THE RELATIONSHIP BETWEEN ASSET ALLOCATION AND INVESTMENT RETURNS OF INSURANCE COMPANIES IN KENYA

BY

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DECLARATION

This research proposal is my original work and has not been submitted for examination in any other University.

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

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DR. KISAKA SIFUNJO.

DEDICATION

I dedicate this project to all that contributed to my success. My wife Evelyne, My three kids Andria, Alexia and Adrian, my colleague Korir and my supervisor Dr. Kisaka Sifunjo for their unending support in preparation of this project.

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ABSTRACT

The relationship between asset allocation and investment returns is critical in determining whether asset is critical in increasing policyholders and shareholders' wealth in Kenya. It is paramount that the insurance funds be invested in manner that is consistent with the spirit of increased performance. Where this not done proactively then, as might be expected investment returns will decrease leaving its members. However, as the regulator, IRA is concerned with whether insurers have developed an Investment Policy (IP) and adhere to it. There is therefore a gap when it comes to evaluating the effectiveness of those IPs in increasing wealth. The study adopted a descriptive survey and utilized a sample of 49 insurance companies in Kenya. The sample included only those insurance companies were in existence for at least 5 years. The findings of the study were that allocation of investments describes 7% of the inconsistency of yields. The remaining 93% explain other factors e.g. timing asset class, security selections and manager selection. The study recommends that the insurance assets should be less regulated by relaxing the rule for strict adherence to the insurance act. Also the IRA should allow fund managers actively manage the funds and use the Insurance Act as a guide for strategic ranges. This is because the asset allocation in Kenya account for only 7% performance of the financials.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Allocation of investments is an approach in which different investment instruments like equities, cash, bonds, real estate etc are divided or allocated to maximise returns while minimising risk. Thus, it is a main notion in organisation financial management. It's an important investment decision and individual's selection of investment instrument comes second to the way an insurance company allocates investment to equities, bonds, real estate and cash.

Modern Portfolio Theory can help investors develop portfolios to maximise returns while minimising peril. Harry Markowitz pioneered this theory and postulated that building efficient frontiers leads to better returns and reduced risk levels.

The strategies adopted by insurance companies in Kenya should, in general, comply with the guide provided by the Insurance Act Section 50 & 51. In addition, the specific Investment Policy Statement need to be proactively managed in order to maximize wealth by taking advantage of favourable market conditions while minimizing on wealth erosion arising from adverse economic conditions. This is because an asset allocation strategy that does not lead to improved investment returns will reflect poorly on the performance of the management of the insurance company.

This study examined the insurance firms in Kenya and the relationship between asset allocation and the investment returns of quoted insurance companies.

1.1.1 Asset Allocation

This is a decision to divide your wealth across different investment instruments and what proportions for each class of say cash, bonds, equities, real estate etc. Strategic allocation of wealth is the long term approach, Sharpe (1996). According to Lofthouse (2001), strategic weights should be set based on: capitalization and investors should vary their holding of an asset with least risk to obtain a trade-off that they desire; or following the median manager that is doing what others are doing; or use of mean-variance optimization where an efficient frontier is calculated and then an efficient portfolio is chosen; or even asset- liability modelling in this the basic idea is to plan the assets and liabilities in relation to one another under a number of different conditions. Many fund managers are therefore in the position that they manage assets that are intended to meet specific liabilities.

Tactical asset allocation refers to allocation under time profiles. Decisions are based on market assessments.

1.1.2 Investment Returns

Investment returns is major determinant in the failure or success of any given insurance company. Good insurance practice has it that the premium income will match the claims incurred. Insurers obtain investable funds from premiums which are received prior to

settling of any claims. Thus, it's the investment income that determines financial success or failure of the insurer.

1.1.3   Asset Allocation and Investment Returns

Theoretical relationship between asset allocation and investment returns is demonstrated by Blake, Lehmann and Timmermann (1998) in their research on the significance of allocation choice in the United Kingdom (UK) which demonstrated that over 90% of returns were explained investment holding.

Ferri (2010) concludes that a prudent asset allocation that is followed by discipline will increase the chances of increasing investment returns over time. In the long runall investments selected for a well-spread portfolio are expected to generate a certain return given their level of inherent risk. Further on Bogle (1994), proposes that the investors with a long term view will profit over time as they put more in either stocks or bonds. Thus there is a direct connection between allocation and returns.

1.1.4   Kenya Insurance Industry

The insurance industry had 49 insurance companies in 2014. 25 of those companies were General underwriters, 13 were life Assurers and 11 did both general and life. Of these companies, only 7 are quoted at the Nairobi Securities Exchange.

1.2 Statement of the Problem

Strategic asset allocation is a process of allocating investments across multiple asset classes to reduce overall portfolio risk. It further involves investing broadly within each asset class to reduce the specific risk and thirdly it involves keeping transaction costs low including taxes. Forth, asset allocation involves rebalancing the portfolio to keep the risk on target. Thus asset allocation is a concept to simple to understand and yet extremely difficult to implement. Early studies done in investment portfolios demonstrate that one cannot constantly out-do the market returns.

Findings show that fund managers normally out do the market. Given that the primary reason for the establishment of insurance portfolios is to cushion the companies' bottom-line, it is paramount that the funds be invested in manner that is consistent with the spirit of increased performance. Where is this not done proactively then, as might be expected, value of the insurance assets will decrease, leaving the company in a loss situation. In fact, volatility may reduce investment performance over a period. Simply, if you lose about 25%, you have to generate 50% to break even (Arnott, Bernstein and Hall 1991).

Given that insurance funds are valued at the market or fair values, It is important to ensure performance is maximized through strategic asset allocation in the form of IPs. One of the key mandates of IRA is to regulate the industry and protect the interests of the policyholder. To carry this out effectively, IPs have to be prepared prior to actual investments of the funds.

Studies on the relationship between asset allocations and returns by insurers in Kenya are inadequate. There is a study on effect of risk on management of investment returns of the insurance companies in Kenya (Omasete 2014). A study carried out by Kagunda (2011) showed returns over time and hence it's a primary determinant of investment returns of insurance companies in Kenya. However, there have not been any studies done locally that explain the nature of the relationship between asset allocation and investment returns clearly showing the important asset classes. The study intended to address research question: Is there a relationship between asset allocation and investment returns of quoted insurance companies in Kenya?

1.3 Objective of the Study

The research objective was to establish the relationship between asset allocation and investment returns of insurance companies in Kenya.

1.4 Value of the Study

Results will help managers and other stakeholders of insurance companies understand how different asset classes and ranges influence investment returns of insurance companies.

The study informed policy makers (Insurance Regulatory Authority) to better manage and regulate the industry in as far as investment in insurance companies are concerned.

It formed a basis for further research to the academicians and other interested bodies. The scholars and researchers who would have liked to debate or carry out more studies on the relationship between the asset allocation and investment returns of insurance companies in Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter abridged work of other researchers in the same area of focus. The specific areas covered here were 2.2 Theoretical Literature review, 2.3 Determinants of investment returns and 2.4 Empirical Review. The chapter also summarises the literature review discussed.

2.2 Theoretical Literature Review

Insurance contracts imply long term uncertain liabilities and this is because the underlying or inherent claims or losses. Insurers need to manage investment portfolio in order to stay afloat and be able to underwrite more in order to succeed. Modern Portfolio Theory enables us understand how to build portfolios that maximise investment returns at a given level of market risk. Ideally insurers are not in the business of investment, thus a good understanding and positioning on how asset allocation drives returns will work for insurers.

2.2.1   Modern Portfolio Theory

Modern Portfolio Theory (MPT) emphasizes how investors can build investments to maximize return under certain risk levels.

Thus it is possible to construct an "efficient frontier. The four step approach to building a portfolio are; Valuation of Investment Instruments, allocation and measurement of returns.

Limitation of MPT is that it does not constantly reflect the investment realities in the market. The theory has an elliptical distribution assumption implying that uncertainity about good returns is also disliked like uncertainity about good returns. Further bad returns appear more riskier and thus MPT methods distort investment scenarios. Before Markowitz's studies, focus was on risks and rewards of different investment instruments. The norm and advise was select those instruments offering best opportunities but with least risk to build a portfolio with.

2.2.2   Post-Modern Portfolio Theory (PMPT)

Post-modern portfolio (PMPT) was invented by computer software investors called Brian Rom amd Kathleen Ferguson in 1991. The purpose was to separate portfolio building from the traditional MPT technology. The PMPT was first published in 1993 and it combines approaches of various authors. The main difference between PMPT and MPT is that PMPT focuses on a return that must first be earned before making a certain future payment, thus its practical and takes into account the investors aspirations. PMPT thus brings in an aspect of Internal Rate of Return (IRR) while MPT ignores IRR. Thus PMPT measures risk alongside IRR.

Mr. Rom began using PMPT in order to market an investment software for portfolio management. However the system was built on algorithms. A more recent work by

Sortino was published for investment practitioners, thus, MPT is a special (symmetrical) case of PMPT (Sortino and Satchell 2001).

2.2.3   Barbell Theory

This is a theory that borrows its credence to a barbell and postulates that assets are focused on the two extreme ends. Theory is different from MPT which has been in operation for over 2 decades.

Barbell theory assumes that the two ends of the barbell reflect opposite ends of the risk profile. Thus one can allocate money from the safe end which is conservative approach to the risky end which is the aggressive investing. Illustratively give 70% of your wealth to treasury bills, they are safe and 30% to aggressive company stocks. The "Floor and Upside" strategy means that, before any investing activity its prudent to build a floor which is a safe investment for income streams. Define baseline consumption and project cash requirements for retirement years. Finally determine any additional funds one requires above the assured sources to meet your basic needs, (Walnut Hill Advisors LLC).

2.3 Determinants of Investment Returns

2.3.1 Risk

Maya Fisher-French (2012) stated that risk of an asset class affects the fund performance. Low risk is associated with potential low returns and the converse holds. The researcher

advocates the asset allocation to be composed of various asset ranges such as cash, bonds, property and equities (shares), whose overall effect on portfolios is medium.

2.3.2 Portfolio Weightings

Block and French (2002), showed that the weights of individual securities that the investment manager gives various instruments in an investment mix can make a certain return is important just like selection of a security and timing of investment. Investment managers tend to have some strategic and tactical ranges when constructing a portfolio.

2.3.3 Interest Rates

Interest rate changes on shares of financial institutions are normally positively correlated with interest rate changes. This implies that where insurance funds are invested in equities and the money market, both asset classes lose if interest rates decreases. The vice versa also hold should interest rate rise.

2.3.4 Liquidity

This is how fast a security can be converted into actual cash or sold and still get a fair price for it. Interest bearing assets like cash, treasury-bills and commercial paper are most liquid assets, whereas physical assets such as real estate are among the most illiquid. Liquid assets tend to have lower rates of returns than the less illiquid assets. Thus investment managers need to strike a balance between liquidity required and desired returns within the portfolio mix.

2.3.5 Investment Horizon

This is the planned investment period that culminates into disposal date of the investment. This concept is best supported by the yield curve which (that is upward sloping). This means that long dated bonds have higher yields or price. Thus time horizons need to be considered when choosing between instruments with various maturities, such as bonds. This is because they pay off at future dates and this has an impact on the investment returns of specified portfolios.

2.3.6 Regulations

Regulations affect both professional and institutional investors, and the prudent investor rule requires that professionals who manage other people's wealth have a fiduciary responsibility to limit investment to assets only approved by the investor after professional advise. For instance, there are investment guidelines issued by IRA to regulate the way in which insurance funds invest policy and shareholders' funds. This affects investment returns of the funds as an investment manager is restricted from over-concentration on any one asset class.

2.3.7 Tax Considerations

Tax is an important consideration as most investments are classified as good or bad depending on the tax regime the assets have been deployed in. Investment performance is measured by net yields after taxes. Thus retail and institutional investors with various tax exposures have tax as a major determinant to their investing activities or strategies.

2.3.8 Unique Needs

All investor have unique circumstances. Insurance funds will differ in their investment policy. A life insurer with most policy holders nearing retirement age will have investment policies that favour liquidity i.e. mostly interest bearing assets with lower risk and stable returns. Likewise if with younger members the portfolio will tend to be more aggressive with higher concentration on quoted equities.

2.4 Empirical Literature Review

A proper investment process includes the followings; development of a prudent investment plan, implementation of the plan and adherence to the plan to cushion you in good times and the bad.

The investment plan is the roadmap to stable investment returns and asset allocation is the most important step in investment planning. This will be the amount of funds committed to each asset class like equities, cash, real estate, bonds etc.

This paper determined whether asset allocation by insurance companies in Kenya is a major determinant of investment return.

2.4.1 International Evidence

Fowler, Ross et al, (Oct 2007) found that asset allocation to New Zealand investors can explain that there is a major difference over time and between portfolios. Between portfolios, allocation describes around 60% of the difference in the returns. This perspective show that allocation is important in explaining returns. Thus, investment managers are expected to provide net returns that exceed passive returns.

2.4.2 Local Research

Mugo (1999) observed that factors identified in finance literature are considered in investment decision by institutional investors at the NSE. However, the relevance of the factors is different as insurance companies and fund management companies consider company factors more important while Retirement Benefits Schemes consider industry factors more relevant. Institutional investors should not be looked at as homogeneous and therefore these findings cannot be generalized for insurance companies.

Mwobobia (2004) concluded that factors that investment management companies consider across the board of investment instruments from the most important to the least are risk, return, and growth of capital, diversification, income stability and liquidity. The factors range from economic, company, social and geographical. Similarly, the factors influence investment instruments differently, for example, factors like inflation influence investment in government bonds more than it does in corporate bonds and stocks. However, investment management companies differ from unit trusts in the sense that they are closed-ended where the money invested is not changed for long periods.

A local study by Nguthu (2009) explained that asset allocation explained about 62% of the returns. This is important as policy makers and trustees in Kenya will be guided on which asset classes contribute the most to fund performance so as perform the selection in the most informed manner.

There has therefore not been adequate studies carried out on the effect of asset allocation on investment returns of quoted insurance companies in Kenya.

2.5 Summary of Literature Review

This study hinged itself on Markowitz Portfolio Theory which emphasized how investors can maximize returns under given levels of risk. Study further showed that it is possible to construct an "efficient frontiers" and the four step approach to building a portfolio are; Valuation of Investment Instruments, allocation and measurement of returns.

Limitation of MPT is that it does not constantly reflect the investment realities in the market. The theory has an elliptical distribution assumption implying that uncertainity about good returns is also disliked like uncertainity about good returns. Further bad returns appear more riskier and thus MPT methods distort investment scenarios. Before Markowitz's studies, focus was on risks and rewards of different investment instruments. The norm and advise was select those instruments offering best opportunities but with least risk to build a portfolio with. Thus as asset values adjustments are due to investment market situations, thus one needs to be rebalance ensuring risk and return are not compromised.

However, although literature has been reviewed on asset allocation and investment returns, the studies have been in different countries whose levels of development is different from that of Kenya.

Most studies tend to conclude that on average asset allocation strategies explain to a significant extent the performance of funds. Most of these studies have been carried on

done on developed markets, for example the study by Ibbotson and Kaplan (2000) and that by Brinson, Hood and Beebower (1986). A local study by Nguthu (2009) explained that asset allocation explained about 62% of the returns. However, the scope of the study did not include the extent to which the individual asset classes contributed to the overall performance of portfolios. There has therefore not been any study carried out on insurance funds in Kenya to explain the investment returns of insurance funds in Kenya.

It is evident therefore very little studies have been carried out focusing on the relationship between asset allocation and investment returns of quoted insurance companies in Kenya. This therefore justifies the need for the current study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This is the approach that was used to carry out the study. Research methodology is a frame in which facts are assembled and their implication clearly analysed. The approach entails the research design, the population, sampling, data collection and analysis.

3.2 Research Design

Descriptive survey was used in the research design. This portrays as accurate profile of persons, events or situations, Trevor (1969) states that surveys are conducted to establish the nature of the existing condition or situation. This research design provided a means to gather, analyze and interpret the relationship between asset allocation and returns of insurance companies in Kenya.

3.3 Population and Sample

The entire population was done for all the registered insurance companies in Kenya. According to IRA, there are 49 which constituted all the elements of the study.

The 49 insurance companies based on the criteria described below drawn from the target population for the purposes of the study.

For sampling purposes, insurance companies that have been in existence for at least 5 years was used. This range of period was to help access data from IRA database. Thus we will use the Insurance Returns data obtained from the IRA.

Insurance portfolios with less than Ksh 100 Million as at the end of 2014 were not considered. This was because large insurance have sufficient returns and investment weights information was sufficient for the needs of the study.

3.4 Data Collection and Data Collection Instruments

Secondary data on quarterly returns and asset allocation was obtained from IRA. The returns obtained were gross of expenses. This was a cheaper and reliable source of data because all insurance companies are required to submit this data to IRA for compliance purposes. The data collected was categorized into the individual asset class weighting, the individual asset class returns together with the portfolio return for the period 2010-2014.

The portfolio currency will be Kenya shillings for the purposes of calculating returns and the asset class weights. Data on the standard market benchmarks will include NSE 20 Share Index and Treasury Bill Rate rates. These benchmarks will obtained from the Nairobi Securities Exchange and Central Bank of Kenya for the purposes of computing the value-weighted asset class benchmarks.

3.5 Data Analysis

Data collected for each of the insurance company was quantitative in nature. The quantitative data was be analyzed in two stages. First, the R-Square (Coefficient of Determination) was calculated in order to explain how much of the variability of investment returns can be caused or explained by asset allocation. The purpose of this stage is to corroborate the findings by Nguthu (2009).

The second stage was to determine the extent to which each asset class contributes to the overall investment returns of the fund by estimating the relative importance of the regressors in the linear regression. For this purpose, a linear regression T-Test will be applied.

3.5.1   Data Reliability

This mechanism ensures that the approach of gathering data results to consistent results. Different researchers follow certain methodologies to confirm that results can be replicated. If results are same then method of gathering data is voted as reliable. Thus data reliability is an important aspect of any research.

3.5.2   Analytical Model

A multiple regression model was used to predict the extent to which investment returns are explained by asset allocation. A similar model was use by Nguthu (2009) in his study.

The model was therefore necessary in order to corroborate the findings in the study by Nguthu. The multiple regression model used in the study was as per below:

$$Y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 x_8 + \varepsilon$$

Where:

Y is the Fund returns

α is the risk-free rate of return

β is the regression coefficient

x_1, is the actual weight of cash in the fund

x_2, is the actual weight of fixed deposit in the fund

x_3, is the actual weight of fixed income in the fund

x_4, is the actual weight of Government security in the fund

x_5, is the actual weight of quoted equities in the fund

x_6, is the actual weight of unquoted equities in the fund

x_7, is the actual weight of offshore investment in the fund

x_8, is the actual weight of immovable property in the fund

ε is the error term

Tests of significance was used in the study. These included Bivariate Correlation between the asset classes and portfolio returns, R- square, Coefficient of Determination and Paired Sample T-Test.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents the findings of the data analysis. The data of the insurance companies was collected and analyzed in response to the objective which is to establish the relationship between asset allocation and investment returns of the insurance companies in Kenya. All the 49 insurance companies in Kenya that were in existence for at least 5 years have been taken into account. The findings presented in this chapter demonstrate the relationship between asset allocation and investment returns of insurance companies and illustrates further the extent to which each asset class contributes to the overall investment returns of the companies.

4.2 Summary Statistics

The objective of the study was to establish relationship between asset allocation and investment returns of insurance companies in Kenya. To achieve this, quantitative data was collected for each of the companies and analyzed in using Panel data analysis. Unit root test was used to assess whether variables had a non-constant mean. Ideally in classical regression all variables should be non-stationary. Means should not be changing and have to be constant across time.

Tests of significance and descriptive statistics, such as correlations, the R-Square (Coefficient of Determination). The purpose of this stage was to corroborate the findings by Nguthu (2009). The second stage was to determine the extent to which each asset class

contributes to the overall investment returns of the fund by estimating the relative importance of the regressors in the linear regression by performing Panel unit root test.

The output and findings of the analysis was presented in the tables below:

4.2.1 Descriptive Statistics

Table 4.1: Portfolio Returns and returns on the various asset classes

	CASHF	EQUITYQ	EQUITYU	FINCOME	FXDEP	GOVSEC	OFFSHORE	PROPERTY	FUNDR
Mean	0.051952	0.126667	0.194762	0.055762	0.195905	0.253667	0.033524	0.099714	0.208238
Median	0.020000	0.060000	0.135000	0.020000	0.175000	0.220000	0.010000	0.040000	0.160000
Maximum	0.950000	0.830000	0.900000	0.490000	0.660000	0.870000	0.340000	0.840000	1.410000
Minimum	0.000000	0.000000	0.000000	0.000000	0.000000	0.020000	0.000000	0.000000	-0.110000
Std. Dev.	0.124618	0.165750	0.202667	0.087006	0.154797	0.152219	0.051522	0.153909	0.176850
Skewness	5.464436	2.128637	1.081897	2.821888	0.729506	0.937247	2.550438	2.675368	2.169219
Kurtosis	35.64070	7.890917	3.760400	12.01788	2.857800	3.665599	11.48390	10.42018	12.41827
Jarque-Bera	10367.48	367.8977	46.02683	990.2764	18.80317	34.62154	857.4602	732.2827	940.8520
Probability	0.000000	0.000000	0.000000	0.000000	0.000083	0.000000	0.000000	0.000000	0.000000
Sum	10.91000	26.60000	40.90000	11.71000	41.14000	53.27000	7.040000	20.94000	43.73000
Sum Sq. Dev.	3.245700	5.741867	8.584438	1.582128	5.008078	4.842677	0.554792	4.950783	6.536648
Observations	210	210	210	210	210	210	210	210	210

Source: Authors Computation

As shown in table 4.1 above, the fund has a mean of 0.208 and standard deviation of 0.176 correlation index for the relationship between PortfolioReturns and Cash, is 0.4, which is equal to 0.4. This result indicates that there is a strong and positive correlation between portfolio returns and the returns of cash. That is, weight of cash in fund, on average, accounted for 20.8% of the funds returned.

On the other hand the correlation indices for the relationships between Portfolio Returns and Fixed Deposit and Govt Security are 0.097 and 0.122 respectively, which are between 0.4 and 0.7. These results indicate that there is moderate and positive correlation between portfolio returns and the returns of fixed deposits and government securities. The actual weight of Govt Security in the fund calculated an average of 0.25366. That is, the weight of Govt Security explained 25.366% of the funds returned. The value was noted to fluctuate from a high as 2.0% and as low as 87%.

The correlation indices for the relationships between Portfolio Returns and Quoted Equities, Fixed Income and OffshoreInv are -0.356, -0.0813 and -0.126 respectively, which are below -0.4. These results indicate that there is a weak and negative correlation between portfolio returns and the returns of quoted equities and offshore investments. The study generally noted that all the independent variables had each some level of explanation to the fund returns in relation to the investment returns of insurance funds in Kenya.

4.2.2 Asset allocation and investment returns

Variation over time is determined by regressing total fund returns against the investment returns, this is reported on the R^2 value of each of the fund in the study. A lower R^2 means that the performance of the Fund Returns is not determined by the Investment Policy but by the active tactical fund management approach.

Table 4.2 R-Square

R Square	Adjusted R Square	Std. Error of the Estimate
.309	.074	0.170

Source: Author's Computation

As shown in table 4.2 above, the value of R-square is 0.309. This statistic explains how much of the variation in the value of the dependent variable (Portfolio Returns) is explained by the regression model. Regressing portfolio returns on asset allocation produces an R-square of 0.309 which indicates the variation in returns can be described by the allocation in the different asset classes.

4.2.3   Correlation Coefficient

Table 4.3 Panel Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CASHF	0.403472	0.263450	1.531493	0.1277
EQUITYQ	0.356432	0.345223	1.032468	0.3035
EQUITYU	0.095001	0.333241	0.285080	0.7760
FINCOME	-0.081339	0.376540	-0.216015	0.8293
FXDEP	0.097313	0.338955	0.287096	0.7744
GOVSEC	0.122738	0.326112	0.376366	0.7072
OFFSHORE	-0.125949	0.388020	-0.324595	0.7459
PROPERTY	0.010379	0.345552	0.030036	0.9761
C	0.081151	0.327224	0.247997	0.8045

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.308642	Mean dependent var	0.208238
Adjusted R-squared	0.073758	S.D. dependent var	0.176850
S.E. of regression	0.170203	Akaike info criterion	-0.486618
Sum squared resid	4.519163	Schwarz criterion	0.374067
Log likelihood	105.0949	F-statistic	1.314017
Durbin-Watson stat	2.418404	Prob(F-statistic)	0.101251

Source: Research Findings

As shown in table 4.4 above, the value of the constant can be determined by studying the results of the coefficients. With the exception of Offshore, Quoted Equities, Unquoted Equities and Cash, all of the predictors are statistically significant.

4.2.4 Panel Unit Root Test Analysis

To determine the extent to which a variable has a non-constant mean that is not changing and constant across time. Helps measure how each asset class contributes to the overall investment returns of the fund. The relative importance of the regressors in the linear regression was estimated using a Panel Unit Root Test. Each of the regressors was paired with the fund returns, Y, for the entire period. The results from the analysis are shown on table 4.5 below.

Table 4.5: Results of Panel Unit Root Test

Variable	Method	Statistic	Prob.*	Result
CASH	PP - Fisher Chi-square	152.587	0.0000	Reject H_0
FINCOME	PP - Fisher Chi-square	206.790	0.0000	Reject H_0
FXDEP	PP - Fisher Chi-square	196.527	0.0000	Reject H_0
EQUITYQ	PP - Fisher Chi-square	227.335	0.0000	Reject H_0
EQUITYU	PP - Fisher Chi-square	129.233	0.0011	Reject H_0
PROPERTY	PP - Fisher Chi-square	147.996	0.0000	Reject H_0
OFFSHORE	PP - Fisher Chi-square	142.533	0.0000	Reject H_0
GOVSEC	PP - Fisher Chi-square	181.335	0.0000	Reject H_0
FUNDR	Hadri Z-stat	55.5668	0.0000**	Reject H_0

The results shown in the Table 4.5 above represent the second stage of the analysis. The purpose of this stage was to determine the extent to which each asset class contributes to the overall investment returns of the fund by estimating the relative importance of the regressors in the linear regression. The Prob*value is 0.000 for all the pairs analyzed and

this proves that the panel data is stationary and therefore can apply classical linear regression model to do the analysis. Also this value is less than 0.05 i.e. 5% significance level.

4.2.5 Panel Data Analysis

The Prob*value is 0.000 for all the pairs analyzed and this proves that the panel data is stationary and therefore can apply classical linear regression model to do the analysis. Also this value is less than 0.05 i.e. 5% significance level. The probabilities for Fisher Tests were computed using asymptotic Chi- Square distribution. All other tests assumed asymptotic normality.

4.3 Interpretation of Findings

From the analysis, the asset class that had the most impact on the performance of the fund was Fixed Income. The asset class had a moderate negative correlation with the overall performance of the funds. This finding was in consonance with the Co-efficient analysis in Table 4.3. The Analysis found that there is a linear relationship between Fund Returns and Fixed Deposits, Government Securities, Quoted Equities and Property Investments. Fixed Income and Offshore Investments had a similar relationship but the strength of the correlation was found to be weak. These findings could be as a result of the borrowings made by the insurance companies, such that while interest rates increased, the benefits of higher returns obtained from investing in interest earning instruments was negated by even higher interest payable on the borrowings.

R-Square (Co-efficient of Determination) was determined to establish how much of the variability of fund returns can be caused or explained by asset allocation over time. The R Square and the Adjusted R Square values which are 7.4% show that the weighted combination of the predictor variables explained approximately 7% of the variance of the fund returns. There is a slight loss in the computation of the Adjusted R Square which is due to the relatively large number of the sample compared to the relatively small set of the predictors. The R Square value also shows that the insurance funds under analysis adopt an active approach to management of the funds. Active management of funds approach is adopted because of the quantitative assets restrictions placed by the Insurance Regulatory Authority and also adopted by their investment policies.

4.4 Discussion

4.4.1 Key results

The findings by Nguthu (2009) showed that 37% of the return difference was explained by the policy differences. However our study shows that 7.4% of the returns are explained by policy adherence, an indication that there are many other factors affecting investment returns of insurance companies in Kenya.

4.4.2 Implication of the policy

This drop could be attributed to increased awareness of the policy holders on the need for management to increase value of their investments. This has increased pressure on the management to actively manage funds to increase fund value. In addition, Insurance Regulatory Authority demands that each insurance fund be managed by a qualified fund manager with aim of maximizing returns hence fund values.

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4.5 Summary

4.5.1 Methodology

To determine the extent to which each asset class contributes to the overall investment returns of the fund the relative importance of the regressors in the linear regression was estimated using a Panel Data Analysis.

4.5.2 Key Results

Each of the regressors was paired with the fund returns, Y, for the entire period. From the study it was found out that there is a linear correlation between fund performance and the returns of the various asset classes with the strongest correlation being between fund performance and returns in Quoted equity and Government securities. Further, the study also showed that 30.8% of the variability among fund performance is due to policy differences of the various funds. The balance of about 69% is due to other factors such as the manager's selection, timing of investments and securities selection within as asset class and whether the manager adopts an active style of management of the insurance fund. This shows that the investment managers of these insurance portfolios under analysis adopt an active approach to management of the funds

4.5.3 Implications

The results found that asset allocation is not significantly impacting on the portfolio returns for all the asset classes considered for the analysis. The investment guidelines as provided for by the Insurance Act Cap 497 need to be to incorporate current aspects of investment need   The act should therefore be revised to reflect current situation.

Another recommendation of the study is to compel all insurance companies hire competent Investment Managers who are licensed by the Capital Markets Authority to actively manage the insurance asset portfolios in order to create value for the policy holders and shareholders.

CHAPTER FIVE

SUMMARY AND CONCLUSIONS

5.1 Introduction

This chapter provides a summary and recommendations of the study. The study intended to address the research question: Is there a relationship between asset allocation and investment returns of insurance companies in Kenya? Secondary quantitative data was collected and analyzed using E-Views in order to satisfy the objectives of the study. Specifically, the following tests were carried out on the data: Correlation, R Square, Coefficients and Paired Sample T-Tests using Panel Data Analysis. The findings of the analysis have been documented and have formed the basis for this chapter. This chapter also presents a summary of the findings, the conclusions that addresses the research question and the recommendations of the study.

5.2 Summary of the Study

The objective of the study was to establish the relationship between asset allocation and investment returns of insurance companies in Kenya. All usable data was analyzed and the respective information was discussed in narrative form and the output of the analysis presented in tables. From the findings of the analysis, there is a linear correlation between fund performance and the returns of the various asset classes. This was demonstrated by the results of Correlation, Coefficient and Panel data analyses. Panel Data Analysis was found to be strongest between fund performance and returns in Cash. Quoted Equity and Government securities.

Further test was performed by analyzing the data using R-Square. The R-Square of the data was found to be 30.8% which indicate that differences in the fund returns were explained by approximately 31% of the investment policy. The remaining 69% was explained by other factors such as assets selection, timing and manager selection. Previous study by Nguthu (2009) found that 37% of the return difference was explained by investment policy differences. The drop of about 9% could be attributed to increased awareness of the need for the management of insurance companies to increase value for their investments. This has increased pressure on the management to actively manage insurance funds to increase the fund value for the benefit of policy holders.

Finally the study, as indicated by the results of the Panel Data Analysis, found out that that investment in cash was relatively more important than investments in fixed deposits in determining the overall performance.

Panel data Statistics reveal that the prob* value is 0.0000 proved that Panel Data is stationary and therefore can apply classical linear regression model could be applied to analyze the returns for period under review.

5.3 Conclusions

The objective of the study was to establish relationship between asset allocation and investment returns of insurance companies in Kenya. From the study, it was found out that there is a linear correlation between performance and the returns of the various asset classes with the strongest correlation being between fund performance and returns in

Quoted equity and Government securities. Further, the study also showed that 30.8% of the variability among fund performance is due to policy differences of the various funds. The balance of about 69% is due to other factors such as the manager's selection, timing of investments and securities selection within as asset class and whether the manager adopts an active style of management of the insurance fund. This shows that the investment managers of these insurance portfolios under analysis adopt an active approach to management of the funds.

It is therefore very important for the management of insurance companies to note that changing the policy of the fund will not change much the variability of returns but this can be reduced by adopting an active management of the fund. From the analysis it also found that investments in cash was relatively more important that investments in fixed deposits in the determining the overall performance of the insurance asset portfolio.

5.4 Recommendations for Policy

The study found that there is need for IRA to relax the quantitative asset restrictions which limits the Insurance Company's Investment Managers' ability to make investment decisions based on the risk-return analysis. Investment managers should be allowed to fully exercise active management of the funds without strictly adhering to the investment guidelines provided by IRA, but only use them as a guide. This is mostly because 69% of investment returns is dependent the manager's selection, timing of investments and securities selection within as asset class and whether the manager adopts an active style of management, only 31% is dependent on the investment policies.

From the findings of the study that cash is key in determining the overall performance, this study therefore also recommends that fund managers should invest a large proportion the funds in cash as it has the most relevance in the determination of fund performance.

The investment guidelines as provided for by the Insurance Act Cap 497 have not been revised since for several years now. Due to this time lapse various aspects that were used in the development of the Act may have changed and may no longer represent the needs of the industry.   The act should therefore be revised to reflect current situation.

Another recommendation of the study is to compel all insurance companies hire competent Investment Managers who are licensed by the Capital Markets Authority to actively manage the insurance asset portfolios in order to create value for the policy holders and shareholders.

5.5 Limitations of the Study

The study was restricted to data of insurance companies as published in their annual report and this may not provide a full proof on assessment of asset allocation. The study relied heavily on secondary data for the analysis. There was time constraint required to investigate all variables and factors relevant to the study. Time required was inadequate to investigate the research problem by performing a comprehensive analysis of the impacts of asset allocation on investment returns of insurance assets in Kenya.

5.6 Suggestions for Further Studies

With the standardization of performance calculation methods and enforcement of declaration and submission of fund returns for all vehicles of retirement savings, similar studies should be extended to include returns for all the schemes in existence in Kenya.

The analytical model used in the data analysis of this study used actual weights of assets which vary significantly from scheme to scheme. Further studies should be carried out replacing actual weights of assets with a departure/deviation from the weights recommended by the insurance act.

A study should be carried out to assess the impact of professional Investment Managers licensed by the CMA on the investment returns of insurance assets in Kenya. Specifically, it should seek to find out if the insurers with licensed fund managers have higher financial returns than those that are yet to hire professional licensed investment managers.

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APPENDICES

APPENDIX I

DATA CAPTURE SHEET

Year

Total Fund	Cash	Quoted Equities	Unquoted Investments	Fixed Income	Fixed Deposit	Government Security	Offshore	Property