"AN INVESTIGATION INTO THE RELATIONSHIP BETWEEN RISK AND RETURN OF COMPANIES LISTED UNDER THE VARIOUS MARKET SEGMENTS: The Case of the Nairobi Stock Exchange"

KAMAU G. SIMON

D61/P/8104/98

A RESEARCH PROJECT SUBMITED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTERS OF BUSINESS ADMINISTRATION OF THE UNIVERSITY OF NAIROBI.

JUNE 2001

DECLARATION

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

SIGNED: _____ DATE 23rd Oct 2002

Simon George Kamau
STUDENT

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

SIGNED: _____ DATE 24/10/2002

CYRUS IRAYA
LECTURER, DEPARTMENT OF ACCOUNTING

UNIVERSITY OF NAIROBI

DEDICATION

TO

Cecilia Wanjiru my Mother and Antonina Waturi my Grandmother

TABLE OF CONTENTS

ACKNOWLEDGEMENT

ABSTRACT

The principal objective of this study was to establish whether there exist any difference in terms of risks and returns of companies listed under the two market segments namely; the Main Investment Market Segment and the Alternative Investment Market Segment at the Nairobi Stock Exchange. These companies had previously operated in the same market under similar requirements until June 2000 when they were re-classified into the two segments i.e. the Main Investment Market Segment and the Alternative Investment Market Segment.

The study utilized historical market data collected from the Nairobi Stock Exchange for the period between January 1996 to December 2000. Individual companies' Sharpe Ratios for the entire period were computed and analyzed. Difference between Sharpe Ratios of companies listed under the Main Investment Market Segment and those of companies listed under the Alternative Investment Market Segment were analyzed using Wilcoxon Rank Sum test

The research found out that there exist no significant difference in terms of return and risk between those companies listed under the Main Investment Market Segment and those listed under the Alternative Investment Market Segment at the Nairobi Stock Exchange. The research therefore concluded that the companies listed under the two different segments mentioned above are the same in terms of performance as measured by risk and return.

In conclusion therefore, the failure by NSE market segmentation to address the interest of the consumer (rational investor) who considers the risk and return performance of the securities as his basis of selecting products (securities), lead to ineffective segmentation.

LIST OF ABBREVIATIONS

AIMS	Alternative Investment Market Segment.
AVR	Average.
AV RET	Average Return.
CAPM	Capital Asset Pricing Model.
CMA	Capital Markets Authority.
EXE RET	Excess Return.
FISMS	Fixed Income Security Market Segment.
FOMS	Futures and Options Market Segment.
MIMS	Main Investment Market Segment.
MRK SEG	Market Segment.
NSE	Nairobi Stock Exchange.
RET	Returns.
ROI	Return on Investment.
SDV	Standard Deviation.
SQR	Square Root
T-Bills	Treasury Bills.
WSE	Warsaw Stock Exchange.
EXE RET	Excess Return.

CHAPTER ONE

1.0.0 INTRODUCTION

1.1.0 BACKGROUND

A stock exchange is a market that deals in the exchange of securities issued by publicly quoted companies and the government. In order to be robust, a stock exchange needs to facilitate rational and efficient allocation of capital, which is a scarce resource. An efficient market will therefore have the expertise, the institutions and the means to prioritise access to capital by competing users so that an economy manages to realise maximum output at least cost i.e. optimum production level[1].

1.1.1 The Nairobi Stock Exchange

Nairobi Stock Exchange (NSE) was constituted in 1954 as a voluntary association of stockbrokers registered under the Societies Act[2]. Since its inception, the NSE has undergone various major changes. Some of the changes include the following: -

In the early 1980's the government began to focus more intensely on the country's financial system. It aimed at adopting more market friendly reforms to foster competition and more sustainable economic growth. These reforms gained momentum in the late 1980's with the privatisation program targeting the state corporations such as Kenya Commercial Bank, Kenya Airways, etc. The NSE was chosen as a market in which shares of the government in these state corporations were floated to the public. For instance, Kenya Airways floated to the public its shares in 1996 and more than 110,000 shareholders acquired a stake in the airline. In the same year, Kenya Airways Privatisation team was awarded the World Bank Award for Excellence for being a model success story in the divestiture of state-owned enterprises. The aim of floating the shares through the NSE was to encourage local investments[3].

In line with the government's aim to re-emphasise its commitment to the financial reform process and further boost investor confidence, a regulatory body to oversee

---

[1] Nairobi Stock Exchange Limited, "Market Fact File 2000", (Unpublished Paper, NSE Library, 2000)
[2] Ibid.
[3] Ibid.

NSE's activities, amongst other objectives was created through an act of parliament, the Capital Markets Authority Act (CAP 485 A) of the laws of Kenya (Kihumba (1992)).

The key words in the objectives of creating the Capital Markets Authority were "promotion" and "facilitation" of an orderly, fair and efficient capital market in Kenya. As pointed out by Kihumba (1992), the ultimate test of CMA's worthiness, as a public institution will be its ability to satisfactorily respond to the users of it's services; the investors, companies in need of capital, stockbrokers, dealers, etc.

In January 1991, the NSE changed its status into a company limited by guarantee. Further to this, it ended the old "call-over" trading system in favour of the floor based "Open Outcry System"[4].

In July 1994, the NSE moved to a more modern and spacious location at the Nation Centre. In the same year, the International Finance Corporation's Capital Market Division rated the NSE as the world's best performer among the emerging markets with a return of 179% in dollar terms. Also in the same year, the NSE 20-Share Index recorded an all-record high of 5030 points on 18th February [5].

The World Bank and the International Monetary Fund (IMF) have been key players in promoting changes geared towards privatisation and strengthening of financial markets in Africa, Latin America, Asia, Central and Eastern Europe (Jemakowicz and Gornik (1998)). The two organisations have contributed significantly to the reform process at the NSE.

1.1.2 NSE Market Segmentation

During the year 2000, the Nairobi Stock Exchange embarked on a major reform of the market dubbed "Market Segmentation and Re-organisation". The aim of the reform was "developing and operating an efficient and transparent securities market to the best international standards for the benefit of all stakeholders"[6].

---

[4] Ibid.
[5] Ibid
[6] Nairobi Stock Exchange "Press Release 5th Feb 2001" (NSE Library, 2001).

The fundamental market reform process was launched with effect from July 1st 2000. This reform process involved the re-organisation of the market into four independent market segments. The market segments are:

Main Investments Market Segment (MIMS).
This segment is the main market and has the highest entry and continuity market requirements with respect to net assets and share capital among others.

Alternative Investment Market Segment (AIMS)
This segment besides having the same strict disclosure requirements as MIMS has lower entry and continuity requirements with respect to minimum assets and share capital.

The other two market segments include Fixed Income Security Market Segment (FISMS) and Futures and Options Market Segment (FOMS), whose details are not relevant to this research.

As part of the process of market reforms and segmentation, the existing companies listed at the Stock Exchange were re-classified with some of them falling under the Main Investment Market segment while others were listed under the Alternative Investment Market Segment. Consultations were held between CMA, NSE, and the stakeholders during the re-organisation. All market participants were then allowed a transition period that extended into the year 2001, to enable them implement the changes to meet the minimum requirements of the segment under which they wished their securities to be listed[7]. As at May 30th 2001, forty-four (44) companies had been listed under the MIMS while eleven (11) companies were listed under the AIMS[8].

The Nairobi Stock Exchange market reform and segmentation process was done with consideration of various other foreign models of capital market operations like, the London Stock Exchange, Indian Capital Market, Malaysian Capital Market, etc. The

---

[7] Nairobi Stock Exchange "Press Release 5th Feb 2001" (NSE Library, 2001).
[8] Nairobi Stock Exchange, "Daily Price List May 30th 2001" (NSE Library, 2001).

entire process of reorganisation was under the directorship of CMA, the NSE's regulating authority[9].

1.2.0 STATEMENT OF THE PROBLEM

While choosing among alternative investment instruments, investors estimate and evaluate the expected risk-return trade-off for the alternative investments available. Each of these parameters also serves as a yardstick in determining which market, market segment or asset portfolio to invest in.

A study performed at the Warsaw Stock Exchange which is an emerging market with similar segments as the NSE reveal that the main market segment's earnings results were slightly stronger than the whole market while being definitely stronger than the parallel (alternative) market segment's (Jermakowicz and Gornik, (1998)). In light of market segmentation concept this shows that the performance of the two market segments ought to be significantly different.

It is therefore important to understand whether the re-classification of companies listed at the NSE's two market segments namely the Main Investment Market Segment and the Alternative Investment Market Segment reflects significant differences in performance levels of those companies.

This research analysed the risk and return relationship between the two market segments i.e. the risk-return relationship between those companies listed under the Main Investment Market Segment and those companies listed under the Alternative Investment Market Segment at the NSE.

1.3.0 OBJECTIVE OF THE STUDY

To establish whether the companies that are classified under the Main Investment Market Segment are actually different, in terms of risk and return, with those that are classified under the Alternative Investment Market Segment at the Nairobi Stock Exchange.

---

[9] Nairobi Stock Exchange Limited, "Market Fact File 2000", (Unpublished Paper, NSE Library, 2000).

1.4.0   IMPORTANCE OF THE STUDY

Investors

The findings of this study would assist investors in making more informed decisions when choosing among securities listed in either of the two market segments or in deciding the composition of their investment portfolio.

Financial Advisors

The findings of this study would aid financial advisors with information that can assist them in advising their clients appropriately on the performances of securities listed under the various market segments.

Academicians

This study provides a body of knowledge to scholars in the field of financial theory and will aid future research work.

Capital Markets Authority

Findings of this study provide further knowledge on how the NSE market segmentation has been done and would aid the CMA in making future adjustments if need be.

CHAPTER TWO

2.0.0 LITERATURE REVIEW

2.1.0 MARKET SEGMENTATION

Market segmentation defined from a marketing perspective is the process of dividing a varied and differing group of buyers (or potential buyers) into smaller groups within which broadly similar patterns of buyers' needs exist (Wilson and Gilligan (1998)). Stanton (1994) defines market segmentation as a process of dividing the total market for a good or service into several smaller groups, such that the members of each group are similar with respect to factors that influence demand. A major success to market segmentation is the ability of a company to segment it's market effectively.

The benefits of market segmentation as outlined by Stanton includes:

i)   Enhancing management's ability to market services or products and make more efficient use of scarce marketing resources.

ii)   Development of strong positions in specialised market segments thereby enhancing rapid growth for medium-sized firms.

iii)   All companies including the large ones become more focused using market segmentation strategy to reach homogeneous market fragments that previously constituted a mass, heterogeneous market.

Wilson and Gilligan (1998), point out that a key to a successful differentiation strategy is to develop the point of differentiation from the consumers' perspective rather than from the perspective of the business operations. The rationale of market segmentation can therefore be said to be straight forward and can be expressed most readily in-terms of the fact that rarely does a single product or marketing approach appeal to the needs and wants of all consumers.

2.1.1   Conditions for Effective Market Segmentation

For segmentation to be effective Stanton (1994) lists the following as the required conditions:

i)   The basis for segmentation i.e. characteristics used to describe what segments customers fall into must be measurable and data describing the characteristics (e.g. age) quantifiable.

ii)   The market segment should be accessible through the existing marketing institutions, advertising media etc.

iii)   Each segment should be large enough to be profitable.

2.1.2   Approaches to Market Segmentation

Market segmentation process involves either an *apriori* approach or a *post hoc* approach. An *apriori* approach is based on the notion that the planner decides in advance, of any research which basis for segmentation he intends to use. Having decided this, he then conducts appropriate research on the potential of each segment and characteristics of its consumers, as a prelude to deciding on which of the segment the market effort is to be concentrated. *Post hoc* segmentation on the other hand involves segmenting the market on the basis of existing research findings. The research findings or experiences used in the *post hoc* approach may have been drawn from other similar markets, or from the same market provided they prove appropriate to the intended market segmentation (Wilson and Gilligan (1998)).

Both approaches to segmentation have their place, and their real value to the strategist depends largely on how much knowledge of the market the strategist has. If for instance previous research or experience on the particular market has enabled the planner to identify key segmentation dimensions within the market, then the *apriori* approach is likely to be adequate. When however the market is new, changing or unrelated to the planners experience, a *post hoc* approach to determine the key segmentation variables is likely to prove more valuable as suggested by Wilson and Gilligan (1998).

Consumer markets are segmented on the basis of characteristics such as geographic, demographic, psychographics or buying power. Stanton (1994), reports that in selecting a target market the company should take into consideration four important factors namely: -

i) The target market should be compatible with the organisation's goal and image.

ii) The target market should be matched with the organisation's resources.

iii) The organisation should seek market segments that will result in higher profits and lower costs.

iv)   The company should preferably seek a market where there are least and smallest competitors.

2.2.0   NAIROBI STOCK EXCHANGE MARKET SEGMENTATION.

As reported on the Nairobi Stock Exchange Market Fact File (2000), with effect from 1st July 2000, the Nairobi Stock Exchange re-organised the market into four major market segments.   Only two of this market segments are important for this study namely:

The Main Investment Market Segment (MIMS)
This market segment is the main market and has the highest entry and continuous requirements with respect to net assets and share capital.

The Alternative Investment Market Segment (AIMS)
This segment besides having the same strict disclosure requirement as MIMS has lower entry and continuous requirements with respect to net assets and share capital.

Table 1 below summarises the minimum requirements for the two market segments

Table 1: MINIMUM REQUIREMENTS FOR MIMS AND AIMS

REQUIREMENT	MIMS	AIMS
Incorporation.	Limited company by shares and registered under the Companies Act (CAP 486) as a public company.	Same requirement.
Minimum authorised and fully paid up capital before public offering.	Ksh 50 millions	Ksh 10 millions
Net assets before public offering	100 millions	20 millions
Dividend policy and profits	Must have registered positive profits after tax attributable to shareholders in at least 3 of the last five completed accounting periods prior to offer.	Must disclose a clear dividend policy

Shareholders composition	At least 20% of shares held by not less than 300 shareholders excluding employees of the company. Banks must have a clearance certificate.	i) Minimum 25 investors. ii) At least 20% of paid up capital after listing excluding holding by employees or family members is held by not less than the prescribed minimum number of investors iii) No investor shall hold more than 3% of the shares in (ii) above
Directors	Must not have any petition under bankruptcy proceeding, winding up petition (corporate) or any criminal proceeding or any offence within or outside Kenya for a 2 years period prior to date of application for listing.	Besides similar requirements as for MIMS, must also have suitably qualified and experienced senior management none of whom shall have committed any serious offence considered inappropriate for the management of a listed company. Must have at least two non- executive and independent directors on its board of directors.

Accounts and Reporting	Accounts must not be less than 3 months old prior to the date of offer and must comply with the International Accounting Standards.	Accounts must not be less than 4 months old before listing and must be audited.
	Company must be solvent and auditors report unqualified.	Company must be solvent and auditors report unqualified
Others	The securities listed must be freely transferable and not subject to any restrictions on marketability or pre-emption right	Besides the same requirement as the MIMS, other requirements include - must have been in existence in the same business for at least 2 years with good growth potential. A subsidiary whose parent company have a five years track record may list provided the subsidiary has one-year track record. May only change to MIMS after one year of listing and after satisfying MIMS requirements.

Source: (Nairobi Stock Exchange Limited, Market Fact File (2000))

As at 30th May 2001, forty-four (44) companies were listed at the MIMS and eleven (11) companies at the AIMS. The eleven companies in the Alternative Investment Market Segment having been re-categorised for failing to meet the minimum requirements for the MIMS.

2.2.1 Objectives of NSE Market Segmentation

The number of companies listed at the NSE has remained below 60 for a long time. Following consultations with the stakeholders in the capital market industry, the NSE undertook a fundamental reform focused on its market structure. Specifically the reform focused on creating alternative markets to cater for the specific needs of different issuers and investors[10].

The MIMS was created with the objective of making it the main quotation market, with more stringent listing requirements similar to those previously existing at the NSE. On the other hand, the Alternative Investment Market Segment's (AIMS) objectives include providing access to the capital markets for small and medium sized companies with high growth potential. AIMS like MIMS is also aimed at facilitating liquidity to companies with a large shareholder base through the process of "introduction", a process by which existing shares are listed for the purpose of marketability and not for the purpose of raising capital. Finally the AIMS segment has been established with the purpose of offering investment opportunities to institutional investors and high net-worth individuals to diversify their portfolios and access high growth sectors of the economy[12].

The decision on new entry and continuity at the two market segments is vested on the Capital Markets Authority, which regulates NSE's activities[12].

2.3.0 PERFORMANCE MEASURES

Jansen (1968) reports that the concept of portfolio "performance" has at least two distinct dimensions.

> 1) The ability of the manager or security analyst to increase returns on the portfolio through successful prediction of future security prices and,
>
> 2) The ability of the portfolio manager to minimize (through efficient diversification) the amount of "insurable risk" bore by the holder of the portfolio.

---

[10]Nairobi Stock Exchange "Press Release 5th Feb 2001" (NSE Library, 2001).
[11]Nairobi Stock Exchange Limited, "Market Fact File 2000", (Unpublished Paper, NSE Library, 2000).
[12] Ibid.

Much of the remaining part of this chapter deals with the definitions and concepts of risk and return as measures of performance.

2.3.1 Market Vs Accounting Based Measures of performance

There are two main bases on which risk and return can be measured; the market based measures and the accounting or financial based measures. Accounting based measures rely on information contained in companies financial statements whereas market based measures are based on information derived from stock exchange markets mainly stock prices.

Accounting based measures of return are rarely an indication of return (Aaker and Jacobson, (1987)). The most widely used accounting based measure is the return on investment (ROI). Mathematically it is expressed as the ratio of net income to the total investment in assets. This measure has been widely criticized as bearing little if any relationship to economic returns.

Among the criticism leveled against ROI is that, it does not properly relate a stream of profits to the investment that produced such profits (Gitari, (1990)). This has been pointed out as mainly due to the fact that, the earnings used in the ROI formula are a consequence of investment decisions made in the past, whereas the assets figure (the denominator) can be expected to not only have influenced past and current earnings but also feature earnings as well. This means that a portion of the total investment in assets value used in ROI has not been utilized in the production of past and current earnings. The result then is a mismatch between earnings and the investments producing such earnings, which renders the ROI invalid as a proxy for economic returns.

Another criticism against accounting ROI is that it is very sensitive to accounting policies, which have nothing to do with economic realities (Wetson and Brigham, (1978)). Such policies which may be meant to affect other assets and liabilities are often changed by management to meet various goals such as portraying a better level of economic performance than would otherwise be under different policies. Needless to say that even after the standardization of accounting policies, ROI remains a poor

indicator of returns.

Market data is also preferred relative to accounting based data because accounting data require making inflationary adjustments to make it economically meaningful. Unfortunately, the problem of inflationary accounting still remains unresolved until to-date as reported by Gitari (1990). Consequently, contemporary accounting information is distorted as it usually contains a mixture of historical and current value resulting into earnings that are neither historical nor current.

Finally market based data is not only readily available but also does not require as many adjustments as accounting based data.

2.3.2   Risk Definition and Concept
Risk is the uncertainty associated with the expected returns. Scholars have however defined risk in more precise ways. Different scholars have used varied definitions to capture the concept of risk. In finance theory these varied definitions are attributable to various schools of thoughts with the two main schools of thoughts being the volatility and the variability schools, which are basically differentiated on the basis of their perception of risk.

March and Shapira (1987), belongs to the variability school and they perceive risk as the variation in the distribution of possible outcomes, their distribution and the subjective values. This perception compares with Robicheck's (1969), who perceives risk as the possibility that actual returns may vary from expected returns. From this perception risk is quantified in terms of variability measures such as ranges, standard deviations, variances, co-variances and coefficients of variations.

Proponents of the volatility school of thought on the other hand perceive risk as the volatility of returns in relation to the market returns. Under this definition then, those securities whose returns are highly correlated with the market returns are said to have low volatility, while those returns that have little correlation with the market returns are said to be highly volatile.

2.3.3 Mean Variance Criterion

This criterion remains the most widely used basis for portfolio selection since classical portfolio theory was pioneered by Harry Markowitz. He perceived risk and returns as comprising of a dual criterion for decision-making purposes. He propounded that investors will seek to either maximize expected returns subject to a given level of risk or minimize risk given a certain level of expected returns (Markowitz, (1952)). The mean variance method is therefore an appropriate measure of risk for any risk averse investor.

Various criticisms have however been leveled against this method. Bawa et al, (1979), contend that the mean variance framework can only be valid if the distributions of the returns to be compared are normal. Their study also points out that studies to test the distribution of returns have in most cases found returns to be lognormally distributed, thus rendering the criterion especially inadequate for portfolio selection explanations.

It has also been considered that higher moments which are used as measures or risk, may lead to portfolio selection that vary from those selected using mean variance criterion alone. Bawa et al, (1979) points out that studies on the direction of performance if higher moments are considered, suggest that preferences using the first two moments are likely to be consistent with those arrived at using the third and fourth moments (i.e. skewness and kurtosis). The first two moments can thus be considered adequate for purposes of portfolio selection. Computations become rather complicated when higher moments are considered and thus these moments have little practical use.

2.3.4 Other Portfolio Selection Criteria

Due to the inadequacies pointed out above on the mean- variance method, researchers have provided other alternative frameworks. However, inspite of the limitations on the mean-variance criterion, the other frameworks have their limitations too mainly due to their practical inapplicability and use of advanced mathematics.

As reported by Munywoki, (1998) the stochastic dominance criteria is one such alternative criterion that was developed in 1960's and comprises of a set of

inequalities involving functions of the probability distributions that induce partial orderings of the set of probability distributions. These orderings provide an admissible set of choice under restrictions on the decision-makers utility functions that follow some prevalent and appealing modes of economic behavior. This model is limited both in its practical application and calls for complex mathematical computations.

Time dominance is another criterion that consists of rules that provide partial orderings of temporal prospects, yielding an efficient set from which the ultimate choice will be made (Ekern, (1981)).

As reported by Munywoki (1998), William Krasker developed the minimax criterion. The model assumes that investors select their portfolio such that the portfolio have some minimax properties i.e. they have for instance some guaranteed level of minimum utility. Since portfolio selection involves the utilization of all available information, minimax behavior seeks to protect the investor from the possibility that their probability distribution is incorrect due to the nature of information that the investor has. This method result in the choice of that portfolio that provides the highest "guaranteed" level of expected returns or utility.

Based on the above arguments, debate on the best portfolio selection criteria still remains unresolved. However as reported by Munywoki (1998), so far the mean-variance criterion remains the most widely used method. This is due to its simplicity in application as it is based only on two measures; mean and variance that are relatively easy to compute.

2.3.5   Return Definition and concept

According to Reilly and Brown (1997), an investment is the current commitment of money for a period of time to derive future payments that will compensate the investor for the time the funds are committed, the expected rate of inflation and the uncertainty of the future payments. This means that the investor is trading a known amount of money today for some expected future stream of payments that will be greater than the current amount he holds. The investor therefore requires a rate of return that compensates him so that he can defer his current consumption for future

stream of payments. This rate of return can also be called the investors required rate of return. Therefore the return on an investment can be defined as the change in wealth resulting from this investment.

2.4.0   THE SHARPE RATIO

Most performance measures are computed using historical data but justified on the basis of predicted relationships. Practical implementations use *ex post* results while theoretical discussions focus on *ex ante* values. Implicitly or explicitly, it is assumed that historical results have at least some predictive ability (Sharpe, (1994)). The Sharpe Ratio is one such measure, which utilizes the historical data. It is a direct measure of reward-to-risk of any investment (e.g. holding a single stock or trading several different commodities with several trading systems). It is a measure of the risk adjusted return of an investment and was derived by Professor William Sharpe (Fulks, (1998)).

The ratio is built on Markowitz' mean-variance paradigm, which assumes the mean and standard deviation of the distribution of one-period return are sufficient statistics for evaluating the prospects of an investment portfolio. The Sharpe Ratio is independent of the time period over which it is measured. However multi period returns are usually computed taking compounding into account, which make the relationship more complicated. Moreover, underlying excess returns may be serially correlated. Even if the underlying process does not involve serial correlation, a specific *ex-post* sample may. It is therefore important to "annualize" data that apply to periods other than one before computing a Sharpe Ratio (Sharpe, (1994)).

The Sharpe Ratio is designed to measure the expected return per unit of risk for a zero investment strategy. The differential return (excess return) in the ratio represents a zero-investment strategy. This can be defined as any strategy that involves a zero outlay of money in the present and returns either a positive, negative or zero amount in the future, depending on circumstances. A differential return clearly falls in this class, since it can be obtained by taking a long position in one asset (e.g. a stock) and a short position in another (the benchmark), with funds from the later being used to finance the purchase of the former. The difference between the returns on two investment assets represents the results of such a strategy.

The Sharpe Ratio does not cover cases in which only one investment return is involved. Clearly, any attempt to summarize even an unbiased prediction of performance with a single number requires a substantial set of assumptions for justification. In practice, such an assumption are at best. likely to hold only approximately (Sharpe. (1994)).

Despite such caveats, there is much to recommend a measure that at least takes into consideration both risk and expected return over any alternative that focuses only on the later (Sharpe, (1994)).

Mathematically the relationship is expressed as follows:

$$S_h \equiv \frac{A_i}{\sigma A_{it}}$$

Where: A_i = excess return on investment i,

σA_{it} = standard deviation of returns of investment i at period t

S_h = Sharpe Ratio of investment i.

2.5.0   THE RELATIONSHIP BETWEEN RISK AND RETURN

In portfolio context this relationship is important since the risk and return parameters are considered the main objects of choice. Based on mean-variance framework of portfolio selection this relationship should be a positive one for the simple reason that investors need to be compensated through the provision of a risk premium if they are to take on additional risk. That means that the theoretical risk-return relationship is based on the premise of risk aversion (Markowitz, (1952) and Sharpe, (1965)).

Some researchers have however quantified this risk-return relationship. Bowman (1982) for instance, found out that within most firms risk and return were negatively correlated. Fiegenbanm and Thomas (1988) also found out a negative risk return relationship. Various explanations have been advanced to explain this contradictions. Laugbumn et al (1980), established that individuals are not uniformly risk averse, but rather adopt a mixture of risk seeking and risk averse behaviors. They further established that in determining this behavior target, most investors tend to be risk

averters. Fiegenbanm and Thomas (1988), and Bowman (1982) also established that troubled firms whose returns are below prospect or target returns are more risk seeking than healthy firms are.

2.6.0   EMPIRICAL STUDIES

Studies on the NSE's market segmentation were not found and this may be attributed to the fact that this has been a recent phenomenon at the Nairobi Stocks Exchange. However various other studies on market segmentation and other factors related to this research have already been performed elsewhere.

Jermakowicz et al, (1998) carried out a study on the information content of earnings in the emerging capital market as evidenced from Warsaw Stock Exchange (WSE). In their study, they investigated the association between stock returns and the annual earnings derived from the then newly established account and reporting standards for the firms listed on the WSE.

The Warsaw Stock Exchange (WSE) is divided into three market segments namely; the main, parallel and free market segments. The various market segments at WSE have minimum requirements that are similar to the NSE's. Like the NSE, the minimum requirements are basically upheld with respect to the net assets and share capital among others. The findings of the research were that the main market earnings were slightly stronger than for the whole market, and definitely stronger than for the parallel market. This research was based on a theoretical model, which expresses price as a multiple of earnings. The findings of this study therefore shed light to the fact that the performance of companies listed on the two different market segments should be different even though the study used historical earnings to measure performance.

2.6.1   Studies Performed at the NSE

Various studies have been performed at the NSE on systematic risk-return relationship. Gitari (1990) established that Kenyan publicly quoted companies do exhibit a positive relationship between risk and return. The relationship was however not significant thereby suggesting that investors may either be under or over compensated for taking high risks.

Muli (1991) on the other hand indicated a market risk of four percent (4%) and a return of approximately six percent (6%) with one year Government of Kenya Treasury Bonds having a coupon rate of fifteen percent (July 1991). The entire market return was twenty one percent being consistent with the governing interest rates in the commercial sector and thus he concluded that the market risk and risk premium calculated therefore appeared to be good estimates of the total market parameters.

Munywoki (1998) estimated the systematic risk and found it to be 3.5 % and the market returns 14.8%. In his study he also estimated the NSE beta and found it to be 0.9002 attributing the difference between his estimated market beta and beta of 1.0 to the effect of sampling results.

Even though the objectives of all those researches were different from the current one, they were performed at the NSE before various significant changes had been made and especially so before the market was segmented and therefore do not provide any information pertaining to the NSE in segmented form. This research is therefore important so as to provide information on the NSE segmentation.

CHAPTER THREE

3.0.0 RESEARCH DESIGN

3.1.0 The population
The population consisted of all the fifty-five companies listed at the Nairobi Stock Exchange as at 30th May 2001.

3.2.0 The Sample
Two samples were used, one sample consisting of thirty-five (35) firms listed under the Main Investment Market Segment and the other one consisting of nine (9) firms listed under the Alternative Investment Market Segment at the Nairobi Stock Exchange as at 30th May, 2001. Convenient sampling method was used with companies whose data was not readily available being left out of the sample.

3.3.0 Data Collection
Secondary data was used in this research. This data comprised of prices and dividends of securities listed at the NSE and the 91 Days Treasury Bills rates. Monthly stock prices and monthly Treasury Bills Rates were obtained from the NSE, for the period between 1st January 1996 to 31st December 2000. The five-year period was chosen in order to capture the influence of major factors in the economy that could have affected share prices and dividends. The five-year period is comparable to that used by other researchers such as Gitari, (1990), Muli, (1991) and Munywoki, (1998). It is also assumed that investors require about five (5) years to assess the risk of a certain stock. Sharpe and Cooper, (1972) used a similar period, to determine the risk return classes among New York Stock Exchange under similar assumption. A second justification for use of the five-year period is that a much longer period would increase the stochastic of betas (Sharpe and Cooper, (1972) and Blume, (1973)).

3.4.0 Data Analysis
Monthly returns were computed for each of the companies for the period of five years from 1996 to 2000 using the following formula:

20

$$R_{It} = (P_{It+1} - P_{It} + D_{It})/P_{It}$$

Where: R_{It} = Return on security i for month t.

P_{It+1}, P_{It} = Prices of security i at the end and beginning of the month t, respectively.

D_{It} = cash dividend on security i for month t.

3.4.1 Sharpe Ratio

$$S_h \equiv \frac{\overline{A_{It}}}{\sigma_{\overline{A_{it}}}}$$

Where: S_h = Sharpe Ratio.

$\overline{A_{It}}$ = "Annualized" excess returns.

$\sigma_{\overline{A_{it}}}$ = "Annualized" standard deviation of the average rate of return of an investment.

Excess return were computed as:

$$A_{iT} = R_{iT} - RF_{FT}$$

Where: A_{iT} = Excess return of investment i during period T

R_{iT} = average monthly returns for asset i during period T

RF_{FT} = risk free rate of return (this research used the "annualized" monthly average 91 Days Treasury Bills rate for the five years period as a risk free rate surrogate).

Multi period returns are usually "annualized"(multiplying them by 12) to minimize the effect of serial correlation. To "annualize" the monthly data for the following equations were used as shown in Fulks (1998):

i)"Annualized" excess returns.

$$\overline{A_{iT}} \equiv 12\ A_{iT}$$

ii)"Annualized" standard deviation.

$$\sigma^2_{\overline{A_{it}}} \equiv 12\sigma^2_{\overline{A_{it}}}$$

21

Hence: $\sigma \overline{A_{It}} = \sqrt{12}\ \sigma \overline{A_{It}}$

iii) "Annualized" risk free rate

$$RF_{FT} = 12\ R_{ft}$$

Where: $\sigma \overline{A_{It}}$ = "Annualized" standard deviation of the average rate of return of an investment.

T = number of periods (in this research number of months).

A_{iT} = Excess return of investment i during period T

$\overline{A_{It}}$ = "Annualized" excess returns

RF_{FT} = "Annualized" average monthly risk free rate.

R_{ft} = average monthly risk free rate

The Sharpe Ratios results were then analysed using a non-parameter test. A non-parametric test was used in this study because the distribution of the risks and returns of companies listed at the NSE was not known. Specifically, Wilcoxon Rank Sum Test was used to test for difference in the risks and in the returns of companies from the two samples. Mann, Whitney and others developed this test as reported by Hoel (1982). The Mann-Whitney test is applicable whenever we wish to test the null hypothesis that two samples have been drawn from the same population against the alternative hypothesis that the two samples are drawn from different populations.

3.4.2   Research Hypothesis
Ho: $n_1 = n_2$

H_1: $n_1 \neq n_2$

Where: - n_1 is the Alternative Investment Market Segment sample
- n_2 is the Main Investment Market Segment sample

3.4.3   Application of Wilcoxon Rank Sum Test
The n_1 and n_2 observations were combined. The combined observations were then given each one a score reflecting their level of alienation. Ranks were obtained by arranging individual firm's Sharpe Ratio in order of magnitude. A rank 1 was

assigned to the smallest value, a rank 2 to the next smallest and so on. The sum of ranks, R_1, was then obtained for the smaller of the two samples. In this research the sum of ranks of AIMS was obtained. If there would have been any ties in ranks, then we could have assigned each of the tied observations the mean of the ranks that they jointly occupy. (Webster (1992)).

Two statistics U and U' were then computed. The smaller of the two computed U values was used in arriving at the decision to either reject or accept the null hypothesis.

To determine U the following was computed as shown by Webster (1992): -

$$U = n_1 n_2 + \frac{n_1 (n_1 + 1)}{2} - R_1$$

Where: - n_1 = the sample size of AIMS

n_2 = the sample size of MIMS

R_1 = the sum of ranks for AIMS

And to determine U': -

$$U' = n_1 n_2 - U$$

Since one of the sample sizes (i.e. MIMS) was larger than 20 the standard score was computed and the normal distribution was used in evaluating the significance of the null hypothesis.

The mean μ of the sampling distribution was computed as:

$$\mu = \frac{n_1 n_2}{2}$$

Standard error was also determined by:-

$$\sigma_U = \sqrt{\frac{n_1 n_2 (n_1 + n_2 + 1)}{12}}$$

And likewise, Z computed as follows: -

$$Z = \frac{U - \dfrac{n_1 \, n_2}{2}}{\sqrt{\dfrac{n_1 \, n_2 \, (n_1 + n_2 + 1)}{12}}}$$

This analysis was done by use of Microsoft Excel spreadsheet.

CHAPTER FOUR

4.0.0 FINDINGS AND INTERPRETATIONS

4.1.0 INTRODUCTION

The principal objective of this study was to establish whether there exist any difference in terms of risks and returns of companies listed under the two market segments namely the Main Investment Market Segment and the Alternative Investment Market Segment at the Nairobi Stock Exchange. These companies had previously operated in the same market under similar requirements until June 2000 when they were re-classified into the two segments. The analysis in this chapter was done using historical market data for the period between 1996 to 2000.

Monthly security returns are given in appendix 1. The Average Returns and "Annualised" data for Returns, Standard Deviations and 91 Days Treasury Bills are given in appendix 2.

4.2.0 RETURNS OF SECURITIES

Figure 1 below shows the average five-year returns of companies listed under the Alternative Investment Market Segment. Three out of the nine companies have positive average returns. The highest average return in this segment is 11.286 for security X7, while the lowest return is −3.148 for security X9. As shown on the figure, the average returns performance of all the securities with the exception of X7 was quite low (below 2%), meaning on average during this period all these companies' performed quite dismally. The general poor performance may have been caused by various factors among them political activism that dominated much of the period and general economic decline that reflected badly on all the sectors of the economy including the Stock Market.

Figure 2 below shows the average monthly returns of securities listed under the Main Investment Market Segment. Fifteen of the companies show average positive returns. These are X13, X16, X18, X20, X21, X24, X25, X31, X32, X33, X34, X35, X38, X39 and X41.The average returns of the rest of the companies are negative. The security with the highest average monthly return is X34 with an average return of

7.143, while the security with the lowest average monthly return is X28 with an average return of –2.594. With the exception of four companies i.e. X16, X25, X34 and X39, all the other securities have average returns of below 2%. Therefore like in the AIMS, the securities in the MIMS exhibit low average return performance that could also be attributed to effects of investment uncertainties due to increased risk associated with both political and economic activities in Kenya (among other factors) during the period under research. This period experienced heightened political activism with the clamour for constitutional reform, suspension of foreign aid from multilateral and bilateral donors plus recurrence of tribal clashes among other negative political and economic activities that reflected negatively on investments in the country. This is supported by the fact that all major economic development indicators were on a declining trend.

FIGURE 1

FIGURE 2

5 YEARS AVERAGE RETURNS OF MIMS
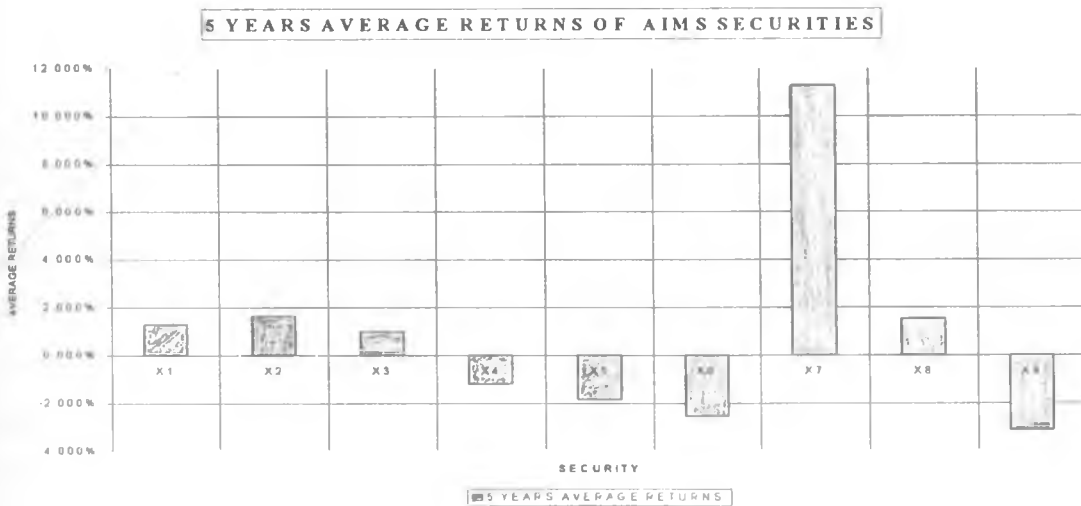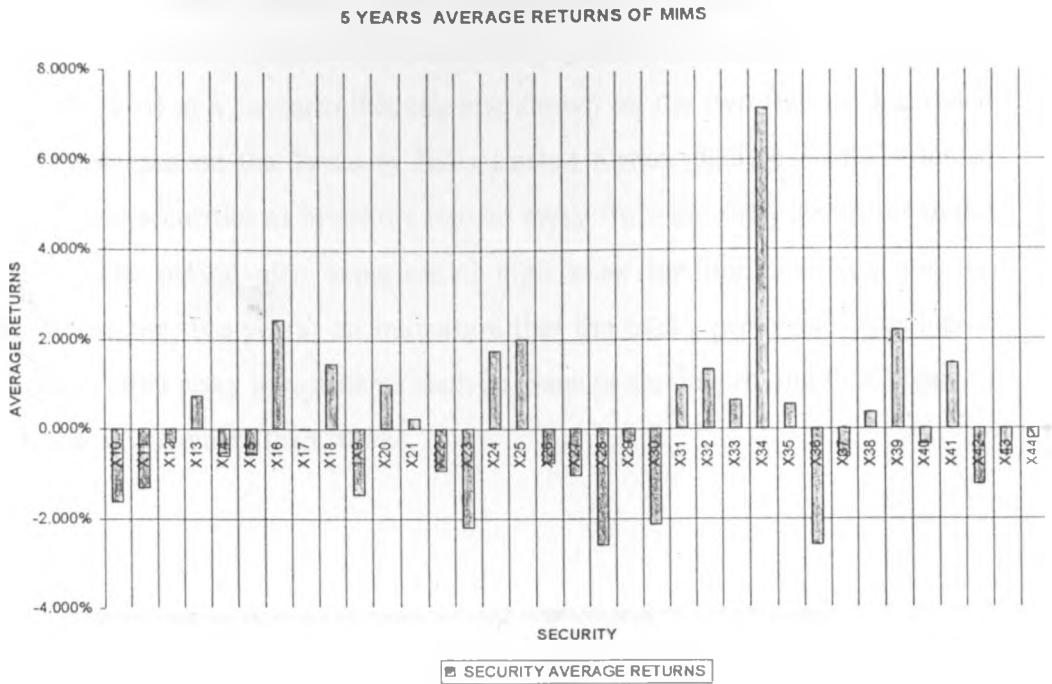
4.2.1 Returns of Securities Vs Treasury Bills Rate

Figure 3 and Figure 4 below show five-year monthly average returns and five-year monthly average Treasury Bills Rate of Alternative Investment and Main Investment Market Segments respectively. The average monthly Treasury Bills rate is 1.569% as shown on the graph. This rate was higher than most of the securities' average monthly returns with exception of a few securities namely X7 in AIMS (Figure 4) and X16, X24, X25, X34 and X39 in MIMS (Figure5).

The five years under the study was generally dominated by high Treasury Bills rates. These high Treasury Bills Rate regime was mainly due to the heavy government borrowing from the domestic market that stood at about Kshs 150 billions or 25% of GDP as at March 1997 (NSE Annual Report (1997)). The high T-Bills rates, coupled with other economic and political activities among other factors, caused rates of returns of most of the securities to be lower than the Treasury Bills rate. The T-Bills rate is used as the risk free rate surrogate in this study meaning therefore that, risky investment rates of return were lower than the risk free rate of return as shown by both Figure 3 and 4 below.

27

Rational investors would however take consideration of associated risk when investing in this securities, and would most likely prefer investing in the Treasury Bills (*ceteris paribus*) in a scenario like the one shown on the two figures. Increased investment preferences on the Treasury Bills caused further decline on the rates of returns of the listed securities as investors moved away from the risky securities to the Treasury Bills. The period also experienced high bank lending rates (on average above 20% across the five years) an indication that the banks preferred investing in Treasury Bills to other risky investments such as loans or stocks proving that Treasury Bills were better investments than stocks.

5 YEARS AVERAGE MONTHLY RETURNS / 5 YEARS AVERAGE MONTHLY TB RATE(AIMS)

FIGURE 3

FIGURE 4

FIVE YEARS AVERAGE MONTHLY RETURNS / FIVE YEARS AVERAGE MONTHLY TB RATE
(MIMS)
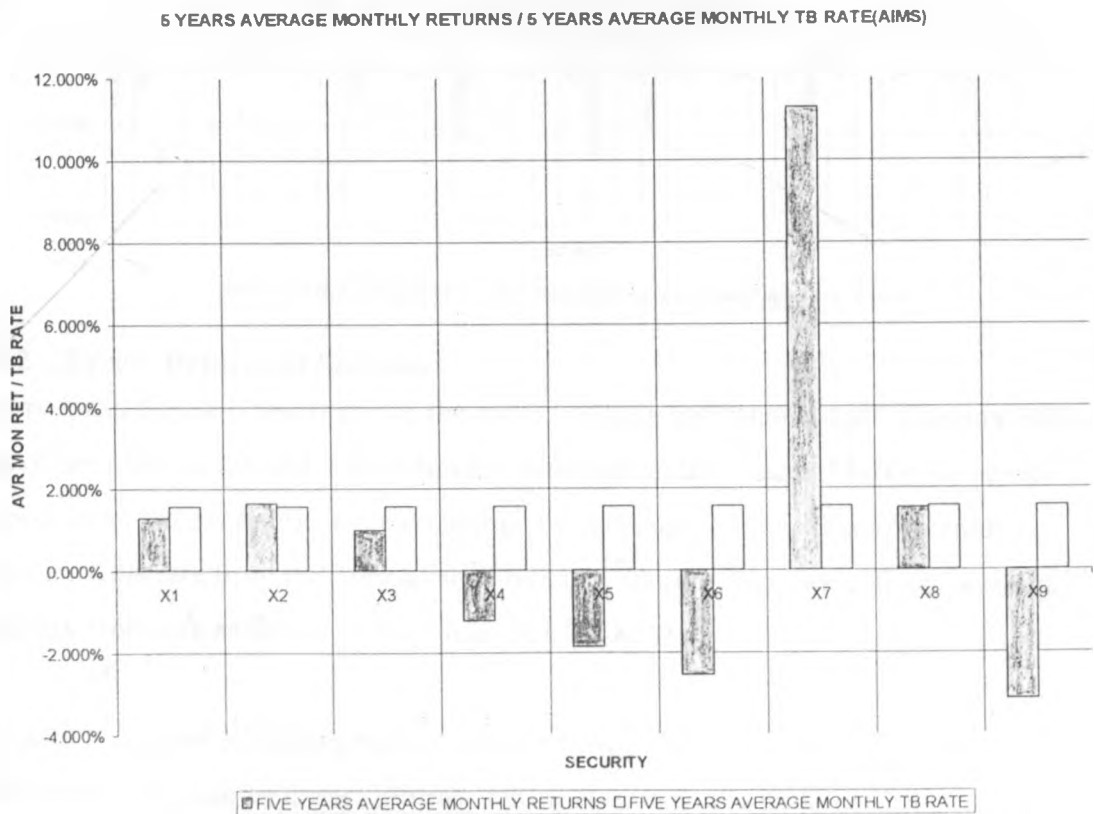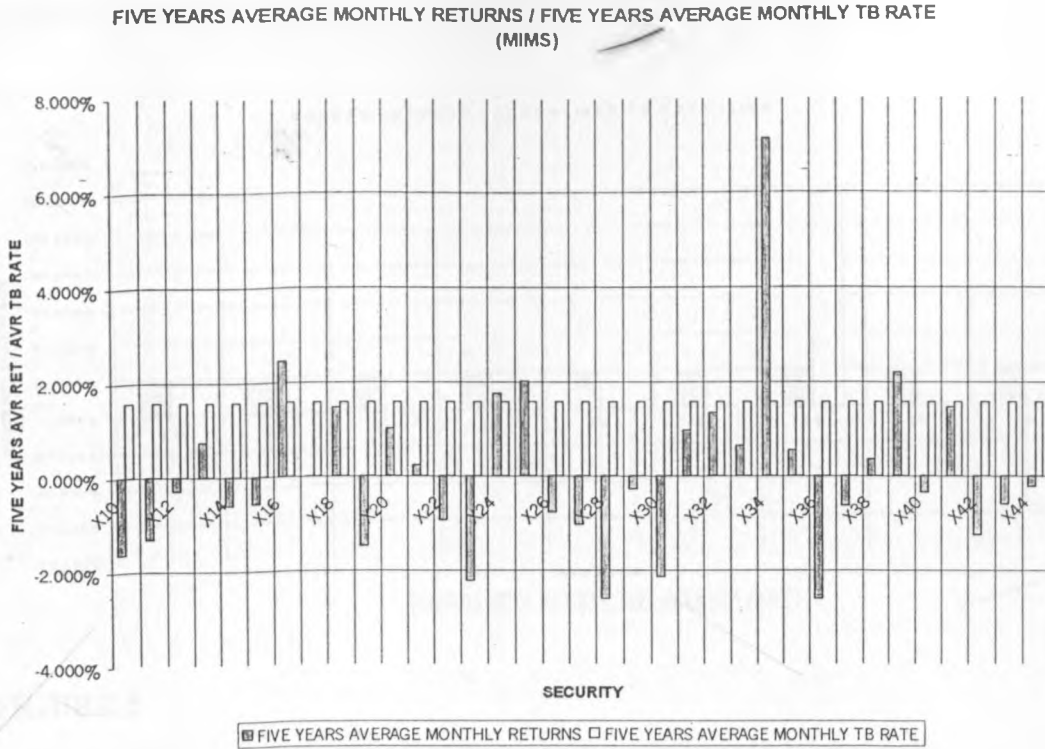
4.2.2 Excess Returns of Securities

Figure 5 and Figure 6 below shows the excess returns and "annualised" Treasury Bills

rate of securities listed under the Main and Alternative Investment Market Segments

respectively. Excess returns were computed by subtracting "annualised" monthly

Treasury Bills rate from the "annualised" monthly returns. The "annualised" average

Treasury Bills rate as shown on both figures is 18.823%.

In figure 5, X2 and X7 have positive excess returns, while X16, X24, X25, X34 and X39

in figure 6 have positive excess returns. This means that only those securities that had

positive average monthly returns that were higher than the monthly average T-Bills rate

have positive excess returns (as shown in figure 3 and 4 discussed previously). The rest

of the securities under-performed the Treasury Bills on average and hence had negative

excess returns.

Rational investors would not invest in securities whose excess returns are negative because the prospects of such investment involve taking risk with negative expected excess returns. The only way they may do so, is if by holding a portfolio of such a security with a risk free investment would give them an overall return level that is positive (Sharpe (2001)).

EXCESS RETURNS / ANNUALISED TB RATE (AIMS

FIGURE 5

EXCESS RETURNS / ANNUALISED TB RATE (MIMS)
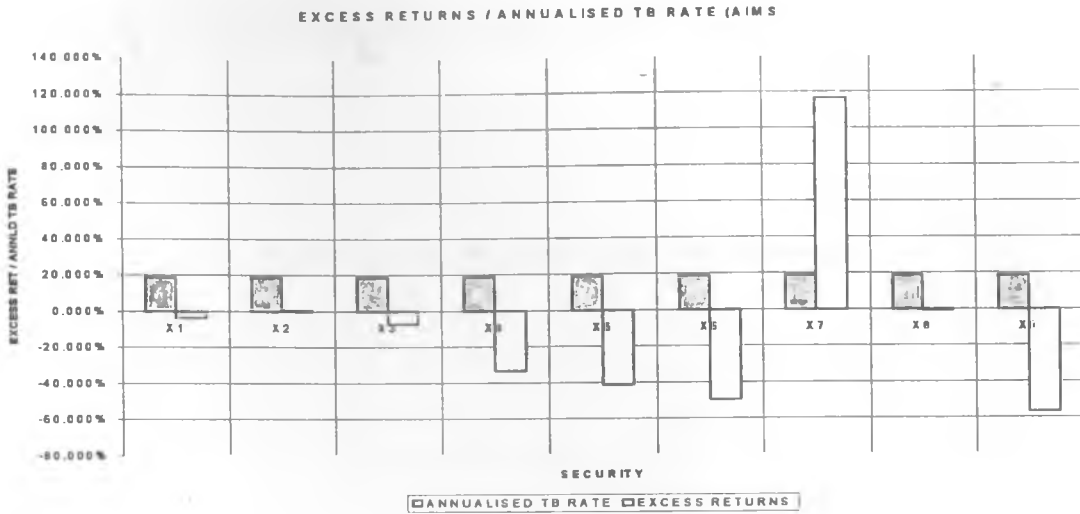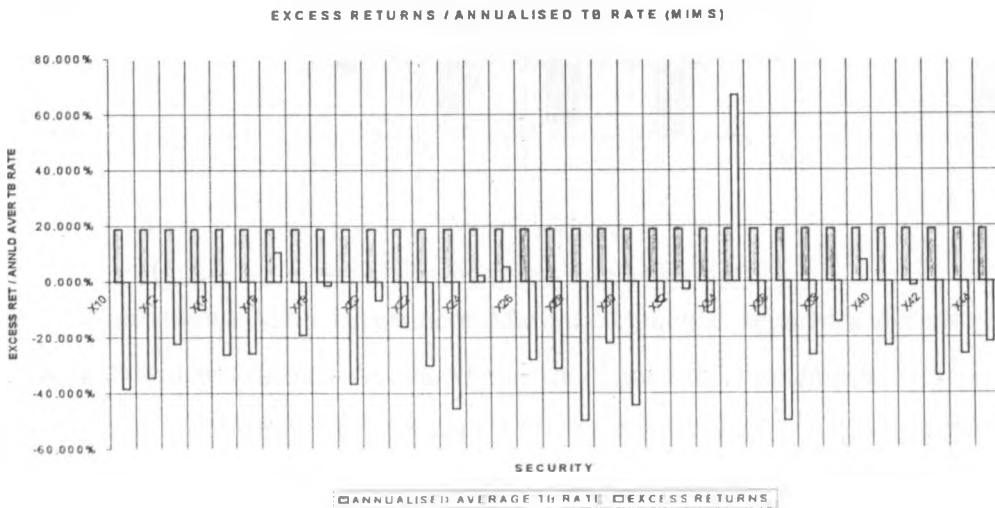
FIGURE 6

4.2.3 Excess returns and standard deviations relationship

Figure 7 below shows Alternative Investment Market Investment Segments' securities excess returns and their standard deviations. Company X4 has the lowest standard deviation of about 24.718%, while X7 has the highest standard deviation of

268.482%. Only two companies have positive excess returns, X2 with 0.909% and a standard deviation of 51.598%, and X7 with excess return of 116.392% and a standard deviation of 268.482%. Despite the fact that the two companies realised positive excess returns, their risks were very high thus making their overall performance in-terms of returns relative to risk low. The rest of the companies in AIMS have negative excess returns and high positive standard deviations and thus their overall performance in-terms of returns and risk is poor.

FIGURE 7

EXCESS RETURNS / ANNUALISED STANDARD DEVIATIONS (AIMS)
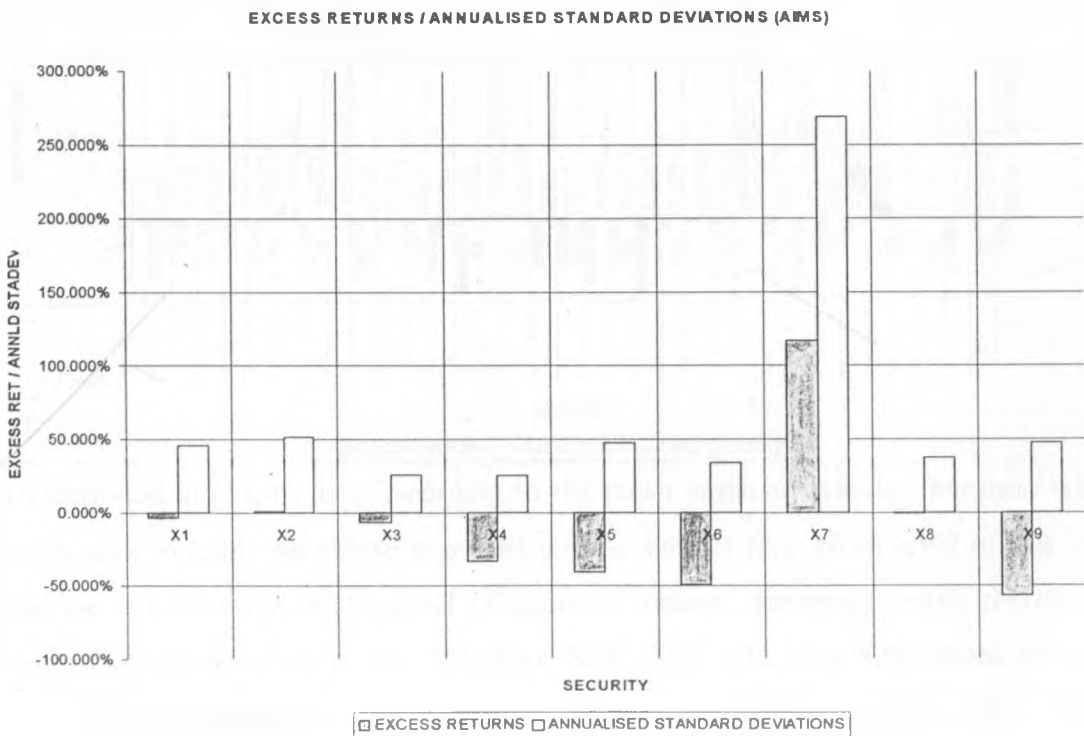
Figure 8 below shows Main Investment Market Segments' securities excess returns and their standard deviations. As shown on the figure the companies with positive excess return on the MIMS are X16 with 7.567%, X24: 2.232%, X25: 5.252%, X34: 66.888% and X39: 7.567%. Their respective standard deviations are X16: 10.526, X24: 110.234, X25: 43.664%, X34: 258.691% and X39: 95.747%. Like their counterparts with positive excess returns in AIMS their positive excess returns performance relative to standard deviations is poor on average due to high standard deviations. The rest of the securities have negative excess returns meaning that their performances are worse relative to the securities with positive excess returns.

FIGURE 8

EXCESS RETURNS ANNUALISED STANDARD DEVIATIONS (MIMS)
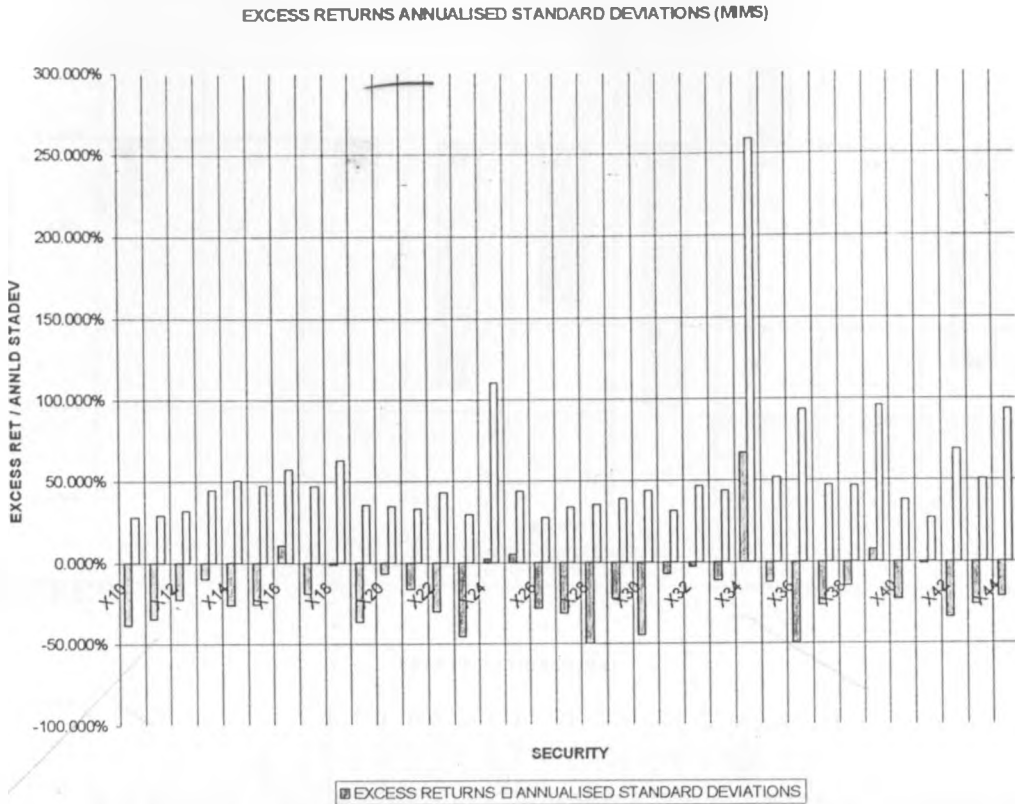
As mentioned in chapter two according to the mean variance criteria, investors will always seek to either maximise expected returns subject to a given level of risk or minimise risk given a certain level of expected returns. Investors would therefore invest in companies such as X2, X7, X16, X24, X25, X34, and X39 whose excess returns are positive (shown in the above two figures) and aim at reducing the overall risk or increase the overall return in their portfolio. Under the scenario shown on the two figures below therefore, investors would only be interested in the securities with positive excess returns with higher preference to those with relatively lower standard deviations.

4.3.0   SHARPE RATIOS

Figure 9 and 10 below shows the Sharpe Ratios of securities listed under the AIMS and MIMS respectively. In figure 9 only two companies i.e. X2 and X7 have positive Sharpe Ratios, while in figure 10 five securities have positive Sharpe Ratios, this are

X16, X24, X25, X34 and X39. All the other securities in the two figures have negative Sharpe Ratios.

SHARPE RATIOS (AIMS)
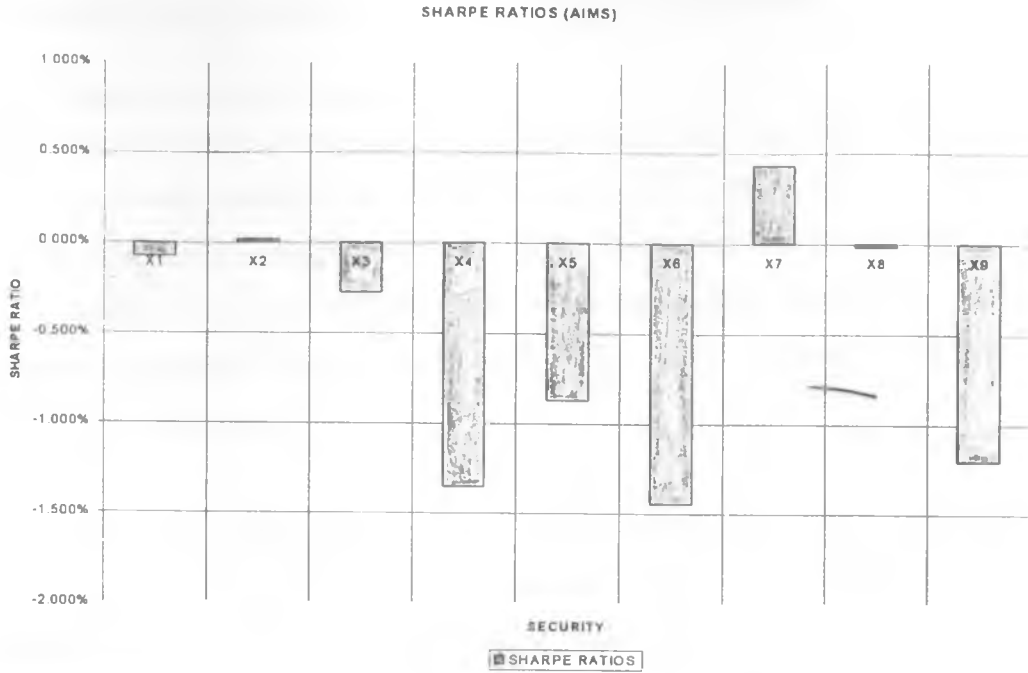
FIGURE 9
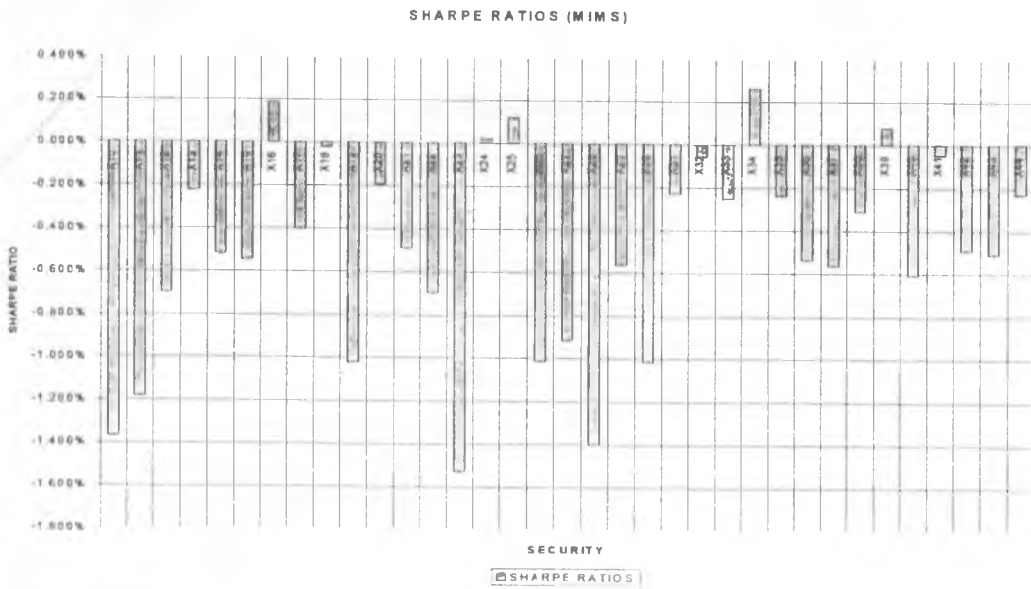
SHARPE RATIOS (MIMS)

FIGURE 10

According to Fulks (1998) when "investing" in a system for trading a Sharpe Ratio of over 2.0 is considered very good, and Sharpe Ratios of over 3.0 are outstanding. However none of the companies listed under either of the two market segments report Sharpe Ratios of above 2.0 In the two figures, the company with the highest Sharpe

Ratio is X18 (figure 10) with 0.434%. In actual fact most of this companies both in AIMS and in MIMS report negative Sharpe Ratio which is a sign of poor performance. Further analysis of the Sharpe Ratios is shown below.

4.4.0 Wilcoxon Rank Sum Test

Table 2 below shows a summary of the Wilcoxon Rank Sum test results. The first column show the particular security, the second column show the Sharpe Ratios of each of the security, while the third and fourth column show the ranking of the Sharpe Ratios from the lowest to the highest and the market segment in which these securities belong to respectively. The respective sums of the results are shown on the last row at the bottom of the table.

As shown on the table there are nine (9) securities listed under the Alternative Investment Market Segment and therefore $n_1 = 9$, on the other hand thirty five (35) companies are listed under the Main Investment Market Segment hence $n_2 = 35$. The sum of ranks of AIMS, R_1 is 203 hence $R_1 = 203$, while the sum of ranks of MIMS is 787 hence $R_2 = 787$.

U and U' were computed using the above information as provided in the table and the results were: -

U=15, and

U'=158

Finally the mean, standard error and Z as shown below were computed using the results obtained above.

$\mu = 157.5$

$\sigma_U = 34.369$

Z=-0.0145

Table 2: Wilcoxon Rank Test Results

SECURITY	SHARPE RATIO	RANK	MKT SEGMENT	MIMS RANKS	AIMS RANKS
X23	-1.528%	1	M	1	
X6	-1.445%	2	A		2
X28	-1.401%	3	M	3	
X10	-1.369%	4	M	4	
X4	-1.353%	5	A		5
X9	-1.206%	6	A		6
X11	-1.184%	7	M	7	
X19	-1.024%	8	M	8	
X30	-1.018%	9	M	9	
X26	-1.012%	10	M	10	
X27	-0.918%	11	M	11	
X5	-0.875%	12	A		12
X12	-0.698%	13	M	13	
X22	-0.697%	14	M	14	
X40	-0.607%	15	M	15	
X29	-0.564%	16	M	16	
X37	-0.562%	17	M	17	
X15	-0.545%	18	M	18	
X36	-0.536%	19	M	19	
X14	-0.515%	20	M	20	
X43	-0.510%	21	M	21	
X42	-0.492%	22	M	22	
X21	-0.487%	23	M	23	
X17	-0.401%	24	M	24	
X38	-0.310%	25	M	25	
X3	-0.275%	26	A		26
X33	-0.252%	27	M	27	
X35	-0.236%	28	M	28	
X44	-0.230%	29	M	29	
X31	-0.230%	30	M	30	
X13	-0.223%	31	M	31	
X20	-0.195%	32	M	32	
X1	-0.077%	33	A		33
X32	-0.059%	34	M	34	
X41	-0.046%	35	M	35	
X18	-0.020%	36	M	36	
X8	-0.017%	37	A		37
X2	0.018%	38	A		38
X24	0.020%	39	M	39	
X39	0.079%	40	M	40	
X25	0.120%	41	M	41	
X16	0.184%	42	M	42	
X34	0.259%	43	M	43	
X7	0.434%	44	A		44
SUM		990		787	203

4.4.1 Two-Tailed Test Results

Using the finding computed above, a two tailed test was performed at 5% significant level ($\alpha = 5$ percent). In the two tailed test, either U or U' can be used in the decision making (Webster, (1992)). The decision rule was not to reject the null hypothesis if $-1.96 < Z < +1.96$ and to reject it if $Z < -1.96$ or $Z > +1.96$.

Since Z was -0.0145, which is less than $+1.96$ and greater than -1.96 then the decision was not to reject the null hypothesis. We therefore conclude with 95% degree of confidence that there is no significance difference between the two market segments in-terms Sharpe Ratios of companies listed under either of the segments. This therefore means that the companies listed under either of the two market segments are the same in their risk-return performances.

CHAPTER 5

5.0.0   CONCLUSIONS. LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

5.1.0   CONCLUSIONS:

From the findings of this research it can be concluded that all the companies listed at the Nairobi Stock Exchange experienced poor performance in-terms of risks and returns during the period between January 1996 to December 2000. This depressed performance which was evident in virtually all key sectors of the economy, is attributable to a number of factors among them structural problems that included the relatively high level of interest rates, dilapidated infrastructure, insufficient provision of public services, incidences of insecurity and continued delay of normalisation of relations with international donors and lending organisations over the issues of good governance that led to suppression of donor funding.

The country experienced a general economic decline throughout this period. The real GDP growth declined from 4.8% in 1995 to 4.6% in 1996 and further to 2.3%, 1.8%, 1.5% and finally to about –2%during the 1997, 1998, 1999 and 2000 fiscal years respectively. The period was also dominated by high 91 Days T-Bills rates averaging 18.88% through out the period.

The Sharpe Ratios of the companies listed under the two market segments at the NSE shows no significant differences. The companies can therefore be said to be the same in terms of return to risk performance across the two segments.

In conclusion therefore it can be said that the reclassification of the companies into the two segments did not take into consideration the return and risk levels of this companies when it was done. In segmenting a market as explained by Wilson and Gilligan (1998), each of the resultant market segment should consist of consumers of the unique product or service being offered by the segment who posses similar interest (different from other segments) with respect to factors that influence demand. The failure by NSE market segmentation to address the interest of the consumer (rational investor) who considers the risk return performance of the securities as his basis of selecting the products therefore leads to ineffective market segmentation.

37

5.2.0 LIMITATIONS OF THE STUDY

The findings of this study utilised the coupon rate on Central Bank of Kenya's 91 Days Treasury Bills as a risk free rate surrogate. This will affect returns on equity because investors make rational decision based on a set of available investment. The effect of the one year Floating Treasury Bills rate will be to suppress the return that could have been obtained from equities due to high yields of those bonds, which may have been the case especially during the period under the study which experienced high TB Rate regime.

Data on some of the companies listed at the NSE was not available for the period under study inclusions of this data may have had a significant effect on the findings of this research and without them therefore this findings are limited.

The findings of this research are also limited to the extent in which the Sharpe Ratio as a model for return risk analysis is applicable. However the Sharpe Ratio model has its limitations such as the fact that underlying differential returns under multi-periods (periods extending more than a year) may be serially correlated even when the data have been annualised before computing the Sharpe ratio.

The results also relied on the mean variance criterion to determine the returns. The mean variance model has been questioned before and therefore the results obtained might be inferior to those attained using different criteria.

5.3.0 RECOMMENDATIONS FOR FURTHER RESEARCH

This research may be replicated using a post re-classification period after the companies stocks have traded for a number of years under the two different segments in future.

Another area of future research is to use other market models such as Capital Asset Pricing Model (CAPM) instead of the Sharpe Ratio in the determination of return risk performance of these companies.

The study may also be undertaken in future using other measures of performance such as the accounting measures of performance.

MONTHLY SECURITY RETURNS

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1				1996										
2	CODE	MKT SEG	SECURITY	JAN RET	FEB RET	MAR RET	APR RET	MAY RET	JUN RET	JUL RET	AUG RET	SEPT RET	OCT RET	NOV RET
3			90 DAYS TB ANNUAL RATE	21.3	26	26.7	24.16	22	21.9	21.8	21.6	22.5	24.1	22.1
4			90 DAYS TB MONTHLY RATE	1.775	2.167	2.225	2.013	1.833	1.825	1.817	1.800	1.875	2.008	1.842
5	X1	AIMS	EAAGADS	0.000%	-7.500%	-1.802%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	2.569%
6	X2	AIMS	G. WILLIAMSON	-18.023%	-0.709%	-5.714%	-25.379%	13.706%	15.179%	3.150%	0.000%	0.763%	6.061%	2.857%
7	X3	AIMS	KAPCHORUA	0.000%	0.000%	0.000%	0.000%	0.000%	0.862%	-43.966%	4.615%	1.471%	-1.449%	0.000%
8	X4	AIMS	LIMURU TEA	0.000%	1.481%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.385%	0.000%	0.000%
9	X5	AIMS	A. BAUMAN	3.743%	-3.191%	-23.077%	1.429%	-2.113%	0.000%	0.719%	-2.857%	2.941%	0.000%	-5.714%
10	X6	AIMS	EXPRESS	-7.955%	-14.815%	0.000%	0.725%	9.353%	2.632%	8.974%	-5.882%	0.625%	1.863%	14.634%
11	X7	AIMS	STANDARD NEWSPAPERS	0.385%	-0.383%	-4.615%	-0.806%	-16.260%	-1.942%	-0.990%	-9.500%	-12.155%	-4.403%	5.921%
12	X8	AIMS	CITY TRUST	0.000%	-4.464%	4.673%	-7.143%	0.000%	7.692%	14.286%	-3.125%	-3.226%	6.667%	-37.500%
13	X9	AIMS	E.A.PACKAGING	-0.662%	0.000%	-4.000%	-2.083%	-2.128%	1.449%	1.429%	-1.408%	0.000%	6.429%	-2.817%
14	X10	MIMS	THETA	0.000%	0.000%	0.500%	0.000%	-10.945%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
15	X11	MIMS	B BOND	0.000%	-28.789%	25.926%	1.765%	0.578%	1.724%	1.130%	-1.676%	1.250%	0.000%	0.565%
16	X12	MIMS	KAKUZI	2.128%	4.167%	-5.750%	-6.989%	10.983%	4.167%	-10.000%	2.778%	5.189%	-0.518%	1.563%
17	X13	MIMS	SASINI	0.775%	-6.154%	-20.000%	29.167%	-3.226%	-8.333%	5.455%	-10.526%	3.922%	1.887%	7.407%
18	X14	MIMS	CAR&GEN	2.439%	0.000%	0.000%	-2.381%	2.439%	1.190%	6.353%	-3.333%	-8.046%	1.250%	-1.235%
19	X15	MIMS	CMC	12.037%	0.000%	10.169%	-3.077%	-4.762%	5.000%	3.200%	-5.426%	11.475%	-4.412%	0.000%
20	X16	MIMS	HUTCHINGS BIEMER	0.000%	106.250%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	1.010%
21	X17	MIMS	MARSHALS	0.000%	1.351%	3.333%	0.000%	-1.290%	1.307%	10.968%	20.513%	0.000%	1.064%	-1.053%
22	X18	MIMS	NATION MEDIA	3.093%	0.000%	-20.000%	4.531%	3.659%	12.941%	6.250%	0.000%	5.515%	-0.935%	1.887%
23	X19	MIMS	PEARL DRY CLEANERS	3.896%	2.917%	0.000%	6.073%	-8.397%	5.833%	0.000%	-18.410%	7.692%	-0.503%	0.505%
24	X20	MIMS	UCHUMI SUPERMARKETS	0.000%	0.000%	-10.000%	0.000%	0.000%	11.429%	-3.846%	4.000%	2.564%	35.000%	-13.000%
25	X21	MIMS	BARCLAYS BANK	-3.871%	6.040%	-23.841%	4.348%	-1.667%	-4.237%	-1.770%	1.802%	-5.455%	-6.731%	-0.515%
26	X22	MIMS	CFC BANK	-5.217%	-0.917%	-6.481%	0.000%	-8.317%	-1.124%	0.000%	-14.545%	-0.798%	0.000%	47.453%
27	X23	MIMS	DIAMOND TRUST	-1.923%	-4.412%	-12.718%	1.198%	-2.367%	9.091%	-1.111%	-15.056%	3.378%	-8.497%	-8.571%
28	X24	MIMS	HFCK	-2.804%	-5.769%	27.551%	-27.642%	4.494%	11.828%	0.000%	-5.769%	-2.083%	-9.574%	-5.882%
29	X25	MIMS	ICDC	2.273%	3.704%	-25.000%	20.000%	13.492%	5.185%	-6.338%	-4.511%	-3.150%	32.520%	-17.647%
30	X26	MIMS	JUBILEE	1.587%	4.167%	4.000%	-1.442%	-19.095%	9.317%	-2.273%	-12.426%	6.757%	-6.329%	-10.135%
31	X27	MIMS	KCB	-1.176%	4.762%	-2.841%	-27.711%	-10.000%	3.704%	3.571%	-2.609%	-7.143%	6.731%	12.613%
32	X28	MIMS	NATIONAL BANK	4.301%	-20.851%	1.613%	-4.233%	-8.011%	2.102%	1.765%	4.046%	-12.222%	-8.228%	-5.172%
33	X29	MIMS	NIC	-2.041%	10.000%	1.961%	-3.846%	-19.500%	6.832%	-3.488%	-4.217%	4.575%	1.250%	2.469%
34	X30	MIMS	PAN AFRICA INS	0.806%	2.400%	0.781%	0.775%	6.923%	-3.597%	-5.970%	-0.794%	-8.800%	0.000%	0.000%
35	X31	MIMS	STANDARD CHARTERED	-2.830%	0.971%	-10.204%	5.114%	5.405%	-1.026%	-4.663%	4.348%	-3.723%	1.657%	2.717%
36	X32	MIMS	BAMBURI	-7.692%	20.833%	-35.669%	18.812%	-3.333%	7.759%	-4.000%	-1.667%	-1.695%	-3.448%	0.893%
37	X33	MIMS	BAT	0.562%	-6.704%	-16.875%	3.008%	0.730%	2.174%	0.709%	-4.225%	0.735%	-5.263%	-1.587%
38	X34	MIMS	CARBACID	5.820%	0.800%	0.000%	-30.000%	20.000%	-1.190%	3.012%	0.585%	3.488%	18.202%	-40.385%
39	X35	MIMS	CROWN BERGER	3.571%	-3.448%	-3.571%	-6.173%	-16.667%	13.333%	-7.941%	-36.102%	2.500%	0.000%	-2.439%
40	X36	MIMS	DUNLOP	-0.395%	0.000%	-0.794%	0.000%	0.000%	0.000%	2.400%	8.584%	1.167%	0.000%	0.000%
41	X37	MIMS	E.A. CABLES	6.944%	0.685%	-0.680%	-4.110%	-14.286%	14.167%	-0.730%	0.735%	0.730%	-10.145%	0.000%
42	X38	MIMS	BOC KENYA LTD	-2.841%	-6.433%	-2.500%	0.000%	-9.103%	-1.429%	-10.145%	0.000%	4.839%	0.000%	6.077%
43	X39	MIMS	E.A. PORTLAND	6.667%	133.929%	-3.817%	-85.714%	29.167%	11.828%	1.923%	-10.377%	-2.105%	-11.828%	17.463%
44	X40	MIMS	FIRESTONE	-4.040%	7.368%	-7.216%	-2.222%	13.409%	13.978%	0.943%	-11.215%	17.895%	-10.714%	4.000%
45	X41	MIMS	KENYA BREWERIES	-12.174%	0.990%	-13.131%	-2.326%	2.976%	11.561%	0.000%	-3.109%	5.882%	8.696%	3.000%
46	X42	MIMS	KEN NAT MILLS	-1.961%	0.000%	-0.600%	-0.510%	-3.590%	0.000%	6.383%	-4.000%	9.375%	0.000%	-10.000%
47	X43	MIMS	K.P.L.C.	-2.857%	-47.647%	-6.180%	-4.192%	3.125%	11.515%	15.217%	0.000%	13.208%	1.667%	13.115%
48	X44	MIMS	UNGA LTD	2.113%	2.759%	2.013%	0.662%	0.658%	0.000%	1.961%	-0.641%	9.032%	-3.125%	-3.030%

MONTHLY SECURITY RETURNS

	A	B	C	O	P	Q	R	S	T	U	V	W	X	Y
1				1997										
2	CODE	MKT SEG	SECURITY	DEC RET	JAN RET	FEB RET	MAR RET	APR RET	MAY RET	JUN RET	JUL RET	AUG RET	SEPT RET	OCT RET
3			90 DAYS TB ANNUAL RATE	21.6	21.6	21.4	21.4	21	20.4	19.4	18.5	19.7	26.2	27.1
4			90 DAYS TB MONTHLY RATE	1.800	1.800	1.783	1.783	1.750	1.700	1.617	1.542	1.642	2.183	2.258
5	X1	AIMS	EAAGADS	0.000%	0.000%	-5.505%	0.971%	0.000%	0.000%	0.000%	0.000%	7.692%	0.00%	65.385%
6	X2	AIMS	G. WILLIAMSON	-2.778%	5.000%	0.000%	-0.680%	-3.425%	0.000%	1.449%	2.857%	6.250%	68.63%	-2.326%
7	X3	AIMS	KAPCHORUA	2.941%	0.000%	0.000%	0.000%	0.000%	2.143%	0.000%	0.000%	0.000%	0.00%	0.000%
8	X4	AIMS	LIMURU TEA	0.000%	0.000%	1.923%	0.000%	0.000%	0.000%	-23.077%	-15.500%	0.888%	0.00%	-11.765%
9	X5	AIMS	A. BAUMAN	0.000%	0.000%	29.545%	-3.571%	-48.148%	23.810%	0.000%	-3.846%	-20.000%	-5.00%	-3.158%
10	X6	AIMS	EXPRESS	-9.574%	-5.718%	9.868%	-1.796%	-8.537%	0.000%	-5.333%	-4.225%	-4.412%	-10.77%	0.862%
11	X7	AIMS	STANDARD NEWSPAPERS	-0.621%	13.125%	71.823%	-2.062%	-7.018%	9.434%	72.414%	30.000%	26.923%	21.21%	-4.000%
12	X8	AIMS	CITY TRUST	38.667%	26.923%	9.091%	-8.333%	3.030%	2.941%	2.143%	-2.098%	0.000%	-2.86%	4.412%
13	X9	AIMS	E.A.PACKAGING	0.000%	1.449%	0.000%	-3.571%	-25.185%	32.673%	0.000%	0.000%	-10.448%	-4.17%	9.565%
14	X10	MIMS	THETA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.00%	0.000%
15	X11	MIMS	B BOND	-5.618%	-11.905%	1.892%	-10.000%	-8.148%	0.000%	0.000%	-0.806%	0.000%	-1.63%	-0.826%
16	X12	MIMS	KAKUZI	0.000%	0.513%	3.061%	1.386%	0.000%	0.990%	0.000%	3.922%	23.585%	15.38%	-3.333%
17	X13	MIMS	SASINI	1.724%	4.237%	3.333%	20.968%	1.333%	-0.658%	14.570%	-5.882%	3.750%	12.64%	-4.082%
18	X14	MIMS	CAR&GEN	0.000%	0.000%	0.000%	0.000%	0.000%	-19.500%	5.590%	-4.412%	-1.538%	0.00%	0.000%
19	X15	MIMS	CMC	3.077%	7.692%	14.286%	1.250%	-13.580%	4.286%	13.793%	9.091%	-11.111%	0.00%	-15.000%
20	X16	MIMS	HUTCHINGS BIEMER	0.000%	0.000%	0.000%	41.000%	0.000%	0.000%	0.000%	0.000%	0.000%	-0.71%	0.714%
21	X17	MIMS	MARSHALS	3.191%	-2.062%	0.526%	-16.230%	25.000%	32.000%	16.667%	19.481%	-2.273%	-62.79%	47.656%
22	X18	MIMS	NATION MEDIA	0.926%	3.670%	-3.540%	1.835%	46.059%	5.000%	-30.952%	-3.448%	8.929%	4.10%	0.794%
23	X19	MIMS	PEARL DRY CLEANERS	-2.513%	3.093%	0.000%	0.000%	2.500%	0.000%	0.000%	-12.195%	10.556%	8.70%	0.000%
24	X20	MIMS	UCHUMI SUPERMARKETS	22.989%	-26.168%	5.063%	-15.060%	10.638%	3.205%	0.870%	-2.500%	2.564%	12.50%	-11.667%
25	X21	MIMS	BARCLAYS BANK	3.109%	15.578%	5.217%	-10.526%	5.882%	6.481%	-4.348%	-0.909%	1.835%	-0.93%	0.935%
26	X22	MIMS	CFC BANK	-30.909%	19.737%	1.099%	-8.696%	-7.143%	2.564%	30.000%	-15.385%	-9.091%	0.00%	0.000%
27	X23	MIMS	DIAMOND TRUST	0.000%	14.063%	1.370%	-18.243%	-0.826%	4.167%	-3.200%	-1.653%	-12.605%	-1.92%	-11.765%
28	X24	MIMS	HFCK	-7.750%	30.081%	3.125%	-12.500%	14.286%	0.000%	-2.083%	0.000%	-12.766%	-2.44%	-5.000%
29	X25	MIMS	ICDC	11.111%	14.286%	8.750%	6.322%	-13.514%	12.500%	11.111%	20.000%	10.000%	-45.08%	0.000%
30	X26	MIMS	JUBILEE	2.256%	13.235%	14.286%	-6.250%	-5.455%	-8.974%	16.901%	-6.627%	0.000%	-2.63%	-5.405%
31	X27	MIMS	KCB	15.200%	25.000%	9.333%	-0.915%	-8.511%	11.628%	19.792%	-8.696%	-3.333%	0.00%	-9.184%
32	X28	MIMS	NATIONAL BANK	3.846%	18.519%	-1.875%	0.000%	-0.318%	2.236%	-5.000%	5.263%	-11.875%	-3.68%	15.267%
33	X29	MIMS	NIC	-1.205%	21.951%	-6.000%	5.319%	1.026%	11.675%	9.091%	1.667%	-13.115%	-3.85%	-2.000%
34	X30	MIMS	PAN AFRICA INS	-12.281%	2.000%	0.980%	2.913%	-5.660%	13.500%	14.545%	-9.524%	-12.281%	-20.00%	5.000%
35	X31	MIMS	STANDARD CHARTERED	4.865%	12.371%	-3.211%	-8.333%	-3.209%	2.210%	1.622%	0.000%	2.128%	-4.26%	-2.222%
36	X32	MIMS	BAMBURI	3.540%	36.752%	26.250%	-19.598%	3.750%	-4.217%	-5.660%	8.667%	11.801%	-6.67%	-14.286%
37	X33	MIMS	BAT	1.613%	31.746%	-20.482%	0.000%	-1.613%	3.279%	-3.175%	3.279%	-8.197%	-8.93%	0.000%
38	X34	MIMS	CARBACID	29.032%	2.500%	4.878%	0.349%	1.754%	-4.023%	0.599%	-8.333%	0.000%	-2.60%	-6.400%
39	X35	MIMS	CROWN BERGER	-5.000%	31.579%	-20.800%	5.051%	15.385%	0.000%	-4.545%	4.762%	6.818%	-2.13%	-21.304%
40	X36	MIMS	DUNLOP	-1.923%	7.843%	9.091%	-31.667%	39.024%	0.000%	-5.263%	0.000%	107.407%	-18.75%	0.000%
41	X37	MIMS	E.A. CABLES	0.806%	26.400%	-2.703%	-18.056%	3.390%	4.918%	3.125%	-3.030%	0.000%	0.00%	0.000%
42	X38	MIMS	BOC KENYA LTD	-2.256%	7.692%	5.714%	-45.946%	72.500%	0.000%	11.449%	-1.316%	-6.667%	1.43%	-1.408%
43	X39	MIMS	E.A. PORTLAND	-13.684%	19.512%	22.449%	21.667%	6.849%	19.231%	-5.376%	0.000%	-3.977%	-17.16%	0.000%
44	X40	MIMS	FIRESTONE	5.769%	9.091%	6.833%	-16.800%	3.846%	3.704%	0.000%	12.500%	-16.393%	0.98%	-16.505%
45	X41	MIMS	KENYA BREWERIES	-1.942%	3.960%	21.905%	0.000%	-5.645%	0.000%	2.564%	-5.000%	-11.404%	1.49%	-0.529%
46	X42	MIMS	KEN NAT MILLS	0.000%	-22.778%	3.597%	2.222%	-2.778%	0.714%	33.333%	-11.702%	-3.614%	9.75%	-3.614%
47	X43	MIMS	K.P.L.C.	2.174%	-30.496%	33.333%	-5.833%	9.735%	37.097%	2.353%	2.339%	-4.000%	4.17%	8.000%
48	X44	MIMS	UNGA LTD	-1.250%	-24.051%	-5.833%	-0.708%	1.802%	7.965%	22.951%	0.000%	6.667%	8.00%	-3.049%

MONTHLY SECURITY RETURNS

	A	B	C	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ
1						1998								
2	CODE	MKT SEG	SECURITY	NOV RET	DEC RET	JAN RET	FEB RET	MAR RET	APR RET	MAY RET	JUN RET	JUL RET	AUG RET	SEP RET
3			90 DAYS TB ANNUAL RATE	26.8	26.4	26.3	26.3	26.7	27	26.4	25.5	24.7	23.7	22.5
4			90 DAYS TB MONTHLY RATE	2.233	2.200	2.192	2.192	2.225	2.250	2.200	2.125	2.058	1.975	1.875
5	X1	AIMS	EAAGADS	-3.488%	0.000%	45.872%	-6.918%	0.000%	0.000%	0.000%	0.000%	12.838%	0.000%	29.054%
6	X2	AIMS	G. WILLIAMSON	-31.746%	0.000%	54.286%	12.963%	11.475%	11.029%	1.325%	-3.595%	-8.571%	1.563%	1.538%
7	X3	AIMS	KAPCHORUA	0.000%	0.000%	0.000%	15.714%	0.000%	0.000%	0.000%	9.259%	16.049%	0.000%	0.000%
8	X4	AIMS	LIMURU TEA	0.000%	0.000%	-42.308%	9.000%	-0.662%	0.667%	0.000%	0.000%	-0.795%	0.000%	4.806%
9	X5	AIMS	A. BAUMAN	-15.489%	0.000%	-52.879%	0.000%	2.894%	0.000%	1.563%	-4.615%	0.000%	0.000%	0.000%
10	X6	AIMS	EXPRESS	0.855%	0.000%	-36.471%	5.926%	-6.364%	-15.534%	-17.241%	-16.667%	0.000%	1.667%	-1.639%
11	X7	AIMS	STANDARD NEWSPAPERS	10.417%	0.000%	575.000%	-11.111%	27.083%	-46.667%	-20.313%	39.216%	-43.662%	-1.250%	-39.241%
12	X8	AIMS	CITY TRUST	0.000%	0.000%	31.731%	2.190%	0.000%	0.000%	-6.429%	-6.107%	-17.073%	0.000%	0.000%
13	X9	AIMS	E.A.PACKAGING	-3.968%	-19.008%	-34.058%	-20.879%	-10.417%	3.101%	-15.789%	-28.571%	0.000%	-2.500%	2.564%
14	X10	MIMS	THETA	-44.134%	0.000%	-44.134%	2.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
15	X11	MIMS	B BOND	-8.333%	0.000%	-22.619%	-3.846%	-4.000%	-0.833%	1.681%	9.917%	6.767%	5.634%	-0.200%
16	X12	MIMS	KAKUZI	-33.793%	0.000%	12.821%	17.273%	2.132%	-7.692%	0.000%	19.167%	1.399%	4.138%	-6.667%
17	X13	MIMS	SASINI	0.000%	0.000%	61.017%	26.316%	-25.833%	-20.787%	10.638%	-1.316%	0.000%	0.000%	4.000%
18	X14	MIMS	CAR&GEN	0.625%	0.000%	1.250%	-1.728%	-34.673%	0.000%	-7.692%	-8.333%	9.091%	0.000%	0.000%
19	X15	MIMS	CMC	17.647%	0.000%	66.154%	-54.630%	-10.204%	-18.182%	-5.556%	3.676%	0.000%	2.128%	0.000%
20	X16	MIMS	HUTCHINGS BIEMER	0.000%	0.000%	41.000%	0.000%	-42.553%	0.000%	-1.235%	1.250%	0.000%	0.000%	0.000%
21	X17	MIMS	MARSHALS	-13.228%	0.000%	-8.247%	-5.618%	0.000%	-1.786%	0.000%	3.030%	-10.588%	-25.000%	-8.182%
22	X18	MIMS	NATION MEDIA	3.150%	0.000%	22.018%	2.256%	8.088%	42.007%	-59.903%	92.771%	-25.000%	2.500%	2.073%
23	X19	MIMS	PEARL DRY CLEANERS	5.000%	0.000%	3.093%	0.000%	0.000%	0.000%	0.000%	2.500%	-2.439%	0.000%	0.000%
24	X20	MIMS	UCHUMI SUPERMARKETS	5.405%	0.000%	-19.626%	4.651%	-11.111%	0.000%	16.875%	-1.604%	-10.326%	3.636%	-1.754%
25	X21	MIMS	BARCLAYS BANK	6.481%	0.000%	14.573%	19.298%	-24.803%	-5.759%	17.778%	-3.774%	-3.922%	5.102%	-2.000%
26	X22	MIMS	CFC BANK	-12.000%	0.000%	6.579%	-1.235%	-1.400%	-21.260%	16.667%	-2.571%	-6.158%	0.000%	-3.125%
27	X23	MIMS	DIAMOND TRUST	-3.333%	0.000%	-31.250%	4.545%	2.609%	-9.783%	6.024%	0.000%	-9.318%	2.256%	1.250%
28	X24	MIMS	HFCK	0.263%	0.000%	19.241%	-4.545%	11.905%	-15.556%	10.526%	-23.333%	5.590%	-5.294%	156.410%
29	X25	MIMS	ICDC	0.730%	0.000%	37.143%	-10.417%	-16.860%	0.699%	3.472%	8.276%	-2.548%	-5.229%	0.690%
30	X26	MIMS	JUBILEE	5.000%	0.000%	17.647%	7.500%	4.651%	0.000%	-9.091%	-23.750%	4.098%	-3.226%	0.000%
31	X27	MIMS	KCB	-13.483%	0.000%	14.583%	-1.818%	-10.494%	2.941%	-2.857%	2.941%	0.714%	3.546%	-10.791%
32	X28	MIMS	NATIONAL BANK	-17.219%	0.000%	-7.407%	1.200%	-16.601%	-4.265%	3.465%	10.526%	-12.987%	-5.473%	-2.778%
33	X29	MIMS	NIC	2.041%	0.000%	21.951%	5.000%	0.000%	-33.981%	25.000%	-3.529%	2.439%	-19.048%	-0.752%
34	X30	MIMS	PAN AFRICA INS	-0.595%	0.000%	-28.000%	-2.778%	-2.857%	-3.676%	-3.226%	0.000%	0.000%	-3.333%	-5.172%
35	X31	MIMS	STANDARD CHARTERED	6.818%	0.000%	-2.062%	-11.053%	6.790%	-9.827%	10.256%	-2.907%	-4.192%	0.000%	-1.250%
36	X32	MIMS	BAMBURI	-13.194%	16.000%	36.752%	-12.188%	15.942%	-16.875%	5.263%	0.000%	-17.143%	1.724%	-5.085%
37	X33	MIMS	BAT	-1.961%	0.000%	-15.873%	2.830%	-10.891%	-2.222%	2.273%	0.000%	-1.111%	13.483%	6.250%
38	X34	MIMS	CARBACID	-10.870%	0.000%	-7.500%	-6.757%	-8.841%	-3.226%	6.667%	12.500%	-9.722%	3.077%	-2.985%
39	X35	MIMS	CROWN BERGER	6.077%	3.125%	28.421%	19.262%	-22.348%	-2.439%	-5.000%	0.000%	0.000%	-2.632%	8.108%
40	X36	MIMS	DUNLOP	-77.143%	-3.846%	-60.000%	-1.961%	-3.000%	-2.062%	-11.053%	84.615%	-81.818%	-7.143%	-22.115%
41	X37	MIMS	E.A. CABLES	-14.844%	0.000%	2.400%	-3.333%	-22.414%	6.667%	0.000%	-7.292%	-10.112%	-2.500%	1.282%
42	X38	MIMS	BOC KENYA LTD	3.500%	0.000%	1.538%	4.545%	0.000%	-1.449%	-1.471%	2.273%	3.704%	-2.857%	-4.412%
43	X39	MIMS	E.A. PORTLAND	-25.229%	0.000%	82.927%	-19.333%	-4.959%	-13.043%	-20.000%	17.500%	-14.894%	0.000%	-5.000%
44	X40	MIMS	FIRESTONE	4.651%	0.000%	5.455%	25.000%	-43.885%	-11.282%	1.156%	-2.857%	5.882%	-5.556%	-5.588%
45	X41	MIMS	KENYA BREWERIES	7.447%	0.000%	0.990%	3.922%	0.000%	-4.412%	0.000%	8.718%	7.547%	-3.509%	3.636%
46	X42	MIMS	KEN NAT MILLS	-5.000%	0.000%	4.556%	-4.865%	40.909%	0.000%	3.226%	-64.063%	-10.870%	-2.683%	-3.258%
47	X43	MIMS	K.P.L.C.	-12.698%	0.000%	31.915%	7.527%	-10.000%	-5.556%	6.471%	4.972%	2.632%	1.026%	-6.599%
48	X44	MIMS	UNGA LTD	-24.528%	0.000%	-14.430%	17.910%	108.861%	-3.030%	-78.750%	-16.912%	6.195%	-6.667%	51.786%

MONTHLY SECURITY RETURNS

	A	B	C	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU
1							1999							
2	CODE	MKT SEG	SECURITY	OCT RET	NOV RET	DEC RET	JAN RET	FEB RET	MAR RET	APR RET	MAY RET	JUN RET	JUL RET	AUG RET
3			90 DAYS TB ANNUAL RATE	20.6	17.7	12.5	10.7	8.9	8.8	9	9.6	11.3	14.5	14.8
4			90 DAYS TB MONTHLY RATE	1.717	1.475	1.042	0.892	0.742	0.733	0.750	0.800	0.942	1.208	1.233
5	X1	AIMS	EAAGADS	-9.948%	0.000%	0.000%	-1.744%	0.000%	0.000%	0.000%	0.000%	0.000%	3.550%	-45.882%
6	X2	AIMS	G. WILLIAMSON	0.000%	3.030%	3.676%	1.418%	-2.098%	0.000%	1.429%	0.000%	0.704%	-2.098%	-17.857%
7	X3	AIMS	KAPCHORUA	0.000%	1.064%	0.000%	14.737%	14.679%	0.000%	15.200%	4.167%	0.000%	0.000%	0.000%
8	X4	AIMS	LIMURU TEA	0.000%	-1.316%	0.000%	0.000%	0.000%	8.000%	0.000%	0.000%	-13.333%	0.000%	0.000%
9	X5	AIMS	A. BAUMAN	14.516%	0.000%	-1.176%	2.083%	0.000%	0.000%	-12.536%	-1.667%	-5.085%	16.071%	-6.667%
10	X6	AIMS	EXPRESS	4.167%	-4.800%	-3.361%	35.652%	2.564%	-12.500%	-2.857%	-25.000%	-1.961%	0.000%	-8.000%
11	X7	AIMS	STANDARD NEWSPAPERS	30.417%	15.016%	19.444%	16.279%	0.000%	-36.000%	27.358%	-11.111%	-25.556%	-10.448%	0.000%
12	X8	AIMS	CITY TRUST	7.843%	2.941%	0.000%	1.905%	0.000%	-2.804%	-2.885%	-10.891%	0.000%	13.333%	-2.128%
13	X9	AIMS	E.A.PACKAGING	-17.500%	-3.030%	-2.813%	25.723%	-4.348%	6.952%	-10.000%	0.000%	-25.000%	1.481%	2.190%
14	X10	MIMS	THETA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
15	X11	MIMS	B BOND	-5.405%	-9.286%	11.024%	0.709%	0.000%	2.324%	2.797%	0.000%	0.680%	0.000%	-22.297%
16	X12	MIMS	KAKUZI	-3.571%	1.481%	2.920%	0.000%	2.837%	-16.034%	-2.500%	-0.855%	4.310%	0.000%	0.826%
17	X13	MIMS	SASINI	-3.846%	-6.667%	0.000%	0.000%	-14.286%	-3.333%	0.000%	-10.345%	3.846%	0.000%	6.481%
18	X14	MIMS	CAR&GEN	0.000%	2.917%	-2.834%	0.000%	4.167%	1.600%	0.000%	-1.575%	-20.000%	0.000%	0.000%
19	X15	MIMS	CMC	-1.389%	-0.704%	3.546%	-15.278%	-1.639%	-6.667%	1.786%	0.000%	0.000%	8.571%	0.833%
20	X16	MIMS	HUTCHINGS BIEMER	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	1.235%	-1.220%	0.000%
21	X17	MIMS	MARSHALS	-0.990%	1.000%	-0.990%	4.000%	0.000%	0.000%	-6.731%	0.000%	0.000%	0.000%	3.093%
22	X18	MIMS	NATION MEDIA	-2.400%	2.459%	9.600%	-0.730%	2.941%	-3.571%	0.815%	-5.926%	1.575%	-6.977%	-8.333%
23	X19	MIMS	PEARL DRY CLEANERS	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	-2.500%	0.000%	0.000%	-69.231%
24	X20	MIMS	UCHUMI SUPERMARKETS	9.643%	-12.791%	17.333%	2.273%	8.333%	2.564%	-4.000%	0.000%	0.000%	10.000%	1.980%
25	X21	MIMS	BARCLAYS BANK	1.020%	4.040%	26.214%	-5.385%	3.252%	-7.563%	-3.636%	1.887%	3.704%	5.357%	-13.136%
26	X22	MIMS	CFC BANK	-3.226%	0.000%	0.667%	32.450%	-8.500%	-18.033%	-6.333%	0.000%	6.762%	0.000%	0.000%
27	X23	MIMS	DIAMOND TRUST	-1.235%	1.250%	8.642%	13.636%	4.000%	-2.885%	-0.990%	-4.000%	-2.083%	3.191%	-15.876%
28	X24	MIMS	HFCK	-64.875%	1.423%	12.632%	-0.935%	-5.660%	0.714%	-13.121%	7.755%	-5.303%	20.000%	-17.667%
29	X25	MIMS	ICDC	-4.348%	-0.758%	28.244%	0.000%	2.976%	4.046%	4.444%	4.348%	0.000%	5.208%	-0.990%
30	X26	MIMS	JUBILEE	0.000%	-6.667%	7.143%	10.000%	0.000%	0.000%	0.000%	-6.818%	-7.317%	7.895%	-9.167%
31	X27	MIMS	KCB	-4.839%	-4.237%	8.850%	1.626%	-6.400%	-16.239%	-8.163%	-2.222%	4.545%	-1.630%	-13.812%
32	X28	MIMS	NATIONAL BANK	-8.571%	-17.500%	30.303%	-6.395%	-5.590%	-9.868%	-12.409%	0.000%	0.000%	-7.500%	-8.108%
33	X29	MIMS	NIC	-1.515%	-10.000%	28.205%	-4.667%	-7.692%	9.848%	-6.383%	9.848%	-17.241%	-10.833%	7.477%
34	X30	MIMS	PAN AFRICA INS	-12.727%	4.167%	0.000%	-3.000%	3.093%	1.000%	-0.990%	40.000%	2.857%	0.000%	11.111%
35	X31	MIMS	STANDARD CHARTERED	-2.532%	3.896%	26.250%	-8.416%	1.622%	4.255%	-1.087%	1.099%	8.696%	8.000%	3.981%
36	X32	MIMS	BAMBURI	0.000%	-7.143%	38.462%	2.778%	-14.189%	-3.226%	-19.167%	3.093%	5.000%	13.333%	2.564%
37	X33	MIMS	BAT	7.843%	0.000%	39.091%	-13.072%	38.346%	-4.598%	13.855%	1.587%	-10.417%	-11.628%	8.553%
38	X34	MIMS	CARBACID	-1.077%	-15.873%	17.925%	10.400%	1.449%	4.286%	-2.083%	0.709%	-2.817%	10.145%	-11.111%
39	X35	MIMS	CROWN BERGER	-23.000%	10.390%	-5.294%	18.012%	-24.737%	18.881%	-2.941%	5.455%	-0.575%	15.607%	56.667%
40	X36	MIMS	DUNLOP	-9.877%	-1.370%	11.111%	22.500%	-4.082%	-23.404%	-3.611%	-8.934%	-5.063%	0.000%	-6.667%
41	X37	MIMS	E.A. CABLES	-1.266%	-2.821%	5.541%	47.500%	-17.797%	-14.157%	-0.524%	0.000%	4.737%	0.000%	0.000%
42	X38	MIMS	BOC KENYA LTD	8.462%	0.709%	4.225%	6.294%	-9.868%	3.650%	33.099%	-24.868%	0.704%	-2.098%	0.000%
43	X39	MIMS	E.A. PORTLAND	-4.737%	-1.934%	4.507%	13.960%	1.250%	-1.235%	-50.000%	45.000%	-3.448%	0.000%	0.357%
44	X40	MIMS	FIRESTONE	-4.984%	-0.984%	6.623%	24.224%	-6.750%	-10.864%	3.125%	3.636%	-3.509%	3.030%	-16.061%
45	X41	MIMS	KENYA BREWERIES	-12.736%	11.351%	30.097%	-10.448%	12.500%	6.870%	9.286%	3.268%	-1.266%	1.923%	4.403%
46	X42	MIMS	KEN NAT MILLS	-5.440%	-25.479%	25.000%	17.353%	-13.283%	-19.075%	-6.786%	7.280%	0.000%	0.000%	-46.071%
47	X43	MIMS	K.P.L.C.	7.609%	-43.005%	13.636%	2.400%	0.000%	-7.031%	1.724%	-5.085%	0.893%	-2.655%	-9.091%
48	X44	MIMS	UNGA LTD	-54.412%	-5.806%	28.767%	-4.255%	-6.667%	-18.452%	-0.730%	-17.647%	15.179%	-27.907%	-7.527%

MONTHLY SECURITY RETURNS

	A	B	C	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF
1								2000						
2	CODE	MKT SEG	SECURITY	SEP RET	OCT RET	NOV RET	DEC RET	JAN RET	FEB RET	MAR RET	APR RET	MAY RET	JUN RET	JUL RET
3			90 DAYS TB ANNUAL RATE	15.8	17.6	18.1	20	20.3	14.8	11.3	12.4	11.2	10.5	9.9
4			90 DAYS TB MONTHLY RATE	1.317	1.467	1.508	1.667	1.692	1.233	0.942	1.033	0.933	0.875	0.825
5	X1	AIMS	EAAGADS	13.043%	0.000%	0.000%	0.000%	0.000%	-3.846%	0.000%	0.000%	0.000%	0.000%	-2.000%
6	X2	AIMS	G. WILLIAMSON	0.000%	-4.348%	-16.364%	1.087%	0.000%	-6.452%	0.000%	3.448%	-14.444%	-2.597%	-4.667%
7	X3	AIMS	KAPCHORUA	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	1.667%	0.000%	0.000%
8	X4	AIMS	LIMURU TEA	0.000%	0.000%	0.000%	0.000%	0.000%	4.615%	0.000%	0.000%	0.000%	0.000%	0.000%
9	X5	AIMS	A. BAUMAN	3.929%	3.093%	0.000%	-2.000%	0.000%	0.000%	-2.721%	-2.098%	0.000%	-1.429%	-5.797%
10	X6	AIMS	EXPRESS	-18.913%	-1.340%	-2.174%	5.556%	0.526%	1.309%	1.550%	0.000%	-3.053%	0.000%	-8.136%
11	X7	AIMS	STANDARD NEWSPAPERS	33.750%	-37.695%	12.000%	-12.054%	9.137%	-2.326%	-4.286%	-19.900%	8.696%	-30.286%	3.279%
12	X8	AIMS	CITY TRUST	-7.609%	9.412%	3.529%	0.000%	-2.273%	2.326%	0.000%	0.000%	-9.091%	0.000%	0.000%
13	X9	AIMS	E.A.PACKAGING	-28.571%	0.000%	3.000%	0.000%	6.796%	12.273%	3.644%	1.953%	-0.383%	1.538%	6.818%
14	X10	MIMS	THETA	0.000%	0.000%	0.000%	0.000%	-0.980%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
15	X11	MIMS	B BOND	-13.043%	2.000%	1.961%	0.000%	0.000%	3.846%	-15.385%	-11.364%	-2.564%	-2.632%	0.000%
16	X12	MIMS	KAKUZI	-17.355%	0.000%	-9.500%	-3.867%	12.069%	-20.513%	-8.387%	-4.286%	0.000%	-0.746%	-5.263%
17	X13	MIMS	SASINI	-3.478%	-6.306%	-17.308%	5.814%	0.000%	-20.000%	-1.389%	-10.563%	2.500%	-1.951%	89.055%
18	X14	MIMS	CAR&GEN	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
19	X15	MIMS	CMC	-0.826%	0.000%	0.000%	0.833%	0.000%	0.000%	-16.667%	-21.000%	-9.873%	-5.618%	-0.298%
20	X16	MIMS	HUTCHINGS BIEMER	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
21	X17	MIMS	MARSHALS	0.000%	0.000%	-6.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	-17.872%	0.000%
22	X18	MIMS	NATION MEDIA	-1.318%	-1.852%	-2.830%	-2.913%	-7.000%	-2.688%	-3.315%	-12.914%	-1.333%	1.351%	0.000%
23	X19	MIMS	PEARL DRY CLEANERS	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	-20.000%	0.000%
24	X20	MIMS	UCHUMI SUPERMARKETS	-9.709%	-11.183%	-1.282%	3.896%	0.000%	8.750%	1.034%	0.000%	-2.312%	1.183%	-2.924%
25	X21	MIMS	BARCLAYS BANK	0.000%	1.000%	1.980%	0.000%	-1.942%	21.287%	-21.739%	0.000%	-3.333%	-1.149%	-4.651%
26	X22	MIMS	CFC BANK	0.333%	-3.654%	-3.448%	1.786%	-1.404%	-0.356%	13.000%	5.611%	-14.688%	-28.205%	7.143%
27	X23	MIMS	DIAMOND TRUST	15.000%	0.000%	5.435%	7.216%	-3.846%	12.000%	-3.036%	-7.477%	-14.141%	-5.882%	-0.250%
28	X24	MIMS	HFCK	-21.074%	4.712%	-2.500%	8.205%	136.967%	-64.800%	10.526%	-17.989%	3.226%	-11.875%	-0.709%
29	X25	MIMS	ICDC	3.000%	0.000%	0.000%	0.000%	0.000%	-8.000%	-10.000%	14.198%	1.622%	5.319%	-8.586%
30	X26	MIMS	JUBILEE	-0.917%	-6.481%	2.970%	-0.962%	-0.971%	3.922%	-0.943%	0.952%	-16.667%	3.529%	0.000%
31	X27	MIMS	KCB	-1.282%	-11.688%	5.882%	-12.500%	11.111%	-10.000%	-20.635%	6.000%	3.774%	1.818%	-15.179%
32	X28	MIMS	NATIONAL BANK	-1.961%	0.000%	0.000%	0.000%	0.000%	-20.000%	-11.250%	15.493%	-3.659%	-8.861%	11.111%
33	X29	MIMS	NIC	2.679%	0.870%	-8.621%	1.887%	-5.556%	1.961%	7.885%	0.000%	2.778%	-24.324%	19.048%
34	X30	MIMS	PAN AFRICA INS	-10.000%	40.972%	-46.000%	0.000%	-5.556%	-17.647%	0.000%	3.571%	-3.448%	-4.762%	-2.750%
35	X31	MIMS	STANDARD CHARTERED	0.909%	5.946%	-4.337%	2.727%	0.885%	41.228%	-30.464%	-9.048%	-1.571%	2.128%	10.833%
36	X32	MIMS	BAMBURI	-12.500%	-0.952%	0.000%	0.962%	0.000%	0.952%	5.769%	-3.636%	7.547%	2.632%	10.256%
37	X33	MIMS	BAT	4.375%	-7.784%	-2.597%	3.333%	-5.806%	39.726%	-31.915%	-3.125%	-1.613%	-6.557%	11.842%
38	X34	MIMS	CARBACID	-6.250%	8.333%	0.000%	3.077%	0.000%	4.478%	-83.571%	563.462%	-18.116%	-11.504%	-2.000%
39	X35	MIMS	CROWN BERGER	1.527%	0.752%	-25.373%	0.000%	0.000%	-3.500%	7.772%	13.942%	8.017%	5.469%	-11.600%
40	X36	MIMS	DUNLOP	0.000%	-7.143%	-38.462%	25.000%	-2.500%	-12.308%	-6.433%	-2.500%	8.974%	-11.765%	0.000%
41	X37	MIMS	E.A. CABLES	-6.030%	0.000%	-30.481%	0.000%	-2.308%	27.953%	-19.149%	0.526%	-0.524%	-15.789%	-25.000%
42	X38	MIMS	BOC KENYA LTD	0.000%	-2.857%	2.279%	-4.478%	0.000%	0.000%	1.563%	-3.077%	-18.254%	-6.436%	2.116%
43	X39	MIMS	E.A. PORTLAND	-21.708%	-22.273%	28.655%	2.273%	0.889%	1.322%	-12.609%	14.925%	-3.896%	11.712%	2.016%
44	X40	MIMS	FIRESTONE	1.444%	-0.356%	2.143%	11.888%	0.000%	-16.250%	-2.326%	-0.794%	-8.000%	12.609%	-3.475%
45	X41	MIMS	KENYA BREWERIES	6.024%	-13.253%	-2.778%	0.000%	-5.000%	5.263%	2.857%	-1.429%	-3.623%	-1.504%	3.817%
46	X42	MIMS	KEN NAT MILLS	32.450%	-16.000%	19.643%	-5.473%	-1.053%	-3.723%	84.530%	-25.150%	-8.000%	-8.696%	-19.048%
47	X43	MIMS	K P L C	1.000%	-16.667%	3.750%	15.060%	-2.094%	-2.139%	-3.825%	-9.091%	-35.897%	3.000%	-1.942%
48	X44	MIMS	UNGA LTD	-11.628%	-27.632%	89.091%	0.000%	-28.462%	0.000%	33.065%	22.222%	-8.264%	-44.505%	-5.844%

MONTHLY SECURITY RETURNS

	A	B	C	BG	BH	BI	BJ	BK
1								
2	CODE	MKT SEG	SECURITY	AUG RET	SEP RET	OCT RET	NOV RET	DEC RET
3			90 DAYS TB ANNUAL RATE	9.2	10.4	10.6	11.2	12.9
4			90 DAYS TB MONTHLY RATE	0.767	0.867	0.883	0.933	1.075
5	X1	AIMS	EAAGADS	0.000%	0.000%	-18.367%	2.500%	0.000%
6	X2	AIMS	G. WILLIAMSON	-17.483%	20.339%	28.169%	-0.549%	7.182%
7	X3	AIMS	KAPCHORUA	0.000%	0.000%	0.000%	0.000%	0.000%
8	X4	AIMS	LIMURU TEA	3.846%	0.000%	0.000%	0.000%	0.000%
9	X5	AIMS	A. BAUMAN	-7.692%	44.167%	-19.492%	0.000%	0.000%
10	X6	AIMS	EXPRESS	-2.857%	-1.471%	7.463%	-0.556%	0.000%
11	X7	AIMS	STANDARD NEWSPAPERS	-0.794%	18.400%	-2.703%	4.167%	-4.667%
12	X8	AIMS	CITY TRUST	0.000%	5.000%	26.250%	0.000%	0.000%
13	X9	AIMS	E.A.PACKAGING	2.837%	0.000%	-1.379%	-55.245%	17.188%
14	X10	MIMS	THETA	0.000%	0.000%	0.000%	0.000%	0.000%
15	X11	MIMS	B BOND	-0.676%	11.565%	12.195%	5.435%	0.000%
16	X12	MIMS	KAKUZI	0.635%	-15.873%	-3.774%	7.843%	0.000%
17	X13	MIMS	SASINI	0.000%	2.206%	-2.158%	2.941%	3.429%
18	X14	MIMS	CAR&GEN	0.000%	0.000%	-47.368%	0.000%	0.000%
19	X15	MIMS	CMC	-2.090%	-2.439%	0.000%	-1.875%	-2.866%
20	X16	MIMS	HUTCHINGS BIEMER	0.000%	0.000%	0.000%	0.000%	0.000%
21	X17	MIMS	MARSHALS	0.000%	0.000%	-3.627%	0.000%	0.000%
22	X18	MIMS	NATION MEDIA	-7.267%	-0.725%	2.190%	-1.429%	0.000%
23	X19	MIMS	PEARL DRY CLEANERS	0.000%	-14.583%	0.000%	0.000%	0.000%
24	X20	MIMS	UCHUMI SUPERMARKETS	6.024%	2.841%	15.580%	-7.000%	5.376%
25	X21	MIMS	BARCLAYS BANK	9.146%	1.724%	9.040%	-16.580%	-6.211%
26	X22	MIMS	CFC BANK	3.810%	-8.257%	0.000%	-2.500%	3.077%
27	X23	MIMS	DIAMOND TRUST	-9.774%	-16.667%	6.667%	-9.375%	-3.448%
28	X24	MIMS	HFCK	-10.714%	24.800%	-10.256%	-11.429%	-11.290%
29	X25	MIMS	ICDC	10.497%	0.000%	4.000%	2.000%	-8.824%
30	X26	MIMS	JUBILEE	-8.182%	-8.629%	5.556%	0.000%	-2.632%
31	X27	MIMS	KCB	5.263%	8.000%	0.000%	3.704%	-8.929%
32	X28	MIMS	NATIONAL BANK	1.250%	1.235%	21.951%	-21.000%	-20.253%
33	X29	MIMS	NIC	7.000%	-5.769%	-6.122%	-13.043%	-11.250%
34	X30	MIMS	PAN AFRICA INS	-2.314%	-6.579%	0.000%	-9.859%	-31.250%
35	X31	MIMS	STANDARD CHARTERED	5.882%	1.852%	0.000%	-6.000%	-1.010%
36	X32	MIMS	BAMBURI	-0.781%	1.575%	5.426%	-2.206%	1.504%
37	X33	MIMS	BAT	7.500%	8.527%	1.429%	-2.113%	-9.701%
38	X34	MIMS	CARBACID	-2.041%	4.167%	21.300%	-21.186%	-13.978%
39	X35	MIMS	CROWN BERGER	3.167%	-6.579%	-20.188%	0.588%	5.263%
40	X36	MIMS	DUNLOP	5.333%	0.000%	-6.667%	-8.571%	0.000%
41	X37	MIMS	E.A. CABLES	15.000%	40.580%	0.000%	-17.526%	15.625%
42	X38	MIMS	BOC KENYA LTD	-15.026%	4.878%	8.256%	1.136%	6.180%
43	X39	MIMS	E.A. PORTLAND	-1.186%	0.000%	-4.000%	-2.083%	-0.426%
44	X40	MIMS	FIRESTONE	-7.917%	8.597%	4.167%	-4.000%	-4.167%
45	X41	MIMS	KENYA BREWERIES	11.765%	3.947%	1.266%	1.250%	-8.025%
46	X42	MIMS	KEN NAT MILLS	-5.882%	16.250%	-18.280%	-7.237%	-0.709%
47	X43	MIMS	K.P.L.C.	-7.921%	-5.376%	-6.818%	9.146%	-10.615%
48	X44	MIMS	UNGA LTD	-6.897%	10.741%	-1.338%	-1.695%	-4.138%