AN EVALUATION OF INVESTOR RETURNS UNDER ACTIVE VS PASSIVE EQUITY PORTFOLIO MANAGEMENT STRATEGIES

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DECLARATION

I, the undersigned, declare that this project is my original work and has not been presented for a degree or diploma in any other university or college.

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This project has been submitted with my approval as the University supervisor.

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DEDICATION

This is for all those who have shown me great love, in their small and big ways, and all those who have persevered with me while I was undertaking this project.

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First and foremost I would like to thank God for giving me the strength and energy to complete this project.

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ABBREVIATIONS

AIG	American Investments Group
AIMS	Alternative Investments Market Segment
APT	Arbitrage Pricing Theory
AS	Average Style
BAAM	British American Asset Managers
BIS	Bank of International Settlements
BV	Beginning Value
CAPM	Capital Assets Pricing Model
CBA	Commercial Bank of Africa
CFA	Certified Financial Analyst
CMA	Capital Markets Authority
CML	Capital Markets Line
CS	Characteristic Selectivity
CT	Characteristic Timing
DIV	Dividend
EA	East Africa
EMH	Efficient Markets Hypothesis
EV	Ending Value
FISMS	Fixed Income Securities Market Segment
ICEA	Insurance Company of East Africa
MBA	Masters of Business Administration
NSE	Nairobi Stock Exchange
OMAM	Old Mutual Asset Managers
SML	Security Market Line
S&P	Standard and Poors
TB	Treasury Bills
UK	United Kingdom
US	United States of America

ABSTRACT

The study set out to evaluate investor returns under active vs. passive equity portfolio management strategies and to analyze which strategy offered the highest risk adjusted returns. Returns were evaluated by calculating returns of investing in a market index, for a passive strategy, and calculating returns of investing via a fund manager for an active strategy. These returns were then compared using graphs, charts and tables Portfolio performance analysis was then carried out using coefficient of variation that measures relative dispersion and Sharpe ratio that measures mean excess returns per unit of risk.

The study covered the period from 1st January 2003 to 31st December 2006. The funds under consideration in this research were British American Equity Fund, Old Mutual Equity Fund, African Alliance Managed Fund and Commercial Bank of Africa Equity Fund. The stock market indices under consideration in this study were the NSE 20 share market index and the AIG (EA) 27 share market index.

The study entailed a census of all Fund managers with equity funds that are authorized to operate as fund managers in Kenya by the CMA. Extensive library research was used to collect data for the purpose of this study. This entailed contacting both fund managers, AIG (EA) and the Nairobi Stock Exchange to collect data relevant for this research.

The research findings showed that with regards to mean excess returns per unit of risk as computed using the Sharpe ratio, the market indices returns ranked higher than the fund managers and with regards to relative dispersion as computed using coefficient of variation, with the exception of British American Equity Fund, the fund managers ranked higher than the market indices. This therefore implies that market indices generated higher risk adjusted returns than fund managers and hence, the passive strategy of indexing offered better returns than the active fund managers.

CHAPTER ONE

INTRODUCTION

This chapter contains the background to the study, statement of the problem, objectives of the study and its importance.

1.1 BACKGROUND TO THE STUDY

Within the investment industry, a distinction is often made between passive – holding securities for relatively long periods with small and infrequent changes - and active portfolio management. This section introduces the two techniques and the specific research area.

1.1.1 Passive Management

Passive managers generally act as if they believe the security markets are relatively efficient and their decisions are consistent with the acceptance of consensus estimates of risk and returns. The portfolios they hold may be surrogates of the market portfolio that are known as index funds or they may be those that are tailored to suit clients with preferences and circumstances that differ from those of the average investor. In any case passive portfolio managers do not try to outperform their designated benchmarks (Sharpe et al, 2004).

1.1.2 Active Management

On the other hand, active managers believe that from time to time there are mispriced securities or groups of securities. They do not act as if they believe that security markets are efficient and they use deviant predictions i.e. their forecasts of risks and expected returns differ from consensus opinions. Whereas some managers may be more bullish than average about a security, others may be more bearish. The former will hold "more than normal" proportions of the security, the latter "less than normal proportions" (Sharpe et al, 2004).

1.1.3 Active vs. Passive Debate

The debate on the merit of active vs. passive management encompasses a large body of empirical and theoretical literature. Supporters of passive strategies rely on the Efficient Market Hypothesis (EMH), stating in their thesis that whatever inefficiencies may occur do not give rise to profitable investing strategies (Malkiel, 2003). Testing the merit of active investment strategies – the "active versus passive" debate – involves measuring the returns from actively managed portfolios to confirm if the selections of fund managers have outperformed the market on average. Engström, (2004) carried out such a study by evaluating fund managers decisions in order to assess whether active portfolio management creates value.

Other supporters of active management include Chen et al (2000) who showed that stocks that fund managers buy perform significantly better than stocks they sell during a one year period under a passive strategy, the evidence they produced suggested that fund managers who trade actively are better at stock picking than those who trade passively.

At the Nairobi Stock Exchange (NSE), Sallah (2005) examined and compared portfolio mean return differentials between active and passive portfolio management strategies by creating two hypothetical portfolios as surrogates for active and passive equity portfolios using shares listed at the NSE, without sampling any fund managers portfolios and found out that there is no significant mean return difference between the two hypothetical portfolios, Kibet (2006) sought to determine how well the NSE 20 share and the AIG (EA) 27 share market indices represent market performance and to test for biases between the two indices, he found out that the NSE 20 share index has more biases than the AIG (EA) 27 share index and hence less representative of market performance. Alum (2006) surveyed the trading strategies employed by fund managers, focusing on the three main strategies of momentum, contrarian and buy and hold. Mwobia (2004) surveyed the factors that investment managers consider when making investment decisions highlighting on factors such as risk, returns, economic and industry factors.

The active vs. passive debate has spawned a large body of empirical and theoretical literature which generally shows that actively-managed portfolios under perform market averages. The overall conclusion drawn from the debate has been that judgment is superfluous in the investing process therefore establishing the rationale for index tracking strategies (Woolley and Bird, 2003). Adherents of market efficiency and financial economists have also asserted for some time that actively managed money cannot outperform money that passively tracks an index and that, on average, active management must under perform index-tracking strategies after costs.

Without a satisfactory answer to this debate, there does not appear to be any scientific rationale for much of the investment industry. Numerous studies have focused on the active-passive debate, from studies by Jensen (1968) to more recent studies by Wermers (2000) with both sides of the debate presenting valid arguments to support their standing. This debate remains in an inconclusive state with neither active nor passive strategies validated universally.

1.2 STATEMENT OF THE PROBLEM

So should an investor follow a passive or active strategy? Whether they manage their portfolios themselves or rely on advisors. Most investment managers advertise that they possess superior investment skills and can earn an investor the highest returns. Despite their persuasion, is it possible that everyone can be above average? Yet the fact that everyone cannot be above average does not prove being above average is impossible. It merely proves it is hard to attain. All investors as a group actually represent the market. According to the empirical evidence by Malkiel (2003), on average, active managers do not surpass their benchmark indices by the additional cost of running their business.

Advocates of passive investing believe that the market behaves according to the Efficient Market Hypothesis (EMH). In such a world, no investors could systematically exploit any mispricings, as they would be instantaneously corrected. Consequently, passive investors believe it is not possible to accurately identify investments that will consistently beat market averages, at a low enough cost to justify

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the effort. Passive investors attempt simply to duplicate their respective investable universes.

Advocates of active investing however, suggest that the market provides sufficient inefficiencies to be successfully exploited by an astute investor. They believe that they are able to consistently identify enough high-performing investments to ultimately achieve better-than-average results. Active investors seek out what they consider better-than-average opportunities (Engström, 2004).

Taking into account the debate between active and passive management, how important is the active-versus-passive investing decision to investors? When first exposed to the concept of passive management, novice and experienced investors alike tend to dismiss the idea as unworkable. How is it possible that a strategy of buying and holding every stock that constitute a market index deliver higher returns than selecting only the most attractive stocks for purchase? Does it not seem more realistic that some companies have better prospects than others and will thus be more profitable investments? Would not careful research by skilled analysts ensure superior results? Is the recent success of indexing just an aberration? Neither label active nor passive is perfect nor not always will there be a complete dichotomy between the two alternative strategies. This study sought to address these two approaches to portfolio management and how they apply to stock market investments and investor returns.

This study also sought to determine if one type of portfolio management technique produced better historical returns than the other. The returns earned by an investor who invests into the stock market using a passive strategy of indexing were evaluated in comparison to those of one who utilizes the skills of an active fund manager. This was done in order to assess which strategy added more value to an investor's equity portfolio. No similar study has been conducted in Kenya at the NSE.

1.3 OBJECTIVES OF THE STUDY

The main objectives of this research were:

- To evaluate investor returns under active vs. passive equity portfolio management strategies.
- To analyze which strategy had the highest risk adjusted returns during the duration of the study.

1.4 IMPORTANCE OF THE STUDY

This section indicates the importance of the study and to whom.

1.4.1 To Small Scale Individual Investors

Recent developments in the Kenyan financial markets have seen a lot of investors both individual and corporate gain interest in its capital markets, particularly the stock market. A majority of these investors have sought to profit by either investing in the stock market directly or finding channels through which they can invest in securities traded in the stock market. This study would help such individuals decide either between active or passive techniques which one would add more value to their investments. It would also help them decide whether to utilize the skills of a fund manager or invest in the stock market directly by themselves.

1.4.2 To Institutional Investors

A lot of institutions have also been established recently in the Kenyan financial markets that seek to create an avenue through which investors can maximize their returns in securities without going through the costs of actually assessing the market on which securities to invest in by themselves. These institutions claim to have expertise that will ensure an investor earns better returns if they invested in their products. With the growth of the Kenyan stock market and its contribution to the development of the countries economy and with the number of these institutions increasing, this study will also add value to such institutional investors as to how they can be able to maximize returns and add value to their client's portfolios using both or either of active or passive strategies.

1.4.3 To Fund Managers

The growing fund management sector of the Kenyan financial markets would also be able to make good use of the findings of this study to ascertain which strategy adds more value to their investment portfolios.

LITERATURE REVIEW

This chapter summarizes relevant previous studies that are related to this study by giving brief details of previous author's research questions, methodologies and conclusions on issues relevant to this study.

2.1 INTRODUCTION

Adherents of market efficiency have claimed that actively managed money cannot outperform money that passively tracks an index, at least over the long run and adjusted for priced risk factors (Wermers, 2003). Numerous studies have focused on the active-passive debate, from the seminal study by Jensen (1968) to the more recent studies by Carhart (1997) and Wermers (2000).

So does active portfolio management create value? The extensive literature that evaluates the performance of mutual funds suggests that the average fund does not outperform relevant benchmarks. Hence, based on this evidence, the answer to the question would be no. Previous evaluations of fund managers' skills have decomposed fund performance into stock selectivity and market timing ability, based on the methods developed in Treynor and Mazuy (1966) and Henriksson and Merton (1981). These methods estimate fund managers' skills by time series regressions, where aggregate data on portfolio returns are used.

Recent studies analyze fund performance based on observed portfolio holdings. Grinblatt and Titman (1989a) and Grinblatt and Titman (1993) are two important contributions in this field. To date, only a few studies of this kind exist since such detailed data are not easily available. However, a recent article by Chen et al (2000) extends knowledge on the value of active portfolio management by examining United States of America's (USA) data on mutual funds' portfolio holdings. Chen et al (2000) find, contrary to previous studies, evidence to support the value of active portfolio management. Chen et al (2000) show that stocks that fund managers buy perform significantly better than stocks they sell during a one-year period. The evidence in

Wermers (2000) shows that fund managers who trade more are better at stock-picking than managers who trade less. Similarly, Dahlquist et al (2000), show that the performance of Swedish mutual funds is positively related to the funds trading activity.

2.1.1 Portfolio Management

Portfolio management is the process by which money is managed. It may be active or passive, use explicit or implicit procedures, controlled or uncontrolled (Sharpe et al, 2004).

2.1.2 Active Portfolio Management

Active portfolio managers believe they can outperform their benchmark or index, or "beat" the market. They believe there are certain inefficiencies in the market that can be taken advantage of to achieve potentially higher returns than that of the benchmark or index. They use available qualitative and quantitative information and employ forecasting techniques and proprietary models of research (Sharpe et al, 2004).

2.1.3 Passive Portfolio Management

Passive portfolio managers on the other hand, believe that the market is inherently efficient and that it is difficult to beat the market. They invest in a portfolio that represents a broad-based market index with the aim of providing performance closely representing that of the index (Sharpe et al, 2004).

2.2 THE ACTIVE VS PASSIVE DEBATE

The debate about the merit of active vs. passive portfolio management encompasses a large body of both empirical and theoretical literature. This section summarizes relevant previous literatures that are related to the active vs. passive portfolio management debate.

2.2.1 Passive Portfolio Management and Efficient Markets

In the mid-1960s Eugene Fama fine-tuned the EMH framework and suggested three forms of informational efficiencies; the weak form, the semi-strong form and the

strong form. EMH implies the impossibility of an investor consistently outperforming the market through customized investment strategies. Clearly, no fund manager would be able to beat the market consistently, if markets were informationally efficient (Fama, 1965).

Jensen's study in 1968 of mutual fund performance found that the average mutual fund produced low returns. A report on the performance of 57 mutual funds and their sensitivity to market fluctuations by Treynor and Mazuy (1966) concluded that perhaps no investor, professional or amateur, can outguess the market. Dunn and Theiser (1983) conducted a test to see the consistency in performance of active fund managers and concluded that the best one can hope from selecting an investment manager strictly on the basis of past results is a 50-50 chance of success – about the same odds as a flip of a coin. Sharpe (1991) asserted that, on average, active managers cannot better the returns derived from passive management strategies. The reasoning is that the performance (before investment expenses) of the index equals the weighted average return of both passive and active investors. Grinblatt and Titman (1992) analyzed how mutual fund performance relates to the past performance, and found evidence that differences in performance between funds persist over time and that this persistence is consistent with the ability of fund managers to earn abnormal returns. Ippolito (1993) established that there is no evidence of superior performance after adjusting the return for risk and expenses. Carhart (1997), documents that the persistence of performance in actively managed mutual funds is almost completely attributable to common factors in stock returns and scale economies in investment rather than superior portfolio management ability.

Daniel and Titman (1997) showed that mutual funds, particularly aggressive growth funds exhibit some selectivity ability but exhibit no characteristic timing ability, meaning that the average performance of a fund could have been replicated by simply purchasing stocks with the same size, book to market and momentum characteristics as the stocks held by the fund. Cunningham and Fender (1999) revisited the debate of passive and active management processes and found that only a very small percentage of money managers have out performed the after-tax Standard and Poor's index.

Malkiel and Aleksander (2001), found no evidence that the success of indexing is self-fulfilling. Bogle (2002) demonstrated that low cost funds outperform high cost funds on both an absolute and risk-adjusted basis. The majority of performance evaluation studies over the last three and half decades, including Malkiel (1995) and Gruber (1996), have generally questioned the ability of active fund management to outperform the market.

2.2.2 Scrutinizing the Debate's Methodology and Conclusions

Many academics and practitioners have contributed to a large body of literature to this debate which exemplifies how measurements, none of which are related to investment prospects and risks, can mislead researchers about the impact of human judgment in investments. Fortunately, the debate's generalizations and conclusions can be scrutinized without recourse to even lengthier data sets or further direct observations of portfolios (Gold, 2004).

2.2.3 Simplifying the Debate: Can Anyone Outperform The Market?

The debate can be simplified by posing the question 'can anyone outperform the market'? Two Nobel laureates in financial economics, Sharpe W. and Samuelson P. "answered" this question a long time ago. Samuelson stated *'what logic can demonstrate is that not everybody, nor the average person can do better than the comprehensive market averages…that would contradict the tautology that the whole is the sum of its parts'* (Samuelson, 1974). Similarly, Sharpe apparently 'answers' the debate stating that *'because active and passive returns are equal before cost, and because active managers bear greater costs, it follows that the after-cost return of active management must be lower than that from passive management'* (Sharpe, 1991).

In arguing the case for index-tracking strategies, Samuelson (1974) and Sharpe (1991) allude to the maxim that the average actively managed funds will always under perform the average indexed funds, after the fees of active managers and other costs are taken into account. This argument only holds, however, if the empirical methodology adequately measures the return of the average dollar invested in a

market. In practice however, it is the average performance of portfolios rather than the average dollar which is measured, and this perpetuates the debate. The debate can be concluded to be a misunderstanding between the theoretical return on the average dollar invested, and the average portfolio return observed and measured in practice (Gold, 2004).

2.2.4 The Debate's 'Anomalies'

A result of Samuelson (1974) and Sharpe's (1991) logic is that actively managed portfolios can beat a market average, but that this phenomenon must be attributable to a range of measurement errors and data biases. For completeness, the task remaining for empirical researchers is to explain why Samuelson (1974) and Sharpe (1991) generated favorable outcomes in the period under study. These answers lie in the data and the methodologies of the experiments conducted by Samuelson (1974) and Sharpe (1991). Aside from intermediary costs and taxes, financial markets are a zero-sum game producing a winner and a loser from each transaction. It is therefore possible to deduce that any observed out performance of market averages must occur only at the 'expense' of underperforming portfolios, also invested in a market, but omitted from the survey. These portfolios are the assets of day traders, other managed funds and offshore investors (Gold, 2004).

In practice, it is common for researchers to use arbitrary rolling periods (e.g. 1, 3 or 4 years) for performance measurement purposes (BIS, 2003). This measurement methodology is date dependent and can capture favorable 'windows' in a portfolio's life. Making generalizations about a single portfolio (or group of managers) relying on this approach, however, may be misleading. For example, a portfolio shown as a market beater in one period can also often be shown as a loser in the next (BIS, 2003).

The compilation of fund surveys can introduce a range of biases, which can produce a distorted picture of investment outcomes. These biases are exacerbated where there is a high turnover of index constituents or truncation of the portfolios measured by the peer survey. Because portfolio surveys are based on restricted populations, and fund managers may choose whether or not to report their returns, the average active

portfolio return provided by these surveys can be affected by selection and survivorship biases. For example, conclusions based on the performance of a portfolio which 'survives' to be measured in a survey, while its contemporaries have disappeared (or chosen not to report their results), cannot be considered as being representative of the average performance outcomes of all portfolios of its era (Gold, 2004).

On the other side of the debate's measurement equation, errors can result where the proxy of performance (e.g. the market index) used does not accurately reflect the aggregate return generated by all securities listed on a market. For example, if a portfolio invests in securities which are not included in the index, or where the proportionate market value of a security is different to its index weighting, a portfolio may show apparent out performance (or underperformance) relative to the market. This measurement error commonly occurs with free-float adjusted indices because the performance contribution of securities in the index is 'discounted' from the actual economic return achieved by portfolio investors (Gold, 2004).

At this juncture, it should be recognized that the debate only deals in outcomes and does not provide any insights into the sources of return or risk. The anomalies generated by the debate's methodology cannot be offered as evidence affirming or dismissing the merit of active management. Additionally, while this methodology is often used to infer skill, these performance outcomes are not adequately distinguished from chance. On a per dollar basis, there are equiprobable opportunities for profit or loss from each transaction; therefore, it can be argued that these empirical studies do not provide a rational basis for the premise that active managers must always under perform passive managers (Keynes, 1963).

2.2.5 The Debate's Contribution to Economic Theory

Modern portfolio theory assumes that rational participants are involved in the process of price discovery, and that fair values are reflected in conditions of market equilibrium. In reality, markets are populated by a broad spectrum of participants with differing motivations, perceptions, risk preferences, time horizons, and legal

constraints. For investors whose faith in financial markets and investment theory has been tested by recent corporate collapses and market integrity issues, the debate is used as a powerful excuse (Gold, 2004).

The theory of 'efficient markets' posits that markets generally reflect all available information about each firm and therefore no economic advantage can be derived from attempting to predict security prices or second-guess the market on 'fair' value. Accordingly investors are compelled not to use their judgment, ingenuity and intuition but to rely upon financial markets to price their securities fairly. Perhaps the strongest affirmation of informational efficiency has been the inability of active managers to outperform market averages (Fama, 1965). As noted above, however, any research measuring markets and portfolios properly will also generate this outcome. On this score, all markets must be informationally efficient. So do markets really reflect all available information? Since informational efficiency is measured using pricing outcomes, it is impossible to determine what (if any) information investors relied upon, nor anything about their motives (rational or otherwise). Rather than being concerned with the notion of market efficiency, it should be recognized that market prices simply reflect rates of exchange at any point in time; fair values remain an abstract ideal (Gold, 2004).

A robust economic rationale for indexing (that is, constructing a portfolio which tracks the market with minimal operating costs) is firmly established because it appears to provide the best economic outcome based on market prices that reflect fair values of daily trading of stock market securities. Index-tracking strategies are predicated upon market prices reflecting fair values which must result from the analysis and trading of active market participants. Proponents of indexing strategies claim that a 'free rider' benefit therefore accrues to index-tracking investors who do not pay any fees for research or human judgment, but benefit from the market pricing function provided by 'smart' active investors. In reality, since every transaction, regardless of its rationality, can affect prices, it is impossible to discriminate between smart investors, overenthusiastic speculators, or insightless market trackers. Consequently; it is unreasonable to expect market prices will always reflect fair

values (Gold, 2004). Nonetheless, for index-trackers, market prices are assumed to always be fair. Accordingly, analyzing the merits of individual securities, or any attempts to 'time' the market are considered futile and wasteful. By contrast, the index-tracker transacts in markets according to cash flows (into and out of its portfolio), and its only motivation for trading is to satisfy portfolio quotas determined by the constituents and weightings of the index tracked.

2.2.6 More on the Practical Effects of the Debate and Indexing Strategies

Within the context of the debate, researchers have provided numerous contributions and rejections based on date-dependency, duration of measurement or selectivity that has made the research appear to be repetitive in nature without considering the appropriateness of index-tracking strategies (Minor, 2001 and Bogle, 2002). Other writers maintain that the debate has deterministic value and attempts to elicit greater understanding of the motivations and behaviors of participants from ex post empirical results (Treynor, 1999). More recent research however, have by-passed the debate's performance stalemate to highlight the unquestionable economic impact created by the increasing production of index tracking schemes. Woolley and Bird (2003) outline the resultant economic impact of implementing index-tracking strategies and the potential for misallocation of capital to index constituents which receive favored access to capital from investors.

2.2.7 Active Index Management

In contrast to the depiction in theoretical and industry literature, indexing is not necessarily a passive strategy. Indices represent actively managed instruments, rather than 'buy-and-hold' strategies, familiar to most investors. A growing body of research documents the costs of active index management for investors tracking broad equity benchmarks, and resultant profit opportunities that are presented to unconstrained market participants (Beneish and Whaley, 2002). The information effect of constituent changes in market indices has also been examined and the writers suggest that index management effects are potentially powerful signals about prospective earnings (Dennis et al, 2003). Other research suggests that price distortions created by index events have no long-term impact, despite that in reality,

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investors pay the price of these distortionary events in cash, and suffer depressed portfolio returns (Malkiel and Aleksander, 2001).

2.2.8 The Debate's Impact on the Investment Management Industry

Although offering a complex service proposition, the primary differentiation between fund managers is their investment performance. Because researchers and market consultants such as asset consultants and personal financial consultants continually measure returns relative to the market (and form their opinions and recommendations according to relative performance), funds managers must ensure that their returns remain reasonably consistent with the market and their peers. Volatile returns are hard to sell and persistently poor returns relative to the market typically generate adverse recommendations from researches and market consultants, which damage sales and profitability. Conversely, strong performance relative to peers is positively correlated with net funds inflows (Sirri and Tufano, 1998). Within this highly regulated and competitive industry, therefore, the investment process is likely to be defined by its measurement benchmarks – indices comprising of peer portfolios and the market.

As a direct consequence, fund managers overtly or surreptitiously track market or peer portfolio indices to ensure their survival, even though these benchmarks are unconcerned with investment merit. The debate's methodology therefore creates significant practical disincentives for managers to make any significant judgments in their portfolio selections which consequently results in the convergence of active portfolios with the market index and consequent performance clustering (Blake et al, 2002). The pervasive effect of performance benchmarking and the reluctance of funds managers to invest outside of the universe of securities comprising these benchmarks has been documented in the United Kingdom in papers by (Brealey, 2000) and (Myners, 2001) and in other competitive financial services markets (BIS, 2003).

The industry's structural forces clearly have potential to create market misalignments and thus asset mispricings. However several global industry trends have been identified as likely to ensure the proper functioning of financial markets: viz. the increasing use of market indices (rather than peer-based performance benchmarks);

the emergence of unconstrained financial products such as hedge funds controlled by 'well informed active asset managers'; and, the shifting of responsibility for asset allocation from plan sponsors to beneficiaries (BIS, 2003).

2.2.9 More on the Active vs. Passive Debate

When making investment decisions, investors are faced with dilemma in two fold:

- Choosing securities to include in a portfolio i.e. the risk – return tradeoff.
- Choosing the best portfolio management strategy for the portfolio so formed. Investors must first determine and if possible measure their predictive ability. They should actively seek above average returns only where they have predictive capabilities.

(Sallah, 2005).

Sallah (2005) examined and compared between portfolio management strategies at the NSE and sought to determine whether there is a management strategy that dominates over the other in terms of returns performance. The NSE 20 share index constituent securities were used as surrogates for passively managed portfolio and top five and bottom five securities in terms of price to earnings ratio were used as surrogates for actively managed portfolio. Price to earnings ratio was used to pick securities included in top five and bottom five during the monthly rebalancing of the actively managed portfolio. Data was later analyzed using; price to earnings ratio, descriptive statistics, critical valuation and mean return assessment. The study indicated that there is no significant mean return difference between active and passive portfolio management techniques.

Mwobia (2004) surveyed the factors that investment management companies consider when making investment decisions and sought to rank the identified factors in order of importance as viewed by the investment management companies she studied. A survey was carried out in which case primary data was collected using a semi-structured questionnaire and then analyzed using descriptive statistics like mean scores, standard deviation and percentages. Mwobia (2004) in her study found that

factors investment management companies consider when making investment decisions range from economic, company specific, society and geographical.

Kibet (2006) determined how well the NSE 20 share and the AIG (EA) 27 share indices represent market performance by testing the relationship between the indices and existence of any biases between them. The results in the study show that both the NSE 20 share and the AIG (EA) 27 share indices have biases, however, the AIG (EA) 27 share index is more representative than the NSE 20 share index in measuring market performance (Kibet, 2006).

Alum (2006) surveyed the trading strategies employed by fund managers in Kenya, her research centered on the three main strategies of momentum, contrarian and buy and hold. The research findings displayed that most fund managers in Kenya rely on the three strategies of momentum, contrarian and buy and hold.

Discerning investors have sought to understand the specific factors that contribute to overall fund performance. This approach to attributing the overall performance to individual causal factors has been a useful tool for internal management control within the funds composition. Several approaches have been noticed in attribution analysis. Fama's (1972) approach is based on the Capital Asset Pricing Model. It splits the overall return into risk-free rate, systematic risk premium, premium for unsystematic risk and returns due to superior fund management capabilities.

Multifactor models have included more explanatory parameters, some of which are economy specific while others are firm specific (Ross, 1976). This method has become quite popular in the fund industry. Hendriksson and Merton (1981) established that perfect market timing ability was equivalent to owning a call option that pays at expiration the return to the best performing asset class. Grinblatt and Titman (1984) highlighted on insights about the applicability of commonly used measures of portfolio performance. They decomposed the measured abnormal returns of an investor into three components: selectivity, timing and the mismeasurement of the average beta of the portfolio strategy, Sharpe (1992) recommended asset class

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factor model that can help make order out of the chaos that often attends the investment process.

Daniel et al (1997) developed 'characteristic timing' and 'characteristic selectivity' to detect whether portfolio managers successfully time their portfolio weightings on these characteristics and whether they select stocks that outperform the average stocks having the same characteristics. It may, however, be noted that though evidence indicates that active fund management does not pay, this has in no way reduced the size of the actively managed fund industry.

If the passive fund management strategy seeks to mimic the index, then the legitimate performance measure would be to assess the divergence between the fund and the index at any point in time. The tracking error is a statistic that indicates the divergence of the fund from that of the index (Perold, 1988). Building an index fund portfolio is theoretically a straightforward approach, requiring the fund manager to invest in all constituent index securities in exactly the same proportion as the underlying benchmark. In practical terms, however, it is not that simple for various reasons. Index represents a mathematical calculation derived from a portfolio of securities that are not subject to the same market frictions faced by the index funds, such as the change in the underlying index. If the compositions, of the underlying index changes, the theoretical portfolio new weight can be achieved automatically. The index fund manager, on the other hand, will be required to physically trade in the index stocks with a view to realign the portfolio. Apart from index composition changes, transaction costs, fund cash flows, the treatment of dividends by the index, the volatility of the benchmark and corporate activity, are identified as the main factors driving index fund tracking error (Chiang, 1998). The liquidity of the underlying index will also have implications for transaction costs and, hence, the tracking error incurred by index funds (Keim and Madhavan, 1998).

Transaction costs associated with trading in the securities market influences the ability of index mutual funds to replicate the performance of the index. The index itself is calculated as a paper portfolio that assumes that transactions can occur

instantaneously, in unlimited quantity and without cost (Perold, 1988). But, the same is not the case with an index fund. Tracking error may also arise when index securities are subject to corporate restructuring, such as merger or take-over by another company outside the index (Chiang, 1998). Beneish and Whaley (1996) identified that front-running by market participants, who acquire index securities ahead of their inclusion in the benchmark, can have undesirable impact on the index funds. Equity Index Funds can be constituted by a variety of different techniques. Broadly speaking, a fund can include all the stocks which comprise the index known as "fully replicated funds", or can be made up of a sample of stocks known as "sampled funds". Attempts to reduce transaction costs through sample strategies may, however, result in higher tracking errors arising from the performance of excluded securities (Olma, 1998).

Tracking error can be expressed by a variety of statistical measures. The popular measure of tracking error used in the fund industry is the square root of the second moment of the deviations between the portfolio return and benchmark return. However, this measure is not free from limitations. Pope and Yadav (1994) warn of potential estimation bias in tracking error arising from the use of high frequency data (i.e. daily or weekly data). They show that negative serial correlation in tracking error can bias the estimate of tracking error upward. While the use of low frequency data does not lead to significantly negative serial correlation, there is loss of information.

Blitz and Andiouke (2001) presented a tracking error allocation framework in a three step process: 1) Identifying the independent investment decision; 2) ranking the forecasting capabilities for the investment decisions; and 3) calculating the optimum partial tracking error. Sethu and Baid (2002) noticed that tracking error is influenced by extraneous factors (such as inefficient information infrastructure and inefficient fund transfer facilities) that are beyond the influence of the asset management company.

Fund analytical services such as Morningstar and Lipper have recognized the importance of several factors that contribute to the overall fund performance (past returns, risk ratings, portfolio composition, and fund investment style etc.). However,

it has not been possible to integrate all these parameters into a composite theoretical framework that explains the overall fund performance. Much of fund analytics, therefore, has taken recourse to expert judgment rather than theoretical rigor. While research has examined the matters relating to tracking error, not much has been said about tracking error attribution. In any case, the importance given to attribution analysis for diversified equity funds and debt funds is conspicuous by its absence when it comes to index funds (Engström, 2004).

2.3 EVALUATING ACTIVE PORTFOLIO MANAGERS: THE FUND PERFORMANCE PERSPECTIVE

This section introduces both traditional and new measures that are used in evaluation active portfolio managers fund performance.

2.3.1 Traditional Measures

Performance evaluation of mutual funds has its origin in the 1960s. Treynor (1965), Sharpe (1966), and Jensen (1968) developed the first evaluation techniques and Jensen's alpha has become the most widely used measure. It is measured as the intercept from a regression of the return, in excess of the risk-free rate, of the managed portfolio on the excess return of a benchmark portfolio. However, this measure is known to suffer from a statistical bias when fund managers successfully time the market. The implication is that successful timers can be assigned a negative performance. In response to the statistical bias problem, Grinblatt and Titman (1989b) proposed a new measure, the Positive Period Weighting measure, which was deemed not to suffer from this bias. Other developments have concerned the choice of benchmarks. Lehmann and Modest (1987) were the first to adapt the Arbitrage Pricing Theory (APT) to performance evaluation and show how evaluation is affected by the choice of benchmark model. The importance of choosing the correct factor in the Jensen single factor model has also been demonstrated in Elton et al. (1993), who extend the single factor model used in Ippolito (1989) into a multi-factor model and showed that the result is reversed.

The Jensen measure has traditionally been unconditional in the sense that historical average returns are used to estimate expected performance, hence, it does not account for time-varying expected returns and risk (Engström, 2003). Ferson and Schadt (1996) extend the traditional measure of performance by using predetermined information variables. This conditional measure of performance allows for time-varying expected returns and risk. The Ferson-Schadt measure is obtained by the regression:

$$R_{it} - R_{ft} = \alpha_i + \beta_{i0}(R_{bt} - R_{ft}) + \beta'_{i1}q_{t-1}(R_{bt} - R_{ft}) + \varepsilon_{it} \quad (1)$$

Where R_{it}, R_{bt}, and R_{ft} are the return of fund i, the benchmark, and the risk-free asset, respectively. The intercept α_i, is Jensen's alpha measure or the systematic pricing error. This deviation from the benchmark model, if it is positive or negative, can be interpreted as superior or inferior performance. The beta coefficient measures the exposure to the benchmark and is a measure of the fund's systematic risk. The predetermined information variables are denoted q_{t-1}. Each information variable has zero mean. The ε_{it} is a fund-specific error term.

2.3.2 Measures with Characteristic-Based Benchmarks

A large number of studies provide evidence on asset pricing anomalies, and show that the cross-sectional pattern of stock returns can be explained by characteristics such as size, past returns, and book-to-market ratios. Daniel and Titman (1997) show that it is the characteristic rather than the covariance structure of returns that explain the cross-sectional variation in stock returns.

Daniel et al. (1997) developed new measures of mutual fund performance based on the evidence in Daniel and Titman (1997). These new performance measures are obtained from a characteristic-based benchmark model. Moreover, Daniel et al. (1997) decomposed performance into Average Style (AS), Characteristic Selectivity (CS), and Characteristic Timing (CT). The AS measure shows whether the returns earned by the fund are due to a tendency to hold stocks with certain characteristics. A CS measure of zero tells us that the average performance of a fund could have been replicated by simply purchasing stocks with the same size, book-to-market, and

momentum characteristics as the stocks that the fund held. The CT measure is positive if the fund manager has been successful at timing the different investment styles.

2.3.3 Measures without General Benchmarks

Traditional performance evaluation methods, which measure portfolio performance in relation to benchmarks, have been the subject of considerable criticism. As Roll (1978) points out, it is difficult to distinguish between portfolio performance and benchmark inefficiency. Moreover, Elton et al. (1993) show that the choice of benchmark can significantly affect the conclusions of a performance evaluation.

In this light, the development in the literature is performance measurement without general benchmarks. Grinblatt and Titman (1993), for example, measured performance by multiplying the twelve-month change in portfolio weight by the following month's return on that stock.

2.3.4 New Measures

Previous performance evaluation measures have mainly focused on aggregate portfolio performance. This performance has been decomposed into selectivity and market timing based on the methods developed in Treynor and Mazuy (1966) and Henriksson and Merton (1981). Engström (2003) tried to extend the literature by decomposing performance and attributing it to fund manager's strategic and tactical decisions. To enable performance to be decomposed, he constructed a passive replicating portfolio, using data on the fund's portfolio holdings.

According to Engström (2003), the performance of strategic decisions captures a manager's ability to make long-term investment decisions, that is, investment decisions that last one year. One way of measuring strategic performance according to him, was to take snap-shots of the portfolio and evaluate a passive strategy of this portfolio, i.e. a replicating portfolio. In contrast, tactical performance captures a manager's ability to make short-term investment decisions, that is, investment decisions during the year. One way of measuring tactical performance was to evaluate

how the active decisions that the manager makes during a year affect the portfolio risk and returns (Engström, 2003).

Compared with previous studies, this replicating portfolio is a more realistic proxy of a passive managed fund, since it fulfils the same conditions as the true fund. For instance, Grinblatt and Titman (1989a) constructed similarly, a hypothetical portfolio based on observed portfolio holdings; Engström (2003) used the same approach. Their approach was based on quarterly portfolio holdings and a monthly rebalancing of the assets. They calculated the hypothetical portfolio by summing the portfolio weights that have been multiplied by the monthly excess returns of securities. However, this hypothetical portfolio does not fulfill the same conditions as a true fund. Engström's paper supports the value of active portfolio management and finds a positive alpha measure for the average fund manager. Moreover, the results show a positive relation between the value created and trading activity.

2.4 MUTUAL FUNDS
A mutual fund is a managed investment company with an unlimited life that stands ready at all times to purchase its shares from its owners and usually will continuously offer new shares to the public (Sharpe et al, 2004). A fund share represents a proportionate ownership of all the underlying securities in the fund, allowing investors to spread their money over many more securities than one person could typically put together in a portfolio.

A mutual fund is more diversified than a typical individual's portfolio, thereby reducing an individual's comparative risk and, consequently increasing the individual's comparative return. The amount of capital needed to obtain this diversification is too large for the average individual investor (Bruno S, 2000). Besides, mutual funds can achieve economies of scale in trading and transaction costs, economies unavailable to the typical individual investor. Also, professional money managers should be able to earn above average returns through successful securities analysis. Moreover, mutual funds allow individuals to earn a certain return without needing to constantly monitor the market (Bruno S, 2000).

2.4.1 Types of Mutual Funds

The two main types of mutual funds are; open ended and closed ended mutual funds (Bruno S, 2000).

2.4.1.1 Open-Ended Mutual Funds

These are mutual funds that continually create new shares on demand. Shareholders buy the funds at net asset value and may redeem them at any time at the prevailing net asset value (Bruno S, 2000).

2.4.1.2 Closed-Ended Mutual Funds

These are mutual funds that do not allow direct ownership into their portfolios instead; listing in a stock market is a basic feature of closed-ended mutual funds. Both existing and new investors can exit from or invest in these funds at the quoted market prices subject to a specified bid and offer spread instead of purchasing directly a share of the mutual fund's portfolio at the net asset value (Bruno S, 2000).

2.4.2 Factors Affecting Mutual Funds

The main factors that affect mutual funds performance include; expense ratio, administrative costs, distribution fees, risk and time horizon (Reilly and Brown, 1997).

2.4.2.1 Expense Ratio

Mutual funds charge fees for their services. A mutual fund's expense ratio is the most important fee. It is made up of the investment advisory fees or management fees which is the money used to pay the manager(s) of the mutual funds. This is usually taken annually as a percentage of the fund's assets (Reilly and Brown, 1997).

2.4.2.2 Administrative costs

These are the costs of record keeping, mailings, maintaining a customer service line, etc. These are all costs incurred during daily operations, though they vary in size from

fund to fund. The thriftiest funds can keep these costs below 0.2 per cent of fund assets (Reilly and Brown, 1997).

2.4.2.3 Distribution fees

Distribution fees are fees spent on marketing, advertising and distribution services. An investor in a fund with such a fee pays every year for the fund to run commercials and try to sell itself to other potential investors (Reilly and Brown, 1997).

2.4.2.4 Risk

Risk is the variability of actual returns from expected returns and is used by fund managers when trying to estimate the reward potential of a stock investment. The greater the stock volatility, or risk, the greater also is the expected reward (Reilly and Brown, 1997).

2.4.2.5 Time Horizon

The time horizon of an individual will also influence the performance measures he or she will take into account. If an individual is investing for less than four years, he or she needs a fund with consistent performance, such that at the expiry of the four years all the investor's money will be there when he or she needs it. The investor also does not have time to earn back a large commission charge on the front end. Conversely, if an investor plans to invest money for a period of 30 years, neither consistency nor load is very important as the investor has plenty of time for the market to recover. With a long-term horizon, the biggest threat to the investment becomes poor performance and high annual expenses, both of which can erode that all-important compounding (Reilly and Brown, 1997).

2.5 FUND MANAGEMENT IN KENYA

The mutual fund history in Kenya started with the enactment of the Capital Markets Amendment Act (2000) which recognized specific investment vehicles especially mutual funds.

Despite the enactment of the Act, there was little development in the mutual fund industry until December 2002 when African Alliance Kenya was licensed by the Capital Markets Authority (CMA) to set up the first regulated mutual fund. It currently offers three different investment alternatives to both institutional and individual investors namely, the Managed Fund, the Kenya Shilling Fund and the Kenya Fixed Income Fund.

This was later followed by Old Mutual Asset Managers (OMAM) Kenya Limited that launched both the Old Mutual Equity Fund and Old Mutual Money Market Fund that started operations on 1st April 2003. They have subsequently introduced the Old Mutual Balanced Fund. The latest entrants to the mutual fund industry are the British American Investment Group in 2005 and Zimele Asset Managers in 2006. Other approved collective investment schemes include Commercial Bank of Africa Unit Trust Scheme and Stanbic Unit Trust Scheme.

2.6 MUTUAL FUNDS PERFORMANCE EVALUATION

Most performance evaluation methods depend on an asset pricing model to measure superior performance. These measures suffer from Roll (1978)'s critique. Papers that provide measures that do not depend on an asset pricing model include Cornell (1979) and Grinblatt and Titman (1993). Two issues related with performance evaluation are persistence of performance and survivorship bias. For persistence of performance, Hendricks et al (1993), Brown and Goetzmann (1995), Grinblatt and Titman (1992), Shukla and Trzcinka (1994) and Elton et al (1996) have produced extensive literature, whereas for survivorship, Brown et al (1992), Brown et al (1995), and Grinblatt and Titman (1989a) have produced extensive literature.

Some theoretical papers that prescribe on techniques used in performance evaluation are Admati et al (1986), Dybvig and Ross (1985b), Dybvig and Ross (1985a), Henriksson and Merton (1981) which provided theoretical models and Henriksson (1984) who provided an empirical test of the timing ability of fund managers. Some papers that show performance evaluation methods in practice include; Grinblatt and Titman (1989a), Grinblatt and Titman (1994), and Malkiel (1995). Most tests of

performance evaluation do not support the hypothesis that managers have superior ability and performance than the market. Ippolito (1989) provides evidence to the contrary. Elton, Gruber, Das, and Hlavka (1993) pointed out some flaws in Ippolito (1989)'s test design and found no evidence for superior performance after correcting these flaws. Lehmann and Modest (1987) discuss the effect of benchmark used on the performance. Grinblatt and Titman (1989b) discuss some important issues in performance evaluation and provide a more general, period weighting measure.

2.7 COMPOSITE PERFORMANCE MEASUREMENT

Composite portfolio performance measures have the flexibility of combining risk and return performance into a single value. The most commonly used composite measures are: Treynor, Sharpe and Jensen measures, these are discussed in the ensuing sections.

2.7.1 Treynor's Performance Index

Treynor (1965) was the first researcher to develop a composite measure of portfolio performance. He measured portfolio risk with beta, and calculated portfolio's market risk premium relative to its beta:

$$Treynor = \frac{\left(R_P - R_f\right)}{\beta_P}$$

Where:

R_P = Portfolio's actual return during a specified time period

R_f = Risk-free rate of return during the same period

β_P = beta of the portfolio

Whenever $R_P > R_f$ and $\beta_P > 0$ a larger Treynor's performance index is realized, meaning a better portfolio for all investors regardless of their individual risk preferences. A negative Treynor's performance index may be attained; when $R_P < R_f$ and $\beta_P < 0$. If Treynor's performance index is negative because $R_P < R_f$ the portfolio's performance is judged to be very poor. However, if the negativity of Treynor's performance index comes from a negative beta, fund's performance is very good. Finally when $R_P - R_f$ and β_P are both negative, Treynor's performance index will be positive, but in order to qualify the fund's performance as good or bad an

evaluation to assess whether Rp is above or below the security market line pertaining to the analysis period should be carried out (Reilly and Brown, 1997).

2.7.2 Sharpe's Performance Index

Sharpe (1966) developed a composite index which is very similar to the Treynor measure, the only difference being the use of standard deviation, instead of beta, to measure the portfolio risk, in other words, it uses the total risk of the portfolio rather than just the systematic risk:

$$Sharpe = \frac{\left(R_P - R_f\right)}{\sigma_P}$$

Where:

R_P = Portfolio's actual return during a specified time period

R_f = Risk-free rate of return during the same period

σ_P = Portfolio standard deviation

This formula suggests that Sharpe's performance index compares portfolios to the capital market line (CML) rather than the security market line (SML). Sharpe index, therefore, evaluates funds performance based on both rate of return and diversification (Sharpe, 1966). For a completely diversified portfolio Treynor and Sharpe indices would give identical rankings.

2.7.3 Jensen's Alpha

Jensen (1968), on the other hand, wrote the following formula in terms of realized rates of return, assuming that CAPM is empirically valid:

$$Jensen = \alpha_P = R_P - \left[R_f + \beta_P\left(R_M - R_f\right)\right]$$

Where:

R_P = Portfolio's actual return during a specified time period

R_f = Risk-free rate of return during the same period

R_M = Return of a market portfolio

β_P = beta of the portfolio

α_P = Jensen's alpha

$Rjt = Rf + \beta j (Rm - Rf) + ujt$

Subtracting Rf from both sides the formula below is obtained:

$Rjt - Rf = \beta j (Rm - Rf) + ujt$

This formula show's that risk premium earned on jth portfolio is equal to the market risk premium times βj plus a random error term. In this form, one would not expect an intercept for the regression equation, if all securities are in equilibrium. But if certain superior portfolio managers can persistently earn positive risk premiums on their portfolios, the error term ujt will always have a positive value. In such a case, according to Jensen, an intercept value which measures positive differences from the model must be included in the equation as follows:

$Rjt - Rf = \alpha j + \beta j (Rm - Rf) + ujt$

Jensen uses αj as a performance measure. A superior portfolio manager would have a significant positive αj value because of the consistent positive residuals an inferior portfolio manager, on the other hand, would have a significant negative αj. Average portfolio managers who have no forecasting ability but can still be considered to be inferior would earn as much as one could expect on the basis of the CAPM.

Jensen's performance criterion, like the Treynor measure, does not evaluate the ability of portfolio managers to diversify since the risk premiums are calculated in terms of β. If the value is positive, then the portfolio is earning excess returns. A positive value for Jensen's alpha means a fund manager has beat the market with his or her stock picking skills.

2.8 THE NAIROBI STOCK EXCHANGE

The Nairobi Stock Exchange (NSE) was formed in 1954 as a voluntary organization of stock brokers (NSE, 2000). The exchange is a market that facilitates the purchase and sale of securities issued by qualifying companies and the government.

In Kenya, dealing in securities started in the 1920's when the country was still a British colony, there was no formal market and no rules and regulations to govern stock broking activities. Trading took place on gentleman's agreement in which

standard commissions were charged with clients being obliged to honour their contractual commitment of making good their delivery and settling relevant costs. At that time, stock broking was a sideline business conducted by accountants, auctioneers, estate agents and lawyers who met to exchange prices over a cup of coffee. Because these firms were engaged in other areas of specialization, the need for association did not arise (NSE, 2000).

In 1951 the first stock broking firm was established by an estate agent Francis Drummond. He held discussions with the then Finance Minister of Kenya, Sir Ernest Vares and impressed upon him the idea of setting up a Stock Exchange in East Africa. The two approached the London Stock Exchange officials in July 1953 and the London officials accepted to recognize the setting up of the Nairobi Stock Exchange as an overseas stock exchange. The NSE in 1954 was constituted as a voluntary association of stock brokers registered under the Societies Act. The business of dealing with shares was then confined to the resident European community since Africans and Asians were not permitted to trade in securities until after the attainment of independence in 1963. At the dawn of independence, the stock market activity slumped due to uncertainty about the future of independent Kenya; however, a lot has changed especially after the NSE was registered under the Companies Act in 1991 (NSE, 2000).

As a capital market institution, the NSE has played an important role in the process of economic development. It has helped in the mobilization of domestic savings thereby bringing about the reallocation of financial resources from dormant to active agents. Long term investments have been made liquid as the transfer of securities between shareholders is facilitated. The NSE has enabled companies to engage local participation in their equity thereby giving Kenyans a chance to own shares. Companies also raise finance essential for expansion and development (NSE, 2000).

The NSE membership is made up of stockbrokers and investment banks that form a council which is responsible for the running of the day to day operations of the stock exchange. These members of the NSE transact business mainly at the Nairobi market,

with limited proportion of business conducted in foreign securities through overseas agents. The stockbrokers and investment banks act as financial advisers to their clients and also carry out their investment requests (NSE, 2005).

The NSE deals in both variable and fixed income securities. Variable income securities are the ordinary shares, which have no fixed rate of return payable as the dividend payable is dependent upon both profitability of the company and what the board of directors decide. The fixed income securities include; treasury and corporate bonds, preference shares and debenture stocks that have a fixed rate of interest. These securities also facilitate the flow of new long term stock, permanent finance in the form of securities into industry and government through stocks (NSE, 2000).

The stock exchange serves as a market for securities in which case it facilitates the flow of new long term permanent finance in the form of securities into industry and government through stocks. It provides a ready capital market in which buyers and sellers of securities conclude their deals and this makes investment in securities attractive as it provides a medium through which these investments are liquidated thus allowing securities to meet the needs of investors (NSE, 2000).

2.9 THE MARKET INDICES

A market index is a collection of securities whose prices are averaged to reflect the overall investment performance of a particular market for financial assets. (Sharpe et al, 2004). In the Kenyan stock market there are two main indices;

1. The NSE 20 share market index
2. The AIG (EA) 27 share market index.

The main parameters used to develop a market index include;

1. Market capitalization
2. Total number of shares issued
3. Number of shares traded
4. Value of shares traded.

(Kimura, 1992).

2.9.1 The NSE 20 share index

The NSE 20 share index comprises of 20 of the most active shares according to the NSE. Additions and deletions into this index are announced publicly by the NSE. The NSE deletes firms from the index when in their opinion they cease to represent the economy either because the industry is no longer representative of the economy or the firm is no longer representative of the industry (Kimura, 1992).

For a firm to be picked for inclusion to the NSE 20 share index, the criterion as below is used;

1. The firm must have at least 20% of its shares quoted at the NSE
2. The firm must have been continuously quoted for at least 3 years
3. The firm must have a minimum market capitalization of Kenya shillings 20 million
4. The firm should ideally be "a blue chip" with superior profitability and dividend record. This will only be on the most active stocks based on their daily closing prices, therefore companies with superior profitability and dividend record but low share prices are excluded from the index computation.

A company that infringes on these conditions for over 3 years can be considered to have disqualified itself for inclusion into the index (NSE, 2005).

2.9.2 Method of computing the NSE index

The NSE 20 share index is a mean daily price relative of the 20 stocks and is computed at the close of each business day (NSE, 2005).

The NSE 20 share index is a geometric equally weighted index with market capitalization as weights. The last price of the day of each share is used but in case there was no trade, arithmetic averages of asks and bid prices are used.

The index is computed once a day and is based on the Fishers ideal formula as below;

$$I_t = I_{t-1} \sqrt[20]{\frac{P_{1t}}{P_{1t-1}} \times \frac{P_{2t}}{P_{2t-1}} \times,\ldots\ldots\ldots,\times \frac{P_{20t}}{P_{20t-1}}}$$

$$= I_{t-1} \sqrt[20]{\prod_{j=1}^{20} \frac{P_{jt}}{P_{jt-1}}}$$

Where; I_t = index at time t

I_{t-1} = index at time t-1

P_{jt} = market price of stock j (j=1,2,.........,19,20) at time t

P_{jt-1} = market price of stock j at time t-1

$\prod$ = multiplying operator (product)

(Kimura, 1992).

2.9.3 The AIG (EA) 27 Share Index

In 2001, AIG introduced the total return AIG (EA) 27 share index that constitutes of 27 companies actively trading at the Nairobi Stock Exchange. Companies are admitted into this index based on the market capitalization weight and high trading volumes. The AIG index is a total return, market capitalization weighted index. In addition to capital gains, the index captures cumulative dividend payments of constituent companies (AIG, 2006).

2.9.4 Difference between AIG and NSE Indices

	AIG (EA) 27 share index	NSE 20 share index
Formulae	Arithmetic mean	Geometric mean
Weighting	Market capitalization	Equally weighted
Return	Total return, captures both capital gains and dividends	Simple return, only captures capital gains
Composition	27 stocks	20 stocks

Source; (AIG investors to Investor report; May 2006)

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter mainly focuses on the research design that was used, description of the sample and sampling procedures. It further contains the description of research instruments, data collection procedures used as well as data analysis procedures.

3.1 RESEARCH DESIGN

The study entailed a census of all Fund managers with equity funds that are authorized to operate as fund managers in Kenya by the Capital Markets Authority of Kenya (CMA). Data was collected regarding the members of the population in order to determine the current status of the population under study with regards to the active vs. passive equity portfolio management strategies. Quantifiable information was collected regarding the sample in order to evaluate the historical returns under active and passive strategies so as to assess which added more value to an investor over the duration of the study. The study covered the period from 1st January 2003 to 31st December 2006.

3.2 RESEARCH HYPOTHESIS

The research hypothesis for this study was;

H_0: Actively managed equity portfolios offer higher risk adjusted returns than passively managed equity portfolios.

H_1: Actively managed equity portfolios do not offer higher risk adjusted returns than passively managed equity portfolios.

3.3 STUDY POPULATION

The target population for this study comprised of the 15 fund managers currently registered and authorized to conduct business in the Kenyan capital market by the CMA as shown in Appendix 7.1. From this population samples were derived for an active equity portfolio.

The study also primarily focused on the shares listed at the Nairobi Stock Exchange during the duration of the study which are shown in Appendix 7.2. The market indices are calculated using samples of these particular shares.

3.4 SAMPLE SIZE

From the study population a sample was selected that consisted of:

- Approved collective investment schemes run by the approved fund managers that focus on equity instrument.
- The NSE 20 share and the AIG (EA) 27 share market indices.

3.5 SAMPLING PROCEDURE

The sampling procedure was as follows; from the study population of all fund managers, fund managers were selected to represent an active equity portfolio management strategy. The criteria used to select this sample was whether they focus on equity instruments (operate an equity fund collective investment scheme), they are authorized to operate in Kenya as fund managers and operate authorized collective investment schemes. The regulatory body is the Capital Market Authority of Kenya and these approved fund managers and collective investment schemes are summarized in Appendix 7.1 and 7.3 respectively.

It is important to note that a fund manager can also passively track an index. However, for the purpose of this study, active returns constituted of those returns made by investing through a fund manager since they claim to possess superior knowledge and investment capabilities and can therefore offer better returns than what the market can.

Active fund managers therefore consisted of;

- British American Equity Fund.
- Old Mutual Equity Fund.
- African Alliance Managed Fund.
- Commercial Bank of Africa (CBA) Equity Fund.

For a passive strategy, the sample consisted of;

- The NSE 20 share index.
- The AIG (EA) 27 share index.

The securities that constitute these indices are shown in Appendix 7.4.

3.6 DATA COLLECTION TECHNIQUE

Data was collected regarding the samples with the use of appropriate data collection procedures as stated below. Relevant data for the purpose of this study consisted of; NSE 20 share index, AIG (EA) 27 share index, the Central Bank of Kenya (CBK) 91 day Treasury bill rates and equity funds daily buy prices for the duration of the study. The equity funds daily buy prices represent the net asset values of these funds and the price at which an investor can be able to sell off their holding in the fund and the Treasury bill rates represent a risk free rate of return.

3.6.1 Library Research

Data on the NSE 20 share index was collected from the NSE daily price lists and weekly market statistics which were availed by the NSE library for the entire duration of the study. Other sources of data included; Nairobi Stock Exchange Handbook, NSE weekly report, fund manager's fact sheets from CBA, Old Mutual and African Alliance. AIG (EA) bulletins and the British American Asset Managers annual financial results were also used. Data on Treasury bill rates for the entire duration of the study was sourced from the CBK these are summarized in Appendix 7.5.

Library research was also used to source for the list of approved fund managers and collective investment schemes as contained in the Capital Markets Act, Gazette notice number 2395 these are summarized in Appendix 7.1 and 7.3 respectively.

The study involved historical statistics. Extensive library research on financial, annual and investment reports from the fund managers was therefore conducted in order to get information or leads to information that is pertinent to the subject under study. Sources such as bulletins, journals and the electronic media were also used.

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3.7 DATA ANALYSIS

The statistical package for social sciences (SPSS) and Microsoft Excel were used to analyze the data.

The data was analyzed as shown below;

- Evaluation of returns from an active strategy using fund manager's returns.
- Evaluation of the returns from a passive strategy using;
  1. NSE 20 share index
  2. AIG (EA) 27 share index
- Portfolio performance analysis using;
  1. Coefficient of variation.
  2. Risk adjusted returns performance analysis.

3.7.1 Evaluation of Returns from an Active Strategy using Fund Manager's Returns

To replicate an active strategy, after assessing whether a fund manager fits the criteria specified for an active manager in the sampling procedure, the daily buy prices of equity funds which are the authorized collective investment schemes that are run by the fund managers were used. The daily buy prices represent the price at which an investor can sell a unit of their holding of a share of such funds. For the purpose of this study it was assumed that the investor will hold their stake in the unit fund for the entire duration of the study. Weekly returns were computed using the formula;

$$Ri = \frac{(EV\text{-}BV)}{BV}$$

Whereby:

Ri is returns, EV is the average buying price for week i+1, BV is the average buying price for week i. The buying price was used as it represents what the investor can get when they sell off their unit in the fund. The annualized monthly returns were then computed by linking the weekly returns based on the technique used by Sharpe et al (2004) in the following way: $(1+Ri) \times (1+Ri+1) \times \ldots \times (1+Rn) - 1$, whereby Ri is the return for the first week, Ri+1 for the second week and Rn for the last week.

The annualized time weighted return as shown in Appendix 7.6 for the entire four years duration was computed based on the technique used by CFA (2006) as the geometric mean of n annual returns as follows:

$$Rtw = [(1+R1) \times (1+R2) \times \ldots\ldots\ldots\ldots x (1+Rn)]^{1/n} - 1$$

Whereby Rtw is the annualized time weighted return for the four years, R1 is the return for the first year, R2 for the second year and Rn for the last year. n represents the total number of years. The time weighted return for each year was also computed based on the technique in Sharpe et al (2004) using the annualized monthly returns and have been summarized in Appendix 7.6.

3.7.2 Evaluation of Returns from a Passive Strategy

For a passive strategy, the NSE 20 share index and the AIG (EA) 27 share index were used to replicate a passive portfolio. The daily market indices for both AIG and NSE were used. The daily market indices represent the movements in the daily prices and volumes of the underlying securities. For the purpose of this study it was assumed that the investor will hold their stake in the portfolio for the entire duration of the study. However, for comparison purposes, weekly returns were computed using the formula;

$$Ri = \frac{(EV-BV)}{BV}$$

Where: EV is ending value and represented the average index computed for week i+1, BV is beginning value and represented the average index computed for week i, and Ri is returns with EV and BV reflecting weekly averages. The annualized monthly returns were then computed by linking the weekly returns based on the technique used in Sharpe et al (2004), and as used in the evaluation of returns from an active strategy discussed in the previous section. The time weighted return for each year was also computed based on the technique in Sharpe et al (2004) shown earlier using the annualized monthly returns that have been summarized in Appendix 7.6.

3.7.3 Coefficient of Variation Analysis

The coefficient of variation that is a measure of relative dispersion was computed and used for portfolio performance analysis by ranking them from the most risky to least

risky. This was used as it measures the amount of risk per unit of mean return expressing the magnitude of variation amongst observations relative to their average size (CFA, 2006). This was computed using the formula:

$$CV = \frac{s}{x}$$

Whereby CV represents the coefficient of variation, s represents the portfolio's standard deviation and x represents the arithmetic mean of annualized monthly returns. The data as shown in Appendix 7.6 was used to derive information for these computations.

3.7.4 Risk Adjusted Returns Performance Analysis

The Sharpe ratio developed by Sharpe (1966) that uses standard deviation as a measure of the portfolio risk, and measures returns in terms of mean excess return per unit of risk was used to conduct risk adjusted performance analysis of the portfolios.

Those risk averse investors who make decisions only in terms of mean return and standard deviation of return prefer portfolios with large Sharpe ratios to those with smaller Sharpe ratios (CFA, 2006), hence the Sharpe ratio was used to rank the portfolios based on the assumption that investors are risk averse and would therefore prefer the portfolios with the highest Sharpe ratio. The data shown in Appendix 7.5 and 7.6 was used to derive statistics for these computations.

CHAPTER FOUR

RESEARCH FINDINGS

This chapter presents the results and a discussion of the research findings.

4.1 INTRODUCTION

The study set out to evaluate investor returns under active vs. passive equity portfolio management strategies and to analyze which strategy offered the highest risk adjusted returns. Returns were evaluated by calculating returns of investing in a market index, for a passive strategy, and calculating returns of investing via a fund manager for an active strategy. Portfolio performance analysis was then carried out using coefficient of variation that measures relative dispersion and Sharpe ratio that measures mean excess returns per unit of risk.

The duration of the study was from 1st January 2003 to 31st December 2006 so as to capture the entire duration under which the fund managers have been operational since the Equity Fund under Old Mutual Asset Managers and the Balanced Fund under African Alliance Kenya which were the first funds to be established began their operations in April and May 2003 respectively. The Equity Funds under British American Asset Managers and Commercial Bank of Africa began their operations in July 2005 and May 2006 respectively.

4.2 EVALUATION OF INVESTOR RETURNS

For an active strategy, having collected the daily buy prices from fund managers that represent the net asset values of these funds and the price at which an investor can be able to sell off a unit of their holding in the net assets of these funds, annualized monthly returns were computed as specified in the data analysis section of the study and have been summarized in Appendix 7.6. These returns represent what percentage an investor will be able to earn per unit of their investment should they opt to sell their stake in the equity fund.

For a passive strategy, the NSE 20 share index and the AIG (EA) 27 share index were used to replicate a passive portfolio. These two indices were used as each represents a different methodology of computing stock market indices. Annualized monthly returns were computed as specified in the data analysis section of this study and have been summarized in Appendix 7.6. These returns represent what percentage an investor earned per unit of their investment.

Graph 1.0 shows the movements of fund manager's annualized monthly returns in comparison to those of stock market indices over the duration of the study. From this graph it can be observed that the market was on a high in January 2003, it can also be observed that both fund managers and stock market indices returns were lowest in March 2004 which might imply that the market was on experiencing low returns at this time, it can also be observed that low returns were generally being experienced around February, March and December and high returns around September, October and November, with the exception of May and June in the years 2005 and 2006. Another observation is that all the funds and market indices had a combination of both negative and positive returns as shown in Graph 1.0, Table 1.0 and Chart 1.0.

Graph 1.0 Fund Managers vs. Stock Market Indices Annualized Monthly Returns
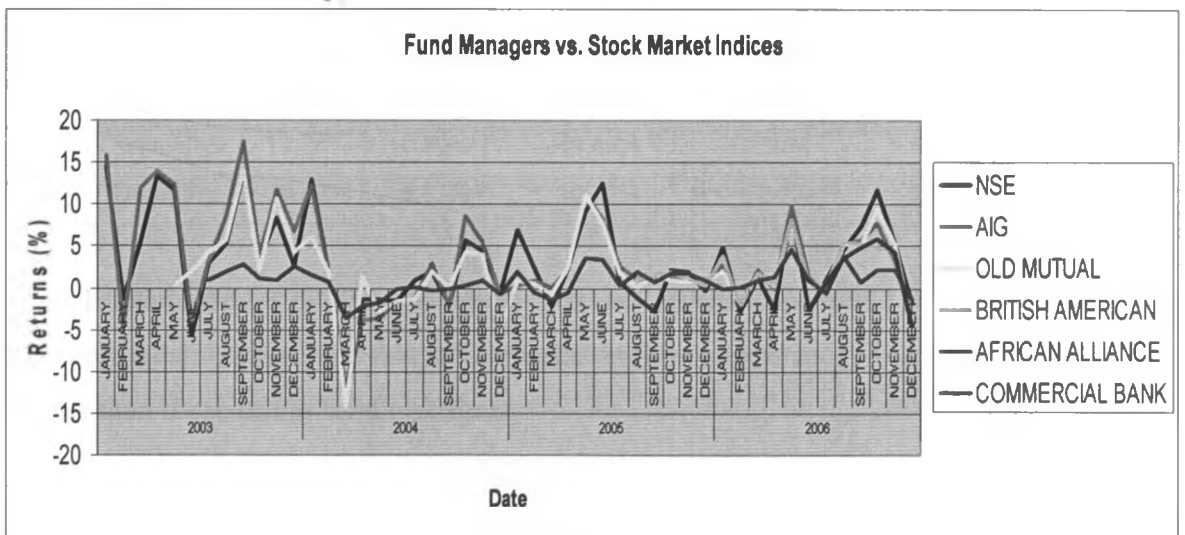
Table 1.0 shows time weighted quarterly returns of the market indices in comparison to those of the fund managers from when they began their operations. Each year was deemed to comprise of four quarters of three months each for all the months in a calendar year starting from January and ending in December.

Table 1.0 Fund Managers and Stock Market Indices Time weighted Quarterly Returns

Year	Quarter Ended:	NSE Index	AIG Index	Old Mutual Equity Fund	British American Equity Fund	African Alliance Managed Fund	Commercial Bank of Africa Equity Fund
2003	March	19.28%	23.54%				
	June	19.40%	22.90%	2.43%			
	September	23.58%	31.89%	25.56%		5.78%	
	December	14.96%	23.58%	18.02%		4.78%	
2004	March	0.50%	0.28%	-7.12%		-1.34%	
	June	-4.23%	-8.82%	-2.89%		-4.20%	
	September	0.77%	-0.56%	0.86%		-0.14%	
	December	10.04%	13.71%	2.88%		0.29%	
2005	March	7.06%	1.40%	0.75%		-0.08%	
	June	25.81%	23.26%	22.73%		6.59%	
	September	-3.07%	4.84%	3.48%	2.79%	3.12%	
	December	3.93%	2.68%	2.46%	3.52%	4.61%	
2006	March	3.36%	3.03%	1.76%	3.32%	0.93%	
	June	3.30%	11.21%	8.86%	9.55%	7.11%	-2.61%
	September	13.70%	10.47%	10.69%	11.50%	4.02%	9.54%
	December	15.69%	6.83%	10.72%	6.36%	2.98%	5.40%

Chart 1.0 summarizes the time weighted quarterly returns shown in Table 1.0. From this chart it can be observed that stock market indices appear to have generated higher returns than those of the fund managers.

Chart 1.0 Fund Managers and Stock Market Indices Time Weighted Quarterly Returns

Quarterly Returns
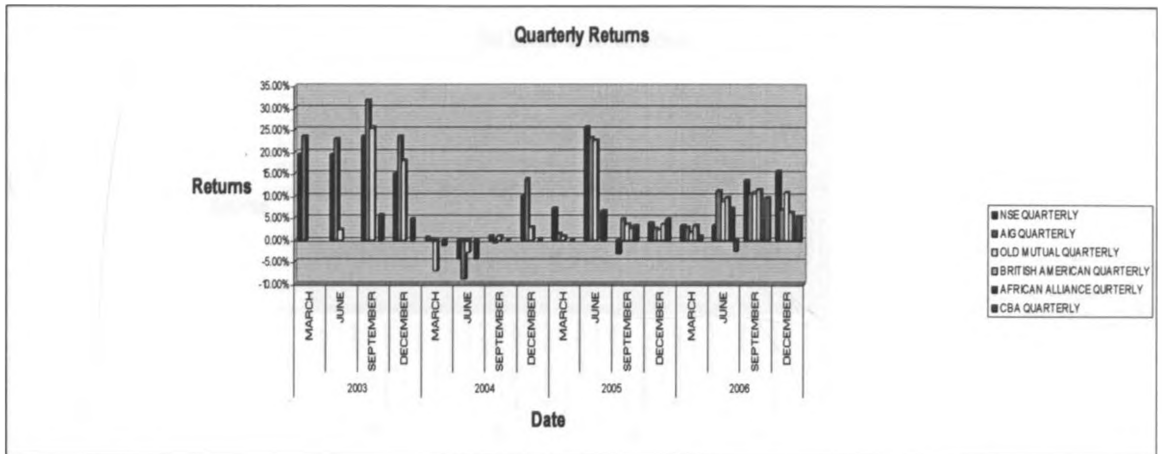
4.2.1 Old Mutual Equity Fund

This section evaluates investor returns from Old Mutual Equity Fund.

4.2.1.1 Technical Information

Fund Launch Date	April 2003
Asset Manager	Old Mutual Asset Managers
Custodian	Kenya Commercial Bank Custodial Services
Initial Fee	5% of initial investment
Annual Management Fee	2% of portfolios current market price

4.2.1.2 Returns to Unit Holders

Chart 2.0 shows a summary of time weighted quarterly returns for Old Mutual Equity Fund and the market indices which were extracted from Table 1.0. From both Chart 2.0 and Table 1.0 it can be observed that the Old Mutual Equity Fund appeared to have failed to consistently make higher returns than the market indices except for the September and December quarters of the year 2003 where it appears to have made better returns than the NSE index, and September and December quarters of the year 2006 where it appears too have made better returns than the AIG index.

Chart 2.0 Old Mutual vs. Stock Market Indices Time Weighted Quarterly Returns
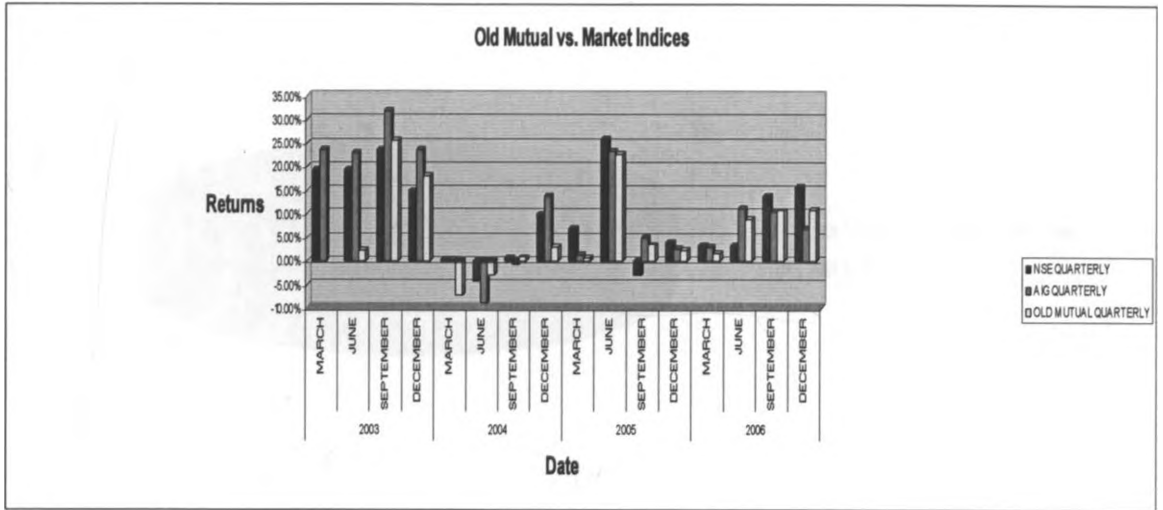
Graph 2.0 emphasizes on Chart 2.0. It can be observed from this graph that the annualized monthly returns which are for shorter durations, appear to also indicate that indeed in most periods under the duration of the study, the Old Mutual Equity Fund annualized monthly and time weighted quarterly returns seemed to not better those of the market indices.

Graph 2.0 Old Mutual vs. Stock Market Indices Annualized Monthly Returns
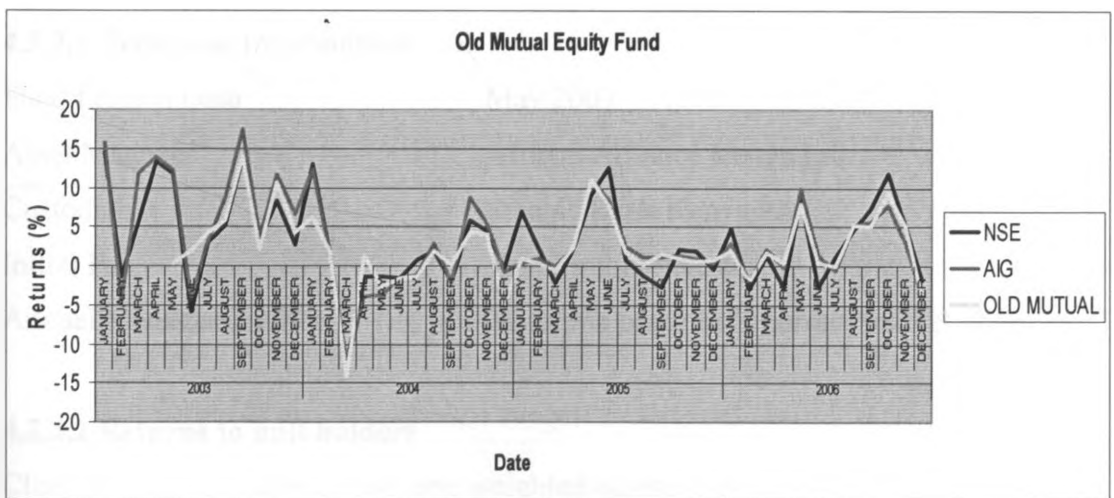
Chart 2.1 Old Mutual Equity Fund Asset Allocations as at December 2006
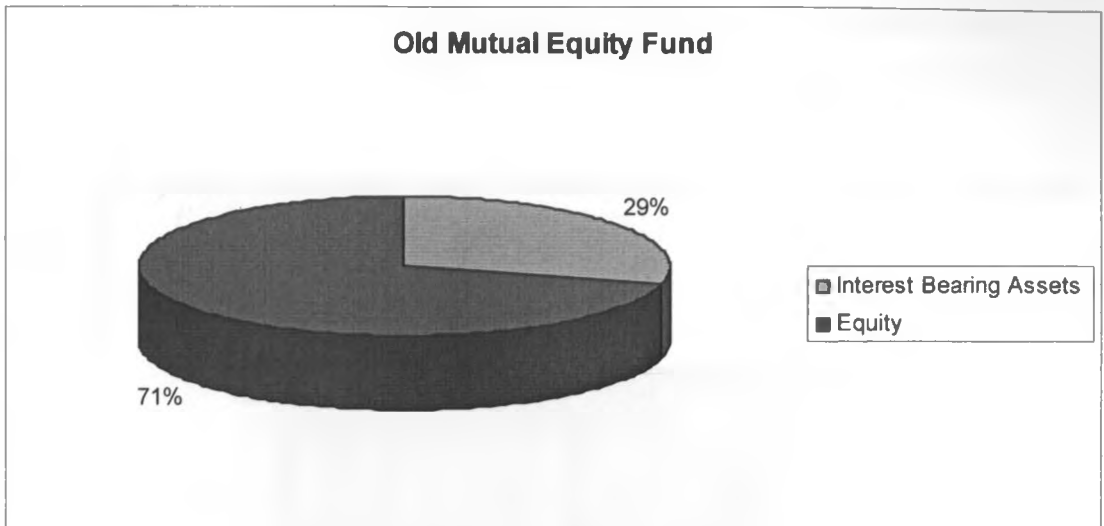
Source: Old Mutual Equity Fund fact sheet December 2006

From Chart 2.1 it can be observed that Old Mutual Equity fund was mostly constituted of equity instruments at 71% and interest bearing assets such as bonds and bank deposits at 29%.

4.2.2 African Alliance Kenya Managed Fund

This section evaluates investor returns from African Alliance Managed Fund.

4.2.2.1 Technical Information

|	
Fund Launch Date	May 2003
Asset Manager	African Alliance Kenya Ltd
Custodian	Stanbic Bank Kenya ltd
Initial Fee	5% of initial investment
Annual Management Fee	2% of the portfolio's current market price

4.2.2.2 Returns to unit holders

Chart 3.0 shows a summary of time weighted quarterly returns for African Alliance Managed Fund and the market indices, these returns have been extracted from Table 1.0 and are in percentages. From both Chart 3.0 and Table 1.0 it can be observed that the African Alliance Managed Fund appears to have failed to consistently generate

higher returns than those of the market indices except for September 2005 quarter where its returns were higher than those of the NSE index, and December 2005 quarter where its returns were higher than for both the NSE and the AIG indices.

Chart 3.0 African Alliance vs. Stock Market Indices Time Weighted Quarterly Returns
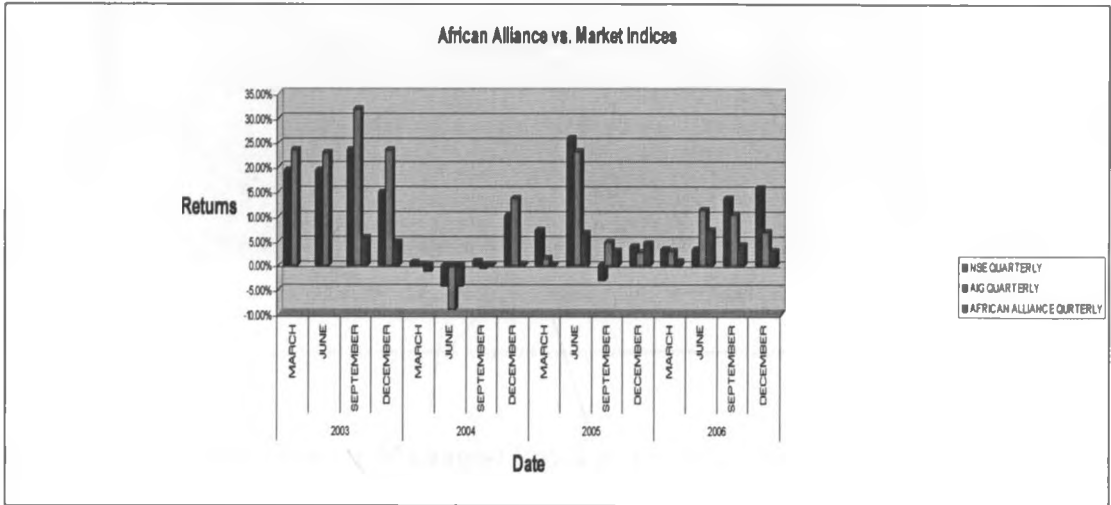

Graph 3.0 emphasizes on Chart 3.0 and Table 1.0. It can be observed from this graph that the annualized monthly returns which are for shorter durations, appear to also indicate, that indeed in most periods under the duration of the study, the African Alliance Managed Fund appears to have failed to earn higher returns than those of the market indices it can also be noted that the African Alliance Managed Fund generally experienced low returns with low volatility as compared to the market indices.

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Graph 3.0 African Alliance vs. Stock Market Indices Annualized Monthly Returns
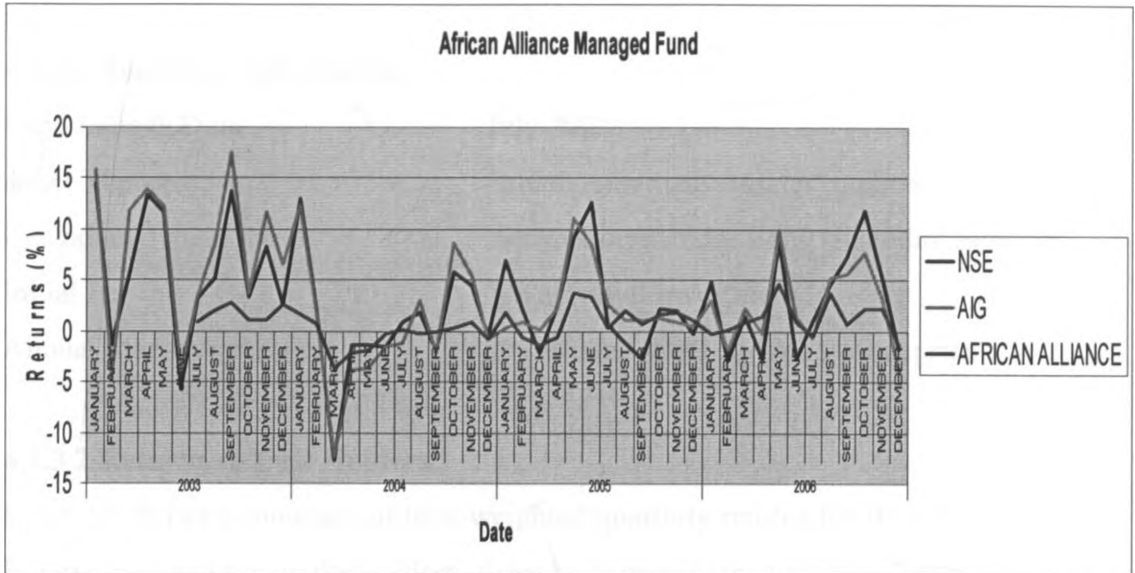
Chart 3.1 African Alliance Managed Fund Asset Allocation as at December 2006
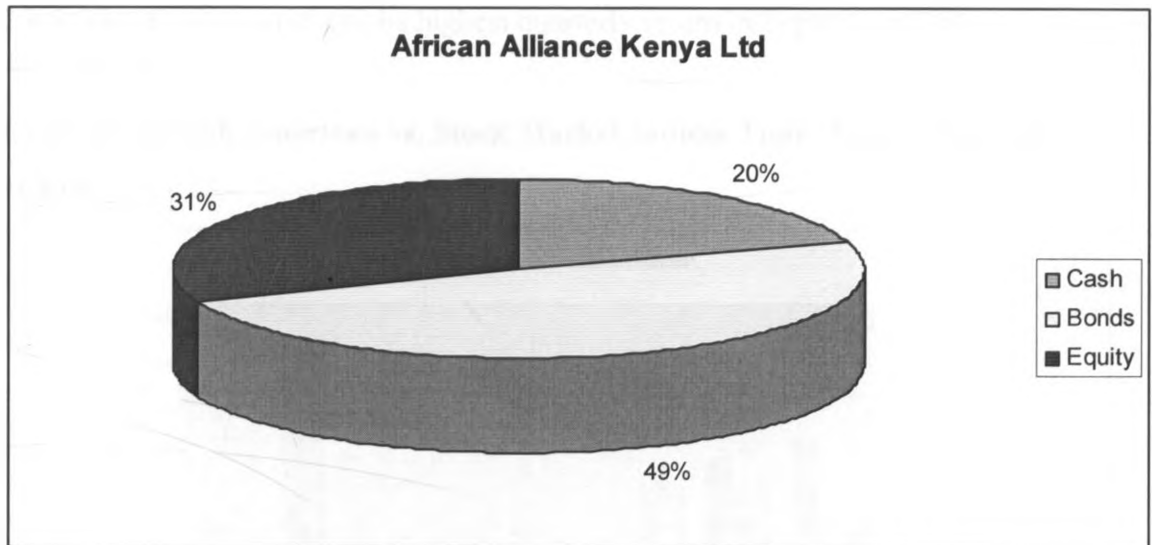
Source: African Alliance Managed Fund fact sheet December 2006

From Chart 3.1 it can be observed that the African Alliance Managed fund focused more on bonds at 49% with equities at 31% and cash at 20%. This shows that this portfolio is for a more risk averse investor with bond instruments taking close to half of the funds assets.

4.2.3 British American Equity Fund

This section evaluates investor returns from British American Equity Fund.

4.2.3.1 Technical Information

Fund Launch Date	July 2005
Asset Manager	British American Asset Managers
Custodian	Kenya Commercial Bank Custodial Services
Initial Fee	5% of initial investment
Annual Management Fee	2% of portfolio's current market price

4.2.3.2 Returns to Unit Holders

Chart 4.0 shows a summary of time weighted quarterly returns for British American Equity Fund and the market indices; these have been extracted from Table 1.0. The equity fund returns were higher than those of the NSE index in September 2005 and June 2006 and higher than those of the AIG in December 2005, March and September 2006. This fund experienced its highest quarterly return in September 2006.

Chart 4.0 British American vs. Stock Market Indices Time Weighted Quarterly returns
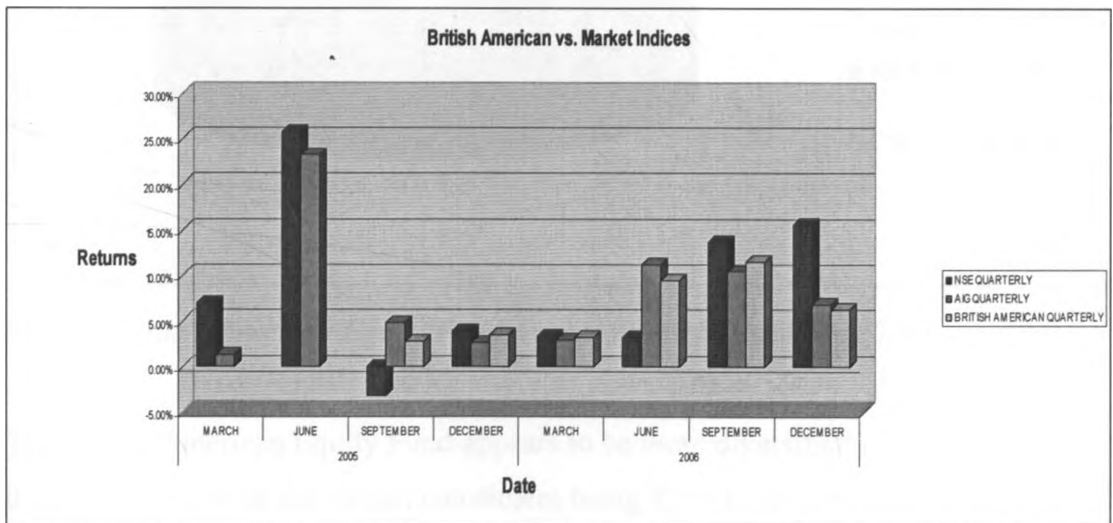
Graph 4.0 emphasizes on Chart 4.0 and Table 1.0 and it can be observed that this fund had its highest quarterly return in September 2006.

Graph 4.0 British American vs. Stock Market Indices Annualized Monthly Returns

British American Equity Fund
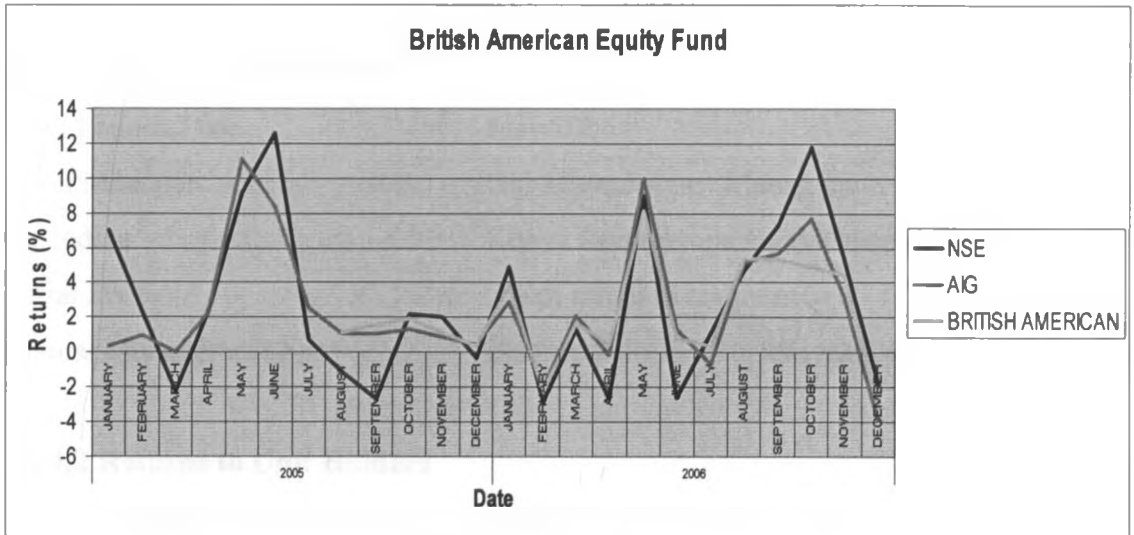
Chart 4.1 British American Equity Fund Asset Allocation as at December 2006

British American Equity Fund

6%   3%   5%

86%

- Cash and Bank balances
- Deposits with Financial institutions
- Kenyan Securities
- Offshore Securities
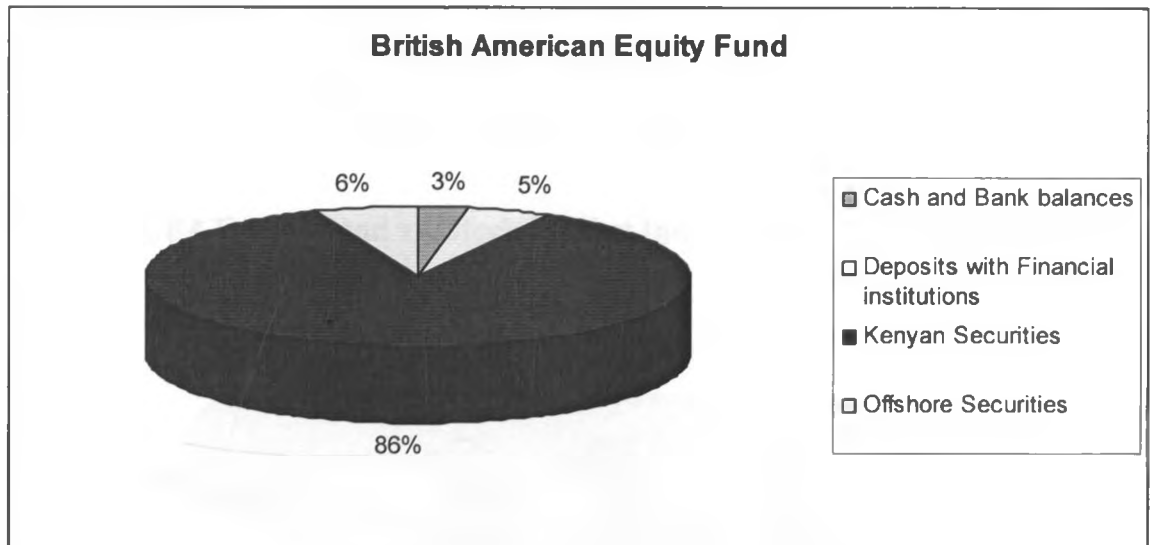
Source: British American Equity Fund Annual reports December 2006

The British American Equity Fund appears to be more diversified in comparison to the other funds, with the largest constituent being Kenyan securities at 86%, to enjoy the benefits of international diversification, 6% constituted of offshore securities with 5% in deposits with financial institutions and 3% cash and bank balances.

4.2.4 Commercial Bank of Africa Equity Fund

This section evaluates investor returns from Commercial Bank of Africa Equity Fund.

4.2.4.1 Technical Information

Fund Launch Date	May 2006
Asset Manager	Old Mutual Asset Managers
Custodian	Kenya Commercial Bank Custodial Services
Initial Fee	5% of initial investment
Annual Management Fee	2% of portfolio's current market price

4.2.4.2 Returns to Unit Holders

Chart 5.0 shows a summary of time weighted quarterly returns for Commercial Bank of Africa Equity Fund and the market indices; these have been extracted from Table 1.0. The Commercial Bank of Africa Equity Fund returns up to the end of the study period were lower than those of the market indices. The fund experienced negative returns at inception which increased to 5.40 percent over the quarter ended December 2006. The September 2006 quarter experienced the highest returns at 9.54 percent.

Chart 5.0 CBA Equity Fund vs. Stock Market Indices Time Weighted Quarterly Returns
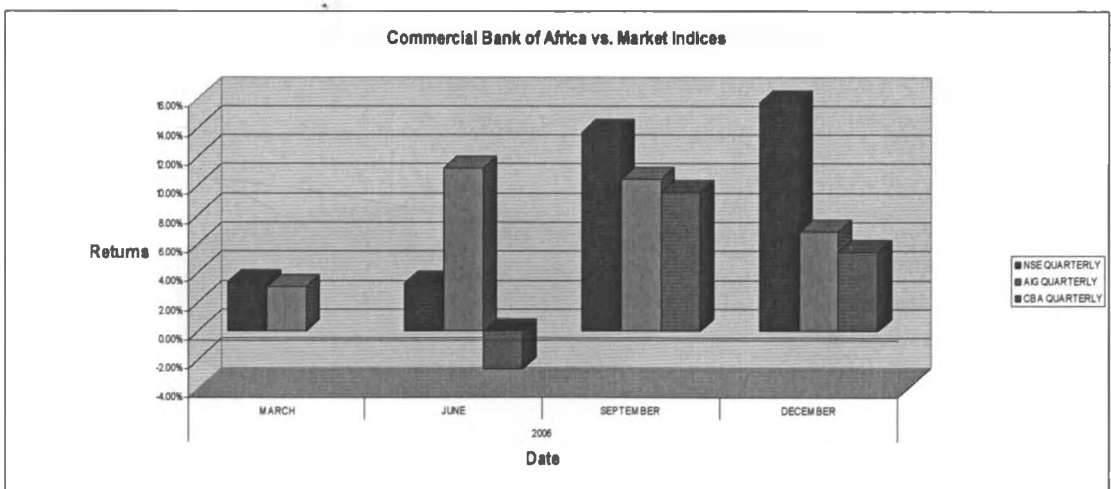
Graph 5.0 emphasizes on Chart 5.0 and it can be observed that indeed in the entire duration of the study, the Commercial Bank of Africa Equity Fund appears to have failed to earn higher returns than the market indices, its returns also moved closely with those of the NSE and the AIG market indices.

Graph 5.0 Commercial Bank vs. Stock Market Indices Annualized Monthly Returns
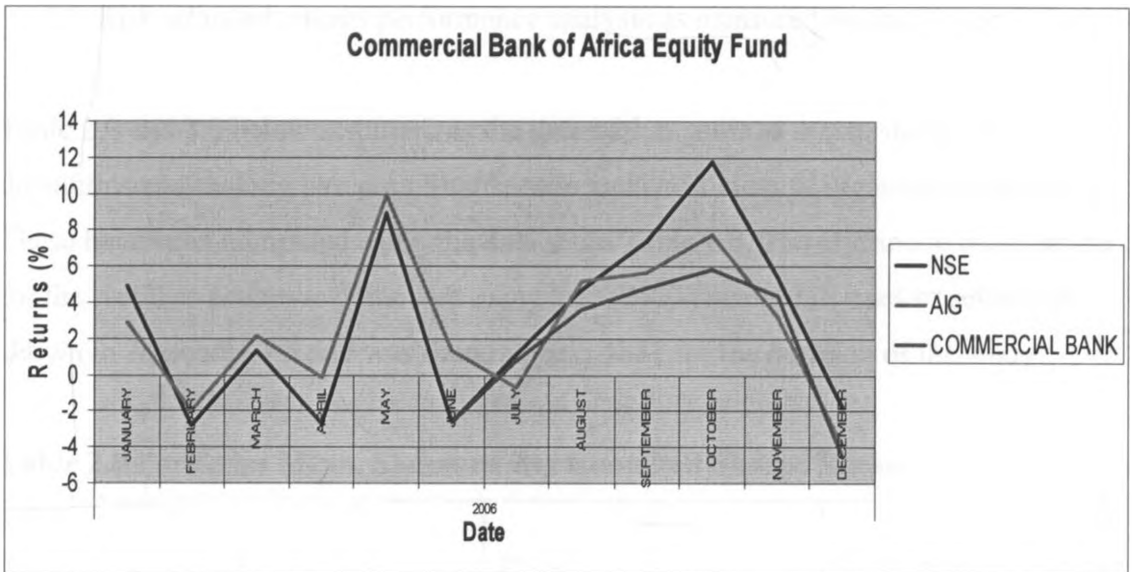
Chart 5.1 Commercial Bank of Africa Asset Allocation as at December 2006
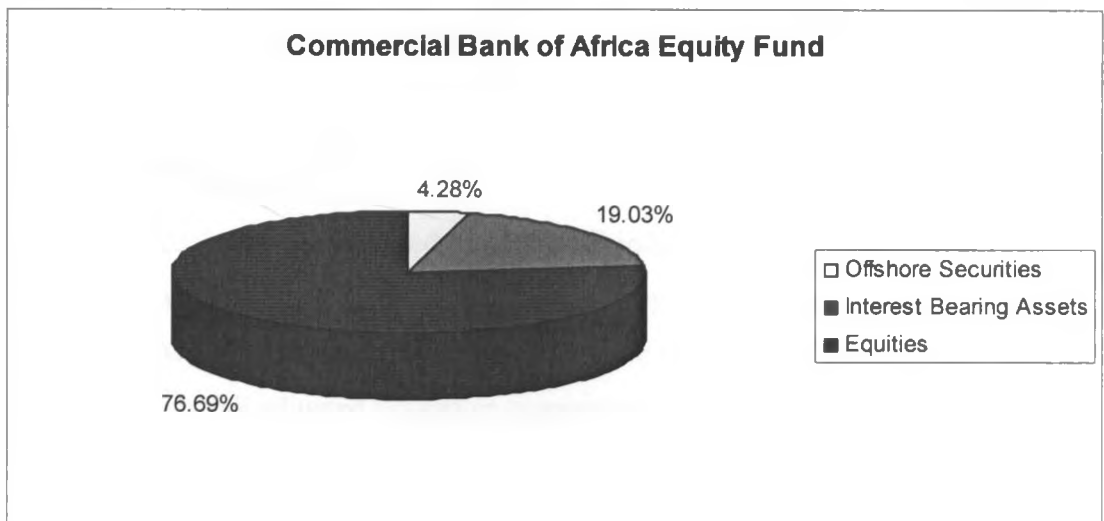
Source: Commercial Bank of Africa Equity Fund fact sheet December 2006

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The Commercial Bank of Africa Equity Fund appears to have invested more on equity instruments at 76.69%, to enjoy the benefits of international diversification, 4.28% of this fund constituted of offshore securities with 19.3% on Interest Bearing Assets.

4.3 PORTFOLIO PERFORMANCE ANALYIS

This was performed using;

1. The coefficient of variation
2. Risk adjusted returns performance analysis as measured by the Sharpe ratio.

Table 2.0 and 3.0 below summarizes the data with regards to mean, standard deviations and ranking based on Sharpe ratio and coefficient of variation respectively. These have been computed using the data set in Table 1.0. The arithmetic mean return for the risk free asset was computed using the CBK Treasury bill rates of returns as shown in Appendix 7.5 and was found to be 5.4851 for the duration of the study.

Table 2.0 Portfolios Mean, Standard Deviation and Sharpe Ratios

Time Weighted Quarterly Returns	AIG Index	NSE Index	British American Equity Fund	Old Mutual Equity Fund	Commercial Bank of Africa Equity Fund	African Alliance Managed Fund
Arithmetic Mean	10.2895	9.4420	6.1101	6.5628	4.1022	2.4331
Standard Deviation	10.8013	9.0015	3.5286	8.7166	6.0970	3.2663
Sharpe Ratio	0.4448	0.4396	0.1771	0.1236	-0.2268	-0.9344
Ranking	1	2	3	4	5	6

From Table 2.0 it can be observed that the AIG index had the highest risk adjusted return as measured by the Sharpe ratio, followed by the NSE index and the last was the African Alliance Managed Fund. It can also be observed that the market indices had the highest risk adjusted returns in comparison to the fund managers and hence ranked higher.

Table 3.0 Portfolios Mean, Standard Deviation and Coefficient of Variation

Time Weighted Quarterly Returns	British American Equity Fund	NSE Index	AIG Index	Old Mutual Equity Fund	African Alliance Managed Fund	Commercial Bank of Africa Equity Fund
Arithmetic Mean	6.1101	9.4420	10.2895	6.5628	2.4331	4.1022
Standard Deviation	3.5286	9.0015	10.8013	8.7166	3.2663	6.0970
Coefficient of Variation	0.5775	0.9533	1.0497	1.3282	1.3425	1.4863
Ranking	1	2	3	4	5	6

From Table 3.0 it can be observed that the CBA Equity Fund had the highest coefficient of variation meaning that it had the highest amount of risk per unit of mean return with the British American Equity Fund having the lowest risk per unit of mean return. This means that CBA Equity Fund was the most risky and British American Equity Fund the least risky hence it ranked first.

Table 4.0 Market indices returns vs. Fund Managers Returns Correlation coefficients.

	NSE	AIG	Old Mutual	British American	African Alliance	CBA
NSE	-	91.33%	81.84%	84.65%	70.03%	92.99%
AIG	91.33%	-	86.90%	96.10%	73.82%	92.99%

Table 4.0 shows correlation relationship between market indices returns and fund managers returns. It can be observed that the correlation relationship of these returns was high and positive with the highest level of correlation existing between AIG and British American Equity Fund at 96.10%, and the lowest between NSE and African Alliance at 70.03%.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

This chapter presents a summary of the study and its results. The conclusions, recommendations, limitations of the study and suggestions for further research are also presented in this chapter.

5.1 CONCLUSION

The study set out to evaluate investor returns under active vs. passive equity portfolio management strategies and to analyze which strategy offered the highest risk adjusted returns. Returns were evaluated by calculating returns of investing in a market index, for a passive strategy, and calculating returns of investing via a fund manager for an active strategy. These returns were then compared using graphs, charts and tables. Portfolio performance analysis was then carried out using coefficient of variation that measures relative dispersion and Sharpe ratio that measures mean excess returns per unit of risk.

The study found that the market indices returns were higher than those of the fund managers for the entire duration of the study as shown in Appendix 7.2. This also implies that active portfolio management did not offer higher returns than passive portfolio management over the entire duration of the study. The study also observed that the fund manager's returns and the market indices returns had high positive correlation coefficients, meaning that these returns moved closely in the same direction.

The study also found that the passively managed portfolios offered the highest risk adjusted returns compared to the actively managed equity portfolios over the entire duration of the study with the AIG index ranking first, the NSE index ranking second then followed by the fund managers. Amongst the fund managers, British American Equity Fund had the highest ranking with the CBA Equity Fund ranking last. The study also found that with regards to the coefficient of variation, which measures the

amount of risk per unit of return, the fund managers with the exception of the British American Equity Fund ranked higher than the market indices.

The study also observed that both the fund managers and the Stock Market indices experienced a set of both negative and positive returns with all of them experiencing negative and declining returns in the period February to April 2004 which indicates that the market was experiencing high volatility with regards to upward movement of share prices at that particular time. The study also observed that all the fund managers either allocated a portion of their assets to debt instruments or invested offshore to gain the benefits of portfolio diversification.

The study therefore supported the alternative hypothesis H_1 that actively managed equity portfolios do not offer higher risk adjusted returns than passively managed equity portfolios

5.2 RECOMMENDATIONS

It would be important to note that even though fund managers may not significantly offer higher returns than the market, they offer an opportunity through which investors can pool their savings with other investors who have the same risk and returns expectations as them. This pool of money can be invested in a spread of investments (a combination of interest bearing securities, company shares and cash) on both the capital and money markets. This assortment of securities is called a portfolio which due to economies of scale and large funds available at their disposal fund managers can significantly reduce risk and increase returns for an individual investor through diversification.

An individual may find it difficult to be able to invest in a high value, highly diversified portfolio across industries and economic sectors on their own due to lack of technical expertise and, or resources of which acquiring the same might be more costly than just approaching a fund manager. It also takes a lot of financial resources to fully replicate a market index which can more easily be achieved by high net worth individuals or pooling of funds under a collective investment scheme as created by a

fund manager who acts as a financial intermediary by pooling the funds from many small investors and creating and managing a large portfolio that is well diversified across industries and markets this might prove difficult for an individual investor.

5.3 LIMITATIONS OF THE STUDY

Two of the equity funds have not been in operation for long, i.e. British American Equity Fund that became operational in July 2005 and Commercial Bank of Africa Equity Fund that became operational in May 2006. A period of five years or more would have added more value in terms of more data for evaluation purposes and a longer duration for data analysis. All the equity portfolios have also not been in existence for the same duration computation of the Sharpe ratio for duration under which all the fund managers have been in existence would have offered an even closer comparison since the returns experienced would have been under the same market conditions.

Due to data and time limitations it was also not possible to construct a whole market index based on both NSE and AIG (EA) indices methodologies. It was also not possible to determine how regularly Equity Funds change the composition of their portfolios or how they select and compose their portfolios. The relevant institutions declined to divulge this information on the basis that it is confidential.

Also, all the funds were not fully constituted of equity instruments as certain proportions were composed of other instruments like bonds and cash, an analysis of a fund that is fully constituted of equity instruments or to be able to separate the components of these equity funds such that we have a fully all equity portfolio would have offered a much closer comparison to the market indices for evaluation purposes.

5.4 SUGGESTIONS FOR FURTHER RESEARCH

Although this study did not consider a whole market index, one can be constructed and active fund manager's returns analyzed using this index. This study could also be redone by developing relevant methodologies to take into account unlisted companies into the active and passive portfolios.

Also, a benchmark index for each active portfolio manager could be constructed based on the securities they invest in so as to assess how close the fund managers were in achieving the performance of their benchmark index or even surpassing it.

It is also recommend that this study be replicated after the fund managers in consideration have been in operation for duration of five years or longer. This can be done so as to repeat the analysis performed over longer term duration of similar operation of all the fund managers and the availability of more data.

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7.0 APPENDICES

7.1 LIST OF APPROVED FUND MANAGERS AS AT MARCH 2007

NAME
1. British American Asset Managers Limited
2. African Alliance Kenya Management Company Limited
3. Aureos Kenya Managers Limited
4. Co-optrust Investment Services Limited
5. Genesis (K) Investment Management Limited
6. Zimele Asset Management Co. Limited
7. Old Mutual Investment Services (K) Limited
8. Stanbic Investment Management Services (E.A.) Limited
9. Standard Chartered Investment Services Limited
10. AIG Global Investment Co. (E.A.) Limited
11. ICEA Investment Services Limited
12. Old Mutual Asset Managers (E.A.) Limited
13. Old Mutual Asset Managers (K) Limited
14. Investeq Capital Limited

Extended License (for the period February 22, 2007 to May 22, 2007)

15. Amana Capital Limited

Source: The CMA, Capital Markets Act (Cap 485A), Grant of Licenses, March 2007

7.2 COMPANIES QUOTED AT THE NSE AS AT 31ST DECEMBER 2006

7.2.1 Main Investment Market Segment (MIMS)

7.2.1.1 Agricultural
Unilever Tea Kenya Ltd Ord. 10.00
Kakuzi Ltd. Ord. 5.00
Rea Vipingo Plantations Ltd. Ord. 5.00
Sasini Tea and Coffee Ltd. Ord. 1.00

7.2.1.2 Commercial and Services
African Lakes Corporation PLC Ord. 5.00
Car and General (K) Ltd. Ord. 5.00
CMC Holdings Ltd. Ord. 0.50
Hutchings Biemer Ltd. Ord. 5.00
Kenya Airways Ltd. Ord. 5.00
Marshalls (E.A) Ltd. Ord. 5.00
Nation Media Group Ord. 5.00
Scangroup Ltd. Ord. 1
Tourism Promotion Services Ltd. Ord. 5.00 (Serena)
Uchumi Supermarket Ltd. Ord. 5.00

7.2.1.3 Finance and Investment
Barclays Bank Ltd. Ord. 2.00
C.F.C Bank Ltd. Ord. 5.00
Diamond Trust Bank Kenya Ltd. Ord. 4.00
Equity Bank Ltd Ord. 5.00
Housing Finance Co. Ltd. Ord. 5.00
I.C.D.C Investments Co. Ltd. Ord. 0.50
Jubilee Insurance Co. Ltd. Ord. 5.00
Kenya Commercial Bank Ltd. Ord. 1.00
National Bank of Kenya Ltd. Ord. 5.00
NIC Bank Ltd. Ord. 5.00
Pan African Insurance Ltd. Ord. 5.00
Standard Chartered Bank Ltd. Ord. 5.00

7.2.1.4 Industrial and Allied
Athi River Mining Ord. 5.00
B.O.C Kenya Ltd. Ord. 5.00
Bamburi Cement Ltd. Ord. 5.00
British American Tobacco Kenya Ltd. Ord. 5.00
Carbacid Investments Ltd. Ord. 5.00
Crown Berger Ltd. Ord. 5.00
E.A Cables Ltd. Ord. 0.50
E.A Portland Cement Ltd. Ord. 5.00
East African Breweries Ltd. Ord. 2.00
Eveready East Africa Ltd Ord.1.00
Kenya Oil Company Ltd. Ord. 5.00
Kenya Power and Lighting Ltd. Ord. 5.00
KenGen Ltd. Ord. 2.50
Mumias Sugar Company Ltd. Ord. 2.00
Olympia Capital Holdings ltd Ord 5.00
Sameer Africa Ltd Ord 5.00
Total Kenya Ltd. Ord. 5.00
Unga Group Ltd. Ord. 5.00

7.2.2 Alternative Investment Market Segment

A. Baumann and Company Ltd. Ord. 5.00
City Trust Ltd. Ord. 5.00
Eaagads Ltd. Ord. 1.25
Express Ltd. Ord 5.00
Williamson Tea Kenya Ltd. Ord. 5.00
Kapchorua Tea Company Ltd. Ord. 5.00
Kenya Orchards Ltd. Ord. 5.00

Limuru Tea Company Ltd. Ord. 20.00
Standard Newspapers Group Ord. 5.00

7.2.3 Fixed Income Securities Market Segment

7.2.3.1 Preference Shares
Kenya Power and Lighting Ltd. 4.0% Pref. 20.00
Kenya Power and Lighting Ltd. 7.0% Pref 20.00
Marshalls (East Africa) Ltd. 7% Pref 20.00
Standard Newspapers Group Pref 5.00
Kenya Planters Co-operative Union 10% Unsec. Loan Stock 1996 - 2000
East African Development Bank (TB + 0.75%) 2003
Government of Kenya Treasury Bonds (Government Securities).

Source: NSE weekly market statistics for the week ending 29th December 2006

7.3 APPROVED COLLECTIVE INVESTMENT SCHEMES

1. African Alliance Kenya Unit Trust Scheme:
   a. African Alliance Kenya Shilling Fund.
   b. African Alliance Kenya Fixed Income Fund.
   c. African Alliance Kenya Managed Fund.
2. Old Mutual Unit Trust Scheme:
   a. Old Mutual Equity Fund.
   b. Old Mutual Money Market Fund.
   c.   Old Mutual Balanced Fund.
3. British American Unit Trust Scheme:
   a. British American Money Market Fund.
   b. British American Income Fund.
   c. British American Balanced Fund.
   d. British American Managed Retirement Fund.
   e. British American Equity Fund.
4. Stanbic Unit Trust Scheme:
   a. Stanbic Money Market Fund.
   b. Stanbic Flexible Income Fund.
   c. Stanbic Managed Prudential Fund.
5. Commercial Bank of Africa Unit Trust Scheme:
   a. Commercial Bank of Africa Money Market Fund.
   b. Commercial Bank of Africa Equity Fund.
6. Zimele Unit Trust Scheme:
   a.   Zimele Balanced Fund
   b.   Zimele Money Market Fund

Source: The CMA, Capital Markets Act (Cap 485A), Grant of Licenses, March 2007

7.4 INDEX CONSTITUENT COMPANIES AS AT 31ST DECEMBER 2006

NSE 20 SHARE INDEX	AIG (EA) 27 SHARE INDEX
Unilever Tea	Unilever Tea
Williamson Tea	Rea Vipingo
Kakuzi Tea	Sasini Tea and Coffee
Sasini Tea and Coffee	CMC Holdings
Uchumi Supermarkets	Kenya Airways
Kenya Airways	Nation Media Group
CMC Holdings	TPS Serena
Nation Media Group	Barclays Bank of Kenya
Barclays Bank of Kenya	CFC Bank
Diamond Trust Bank	Diamond Trust Bank
Kenya Commercial Bank	Housing Finance Company Kenya
NIC Bank	Kenya Commercial Bank
Standard Chartered Bank	ICDC Investments Company
Bamburi Cement Ltd	National Bank of Kenya
BOC Ltd	NIC Bank
British American Tobacco	Standard Chartered Bank
East African Cables	Athi River Mining
East African Breweries Ltd	BOC Ltd
Sameer Africa	Bamburi Cement
Total Kenya	British American Tobacco
	East African Breweries Ltd
	East African Portland Cement
	Sameer Africa
	Kenya Power and Lighting Company
	Mumias Sugar Company
	Total Kenya
	Kenya Electricity Generating Company

Source: The NSE and the AIG (EA) Ltd Research Departments.

7.5 COMMERCIAL BANKS WEIGHTED AVERAGE INTEREST RATES

| YEAR | MONTH | COMMERCIAL BANKS' WEIGHTED AVERAGE INTEREST RATES (%) | | | | 91-Day Tbill |
		Deposit	Savings	Lending	Overdraft	
2003	JAN	4.68	3.41	19.02	18.52	8 38
	FEB	4.40	3.42	18.83	17.81	7.77
	MAR	3.99	3.28	18.49	17.26	6.24
	APR	4.06	3.27	18.57	17.27	6.25
	MAY	3.71	3.14	18.52	17.18	5 84
	JUN	4 84	3.07	15.73	14.93	3.00
	JUL	4.49	1.79	15.30	14.43	1.54
	AUG	3.37	1.72	14.81	14.96	1.18
	SEP	3.07	1.44	14.82	14.31	0.83
	OCT	3.13	1.43	14.75	14.13	1.00
	NOV	3.32	1.44	14.07	14.02	1.28
	DEC	3.29	1.38	13.47	13.74	1.46
2004	JAN	3.12	1.22	13.48	13.30	1.58
	FEB	2.47	1.47	13.01	12.30	1.57
	MAR	2.32	1.30	13.12	11.65	1.59
	APR	1.96	1.24	12.67	11.08	2.11
	MAY	2.22	1.15	12.55	10.79	2.87
	JUN	2.20	1.15	12.17	10.72	2.01
	JUL	2.25	1.10	12.31	11.10	1.71
	AUG	2.26	1.08	12.19	10.81	2.27
	SEP	2.63	1.03	12.27	10.95	2.75
	OCT	2.33	1.07	12.39	11.85	3.95
	NOV	2.66	1.30	11.97	12.21	5.06
	DEC	2.77	0.98	12.25	12.69	8.04
2005	JAN	3.08	0.97	12.12	13.14	8.26
	FEB	3.47	0.96	12.35	13.82	8.59
	MAR	3.75	0.98	12.84	14.03	8.63
	APR	3.91	1.10	13.12	14.00	8.68
	MAY	4.05	1.07	13.11	13.94	8.66
	JUN	4.21	1.24	13.09	13.83	8.50
	JULY	4.14	1.30	13.09	13.54	8.59
	AUG	4.30	1.30	13.03	13.81	8 66
	SEP	4.35	1.34	12.83	13.50	8.58
	OCT	4.43	1.32	12.97	13.56	8 19
	NOV	4.50	1.37	12.93	13.33	7.84
	DEC	4.38	1.38	13.16	13.67	8.07
2006	JAN	4.48	1.33	13.20	13.81	8.23
	FEB	4.48	1.36	13.27	13.34	8.02
	MAR	4.28	1.34	13.33	13.26	7.60
	APRIL	4.35	1.33	13.51	13.81	7.02
	MAY	4.36	1.31	13.95	14.02	7.01
	JUNE	4.35	1.27	13.79	13.78	6.60
	JULY	4.31	1.32	13.72	13.48	5.89
	AUG	4.08	1.41	13.64	13.43	5.96
	SEPT	4.04	1.36	13.54	13.42	6.45
	OCT	4.11	1.35	14.01	13.94	6.83
	NOV	4.15	1.37	13.23	13.96	6.41
	DEC	4.11	1.42	12.82	13.91	5.73
Arithmetic mean		3.6502	1.5288	13.8210	13.6738	5.4851

Source: (Central Bank of Kenya, Commercial Banks Weighted Average Interest Rates, 2007).

7.6 ANNUALIZED MONTHLY RETURNS

Year	Month	NSE Index	AIG Index	Old Mutual Equity Fund	British American Equity Fund	African Alliance Managed Fund	Commercial Bank of Africa Equity Fund
2003	January	14.5990	15.8176				
	February	-1.3779	-4.6754				
	March	5.5432	11.8956				
	April	13.3420	13.9647				
	May	11.7618	12.3239	0.4072			
	June	-5.7406	-3.9932	2.0114			
	July	3.1001	3.2803	4.2226		0.8454	
	August	5.3005	8.6819	5.7785		1.9963	
	September	13.8343	17.4983	13.8961		2.8364	
	October	3.3733	3.7707	2.1727		1.1287	
	November	8.3288	11.6792	10.7449		1.0305	
	December	2.6611	6.6356	4.3000		2.5561	
Year 2003 Annualized Returns		6.0497	7.8427	5.3545		1.7293	
2004	January	13.0374	12.3960	6.1483		1.5879	
	February	1.9740	1.9003	2.0058		0.7260	
	March	-12.8129	-12.4432	-14.2176		-3.5799	
	April	-1.3450	-3.8787	1.3955		-2.2112	
	May	-1.4074	-3.6611	-2.7769		-1.8517	
	June	-1.5434	-1.5334	-1.4930		-0.1822	
	July	0.8620	-1.2471	-1.2623		0.1299	
	August	1.8794	2.9285	1.9919		-0.2610	
	September	-1.9359	-2.1720	0.1572		-0.0110	
	October	5.7713	8.6607	4.2070		0.2378	
	November	4.5068	5.4966	4.0177		0.8352	
	December	-0.4537	-0.8013	-5.0854		-0.7782	
Year 2004 Annualized Returns		0.5432	0.2785	-0.5500		-0.4564	
2005	January	7.0311	0.3517	0.9849		1.9221	
	February	2.3068	0.9832	0.4323		-0.6016	
	March	-2.2262	0.0654	-0.6597		-1.3665	
	April	2.3578	2.2692	2.5515		-0.5300	
	May	9.1765	11.1333	11.0385		3.6409	
	June	12.5848	8.4537	7.7788		3.3957	
	July	0.7426	2.5465	1.7145		0.3664	
	August	-1.0985	1.1084	0.1247	1.1860	2.0337	
	September	-2.7201	1.1128	1.6048	1.5890	0.6985	
	October	2.2081	1.3621	0.9592	1.9811	1.7383	
	November	2.0090	0.8761	0.6701	1.1358	1.7834	
	December	-0.3162	0.4201	0.8122	0.3670	1.0252	
Year 2005 Annualized Returns		2.5761	2.5040	2.2822	1.2504	1.1646	
2006	January	4.9258	2.8950	1.9441	3.8798	-0.1738	
	February	-2.8227	-1.9640	-1.9361	-2.2231	0.1782	
	March	1.3700	2.1396	1.7898	1.7180	0.9217	
	April	-2.6545	-0.1634	0.3165	0.4771	1.3940	
	May	8.9789	9.9405	8 0505	8.1576	4.6819	
	June	-2.6252	1.3161	0.4303	0.8061	0.9096	-2.6100
	July	1.1217	-0.6342	0.0115	0.3759	-0.4638	0.7705
	August	4.7405	5.2008	5.3162	5.4274	3.7427	3.6599
	September	7.3487	5.6753	5.0865	5.3629	0.7389	4.8675
	October	11.7910	7.7229	9.3301	4.8760	2.2436	5.8349
	November	5.3342	3.1725	5.2776	4.4796	2.1944	4.3332
	December	-1.7501	-3.8765	-3.8083	-2.9359	-1.4453	-4.5495
Year 2006 Annualized Returns		2.8712	2.5461	2.5798	2.4828	1.2297	1.6894
Annualized Time Weighted Whole Duration Returns		2.9913	3.2558	2.3953	1.8647	0.9134	1.6894

Source: African Alliance Kenya Ltd Research Department, AIG (EA) Ltd Research Department, British American Asset

Managers, Commercial Bank of Africa Investment Department, the Nairobi Stock Exchange and Old Mutual Asset Managers.