.612	2.303	0.130	-6.615	-1.389	3.756	0.000
13	CMC Holdings	0.116	-13.723	-2.685	-4.345	-0.397	1.701	3.630	3.022	0.433	-0.431	0.000	0.000
14	Crown Berger	18.272	-14.405	-4.268	12.611	-2.941	0.816	3.353	25.839	14.044	5.846	-8.100	-19.872
15	Diamond Trust	8.558	9.897	-0.468	-1.528	-4.336	0.208	-1.660	-2.532	-12.121	15.862	-2.721	9.091
16	Dunlop Kenya	36.951	-0.158	-12.103	-20.632	-6.826	-6.593	-1.830	-3.795	-4.152	-2.094	-24.926	-10.413
17	E.A Breweries	7.827	-1.675	10.871	7.888	4.788	-0.388	2.898	5.494	-1.077	-3.062	-12.821	0.816
18	E.A Cables	35.626	-11.809	-8.670	-4.041	-7.199	2.005	1.397	0.000	-3.061	-1.579	-14.439	0.000
19	E.A Packaging	8.238	10.831	-2.272	-0.541	-2.174	-10.278	-14.056	2.161	-22.426	-8.545	1.690	-31.574
20	E.A Portland Cement	6.017	6.108	2.649	-22.581	-24.679	24.085	-1.509	-1.950	-4.616	-24.348	-4.528	15.052
21	Eaagads	-1.528	-1.034	0.000	0.000	0.000	0.000	0.713	-32.476	-6.043	3.346	0.000	-2.590
22	Express Kenya	20.138	11.653	-11.954	-0.964	-19.074	-4.554	-3.435	-3.439	-15.145	-11.240	-0.924	2.798
23	Firestone	22.988	-0.890	-7.554	-4.571	1.497	-0.708	0.178	-2.135	-15.758	1.583	-0.637	11.475
24	George Williamson	2.944	-3.000	1.156	0.957	0.594	0.492	-1.750	-0.271	-17.857	-2.609	-5.804	-12.417
25	HFCK	13.621	-10.234	-9.446	-0.432	-10.766	7.935	-5.326	-1.902	-16.155	-4.624	-0.505	3.350
26	Hutchings Biemer	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27	ICDC Investments	14.870	1.021	5.643	2.871	3.808	0.354	2.679	2.346	0.652	-0.962	-0.714	2.117
28	Jubilee Ins	19.376	-5.778	1.079	0.915	-0.302	-11.818	2.612	0.402	-5.670	-8.133	-2.810	-0.277
29	Kakuzi	1.512	0.518	0.141	-13.366	-5.473	2.641	1.827	-0.395	-8.678	-10.154	-1.340	-9.750
30	Kapchorua Tea	1.474	29.668	0.000	9.120	8.871	1.010	0.000	0.000	0.000	0.000	0.000	0.000
31	KCB	12.730	0.031	-14.654	-15.033	-3.664	-0.518	4.570	-9.065	-10.302	-3.873	-11.893	1.723
32	Kenya Airways	10.290	-10.526	2.005	1.704	3.737	1.615	-8.802	-13.807	-8.554	2.041	16.333	13.467
33	Kenya National Mills	36.425	-4.433	-23.041	-9.176	-0.442	3.704	-0.286	-22.421	-15.051	-13.913	10.480	13.371
34	Kenya Oil Co.	3.790	4.459	-3.227	4.203	26.500	0.132	-15.579	2.011	-11.108	-5.466	11.818	12.520
35	Kenya Orchards	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
36	KPL	14.364	-3.245	-5.489	-5.808	-0.663	-1.159	-1.386	-1.549	-8.966	-6.251	-14.097	12.268
37	Limuru Tea	0.000	0.000	0.000	0.000	0.000	-7.237	-7.801	0.000	0.000	0.000	0.000	0.000
38	Lonrho Motors	-1.595	-3.704	8.894	-26.446	-0.360	1.687	2.014	-3.891	-8.157	-7.237	-5.674	0.000
39	Marshall's(Ea)	1.153	1.022	0.389	-3.023	-12.070	0.000	0.000	10.000	3.306	0.000	-4.200	-1.461
40	Nation Media	6.102	-2.215	0.343	-1.332	-3.719	-4.162	4.406	-11.052	-6.656	-1.255	-4.522	-1.389
41	NBK	35.097	-17.216	-14.695	-6.569	-8.125	6.293	-5.600	-10.169	-2.264	-5.405	-1.020	3.093
42	NIC	17.228	-5.945	1.299	2.808	-3.574	1.503	2.584	-6.985	2.274	2.647	-1.891	-7.746
43	Pan Africa Ins	-0.901	0.606	0.602	0.000	36.707	12.265	-6.204	0.458	3.727	66.228	-20.437	-20.012
44	Pearl Dry Cleaners	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-70.000	0.000	0.000	0.000
45	Rea Vipingo	2.333	-1.792	-2.488	-5.782	0.722	6.631	-1.849	-10.445	-4.398	-6.800	3.648	0.621
46	Regent Undervalued Assets	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
47	Sasini Tea & Coffee	2.960	-9.167	-8.976	-4.183	-5.715	-0.521	1.234	1.182	3.522	-3.050	-11.309	-9.963
48	Standard Chartered Bank	8.009	-1.503	-3.499	-2.467	-2.010	5.736	9.618	5.691	-1.441	3.088	5.689	-6.893
49	Standard Newspapers	28.191	1.867	-15.682	-9.179	3.351	-11.992	-30.058	0.585	-5.819	-4.678	-6.944	1.891
50	Theta Group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
51	Total Kenya	33.454	-14.696	2.114	1.313	2.153	0.645	5.000	3.887	-1.567	-8.060	3.896	0.417
52	Tourism Promotion Serena	18.898	-12.583	-1.288	2.379	1.574	-1.845	3.459	2.108	8.897	4.575	0.313	0.561
53	Uchumi Super	3.674	4.711	8.290	-2.908	-2.608	1.255	2.314	2.040	-0.594	-9.058	-15.762	0.000
54	Unga Group	4.961	-5.680	-17.798	-7.272	-8.225	-4.497	-0.168	-25.539	-11.538	-29.105	36.724	36.992

Appendix II- Dividend Yield

	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98
	%	%	%	%	%	%	%	%	%	%	%	%
1 A Bauman	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313
2 African Lakes	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3 Athi River Mining	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4 Bamburi Cement	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313
5 BAT	4.692	4.692	4.692	4.692	4.692	4.692	4.692	4.692	4.692	4.692	4.692	4.692
6 BBK	7.633	7.633	7.633	7.633	7.633	7.633	7.633	7.633	7.633	7.633	7.633	7.633
7 BOC Gas	1.458	1.458	1.458	1.458	1.458	1.458	1.458	1.458	1.458	1.458	1.458	1.458
8 Brooke Bond	3.333	3.333	3.333	3.333	3.333	3.333	3.333	3.333	3.333	3.333	3.333	3.333
9 Car & General	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10 Carbacid	0.917	0.917	0.917	0.917	0.917	0.917	0.917	0.917	0.917	0.917	0.917	0.917
11 CFC	0.279	0.279	0.279	0.279	0.279	0.279	0.279	0.279	0.279	0.279	0.279	0.279
12 City Trust	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833
13 CMC Holdings	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208
14 Crown Berger	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417
15 Diamond Trust	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267
16 Dunlop Kenya	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
17 E A Breweries	4.325	4.325	4.325	4.325	4.325	4.325	4.325	4.325	4.325	4.325	4.325	4.325
18 E A Cables	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833
19 E A Packaging	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20 E A Portland Cement	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417
21 Eaagads	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495	0.495
22 Express Kenya	0.708	0.708	0.708	0.708	0.708	0.708	0.708	0.708	0.708	0.708	0.708	0.708
23 Firestone	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625
24 George Williamson	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125
25 HFCK	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625	0.625
26 Hutchings Biemer	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27 ICDC Investments	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971	0.971
28 Jubilee Ins	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729
29 Kakuzi	1.146	1.146	1.146	1.146	1.146	1.146	1.146	1.146	1.146	1.146	1.146	1.146
30 Kapchorua Tea	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125
31 KCB	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000
32 Kenya Airways	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417
33 Kenya National Mills	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133
34 Kenya Oil Co.	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500	2.500
35 Kenya Orchards	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
36 KPL	8.883	8.883	8.883	8.883	8.883	8.883	8.883	8.883	8.883	8.883	8.883	8.883
37 Limuru Tea	141.667	141.667	141.667	141.667	141.667	141.667	141.667	141.667	141.667	141.667	141.667	141.667
38 Lonrho Motors	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
39 Marshalls(Ea)	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417
40 Nation Media	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688	0.688
41 NBK	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208
42 NIC	0.583	0.583	0.583	0.583	0.583	0.583	0.583	0.583	0.583	0.583	0.583	0.583
43 Pan Africa Ins	0.396	0.396	0.396	0.396	0.396	0.396	0.396	0.396	0.396	0.396	0.396	0.396
44 Pearl Dry Cleaners	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45 Rea Vipingo	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
46 Regent Undervalued Assets	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
47 Sasini Tea & Coffee	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250
48 Standard Chartered Bank	1.388	1.388	1.388	1.388	1.388	1.388	1.388	1.388	1.388	1.388	1.388	1.388
49 Standard Newspapers	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042
50 Theta Group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
51 Total Kenya	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250
52 Tourism Promotion Serena	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417
53 Uchumi Super	1.563	1.563	1.563	1.563	1.563	1.563	1.563	1.563	1.563	1.563	1.563	1.563
54 Unga Group	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083

	Jan-99	Feb 1999	Mar-99	Apr-99	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99	Nov-99	Dec-99
	%	%	%	%	%	%	%	%	%	%	%	%
1 A Bauman	0.521	0.521	0.521	0.521	0.521	0.521	0.521	0.521	0.521	0.521	0.521	0.521
2 African Lakes	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3 Athi River Mining	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4 Bamburi Cement	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417
5 BAT	6.567	6.567	6.567	6.567	6.567	6.567	6.567	6.567	6.567	6.567	6.567	6.567
6 BBK	6.942	6.942	6.942	6.942	6.942	6.942	6.942	6.942	6.942	6.942	6.942	6.942
7 BOC Gas	1.479	1.479	1.479	1.479	1.479	1.479	1.479	1.479	1.479	1.479	1.479	1.479
8 Brooke Bond	3.325	3.325	3.325	3.325	3.325	3.325	3.325	3.325	3.325	3.325	3.325	3.325
9 Car & General	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10 Carbacid	2.083	2.083	2.083	2.083	2.083	2.083	2.083	2.083	2.083	2.083	2.083	2.083
11 CFC	0.279	0.279	0.279	0.279	0.279	0.279	0.279	0.279	0.279	0.279	0.279	0.279
12 City Trust	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833
13 CMC Holdings	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313	0.313
14 Crown Berger	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833
15 Diamond Trust	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16 Dunlop Kenya	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.167
17 E A Breweries	5.042	5.042	5.042	5.042	5.042	5.042	5.042	5.042	5.042	5.042	5.042	5.042
18 E.A. Cables	1.875	1.875	1.875	1.875	1.875	1.875	1.875	1.875	1.875	1.875	1.875	1.875
19 E.A. Packaging	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20 E.A. Portland Cement	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
21 Eaagads	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130
22 Express Kenya	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
23 Firestone	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417
24 George Williamson	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042
25 HFC	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208
26 Hutchings Biemer	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27 ICDC Investments	1.079	1.079	1.079	1.079	1.079	1.079	1.079	1.079	1.079	1.079	1.079	1.079
28 Jubilee Ins	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729
29 Kakuzi	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833	0.833
30 Kapchorua Tea	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042
31 KCB	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
32 Kenya Airways	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
33 Kenya National Mills	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
34 Kenya Oil Co.	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125	3.125
35 Kenya Orchards	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
36 KPL	13.333	13.333	13.333	13.333	13.333	13.333	13.333	13.333	13.333	13.333	13.333	13.333
37 Limuru Tea	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000
38 Lonrho Motors	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
39 Marshalls(Ea)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40 Nation Media	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729	0.729
41 NBK	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
42 NIC	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750	0.750
43 Pan Africa Ins	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208
44 Pearl Dry Cleaners	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
45 Rea Vipingo	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
46 Regent Undervalued Assets	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
47 Sasini Tea & Coffee	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208
48 Standard Chartered Bank	2.054	2.054	2.054	2.054	2.054	2.054	2.054	2.054	2.054	2.054	2.054	2.054
49 Standard Newspapers	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50 Theta Group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
51 Total Kenya	1.417	1.417	1.417	1.417	1.417	1.417	1.417	1.417	1.417	1.417	1.417	1.417
52 Tourism Promotion Serena	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417
53 Uchumi Super	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250	1.250
54 Unga Group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Appendix III- Total Yield

	Jan-98	Feb-98	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Aug-98	Sep-98	Oct-98	Nov-98	Dec-98
	%	%	%	%	%	%	%	%	%	%	%	%
1 A. Bauman	-3.391	0.505	2.680	0.313	1.063	-2.603	-0.646	0.313	0.313	8.054	2.109	0.018
2 African Lakes	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3 Athi River Mining	0.529	1.579	-1.554	-11.053	-19.527	32.353	-21.556	0.992	-11.220	0.474	-1.258	-3.662
4 Bamburi Cement	19.573	-10.099	7.421	-16.468	-0.718	7.788	-6.415	-11.729	0.313	-2.120	-8.163	21.052
5 BAT	4.263	9.730	5.788	3.968	0.743	5.845	8.741	4.144	4.155	7.416	5.089	5.398
6 BBK	10.959	13.782	-8.249	-4.019	10.024	15.940	2.624	9.105	5.689	8.897	9.327	26.217
7 BOC Gas	20.719	-8.953	8.566	-15.322	0.427	8.934	-5.212	-10.637	1.458	-0.974	-7.017	22.198
8 Brooke Bond	18.282	6.108	-5.447	1.719	3.940	10.969	12.826	9.509	4.433	1.635	-9.363	5.500
9 Car & General	18.137	5.047	-16.917	-25.602	3.806	-12.012	6.738	-0.332	0.000	0.000	1.667	-1.639
10 Carbacid	1.640	1.136	-6.984	-3.081	1.164	1.613	0.627	6.641	5.189	9.720	3.452	20.371
11 CFC	8.916	5.143	0.429	-5.348	-13.599	4.139	0.456	-5.492	-0.783	-6.227	1.631	2.613
12 City Trust	25.010	-16.504	-2.376	4.445	-2.252	-4.237	-15.564	-4.442	0.833	1.304	2.707	0.833
13 CMC Holdings	23.838	11.208	-14.637	-10.411	-13.257	0.266	0.952	0.606	1.961	-2.125	1.602	-3.017
14 Crown Berger	18.185	12.697	-19.505	-2.998	-1.806	-1.133	-0.108	-2.537	8.351	-20.832	0.800	3.601
15 Diamond Trust	6.690	-1.055	-0.626	-8.517	9.106	2.490	-9.187	-3.410	-0.853	1.965	4.416	4.737
16 Dunlop Kenya	1.967	-0.865	-2.315	-1.869	-7.989	65.042	-0.828	-5.932	-13.560	-17.541	-7.682	4.115
17 E.A. Breweries	7.094	4.784	5.616	-1.128	-1.484	19.964	10.306	5.206	0.352	-3.875	7.660	18.016
18 E.A. Cables	3.209	-1.554	-14.599	-0.185	0.998	-6.192	-5.662	-5.830	2.099	-1.167	-1.463	2.557
19 E.A. Packaging	-2.949	-13.405	-17.067	-3.478	-9.009	-22.508	-15.417	0.101	-0.402	-6.465	-13.067	-1.988
20 E.A. Portland Cement	57.817	-4.348	-5.687	-16.102	-7.668	-1.759	2.073	-6.473	-1.333	-3.909	-1.977	-4.488
21 Eaagads	-1.047	-7.166	-1.440	0.495	0.495	0.495	0.495	0.495	13.414	3.894	0.495	0.495
22 Express Kenya	8.573	-13.607	-3.876	-4.769	-19.137	-14.741	-9.523	2.079	23.359	-15.851	0.032	-5.227
23 Firestone	13.299	10.580	1.801	-7.110	-2.827	0.682	0.115	1.537	-8.415	-0.245	-4.450	3.133
24 George Williamson	17.758	23.311	16.128	15.454	6.052	3.671	-13.602	5.468	3.471	4.342	5.628	5.390
25 HFCK	11.883	-0.982	9.699	-11.466	1.193	-1.006	7.768	-5.923	-7.974	1.392	3.875	1.429
26 Hutchings Biemer	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27 ICDC Investments	28.865	7.719	-15.210	-8.604	9.653	4.114	-1.264	-0.380	0.576	-11.374	-2.527	15.502
28 Jubilee Ins	10.217	6.707	6.855	1.884	-5.216	-9.598	-2.984	0.500	-0.253	0.299	-1.497	-1.242
29 Kakuzi	9.271	19.496	6.516	1.579	-4.423	10.863	9.942	2.941	2.000	-4.649	-1.336	3.617
30 Kapchorua Tea	3.125	7.054	6.905	3.125	3.125	3.125	14.463	14.950	3.125	3.125	3.923	3.389
31 KCB	15.392	0.493	-5.967	2.965	1.750	6.971	5.100	5.644	-1.851	-5.728	4.795	1.608
32 Kenya Airways	12.883	-6.210	-2.809	-1.583	-1.896	-2.787	16.100	-2.817	-9.609	2.702	1.394	5.258
33 Kenya National Mills	14.649	7.410	24.750	10.669	2.278	11.253	-27.578	-2.674	-0.763	-7.203	-36.418	27.313
34 Kenya Oil Co.	15.542	24.657	2.470	-14.622	-1.161	6.243	6.253	3.129	5.313	-2.297	-1.279	3.699
35 Kenya Orchards	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
36 KPL	20.363	12.392	5.935	-2.800	12.217	18.631	7.711	13.021	4.895	9.184	-0.749	10.498
37 Limuru Tea	141.800	142.199	141.558	141.775	141.667	141.667	141.031	141.507	143.135	141.667	141.667	141.667
38 Lonrho Motors	-0.154	4.597	-10.508	-3.073	-8.237	-17.335	-1.940	3.044	-17.356	8.311	-10.974	1.715
39 Marshalls(Ea)	2.305	6.718	-1.780	-0.189	-0.946	1.871	-1.662	1.551	-4.216	-4.707	0.737	0.696
40 Nation Media	2.081	3.171	5.334	43.428	-6.025	-33.256	-6.688	7.433	2.723	-8.315	8.502	8.009
41 NBK	7.368	-4.446	-7.272	-12.302	0.597	7.282	-9.294	-9.992	0.431	-12.681	-13.312	6.108
42 NIC	2.496	2.192	-3.927	-13.160	-9.058	6.418	3.782	-9.305	-8.850	-4.010	-11.850	12.402
43 Pan Africa Ins	-5.816	-6.343	-3.757	-10.349	-1.546	-0.842	0.646	-0.454	-5.656	-12.326	-0.711	3.941
44 Pearl Dry Cleaners	-1.905	-2.913	0.000	0.000	0.000	1.500	-0.887	-0.596	0.000	0.000	0.000	0.000
45 Rea Vipingo	5.093	-7.801	-6.667	-3.846	-5.429	2.417	-9.145	1.136	1.605	-2.054	-1.613	-1.639
46 Regent Undervalued Assets	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
47 Sasini Tea & Coffee	0.899	16.375	22.243	-13.113	-0.991	6.767	-0.727	0.706	2.291	0.656	-6.787	2.261
48 Standard Chartered Bank	8.758	-6.912	-3.752	-1.322	0.032	8.236	-4.287	-0.756	2.557	-3.459	3.714	18.113
49 Standard Newspapers	6.927	-6.679	-1.513	0.497	-9.632	-0.628	-16.198	-19.789	-9.993	-27.789	44.014	0.954
50 Theta Group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
51 Total Kenya	17.770	-0.674	-9.114	-12.819	-8.352	0.311	0.885	1.006	-2.175	-5.640	-4.680	13.020
52 Tourism Promotion Serena	14.315	2.294	-2.225	-10.624	-6.534	2.932	-1.739	-1.179	-13.637	3.921	0.243	10.851
53 Uchumi Super	19.474	-0.563	0.160	-7.914	9.192	2.952	-1.016	1.706	3.777	2.238	-7.554	11.033
54 Unga Group	9.649	18.070	101.579	8.853	3.884	16.863	-13.067	0.416	-7.812	-4.525	-47.630	70.996

	Jan-99	Feb 1999	Mar-99	Apr-99	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99	Nov-99	Dec-99
	%	%	%	%	%	%	%	%	%	%	%	%

1 A Bauman	0.226	0.521	0.521	0.521	0.521	0.521	0.521	0.521	0.521	-8.473	-1.950	-0.013
2 African Lakes	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3 Athi River Mining	20.331	-13.049	-10.269	-5.634	12.873	-4.132	1.379	-15.306	7.028	12.570	-7.833	6.329
4 Bamburi Cement	19.785	-9.546	-9.388	-2.908	-15.333	8.702	9.275	3.360	-3.115	-7.533	-1.098	0.647
5 BAT	8.250	5.463	5.032	5.462	7.756	7.728	4.397	7.067	6.211	5.424	3.026	5.293
6 BBK	12.409	7.476	-4.205	4.567	6.292	7.144	13.492	4.760	-4.006	8.080	6.159	8.244
7 BOC Gas	20.848	-8.483	-8.326	-1.845	-14.270	9.765	10.337	4.422	-2.053	-6.471	-0.036	1.710
8 Brooke Bond	12.176	3.304	3.747	4.369	4.788	3.851	3.271	3.468	-27.124	1.880	5.287	4.239
9 Car & General	0.000	2.917	2.429	1.186	-0.781	-16.299	-43.556	-16.667	0.000	80.000	5.556	-5.263
10 Carbacid	19.283	-4.410	18.861	7.887	10.705	1.048	-9.723	-5.315	7.973	3.704	-5.901	-0.231
11 CFC	17.413	9.456	-15.258	-8.647	-6.807	4.698	4.989	-2.589	-4.083	41.472	-28.498	-29.239
12 City Trust	-5.757	10.760	2.251	-5.348	-9.167	-0.779	3.136	0.963	-5.781	-0.556	4.589	0.833
13 CMC Holdings	0.428	-13.411	-2.372	-4.032	-0.084	2.014	3.942	3.334	0.746	-0.119	0.313	0.313
14 Crown Berger	19.105	-13.572	-3.435	13.445	-2.108	1.649	4.186	26.672	14.878	6.679	-7.267	-19.038
15 Diamond Trust	8.558	9.897	-0.468	-1.528	-4.336	0.208	-1.660	-2.532	-12.121	15.862	-2.721	9.091
16 Dunlop Kenya	37.117	0.008	-11.937	-20.465	-6.659	-6.427	-1.663	-3.628	-3.986	-1.927	-24.760	-10.246
17 E.A. Breweries	12.869	3.366	15.913	12.930	9.830	4.653	7.940	10.535	3.964	1.980	-7.780	5.858
18 E.A. Cables	37.501	-9.934	-6.795	-2.166	-5.324	3.880	3.272	1.875	-1.186	0.296	-12.564	1.875
19 E.A. Packaging	8.238	10.831	-2.272	-0.541	-2.174	-10.278	-14.056	2.161	-22.426	-8.545	1.690	-31.574
20 E.A. Portland Cement	6.017	6.108	2.649	-22.581	-24.679	24.085	-1.509	-1.950	-4.616	-24.348	-4.528	15.052
21 Eaagads	-1.398	-0.904	0.130	0.130	0.130	0.130	0.843	-32.346	-5.912	3.476	0.130	-2.460
22 Express Kenya	20.138	11.653	-11.954	-0.964	-19.074	-4.554	-3.435	-3.439	-15.145	-11.240	-0.924	2.798
23 Firestone	23.404	-0.473	-7.137	-4.155	1.914	-0.291	0.595	-1.719	-15.341	1.999	-0.221	11.892
24 George Williamson	3.985	-1.958	2.198	1.999	1.636	1.534	-0.708	0.771	-16.815	-1.567	-4.762	-11.375
25 HFCK	13.830	-10.026	-9.238	-0.223	-10.558	8.144	-5.118	-1.693	-15.947	-4.416	-0.297	3.559
26 Hutchings Biemer	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
27 ICDC Investments	15.950	2.101	6.722	3.950	4.887	1.433	3.758	3.425	1.731	0.117	0.365	3.196
28 Jubilee Ins	20.105	-5.049	1.808	1.644	0.427	-11.089	3.341	1.131	-4.941	-7.404	-2.081	0.452
29 Kakuzi	2.345	1.351	0.974	-12.532	-4.640	3.475	2.661	0.438	-7.844	-9.321	-0.506	-8.917
30 Kapchorua Tea	2.515	30.710	1.042	10.162	9.913	2.052	1.042	1.042	1.042	1.042	1.042	1.042
31 KCB	12.730	0.031	-14.654	-15.033	-3.664	-0.518	4.570	-9.065	-10.302	-3.873	-11.893	1.723
32 Kenya Airways	10.290	-10.526	2.005	1.704	3.737	1.615	-8.802	-13.807	-8.554	2.041	16.333	13.467
33 Kenya National Mills	36.425	-4.433	-23.041	-9.176	-0.442	3.704	-0.286	-22.421	-15.051	-13.913	10.480	13.371
34 Kenya Oil Co.	6.915	7.584	-0.102	7.328	29.625	3.257	-12.454	5.136	-7.983	-2.341	14.943	15.645
35 Kenya Orchards	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
36 KPL	27.698	10.088	7.844	7.525	12.671	12.174	11.948	11.784	4.367	7.082	-0.764	25.601
37 Limuru Tea	50.000	50.000	50.000	50.000	50.000	42.763	42.199	50.000	50.000	50.000	50.000	50.000
38 Lonrho Motors	-1.595	-3.704	8.894	-26.446	-0.360	1.687	2.014	-3.891	-8.157	-7.237	-5.674	0.000
39 Marshalls(Ea)	1.153	1.022	0.389	-3.023	-12.070	0.000	0.000	0.000	3.306	0.000	-4.200	-1.461
40 Nation Media	6.831	-1.485	1.073	-0.603	-2.990	-3.432	5.135	-10.323	-5.927	-0.525	-3.793	-0.660
41 NBK	35.097	-17.216	-14.695	-6.569	-8.125	6.293	-5.600	-10.169	-2.264	-5.405	-1.020	3.093
42 NIC	17.978	-5.195	2.049	3.558	-2.824	2.253	3.334	-6.235	3.024	3.397	-1.141	-6.996
43 Pan Africa Ins	-0.693	0.814	0.811	0.208	36.915	12.473	-5.995	0.666	3.935	66.436	-20.229	-19.804
44 Pearl Dry Cleaners	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-70.000	0.000	0.000	0.000
45 Rea Vipingo	2.333	-1.792	-2.488	-5.782	0.722	6.631	-1.849	-10.445	-4.398	-6.800	3.648	0.621
46 Regent Undervalued Assets	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
47 Sasini Tea & Coffee	3.168	-8.958	-8.767	-3.974	-5.507	-0.312	1.442	1.390	3.730	-2.841	-11.101	-9.755
48 Standard Chartered Bank	10.063	0.551	-1.445	-0.413	0.044	7.790	11.672	7.745	0.614	5.142	7.744	-4.838
49 Standard Newspapers	28.191	1.867	-15.682	-9.179	3.351	-11.992	-30.058	0.585	-5.819	-4.678	-6.944	1.891
50 Theta Group	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
51 Total Kenya	34.871	-13.279	3.530	2.730	3.570	2.062	6.417	5.304	-0.150	-6.643	5.313	1.833
52 Tourism Promotion Serena	19.314	-12.166	-0.871	2.796	1.991	-1.428	3.875	2.524	9.313	4.992	0.729	0.977
53 Uchumi Super	4.924	5.961	9.540	-1.658	-1.358	2.505	3.564	3.290	0.656	-7.808	-14.512	1.250
54 Unga Group	4.961	-5.680	-17.798	-7.272	-8.225	-4.497	-0.168	-25.539	-11.538	-29.105	36.724	36.992

Appendix IV- List of Insurance companies in Kenya

	Company Name
--	--------------

1	Alico
2	Apollo Insurance
3	Blue Shield Insurance
4	British American
5	Cannon Assurance
6	Concord
7	Cooperative Insurance Co.
8	Corporate
9	Fidelity Shield
10	First Assurance
11	Gateway Insurance Co.
12	Geminia
13	General Accident
14	Heritage AII
15	Intra Africa Insurance
16	Invesco Assurance
17	Insurance Company Of East Africa Ltd.
18	Jubilee
19	Kenindia
20	Kenya Orient
21	Kenyan Alliance
22	Lakestar Insurance
23	Lion Of Kenya
24	Madison
25	Merchandise Life & General
26	Monarch Insurance
27	Occidental
28	Old Mutual
29	Pan Africa
30	Phoenix
31	Pioneer
32	Royal Insurance Co.
33	Stallion Insurance
34	Standard Assurance
35	Tausi
36	Trident
37	UAP Provincial
38	United Insurance

Appendix V- Companies quoted at the NSE

Code	Company	
1	Brooke Bond	Agriculture
2	Eaagads	Agriculture
3	George Williamson	Agriculture
4	Kakuzi	Agriculture
5	Kapchorua Tea	Agriculture
6	Limuru Tea	Agriculture
7	Rea Vipingo	Agriculture
8	Sasini Tea & Coffee	Agriculture
9	Theta Group	Agriculture
10	African Lakes	Commercial and Services
11	A.Bauman	Commercial and Services
12	CMC Holdings	Commercial and Services
13	Car & General	Commercial and Services
14	Express Kenya	Commercial and Services
15	Hutchings Biemer	Commercial and Services
16	Kenya Airways	Commercial and Services
17	Lonrho Motors	Commercial and Services
18	Marshalls(Ea)	Commercial and Services
19	Nation Media	Commercial and Services
20	Pearl Dry Cleaners	Commercial and Services
21	Tourism Promotion Serena	Commercial and Services
22	Standard Newspapers	Commercial and Services
23	Uchumi Super	Commercial and Services
24	BBK	Finance and Investment
25	City Trust	Finance and Investment
26	CFC	Finance and Investment
27	Diamond Trust	Finance and Investment
28	ICDC Investments	Finance and Investment
29	HFCK	Finance and Investment
30	Jubilee Ins	Finance and Investment
31	KCB	Finance and Investment
32	NBK	Finance and Investment
33	NIC	Finance and Investment
34	Regent Undervalued Assets	Finance and Investment
35	Pan Africa Ins	Finance and Investment
36	Standard Chartered Bank	Finance and Investment
37	Athi River Mining	Industrial and Allied
38	BAT	Industrial and Allied
39	Bamburi Cement	Industrial and Allied
40	BOC Gas	Industrial and Allied
41	Carbacid	Industrial and Allied
42	Crown Berger	Industrial and Allied
43	Dunlop Kenya	Industrial and Allied
44	E.A Cables	Industrial and Allied
45	E.A.Packaging	Industrial and Allied
46	E.A.Portland Cement	Industrial and Allied
47	E.A.Breweries	Industrial and Allied
48	Firestone	Industrial and Allied
49	Kenya National Mills	Industrial and Allied
50	Kenya Oil Co.	Industrial and Allied
51	Kenya Orchards	Industrial and Allied
52	KPL	Industrial and Allied
53	Total Kenya	Industrial and Allied
54	Unga Group	Industrial and Allied

REFERENCES

- Benari.Y (Winter 1988) "An Asset Allocation Paradigm"; Journal Of Portfolio Management
- Bugo N.O (1995) "Portfolio Diversification: An Empirical Investigation Of Commercial Banks In Kenya"; MBA Thesis; UON.
- Clayton G & Osborn W.T (1964) "Insurance Companies Investment Principles And Policy"; George Allen & Unwin Ltd; London; Pg.84
- Cohen K, J And Pogue J.A (April 1967) "An Empirical Evaluation Of Alternative Selection Models"; Journal Of Business 40 No.2;; Pp.166-93
- Elton E.J and Gruber M.J (1995) "Modern Portfolio Theory And Investment Analysis"; 5th Edition; John Wiley And Sons; New York.
- Elton.E; Gruber.J And Padberg.M (Spring 1978) "Optimum Portfolios From Simple Ranking Devices"; Journal Of Portfolio Management, Pp.15-19
- Fischer E & Jordan R.J (1996) "Security Analysis And Portfolio Management"; Prentice Hall;
- Fong G, Pearson C & Vasicek O (Spring 1983) "Bond Performance; Analysing Sources Of Return"; Journal Of Portfolio Management 9; No.3; Pp.46-50

- Freeman Megbenu (1976) "Portfolio Holding Of Insurance Companies In Kenya"; MBA Thesis; UON;
- Gordon A.J & Sharpe F.W (1989) "Fundamentals Of Investments"; Prentice Hall;
- Jensen C, Michael (May 1968) "The Performance Of Mutual Funds In The Period 1945-1964"; Journal Of Finance 23; No. 2; 389-416
- Jones L.D (1968) "Investment Policies Of Life Insurance Companies"; Harvard University; Boston;; Chp.1&2
- Keith V Smith (July 1969) "Stock Price And Economic Indexes For Generating Efficient Portfolios"; Journal Of Business 42;; Pp.326-36
- Markowitz H (March 1952) "Portfolio Selection"; Journal Of Finance ; Volume 7;; Pp.77-91
- Markowitz (1959) "Portfolio Selection: Efficient Diversification Of Investments"; John Wiley & Sons; New York.
- McMenamin Jim (1999) "Financial Management: An Introduction"; Routledge; Newyork.
- Muigai Thumbi P (1996) "An Evaluation Of Pension Schemes And Provident Funds Investment Portfolio In Kenya"; MBA Thesis; UON.

- Ochung D.O (1999) "An Empirical Analysis Of The Relationship Between Deposit Portfolio And Profitability"; MBA Thesis; University Of Nairobi.
- Reilly F.K & Keith C.B (1997) "Investment Analysis And Portfolio Management"; The Dryden Press: New York;
- Rutterford Janette (1983) "Introduction To Stock Exchange Investment"; Macmillan Publishers; Hong Kong;; pp.359-388
- Sharpe F, W (January 1963) "A Simplified Model For Portfolio Analysis"; Management Science 9; Pp.277-93
- Sharpe F, W (January 1966) "Mutual Funds Performance"; Journal of Business; 39, no.1, part 2; 119-138
- Sneyd Michael (1996) "Insurance"; Prentice Hall; New York;
- Tesfamariam Azieb (1996) "World, Country, And Industry Factors In Swedish Stock Prices"; Master Of Finance Thesis; Goteborg University.
- Treynor J.L (January-February 1965) "How To Rate The Management Of Investment Funds"; Harvard Business Review 43; No.1; Pp.63-75
- Wallingford B.A (June 1967) "A survey and comparison of portfolio selection models"; Journal of finance and Quantitative analysis; pp. 85-106

Weston J.F And Copeland T.E (1998)

"Managerial Finance"; Cassell Educational Ltd:
New York;