THE DETERMINANTS OF PERFORMANCE OF UNIT TRUSTS IN KENYA

BY

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DECLARATION

This Project is my original work and has not been submitted for a degree in any other University.

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This Project has been submitted for examination with my approval as University Supervisor.

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DEDICATION

To my parents Francis Kasanga and Beatrice Kasanga for their love, parental care and for their efforts in educating me and their strong belief in the power of education.

To my brothers Daniel and Steve, my sisters Phoebe and Martha and my Cousin Cyrus for being understanding, supportive and encouraging during the time of the study.

ABSTRACT

This study aimed at identifying and evaluating the determinants of performance of unit trusts in Kenya. Unit trusts mean any scheme or arrangements in the nature of a trust in pursuance where members of the public are invited to acquire an interest or undivided share (units of investment) in groups of specified securities and to participate proportionately in the income or profit.

The study focused on registered unit trusts categorized as money market funds and equity funds as at 31st December 2010 mainly due to fact that this were the predominant category of funds representing the extreme ends of the investment spectrum.

In the analysis and evaluation of the determinants of performance, forecasting ability and market timing and security selection ability of the fund managers as determinants of performance of the equity and money market sub-categories of funds was analyzed using the Jensen Alpha modified model.

The findings of the study shows that forecasting ability, market timing ability as well as security selection techniques were critical determinants of performance for unit trusts. The equity fund managers possessed both forecasting ability and security selection ability however, they lacked market timing ability. Money market fund managers lacked forecasting ability, security selection ability as well as market timing ability despite the factors having key influence on their performance.

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LIST OF ABBREVIATION AND ACRONYMS

ACT	-	Act of Parliament
APT	-	Arbitrage Pricing Theory
CAP	-	Chapter
CAPM	-	Capital Asset Pricing Model.
CBK	-	Central Bank of Kenya
CDs	-	Certificate of Deposit
CIS	-	Collective Investment Schemes
CMA	-	Capital Market Authority
CMT	-	Capital Market Theory
EMH	-	Efficient Market Hypothesis
MBA	-	Master of Business Administration
Mid-cap	-	Medium Capitalization
MMFs	-	Money Market Funds
MPT	-	Modern Portfolio Theory
NSE	-	Nairobi Stock Exchange
NSE 20 index	-	Nairobi Stock Exchange 20 Shares Index
RBA	-	Retirement Benefits Authority
REITs	-	Real Estate Investment Trusts
SA	-	South Africa
Small cap	-	Small Capitalization
S & P 500	-	Standard and Poors 500 Index
T- bill	-	Treasury Bills

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The capital market in any country plays an important role in fostering and sustaining economic development. The market helps increase the total volume of domestic savings and investment and promote inflows of foreign capital to fuel economic growth. It also aids the flow of funds from the surplus of the economy to deficient areas by bringing together the lenders (providers) and borrower (users) of long term capital .Stock market in particular helps to allocate capital more efficiently by establishing fair market prices for securities and by minimizing the cost and the difficulty of buying and selling securities. It is the efficient capital market that creates opportunities for small savers and other investors to participate in the market directly by contributing to pension funds or unit trusts (Hughes, 2002).

The Capital Markets Act Cap 485 A the laws of Kenya defines a collective investment scheme (CIS) as that which includes an investment company, a unit trust, a mutual fund or other scheme which is incorporated and organized under the laws of Kenya.

Unit trusts means any scheme or arrangements in the nature of a trust in pursuance where members of the public are invited to acquire an interest or undivided share (units of investment) in groups of specified securities and to participate proportionately in the income or profits .The capital Markets Authority (CMA) leaves the task of constructing the portfolio to the fund managers,therefore,the performance of mutual funds is determined by the astuteness of the fund managers in building their segregated portfolios

from the various asset classes while fulfilling the investment objectives of the mutual fund and adhering to laid legislation (Maiyo, 2007).

Deloite and Touche(2004) study of the East African capital markets highlighted the need to give greater attention to non-equity components of the capital markets as there has been too much emphasis on equities yet greater economic benefit can come from corporate bonds and other instruments. Focus should shift to the promotion of different investment instrument that suit different investors.

In value terms individual investor in Kenya are not significant in the demand for securities due to generally low per capita income and the corresponding low savings rates (world Bank 2002). In the equity market the supply of new equities is thin and privatization accounted for the majority of the issues. The report mentions the major factors that limit the supply of equities as reluctance of the many small family – owned business to dilute ownership, the tedious and costly process of going public and the generally underdeveloped state of the private sector (Maiyo, 2007).

A combination of dynamic financial markets, technological advances, and new regulations have resulted in numerous new investment instruments and expanded trading opportunities. Improvements in communications and relaxation of international regulations have made it easier for investors to trade in both domestic and global markets. Also the competitive environment in the brokerage industry and deregulation of the banking sector made it possible for more financial institutions to compete for investor

money which spawned investment vehicles with a variety of maturities, risk-return characteristics and cash flow patterns (Miller, 1991).

The phenomenal growth in the mutual fund industry in the emerging markets has resulted in an increase in the number of investment companies offering a range of funds. In Kenya with the passage of the Capital Markets Authority Amendment Act (2000), which recognizes specific investment vehicles and especially mutual funds and unit trusts, more opportunities for diversification by both institutional and retail investors emerged. The first unit trust scheme in Kenya was registered in 2002 and since that time there has been phenomenal growth in the market in terms of share trading volumes, market capitalization and share prices including the tremendous growth of these funds with numerous being registered on an annual basis (Maiyo, 2007).

Asset(portfolio) management has continued to gain increased popularity across the world because nearly all the worlds wealth is held in form of recognized funds(or portfolio).In essence ,these funds are nothing more than a group of assets such as equities,bonds,property and cash held in proportions which the fund manager believes will meet his clients' objectives. Avery large portion of the world's capital is now held in form of pension ,unitized (mutual) funds and insurance funds. This is a symptom of a fundamental and ongoing redistribution of wealth from a very small minority to the wage earning and pension drawing majorities a shift which has created the requirement for specialist fund managers to invest on behalf of owners to maximize their long term

wealth i.e. investing their capital in assets offering the highest returns for an acceptable level of risk. (Hughes, 2002)

A central problem in finance and especially portfolio management has been that of evaluating the "performance" of portfolios of risky investments (Jensen, 1968). The problem of accurately measuring the performance of managed portfolios remains largely unsolved after more than 30 years of work by academics and practitioners (Wermers, 2000)

Unit trusts are funds created to manage securities on behalf of a relatively large number of small investors. The fund is divided into units which are brought and sold to investors at the prevailing market share prices this being very closely related to the market value of the underlying securities in which the unit trust invests (Hughes, 2002). Unit trusts pools investors money and invests in ways specified in their prospectus and issues shares to investors entitling them to participation of the income generated by the funds (Bodie et al, 2008)

Portfolio managers can achieve differential return performance by engaging in successful "macro" market- timing activities as well as careful "micro" security selection efforts i.e. they can shift the overall risk composition of their portfolios in anticipation of broad market price movements (Chang, 1984)

Market timing is the portfolio manager's ability to engage in successful asset allocation policy involving dividing investments among the market portfolio of equities and risk

less bonds (Chang 1984). Kon and Jen(1978, 1979), Fabozzi and Francis(1979) found out that mutual fund portfolios do not in fact maintain a constant risk posture over time and attempts at market timing is a dimension of fund managers decision process.

The Forecasting (predictive) ability of a portfolio manager is his power to earn returns through successfully predicting security prices which are higher than those which he could expect given the level of riskness of his portfolio (Jensen, 1968).Grinblatt and Titman(1989, 1993) and wermers (1997) contents that mutual fund manager have the ability to choose stocks that outperform their benchmarks , before any expenses are deducted. Wermer (1995) attribute much fund performance to the characteristics of the stocks held by the funds.

The success of active fund manager is primarily a function of their forecasting future prices, stock selection and market timing ability. Over period in which the market risk premium is positive, a manager that has market timings ability increases (decreases) their exposure to equity market (fixed income market). Conversely over periods when market premium is negative, a manager that has market timing ability decreases (increases) their exposure to the equity market (fixed income markets). (Holmes and Faff, 2009)

In addition to stock selection skills, models of portfolio performance should also attempt to identify whether fund manager have the ability to market time of predict aggregate market movement. This is, can fund managers successfully assess the future direction of the market and adjust the portfolio sensitivity (beta) accordingly. Treynor and Mazuy (1966) and Henriksson (1981) are two commonly applied market timing models in

literature Treynor and Mazuy (1966) model is a quadratic extension of the single factor CAPM.

1.2 Statement of the problem

The investigation of fund performance using data on the Kenyan industry has been an area of very limited research activity. This has been attributed to the small nature of the industry and lack of a specialized organization to monitor and publish performance data on pooled funds.

Studies done on unit trusts (mutual funds) concentrated on the general performance of funds in relation to benchmark indices. These studies resulted into mixed findings with some contending that mutual funds outperformed benchmark indices while others concluded that funds were unable to beat the market indices. Domain and Reichenstein(1998) while studying money market funds focusing on manager ability to predict interest rates concluded that fund managers are able to do so if they shorten fund maturity prior to interest rate increases and lengthen maturity prior to interest decrease and thus the net fund return were driven exclusively by fund expense ratios and portfolio types. Gallagher and jarneac(2002) in their study of actively managed Australian bond funds found out that total portfolio level of majority did not exhibit superior risk adjusted performance. Sharpe (1966) concluded that the difference in returns were due to the mutual funds expenses and majority of the funds failed to outperform the Dowjones index. Jensen(1968) conclude that mutual funds failed to forecast future prices hence

could not take advantage of the buy and hold strategy. These and other studies failed to identify specific factors that determine the performance of mutual funds (unit trusts).

Kogi, (2003) in a study of future of collective investment schemes in Kenya observed that the potential in the Kenyan capital market is yet to be fully utilized. To date access to the new investment outlet has been limited to the well informed large institutional investor and access to the individual small investor will be developed through the CIS managed by the fund manager. Maiyo (2007) in a study to evaluate the performance of unit trusts in Kenya found among other things that the main reason for the low performance of some funds was due to the portfolios having instruments of various categories put together in varying proportion. The study recommended need to explore specific performance drivers. Muriithi (2005) evaluated the performance of two equity mutual funds in Kenya found out that equity funds has higher risk than balance fund due to higher proportion in equity share. The question left unanswered by the reviewed empirical studies and what the study aimed at establishing is what actually determined the (under or over) performance of unit trusts?

1.3 Objective of the study

1.3.1 General Objective

The study sought to establish and evaluate the determinants of performance of unit trusts in Kenya

1.3.2 Specific Objectives

The study was guided by the following specific objectives:

1. To identify and analyse the factors that determine performance of unit trusts in Kenya.

2. To determine the relationship between the determinants and the performance of unit trusts in Kenya

1.4 Significance of the study

The information generated by this study will be of great importance to the investing public, fund managers and analysts, the government and regulators and the academic fraternity.

1.4.1 The Fund Managers/Analysts/Trustees/Investors.

The fund managers, financial planners and analysts are the main players or drivers of the investment industry. In the course of their work they tend to evaluate their performance against benchmarks. This study would interest them in that the results will confirm the factors that drive performance of the funds/investments they manage and address the same to ensure the delivery sufficient returns to their clients as outlined in their

investment prospectus. As providers of capital, investors are very much concerned in the returns to their funds hence the findings will aid them in evaluation and choice of fund managers.

1.4.2 The Government/Regulators

The government of Kenya through its policies influence, the investments in various types of products and industries thus the study can assist in pointing out the areas that need incentives to attract more capital flow.

The regulators play the important role of promulgation of regulations and ensuring compliance hence the finding of the study will ensure they develop policies or regulations that take the unit trust industry and the capital market to the next level.

1.4.3 Academicians

The study will contribute to development of academics literature and theory by providing empirical evidence for use by educators, and researcher in the field of study.

It will also form a basis of further studies in respect to unit trust (CIS) in Kenya

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature on performance of unit trusts (mutual funds) related to the study at hand. It summarizes the information from other researchers who have carried out their research in the same field of study by summarizing the theories, empirical review and general literature.

2.2 Theories of Investment

2.2.1 Efficient Markets Hypothesis (EMH)

Fama (1970) notes that the primary role of capital (stock) market is allocation of ownership of the economy's capital stock. In general terms, the idea is a market in which prices provide accurate signals for resource allocation that is a market in which firms can make productive investment decisions and investors can choose among the securities that represent ownership of firms' activities under the assumption that securities prices at any time "fully reflect" all available information.

Fama (1970) attempted to formalize the theory and organize the growing empirical evidence. He presented efficient market theory in terms of a fair game model, contending that investors can be confident that a current market price fund reflects all available information about a security. In his original article, Fama divided the overall efficient market hypothesis (EMH) and the empirical tests of the hypothesis into weak form EMH semi strong from EMH and strong form EMH

2.2.2 Modern portfolio theory (MPT)

Markowitz (1952, 1959) developed the basic portfolio model which derived the expected rate of return for a portfolio of assets and an expected risk measures. He showed that the variance of the rate of return has a meaningful measure of portfolio risk under a reasonable set of assumptions. More importantly he derived the formula for computing the variance of a portfolio which formula not only indicate the importance of diversifying investments to reduce the total risk of a portfolio but also showed how to effectively diversify. Markowitz (1952, 1959) showed that the expected rates of return of a portfolio are the weighted average rate of return for the individual investments in the portfolio. The standard deviation of portfolio is a function not only of the standard deviations for the individual investment but also of the covariance between the rates of return for all the pair of assets in the portfolio. Hughes (2002) contents that MPT still justifiably provides the cornerstone of portfolio management.

2.2.3 Arbitrage Pricing Theory (APT)

At its simplest level the APT is based on the premise that two items with equivalent characteristics cannon simultaneously be priced differently (otherwise arbitrageurs would step in and simultaneously sell at the high price and buy at he low price making a risk free profit), (Hughes, 2002)

The APT is thus implemented by identifying factors affecting stock (security) returns (such as inflation, interest rates etc.) and calculating the sensitivity of individual securities to each other. This sensitivity is analogous to the Beta in the CAPM and is

used by the APT to calculate the sensitivity of individual securities to each factor (Hughes 2002).

2.3 Determinants of Portfolio Performance

2.3.1 Forecasting Ability

A portfolio manager's predictive ability is his ability to earn returns through successfully prediction of security prices which are higher than those which he could expect given the level of riskless of his portfolio (Jensen, 1968). Jensen (1968) showed that the single period models of Sharpe, Lintner and Treynor can be extended to multiperiod world in which investors are allowed to have heterogeneous horizons and in which the trading of securities is continuous. The equation of the form

$\overline{R}_{jt} - R_{Ft} = \alpha_j + \beta_j \left[\overline{R_{Mt}} - R_{Ft} \right] + \upsilon_{jt}$ can be used for empirical evaluation of forecasting ability where $\overline{\upsilon}_{jt}$ will have $\in \left(\overline{\upsilon}_{jt} \right) = 0$ if a manager has an ability to forecast security prices, the intercept α_j will be positive and it represents the average incremental rate of return on the portfolio per unit time which is solely due to managers' ability to forecast future security prices. A naïve random selection buy and hold policy can be expected to yield a crew intercept with negative α and denoting the manager is not doing well as a random selection buy and hold policy.

In order to make inferences regarding the fund managers forecasting ability we need a measure of the standard error of estimate of the performance measure. Least squares regression theory provides an estimate of the intercept α_j. The sampling distribution of

the estimate $\overline{\alpha}_j$ is a student to distribute with n_j - 2 degree of freedom and will help to get statistical significance of the estimated performance measure (Jensen, 1968).

2.3.2 Market Timing and Security Selection Ability

Managers can achieve differential return performance by engaging in successful "macro" market-timing activities as well as careful "micro" security selection efforts i.e. they can shift the overall risk composition of their portfolios in anticipation of broad market price movement (Chang, 1984).

A variety of studies, including those by Kon and Jen (1978, 1979), Fabozzi and Francis (1979) Alexander and Stover (1980) and Miller and Gressins (1980) found at least some evidence that mutual fund portfolios do not in fact maintain a constant risk posture over time and conclude that attempts at market timing may well be a dimension of a fund managers decision process.

Henrikssson and Merton (1981) portray the market timing portfolio manager as having an asset allocation policy involving dividing investments among the market portfolio of equities and risk less bonds. They arrived at a least squares regression equation to estimate empirically the separate contributions of selectivity and timing to a managed portfolio's return of the form $R_p(t) - RF(t) = \alpha + \beta_1 X_{(t)} + \beta_2 Y_{(t)} + \in_p(t)$ where α is the expected excess rate of return on the portfolio due to the manager's security selection ability: $X(t) \equiv R_m(t) - RF_t$ and $Y(t) = \max [O, -X(t)]$

the true β_2 will be equal zero if the forecaster either has no timing ability or does not act on his or her forecast Chiang (1984) concluded that neither skillful market timing nor

clever security selection abilities are evident in abundance to observe mutual fund return data, and the general conclusion of the prior literature that mutual funds have been unable collectively to outperform a passive investment strategy still seems valid.

2.4 Unit trust

These are funds created to manage securities on behalf of a relatively large number of small investors. The fund is divided into units which are bought and sold by investors at the prevailing market rate, this being very closely related to the market value of the underlying securities in which the unit trust invests (Hughes, 2002).

Loft house (2001) defines investment management as the process of managing investment funds to achieve specific objectives.

Investment management industry dates back to post war years. Before George Ross encouraged everyone into equities in the late 1950 and early 1960s, performance considerations were not regarded as very important. Harry Markowitz in the 1952 came up with the modern portfolio theory to address this gap of the performance of portfolios (Loft house, 2000). The unit trust movement began in the America in 1928. In South Africa , unit trust movement has enjoyed wide acceptance from the investing public and excellent growth in the number of funds and total net assets (SA Forum, 1997).

To form a unit investment trust a sponsor typically a brokerage firm, buys a portfolio of securities which are deposited into a trust. It then sells the public shares of "units" in the trust called redeemable trust certificate. All income and payments of principal from the

portfolio are paid out by the funds trustees, a bank or trust company to the shareholder (Bodie et al, 2008).

Trading in unit trusts must be carried out through the fund manager (i.e. there is no secondary market) with the number of units being variable i.e. the amount of capital invested in the fund can change with such changes being known as unit creation for an increase in capital and liquidation for a decrease (Hughes, 2002).

2.5 Unit trusts industry in Kenya

The fund management industry in Kenya is at its formative stages and is thus underdeveloped. There are 16 fund managers, licensed by both the Capital Market Authority (CMA) and Retirement Benefit Authority (RBA), who play the role of managing the pension and unit trusts funds as well as other institutional and retail funds .

The first unit trust scheme was registered in 2002 and since then there has been phenomenal growth in the market in terms of share trading volumes market capitalization and share prices including the tremendous growth of these funds with numerous other being registered annually (Maiyo, 2007). Unit trust offer investors more choices, besides enhancing returns to investor of between 8% - 10% as more compared to 3% - 4% return gained from traditional investments such as bank deposits (Maiyo, 2007).

Fund management as at June 2010 had a total of net asset value (assets under managements) of Kshs.17.6 billion with the highest percentage of 40% and 25% invested

in quoted domestic equities and fixed income respectively .Fund managers had 2.5 billions in assets and held 56.180% of corporate bonds as at June 2010 as compared to 57% in June 2007. (CMA, 2010)

2.6 Types of fund managed by unit trusts

Rather than an investor directly buying an individual stock or bond issued by government entity, a corporation or another individual, he may choose to acquire these investments indirectly by buying shares in an investment company also called a mutual fund, that owns a portfolio of individual stocks, bonds or a combination of the two. The main categories of fund managed by CISs are: money market funds, fixed income, equity, index, real estate funds, and international funds among many more others. (Brown and Reilly, 2009).

2.7 Performance Evaluation

Performance analysis is very important in the asset management industry. It provides a feed back mechanism for the fund manager telling him how he is doing and why. (Indeed a fund manager's remuneration often heavily relies on his fund's performance) .It also gives trustees (acting on behalf of client) an idea of how his investment is doing compared to alternative investment opportunities (especially other funds) (Hughes, 2002).

In evaluating unit trusts the fund managers whose actions and decisions affect the performance of funds are indirectly being evaluated .In general, these are four decisions

involved in constructing an investment strategy.   what asset class should be considered for investing, policy weight to be assigned to each eligible asset class, allowable allocation ranges based on policy weights and specific securities or funds to be purchased (selection) for portfolio (Brown and Reilly 2009).

The success of actual fund managers is primarily a function of their stock selection and timing ability. Over periods in which the market risk premium is positive, a manager that has market timing ability increases (decreases) their exposure to equity market (fixed income market). Conversely over periods when market premium is negative a manager that has market timing ability decreases (increases) their exposure to the equity market (fixed income market) (Holmes and Faff, 2009).

2.8 Risk-adjusted Portfolio Performance Measures

2.8.1 Treynor's Index

Treynor (1965) developed the first composite measure of portfolio performance that included risk by postulating two components of risk, risk produced by general market fluctuations and risk resulting from unique fluctuations in the portfolio securities. Treynor index denoted as

$\text{T}_i = \left(\overline{R}_i - \overline{R}_F \right) / \beta_i$ where $\overline{R}_i$ is the average rate of return for portfolio i during a specified period of time, β_i systematic risk for the portfolio and $\overline{R}_F$ the average return on a risk free investment during the same time.

2.8.2 Sharpe Performance Measure

Sharpe (1966) conceived a composite measure to evaluate the performance of mutual funds. Sharpe index denoted $S_i = (\overline{R}_i - R_F)/\delta_i$ where δ_i is the standard deviation of the rate of return for the portfolio i during the time period.

2.8.3 Jensen alpha performance measure

This measure was developed by Jensen (1968) based on the CAPM which calculates the expected one-period return on any security of portfolio and is denoted as $E(R_i = R_F + \beta_i$ $E[(R_M) - R_F]$ where $E(R_m)$ is the expected return on the market portfolio of risky assets.

Jensen alpha can be computed as the excess return earned by a portfolio over the market portfolio return and is denoted as α_i can be obtained by rearranging the equation.

$$E(R_i) - R_F = \alpha_j + \beta_j [E(R_M) - R_F]$$

2.8.4 The information ratio performance measure

This is a statistic measure of portfolio average return in excess of that of a comparison benchmark portfolio divided by the standard deviation of this excess return and is denoted as $IR_i = (\overline{R}_i - \overline{R}_b / \delta_R)$ is interpreted as the mean excess return in the (Brown and Reily, 2009).

2.9 A Review of Empirical studies

Droms and Walker (1995) in a study of the relationships between mutual funds risk, asset size, expense ratio, portfolio turnover and load/no-load status on 150 mutual funds for the

period 1971 to 1990 found out that portfolios of funds with higher risk whose commonly earned higher returns as predicted by CAPM Additionally the analysis revealed that portfolios of similar funds appear to be more risky as it is hypothesized that larger funds generally carry less risk due to increased diversification. The relationship between risk and expenses ratio was found to be positive.

Firth (1977) analyzed 72 British-open-end investment trusts over the period 1965 to 1975 found that on average, managers of unit trusts in the United Kingdom (UK) were not able to forecast share prices accurately enough to outperform a simple buy and hold policy. Additionally, there was no statistical significant evidence of any individual unit trusts having superior performance even when management expenses are added back.

Muriithi (2005) in a study to evaluate the performance of two equity mutual funds in Kenya found out that Equity fund had higher risk than the Balanced Fund due to a higher population of quoted equity shares in its portfolio an indication that these mutual funds employed flexible weighting approach to asset allocation.

The study observed that Balanced Fund had the worst performance when compared to the equity fund and the market. However, both the co-efficient of variation and the share index indicated that the equity fund performed worse than the NSE 20 index.The study also found out that the fund managers of equity fund in an effort to select undervalued securities or to time the market holds a portfolio less diversified which contains diversifiable risk.

The study recommended a further research to find out other factors that influence the performance of mutual funds in Kenya noting that studies in other countries considered factors like transaction cost expense ratio, portfolio management style, qualification and experience of the fund manager and the number of funds managed by the investment company.

Maiyo (2007) in a study to evaluate the performance of unit trusts in Kenya specifically concentrated on the funds risk-return trade off and how they measure against the respective benchmarks. The study found mixed results with funds performance depending on composition of their portfolios. Further the study found that the main reason for the low performance of some funds was due to the portfolio having instruments of various categories put together in varying proportion. The study was however, limited in fact it focused on equity and money market categories of funds and failed to identify the effect of fund manager decision and actions on the fund performance.

Nguthu (2009) in a related study sought to find out asset allocation on retirement benefit funds performance in Kenya used a sample of 40 retirement benefit schemes drawn from 400 segregated schemes. Secondary data on quarterly returns and asset allocation was obtained from Retirement Benefits Authority (RBA) and segregation analysis was carried out in order to determine the returns variability over the period of study (2003-2007). Regression analysis of actual quarterly returns against the corresponding quarterly policy benchmark has carried out to determine variable of return over time and coefficient of

determination (R^2) was computed. Further across sectional regression of compound annual returns on the compound annual policy returns over the entire period was computed and R^2 statistic composed to explain the return difference which will be explained by assets allocation.

The study found out that 37% of the variability among funds performance was due to policy differences of the various funds with 63% due to other factors such as the manager's selection, timing of investment, and securities selection within an asset class and whether the manager adopts an active style of fund management.

The study further found out that over time the variability on returns of a pension fund was explained up to 62% by the policy returns. This indicated a need to design a policy that maximizes returns or schemes. Once the quantitative asset restrictions by RBA on assets allocation are recommended, these weights can be allocated to equities rather than fixed income. In the second object to find out how much asset allocation policy contributed to the returns level of a pension fund the study found out that asset allocation policy explains slightly over 100% of the return level of a pension fund.

Summary

Much of the research done on the performance of unit trusts and mutual funds has been carried out in the developed economies where these pooled funds are at very advanced stages with the studies mainly examining funds across investment objectives in which

case the results obtained may not be applicable to any particular fund category. Most of the studies found out mixed results on performance of unit trusts (mutual funds).

(Maiyo, 2007), some unit trust funds performed below the benchmarks implying that the fund managers are not putting in much effort to ensure that the investors get the highest returns however, due to lack of uniform benchmarks, various fund manages have developed their own benchmarks that guide them in the investment management which as resulted in inappropriate and incomparable results. Ways of evaluating the performance of the fund manager should thus be explored and developed to isolate fund specific performance from performance resulting from actions of the fund managers for better understanding of the factors that influence the performance of unit trust funds to the benefit of providers of funds.

Studies carried in Kenya focused on overall performance of funds and failed to bring out the specific factors affecting performance a factor that motivated this study. It would be of interest to determine the factors that influence the performance of the mutual funds in Kenya. Studies in other countries have considered factors like the mutual fund size, transaction cost expense ration, portfolio management styles, qualifications and experience of the fund managers and the number of funds managed by the investment company.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter will discuss the research methodology that was be used as the basis of this study. The chapter will also discuss the research design, population of the study, sampling procedure, data collection methods as well as data analysis and data presentation methods employed in the study.

3.2 Research Design

A causal research design was be adopted in carrying out the study. A causal research design provides evidence regarding the causal relationship between variables by means of concomitant variation and time order (i.e. while cause happens before the effect) while assuming nonspurious association. The design is appropriate to establish the causal relationship between the determinants and performance of unit trusts in Kenya. The study focused on equity and Money markets categories of funds representing the extreme ends of the investment spectrum and covers three year period between January 2008 to December 2010.

3.3 Population and Sample

The population of study was the entire 16 unit trusts schemes registered with the CMA as at 31st December 2010 as indicated in appendix I. A census study was carried on all equity and money market funds managed by the schemes.

3.4 Data Collection

Secondary data was the main source for the study and involved the collection of public material and information from other sources such as financial reports and published data. The net asset value (NAV) or unit prices as at the end of every month for the equity funds was obtained from the fund managers and was used to calculate the return per equity fund share. The capital gains and cash distribution was assumed to be reflected in the unit prices.

The money market funds are held such that the beginning and the end of month face value remains the same hence the end of month yields was provided by the fund managers and served as the relevant data for calculation of returns on these funds.

Monthly data on the NSE 20 index as at the end of each month was obtained from NSE and served as both proxy market and benchmark for the Equity funds.

The average 91 Day T-bill rates as at the end of every month was provided by CBK and was used as the proxy market and benchmark for the money market funds.

3.5 Data Analysis and Presentation

Data collected from each unit trust scheme (fund manager) was thoroughly examined and checked for completeness and comprehensibility. The data was entered into the statistical package for social sciences (SPSS) version 10 for analysis.

Monthly return per share was calculated from the NAV or Unit prices. The average return on the fund for the entire period was calculated from the monthly returns.

The monthly value of the NSE 20 index was used to calculate return on the market and the average return for the entire period was computed from the monthly returns.

The betas for the equity and money market funds was computed from the monthly returns with respects to the respective market proxy returns (NSE 20 index and 91 – Treasury bills rate). The average 91 – Treasury bill rate for the entire period was computed as the proxy for risk free rate of return (RF).

3.5.1 Forecasting Ability

Jensen (1968) modified form model $Rj_t - RF_t = \alpha_j + \beta_j [\overline{R}mt - RF_t] + \mu j_t$ was regressed to obtain the value of α_j and R^2 was obtained to explain the extent of correlation between performance and forecasting ability as represented by α_j .

3.5.2 Market Timing and Security Selection Ability

Henriksson and Merton (1981) model of the from $R_P(t)-RF_{(t)} = \alpha + \beta_1 x_{(t)} + \beta_2 Y(t) + \varepsilon_{p(}t)$ where α is the expected excess return due to manager selection ability, Xt $\equiv Rm_{(f)} - RF_T$ and $Y(t) = Max [0, - X(t)]$ was used to estimate α and β_2 which reflects selection ability and market timing ability of the fund managers respectively

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.0   Introduction

This chapter presents data analysis employed in the study, presentation of the output thereof, summary and interpretation of findings.

4.1   Data analysis and presentation

Data analyzed consisted of the excess return of the funds over the risk free rate of return as a measure of performance, betas (systematic risk) and market risk premium for each category of funds.

There were a total of fourteen funds (six equity funds and eight money market funds) in operation for the entire period of study and whose complete data were available. The monthly return for each fund was computed from the monthly unit prices (NAVs) as

$$\frac{NAV_T - NAV_{T-1}}{NAV_{T-1}}$$

Where NAV_t = end of month unit price

NAV_{t-1} = unit price at the beginning of the month.

The monthly returns for the market were calculated from the monthly values of the market indices (NSE 20 index and 91Dat T-bill rates) and were computed as above.

The monthly return deviations in relation to the proxy market returns was used to compute the systematic risk(betas) with monthly 91-day T-bill rates and monthly NSE 20-share index serving as proxy market returns for money and equity funds.

4.1.1 Forecasting ability

Regression analysis of the form $R_i - R_f = \alpha_i + \beta_i \left[R_m - R_f \right] + \mu_i$ was performed on data for each category of funds (i.e. equity and money market) and the alpha (α) and coefficient of determinant (R^2) was obtained

Table 1:   Summary of output: Equity funds (Forecasting ability)

Regression statistic	
Alpha	0.005519
R	0.953
R squared	0.908
Adjusted R squared	0.885
Standard error	0.002414

Table 2:   Summary of output: Money market funds (Forecasting ability)

Regression statistic	
Alpha	-0.288
R	0.759
R squared	0.576
Adjusted R squared	0.505
Standard error	0.1434

4.1.2 Market timing and security selection ability

Data from each fund categories was regressed using a regression analysis model of the

form $R_{P(t)} - R_f(t) = \alpha + \beta_1 X_{(t)} + \beta_2 Y_{(t)} + \mu_{P(t)}$ where α was used to measure fund

manager's security selection ability and the value of β_2 was an indication timing ability.

The following are summarized as follows.

Table 3: Summary of output: Equity funds (Timing and selection)

Regression statistic	
Alpha	0.0055172
β_2	0.0000
R	0.953
R squared	0.908
Adjusted R squared	0.885
Standard error	0.002413

Table 4: Summary of output: Money market fund (Market timing and security selection)

Regression statistic	
Alpha	-0.288
β_2	0.000
R	0.759
R squared	0.576
Adjusted R squared	0.505
Standard error	0.1434

4.2   Summary and interpretation of findings

4.2.1   Forecasting ability

Forecasting ability is the fund manager's ability to earn returns through successfully predicting future security prices higher than expected for risk free assets and was measured by alpha in the model. The equity funds had an alpha of 0.0056, a positive value denoting that fund managers of equity funds possessed forecasting ability even though slightly better than that of an average randomly selected buy and hold policy. This indicated that on average equity fund manager could increase their portfolio returns on average by an incremental rate of 0.0056 per unit time solely due to the manager's ability to forecast future prices.The value of R squared (R^2) was 0.908 indicated that their ability to forecast future prices contributed 90.8 percent of the total portfolios return during the period under study.

 The money market funds (MMFs) had an alpha measure of -0.288 ,a negative value indicating their inability to improve their total portfolio returns by forecasting future prices. This implied that they employed a rather naïve random selection buy and hold policy thus they did not do as well as randomly selected buy and hold policy which would yield an alpha of zero. The value of R^2 was 0.576 indicating that forecasting ability for money market fund accounted for 57.6 percent of the total portfolio return.

4.2.2 Market timing and security selection ability

The ability of the fund managers to achieve differential return performance by engaging in successful "macro" market-timing activities as well as "micro" security selection efforts was measured by regressing data on each category of funds using the mode

$$Ri_{(t)} - Rf_{(t)} = \alpha + \beta_1 X_{(t)} + \beta_2 Y_{(t)} + \mu_{(t)}$$

Where α measured security selection ability and β_1 and β_2 measured systematic risk (beta risk) and market timing ability respectively.

The alpha for Equity funds was 0.0055172 a positive value which indicated ability of the fund managers to select stocks of companies and industries with returns covariances that led to overall improvement of total portfolio return. However, the value of β_2 was zero indicating the inability of the Equity fund manager to employ market timing in buying and selling stocks in order to improve the overall portfolio return. The value of R^2 was 0.908 indicating that for the period under study security selection contributed to 90.8 percent of the total portfolio return and only less than 1% was contributed by other factors such as forecasting ability, asset allocation, fund size etc.

The alpha for the Money market funds was a negative value of -0.288 an indication of the inability of the fund managers to select securities that could contribute to incremental returns for their portfolio. Interesting, the β_2 value was equally zero as in the case for the Equity funds implying that just like their Equity fund counterparts, the Money market fund managers did not posses market timing ability or either did not act or rebalance their portfolios well enough to increase their portfolio returns.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1   Summary

The study aimed at identifying and evaluating the determinants of performance of unit trusts in Kenya and concentrated on equity and money market funds which represented the extreme ends of the investment spectrum.

The study employed monthly unit price data from the fourteen unit trust funds as provided by the fund managers to compute monthly returns, and betas for the funds and monthly NSE 20-share index and 91-Day T-bill rates as provided by the NSE and CBK served as benchmark and proxy market for the equity and money markets respectively. Regression analysis using modified Jensen alpha's models was used to compute statistics for evaluation of forecasting ability markets timing and security selection of the fund managers under each of the sub categories.

In the equity fund subcategory the study found out that the fund managers had the ability to forecast future prices of securities to initiate buys or sales (i.e. rebalancing of the portfolio) a factor which was supported by a high level of co-efficient of determinant. The equity fund manages had also the ability to select superior securities (stocks) for inclusion in their portfolios which contributed to incremental portfolio returns. However, they lacked the market timing ability as to when to get in and out of the market for the stock , industries or individual companies to improve on performance based on the analysis of the market.

The study found out that Money market fund managers lacked forecasting ability as well as market timing and security selection as means for improving portfolio performance.

5.2   Conclusion

The study found out that forecasting ability, market timing ability as well as security selection techniques employed by fund managers in managing both equity and money market portfolios were very important determinants of performance. However, the degree to which the fund manages possessed the above abilities varied across the fund subcategories. Thus the study pointed out the importance of fund managers to improve on their respective portfolio management techniques to ensure improved performance something which is used periodically evaluating their performance and even a basis for future remuneration.

The study also out that performance of equity and money market funds managed by unit trust schemes under the period of study was highly positively correlated with forecasting ability, market timing and security selection techniques hence due importance should be attached to the same.

The study concludes that Money market fund mangers lacked forecasting ability, market timing and security selection ability which may support earlier studies such as Maiyo (2007), Muriithi (2005) on the funds inability to out performance the market benchmark on a risk adjusted basis, however, the equity fund mangers despite possessing some

ability to forecast future prices and security selection failed or did little market timing in order to improve on their performance.

5.3 Policy Recommendations

There is need for industry players and regulators to come up with objective, relevant and universally acceptable benchmarks so that fund performance is measured against uniform measure. Due to lack of uniform benchmarks various fund mangers have developed their own benchmarks that guide them in the investment management which has led to inappropriate and incomparable results. Benchmarks such as Lehman Brothers Bond Index should be developed for the Kenyan market to act as benchmark for the money markets and bond instruments.

The unit trusts as a form of collective investment schemes were created with a main aim of pooling resources from majorly retail investors to enable diversification risk however, the minimum limit for some funds is much far high (e.g between 50,000 to 100,000) for many retail investor hence this reduces participation, growth and liquidity of the industry .The minimum limits should be brought down to enable participation by the majority of retail end market players.

The regulators i.e. RBA and CMA should explore and develop measures of performance to isolate fund specific performance from performance resulting from actions of the fund manager to enable understanding of the factors that influence the performance of unit trusts funds to the benefit of the providers of funds. Practices such as peer review on

performance should be encouraged and mechanisms of sharing investor information should be developed to foster growth of the industry. The CMA should produce periodic performance review reports for use by investors based on the filed reports.

5.4   Limitations of the study

The study concentrated on the equity and money market funds because there was readily available information on market benchmarks and proxies which were commonly adopted in the industry. However, unit trust schemes in Kenya do manage other funds such as balanced fund, managed fund etc which were omitted for lack of universally acceptable benchmarks.

The study was limited to only three factors determining performance of funds i.e. forecasting ability, market timing and security selection ability, however, other factors such as transaction costs, experience of fund managers, asset allocation policies, expense ratios, fund management styles, the size of assets under management (AUM), and investment objectives.

The period covered under the study was limited to thirty six days due to availability of data in which a total of fourteen funds existed, however many more funds are being registered on annual basis and hence a longer period would need to be considered in future.

5.5   Suggestions for further studies

In this study the influence on performance of unit trust funds by factors like transaction cost, expense ratio, fund management styles, fund objectives, asset allocation decisions, fund size, experience and qualification of portfolio managers were not taken into consideration due to the scope of study. These areas form a fertile ground for exploration by future studies on performance of unit trusts.

The study covered equity and money market category of fund and it would be interesting to see what the results would be if all categories of funds managed by unit trust schemes were evaluated.

The study covered a period of 36 months with fourteen funds being the focus. However, longer historical performance data and choice of more funds in the future may lead to a more robust and conclusive results.

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