Equity Investments and Performance of Unit Trust Funds in Kenya

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ABSTRACT

Unit trust funds strive to record good performance in order to realize their investment objectives. However, not all unit trust funds record good performance. The current study therefore sought to determine the effect of investing in equity on the performance of unit trust funds in Kenya. Fund size had been adopted as a moderator and therefore the study further sought to determine the moderating effect of fund size on the relationship between equity investments and performance of unit trust funds in Kenya. This study adopted a positivism research philosophy and a causal design. Target population was 37 approved unit trust funds in Kenya as at August 2024. The study used secondary data which was collected using a secondary data collection sheet. Data collected was analyzed using Stata version 18.0. Both descriptive and inferential statistics was used in data analysis. Descriptive statistics that were adopted in this study include; mean, standard deviation, minimum and maximum while the inferential statistic tools that were used include both Pearson correlation and panel data analysis. Hausman test was used to determine whether to adopt a fixed effects model or a random effects model. Jacque Bera, Breusch-Pagan, Durbin-Watson tests was used to test normality of residuals, heteroscedasticity and serial correlation respectively. Multicollinearity was tested using variance inflation factor. Stationarity tests were conducted in the study. Findings revealed that investing in equity has a significant positive effect on the performance of unit trust funds with (β= 0.270, $p < 0.05$). Fund size had a significant moderating effect on the relationship between investing in equities and performance of unit trust funds with (β= 0.724, $p<0.05$). The study concluded that investing in equity enhances the performance of unit trust funds in Kenya. Fund size affects the relationship between investing in equities and performance of unit trust funds. The study recommended that the fund managers of unit trust funds should increase the proportion on investment in equity as it has the potential to increase asset return.

Keywords: Equity Investments, Performance, Unit Trust Funds, Kenya

INTRODUCTION

The evaluation of the performance of unit trust funds (UTFs) is as important as the investment structure adopted. How UTFs perform helps to tell whether the UTFs will be agile or not (Malkiel, 2023). Investors prefer investment structures that can easily repay high investment return (Karanja & Karuti, 2017). Unit trust funds performance is the fund overall financial wellbeing during a specified period (Leon, 2021). The measurement and evaluation of returns and the overall success of the UTFs over a specified period is what is known as UTFs performance (Elliott, 2019). UTFs performance evaluation is important as it is able to tell whether investing in equity contributes to UTFs ability to achieve their investment goals or not. The comparison between UTFs

performance against portfolio evaluation benchmarks helps investors to be able to tell whether the investment choices made are effective or not. UTFs performance can be measured using Return on Investment (ROI) (Zabolotnyy & Wasilewski, 2019). Return on Investment is the ratio between net income over a specified period of time and costs of investment that result from an investment of some resources at a specific point in time. A high ROI implies that the performance of the unit trust funds is good (Williams, 2019).

The determinants of UTFs performance include; the kind of investments, investment structure adopted and inconsistent use of investment structure by managers (Kogi, 2019). The focus of this study was investment structure adopted, i.e., investment in equity which was operationalized using the ratio of amount invested in equity to total investments. Worldwide, UTFs adopt various investment structures, for example, in the US, investment funds are invested mainly in common stocks or equities; bond or fixed income funds, which hold bonds and fixed income securities and balanced funds, which hold stocks, bonds and short-term securities (Edlinger, Merli, & Parent, 2021). The income or dividend funds hold preferred and common stocks that generate high dividend income while money market or short-term funds, hold treasury bills, money market securities and other income generating investments which are less than one year in term (Grinblatt & Titman, 2019). In the US, 75% of all the money market funds are held in derivatives of longer-term mortgage-backed securities (MBS) (Gunu & Adamade, 2020). Money market funds usually restrict their holdings to fixed income securities so that to ensure their holdings are redeemed quickly and at a price close to their quoted value (Akinsola, 2021).

In Liberia, asset allocation funds seek high total return by investing in a mix of equities, fixed-income securities and money market instruments (Clark & Rosales, 2020). A total of 53% of the income equity funds seek income by investing primarily in equity securities of companies with good dividends (Gurley & Shaw, 2019). A total of 91% of the growth funds invest primarily in common stocks while aggressive growth funds invest primarily in common stock of small, high growth companies with potential for capital appreciation (Kagoda, 2018). A total of 73% of the balanced funds invest in a specific mix of equity securities and Bonds which if an optimal mix is achieved enhances performance (Wagacha, 2018). Unit trust funds play a critical role in the financial sector in the Kenyan economy. They adopt various investment structures in a bid to increase asset or portfolio returns, achieve investment goals as well as enhance their overall performance. A total of 98% of the investments in UTFs are in equities, bonds and other securities (CMA, 2019). As per the Capital Markets Act, Chapter 485A, the CIS comprises of amongst others; an investment company, a unit trust fund and a mutual fund registered under the laws of Kenya and it collects as well as it pools funds from the public or a section of the public for investment purposes and the funds are managed by fund managers (CMA, 2020). The UTFs are governed by the Capital Markets Authority (CMA) and are regulated under the capital markets collective investments schemes regulation, 2001 (CMA, 2020). Among the investment structures adopted by UTFs in Kenya is investment in equities (Muiruri, 2024). Zimele (2020) opines that in Kenya, there has been a remarkable growth in UTFs but it was happening at a slow pace than expected.

A report by Cytonn investments on UTFs performance in Kenya by 2024 revealed that there are eleven-unit trust funds with an inactive status in Kenya which were; First ethical opportunities fund, Adam unit trust fund, Masaru unit trust fund, Jaza unit trust fund, Dyer and Blair unit trust scheme, Diaspora unit trust scheme, standard investments bank, Genghis specialized fund, Jubilee unit trust, Enwealth capital trust and Amaka unit trust. This had contributed to a reduction in contributions made by UTFs towards GDP (Muiruri, 2024). This inactive status had made the UTFs not to accept new investments but investors who existed were able to sometimes redeem their units (Ombongi, 2023). Leon (2021) posits that investor confidence in unit trust funds was low and most investors were no-longer considering UTFs as a safe haven for investment and therefore there was need for a study to be done on investment in equities and performance of unit trust funds and be able to provide recommendations that would help to not only restore investor confidence but also enhance UTFs performance. Fund size has the ability to affect investment in equities and performance of UTFs, however, little was known about how fund size moderated the relationship between investment in equities and performance of UTFs which this study sought to determine and filled the knowledge gap.

LITERATURE REVIEW

Equity and Performance of Unit Trust Funds

Natarajan et al. (2020), studied the relationship between investing in equity and performance of investment funds in India. The study adopted a descriptive research design while the target population was investment funds listed at the BSE. The study adopted secondary data for 5 years. The panel data was for the period between 2015 and 2019. The data that was gathered from the financial statements of the respective firms were analyzed using descriptive and inferential statistics. Findings show that equity investments have a significant positive effect on performance of investment funds. Unit trust funds were not within the scope of their study, the study was done in a different geographical setting and therefore this study sought to address the problem associated with scarcity of studies on investing in equity and performance of investment funds in a Kenyan context. Their study had been conducted almost three years ago and the landscape has changed. This study sought to address these gaps.

Harelimana (2021), researched the effect of investing in equity on the portfolio performance and risk management of the Rwanda Social Security Board with-in the period 2016 to 2020. Target population and the sample size was 124 and 84 respondents respectively. Primary and secondary data gathered was analyzed using both descriptive as well as inferential statistics. The study results also reveal that investment in equity securities has a significant positive effect on the performance of Rwanda Social Security Board (RSSB). The study had not provided the research philosophy adopted in the study which compromised the authenticity of the findings presented. In order to enhance reliance on the findings by future researchers, research philosophy adopted should be provided. This study provided the research philosophy adopted and therefore addressed the methodological gap. Mohammed (2019) studied the effect of investing in equity on performance of venture capital funds listed at the Nairobi Securities Exchange. A quantitative research design was adopted in the study. The target population was a census of all the 48 listed non-financial firms. Panel data was for the period between 2011 and 2015. It was analyzed using both descriptive statistics and inferential statistics. Findings revealed that equity securities have a positive significant effect on performance of venture capital funds listed at the Nairobi Securities Exchange. Diagnostic tests had not been provided in the study and therefore a methodological gap existed which this study sought to address.

Al-Tally (2019), investigated the effect of investing in equity on performance of hedge funds in Saudi Arabia. The purpose of the study was to determine the effect of equity securities on performance of hedge funds in Saudi Arabia. The study targeted 57 publicly listed companies. The secondary data used was drawn from the respective firms audited annual accounts. The results reveal that equity securities have a positive significant effect on performance of hedge funds. The use of secondary data was not justified and therefore this study sought to justify it and therefore enhanced generalizability of the findings. Akinsola (2021), studied equity securities and financial performance of residential and commercial real estate investments in Nigeria. The purpose of the study was to determine the effect of equity securities on financial performance of residential and commercial real estate investments in Nigeria. The study adopted the descriptive survey research design. The participants were selected purposively and all datasets were adopted. It was then analyzed using descriptive and inferential statistics. Findings show that the former has a positive effect on financial performance. The study had been conducted in a different geographical setting, that is, commercial real estate investments. This study sought to determine if similar findings could be upheld for unit trusts in Kenya. Literature reviewed led to the development of the following hypothesis statement.

H_{01}: Investing in equity has no significant effect on performance of unit trust funds in Kenya

Fund Size and Performance of Unit Trust Funds

Toufaili (2021), studied funds' size and performance of investment funds in Lebanon. An explanatory research design was used and the study targeted all investment funds in Lebanon. The study used all type of datasets. Researcher distributed the survey template to over 200 interviewees within the Banque Libano-Francais network. The respondents were selected by use of simple random sampling technique. The secondary data was drawn from the annual reports of Banque Libano-Francaise. The data collected was then analyzed using descriptive and

inferential statistics. Findings show that the funds' size has a significant positive effect on performance of investment funds in Lebanon. The study had been done in a different geographical setting and hence there was a need for study to be conducted on unit trust funds and find out whether similar results could be upheld.

Ekinci and Poyraz (2019), researched the effect of funds' size on performance of mutual funds in Turkey. The purpose of the study was to determine the effect of funds' size on performance of mutual funds in Turkey. Target population was 125 mutual funds and the panel data was for between 2005 and 2017. The study used secondary data only which was extracted from respective mutual funds annual reports and data collected was analyzed using both descriptive and inferential statistics. The results revealed that funds' size had a significant positive effect on performance of mutual funds in Turkey. Rationale for use of descriptive statistics was not provided and hence a gap in knowledge existed which this study sought to address. Gunu and Adamade (2020), studied the relationship between funds' size and performance of mutual funds in the Nigerian Stock Exchange in Nigeria. Panel data for the study was drawn from all quoted mutual funds in the Nigerian Stock Exchange Market. Target population was 119 mutual funds listed on Nigerian Stock Exchange. The sample size was 30 mutual funds and the study period was 5 years. The study used secondary data which was analyzed using both descriptive and inferential statistics. The findings revealed that an inverse relationship exist between fund size and performance of mutual funds listed in the Nigerian Stock Exchange. Unit trust funds were not within the scope of their study and therefore there was the need for a study to be conducted on the subject matter and hence enhanced the existing body of knowledge on the subject matter. Literature reviewed led to the development of the following hypothesis statement.

H_{02}: Fund size has no significant moderating effect on the relationship between investing in equity and performance of unit trust funds in Kenya

RESEARCH METHODOLOGY

The study adopted a positivism research philosophy and a causal design which is a type of a design adopted when data to be collected is quantitative in nature and when the intention of the study is to explain the cause-and-effect relationship that exists between variables after occurrence of an action or event (Hennick et al., 2020). Target population was 37 approved unit trust funds in Kenya as at august 2024 (CMA, 2024). The study was a census of the 37 approved unit trust funds in Kenya. The sampling frame was 37 approved unit trust funds in Kenya. This study used secondary data for period the 2015 to 2024 which was collected using a secondary data collection sheet. The data was collected from the audited quarterly and annual reports of the respective unit trust funds. The data collected was analyzed using STATA version 18.0 statistical software. The study adopted both descriptive and inferential statistics which included; mean, standard deviation, minimum and maximum, pearson product moment correlation and panel regression analysis. A 0.05 significance level was adopted and the data was presented using frequency tables and charts. The panel regression models used to test the research hypotheses at 5% level of significance were as follows;

Model 1 $Y_{it} = \beta_0 + \beta_1 X_{1it} + \varepsilon_{it}$ .....**Equation 1**

Model 2 $Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 z_{it} + \beta_3(X_{it} * z_{it}) + \alpha_i + \varepsilon_{it}$ .....**Equation 2**

Where;

Y_{it} represents the dependent variable performance (Return of Investment) in time i and cross sectional (t) dimensions

β_0 represents the y intercept (constant)

X_{1it} represents investing in equity

β_1, β_2 main effects of the variables

β_3 the moderation coefficient (if significant, moderation exists)

z_{it} represents fund size

$X_{it} * z_{it}$ is the interaction term (moderation effect)

α_i entity- specific fixed effects (unobserved heterogeneity)

$_{it}$ represents the idiosyncratic error term

t represents time

i represents the number of unit trust funds

Assumptions of panel regression tested in the study were normality, multicollinearity, serial correlation, heteroscedasticity, random or fixed effects and stationarity tests. Normality of residuals was tested in this study because it affects validity of the model selection criteria, for example, R-squared and adjusted R-squared amongst others. In this study, normality of residuals was tested using Jacque Bera test (JB) and if $p>0.05$, it implied that the assumption was upheld. Heteroskedasticity was tested using Breusch-Pagan test. The null hypothesis was that residuals are homoscedastic. If $p<0.05$, the H_0 was rejected and hence heteroskedasticity existed. Serial correlation was tested using the Durbin-Watson Test. The H_0 was that there is no serial correlation. If the d-statistic was more than 0.05, the study failed to reject the null hypothesis and concluded that no autocorrelation existed among the errors. Multicollinearity was tested using VIF and if VIF>10, it implied existence of serious multicollinearity problem (s). The hausman test was done to ascertain whether the preferred model was random effects model or fixed effects model. Hypotheses were as follows; H_0: The chosen model was random effects while Ha: The chosen model was fixed effects. H_0 was to be rejected if the p-value was less than 0.05. Stationary test was conducted to test if the time series has a stationarity property which implies that with time, error means, variances and moments do not change (Mishra & Alok, 2022). Levin-Lin-Chu test was used to test for stationarity in a time series. The null hypothesis was as follows; H_0: Panels has Unit Roots, H_a: Panels are stationary/ has no unit root. The null hypothesis was to be rejected if $p< 0.05$.

RESULTS & DISCUSSION

Descriptive statistics

Descriptive statistics are used to summarize and organize key characteristics of a dataset by use of numerical measures without inferring beyond the data. Descriptive statistics were applied in this study to summarize study variables and the overall research findings. Descriptive statistics often acts as a foundation for a more advanced inferential analysis. The descriptive statistics that were adopted in this study were mean, standard deviation, minimum and maximum. The descriptive statistics were used to describe investment in equity and performance (ROI) of unit trust funds in Kenya. The results were presented in Table 1.

Table 1: Descriptive Statistics Results

Variables	Obs.	Mean	Std Dev	Min	Max
Equity	252	1.48	1.25	0.09	4.77
Fund size	252	3.11	0.63	1.37	4.25
Performance (ROI)	252	3.85	1.30	-3.56	1.09

In Table 1, results revealed that the average investment in equity was 1.48 with a standard deviation of 1.25. This implies that the average investment in equity by UTFs was kshs. 1.48 billion, however, there was a variation in the amount invested in equity among all the UTFs to a magnitude of 1.25. On the same note, the minimum range of investing in equity was 0.09 with the maximum of 4.77. This implies that the minimum amount of funds invested by UTFs in Kenya was kshs. 0.09 billion while the maximum amount of funds that UTFs had invested in equity during the study period was Kshs. 4.77 billion. The study is in agreement with that of Harelimana (2021) that majority of the UTFs invest in equity. Fund size had a mean of 3.11 and a standard deviation of

0.63. This implied that the average total assets of UTFs during the study period was kshs. 3.11 billion, however, the fund size varied across UTFs as shown by a standard deviation of 0.63. The maximum total assets for UTFs for the period 2015 to 2023 was kshs. 4.25 billion while the minimum total assets were Kshs. 1.37 billion. This signified that UTFs fund size fluctuates across UTFs. Our data confirm the earlier results of Toufaili (2021) that fund size is different across UTFs. The study also sought to check on the descriptive results for the dependent variable, performance of unit trust funds. The study results revealed a mean of 3.85 and a standard deviation of 1.30. This implies that the average performance of UTFs during the study period was kshs. 3.85 million, however, there was a variation in performance that was recorded during the study period across UTFs in Kenya to a magnitude of 1.30. The study results further revealed that the minimum performance among UTFs was -3.56 million shillings which was a loss while the maximum was kshs. 1.09 billion. This implies that unit trust funds recorded negative ROI of kshs. 3.56 million during the study period, however, the maximum ROI during the study period was kshs. 1.09 billion. This research supports the widely held view by Obong'o et al. (2020) that return on investment varies across UTFs. In a nutshell, the study showed varied results in terms of the variables that were studied. The lower standard deviations of the study as compared to means showed that during the study period, there wasn't so much variability in the investment structure in the various unit trusts funds. By the minimum and maximum ranges however, there was a great variability as can be sighted in all the variables.

Trend Analysis

Trend analysis was adopted in this study to show patterns and trends among the study variables. The study had sought to determine the trend on investment in equity by UTFs in Kenya for the period between 2015 and 2023. The results were presented in Figure 1.

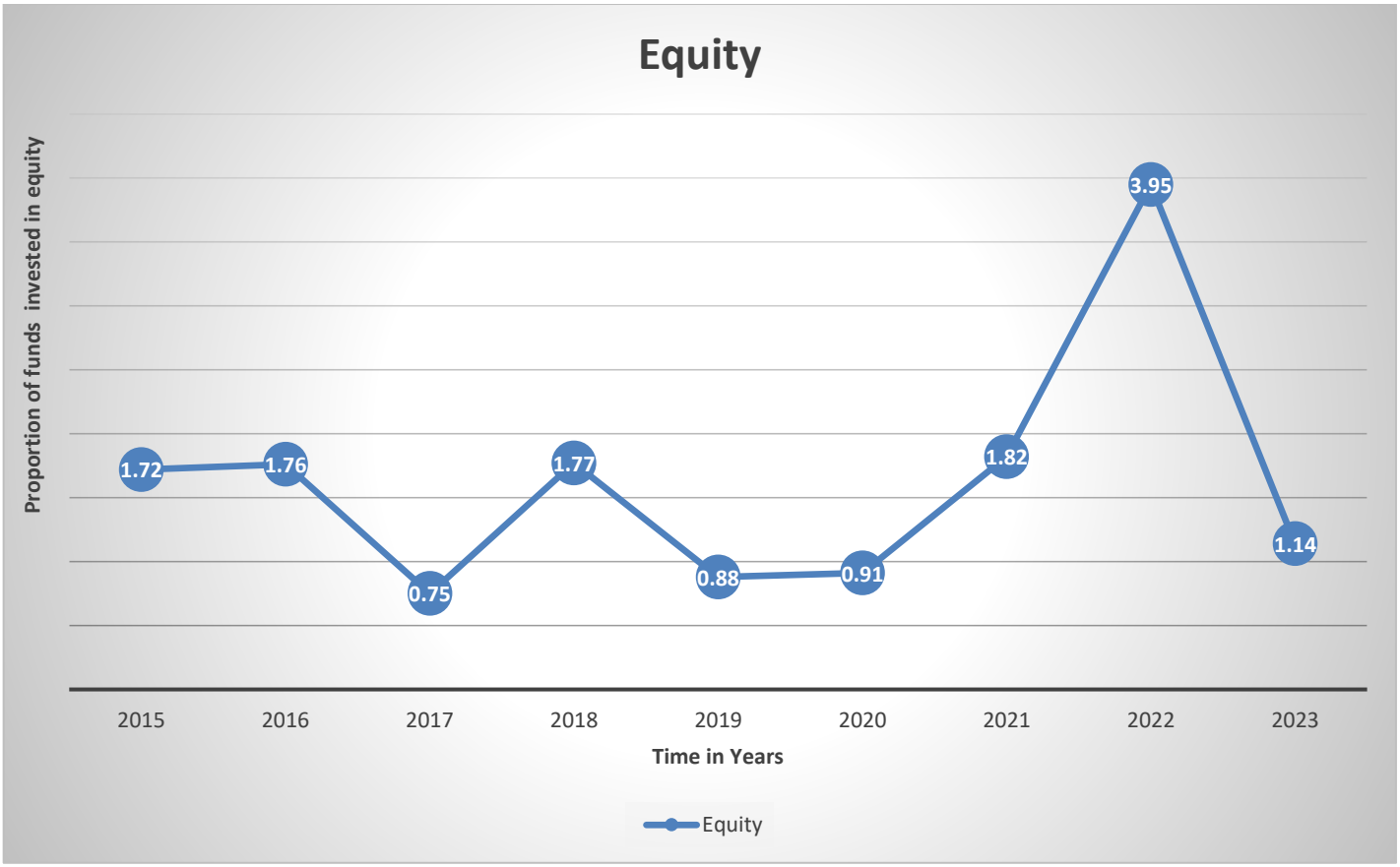

Figure 1: Trend curve for investment in equities (2015-2023)

The trend curve in Figure 1 shows that UTFs invested in equity and the amount invested in equity kept on varying among UTFs in Kenya between 2015 and 2023. An upward trend and downward trend were recorded for the amount invested in equity as displayed in Figure 1. Trend curve of fund size of the unit trust funds was presented in Figure 2;

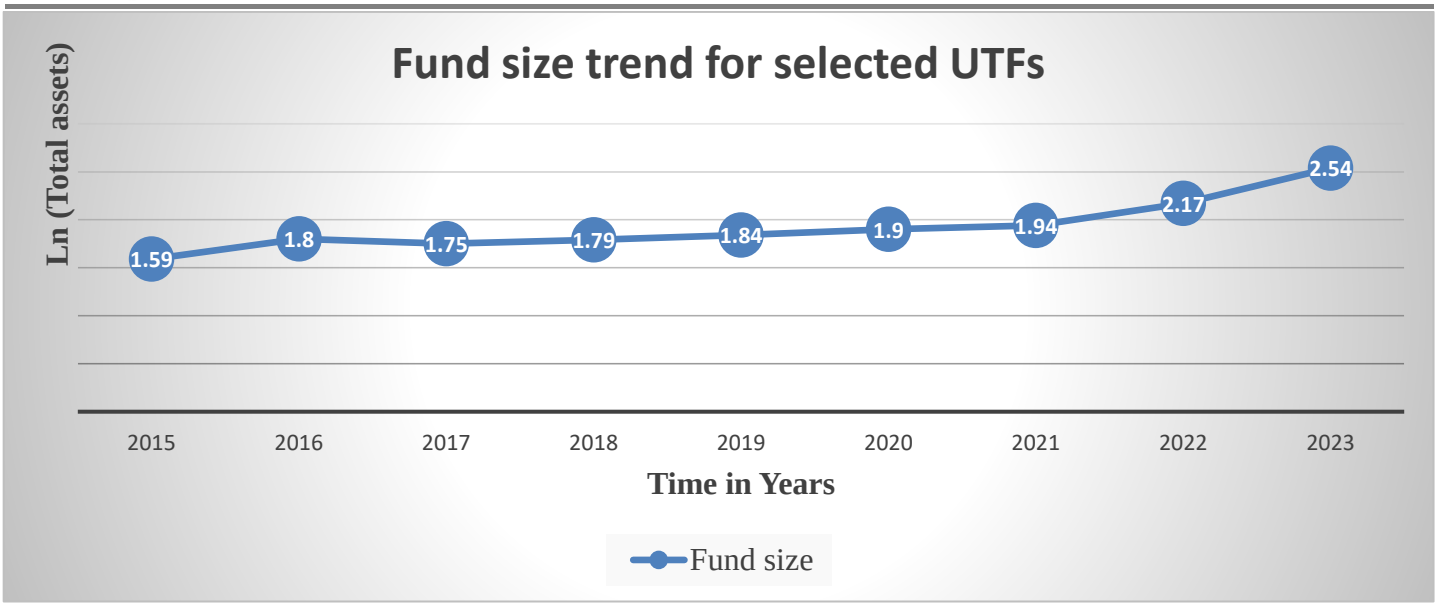

Figure 2: Fund Size Trend for selected Unit Trust Funds

As displayed in the trend curve in Figure 2, there was a positive growth trend for the period between 2015 and 2023. This implied that UTFs in Kenya had made efforts to grow their total assets. The increase in fund size from 2015 to 2016 was as a consequence of strong performance of a funds holding that led to high returns. The increase in fund size between 2016 and 2017 was due to high income that was generated from dividends and interest on the assets of the fund that added to the funds overall size. The increase in fund size between 2017 and 2018 was attributed to more capital from investors which led to growth in the funds' assets under management. The increase in fund size between 2018 and 2019 was due to a good track record from fund managers which had attracted more investors to their subsequent funds which led to a continuous increase in fund sizes. The increase in fund size between 2019 and 2020 was ascribed to positive economic factors and market conditions which created favorable investment environment associated with increase in investor confidence and capital inflows. Funds size kept on increasing between 2021 and 2023 ascribable to increase in the fund's Net Asset Value. The trend curve of the performance of UTFs (ROI) in Kenya was presented in Figure 3.

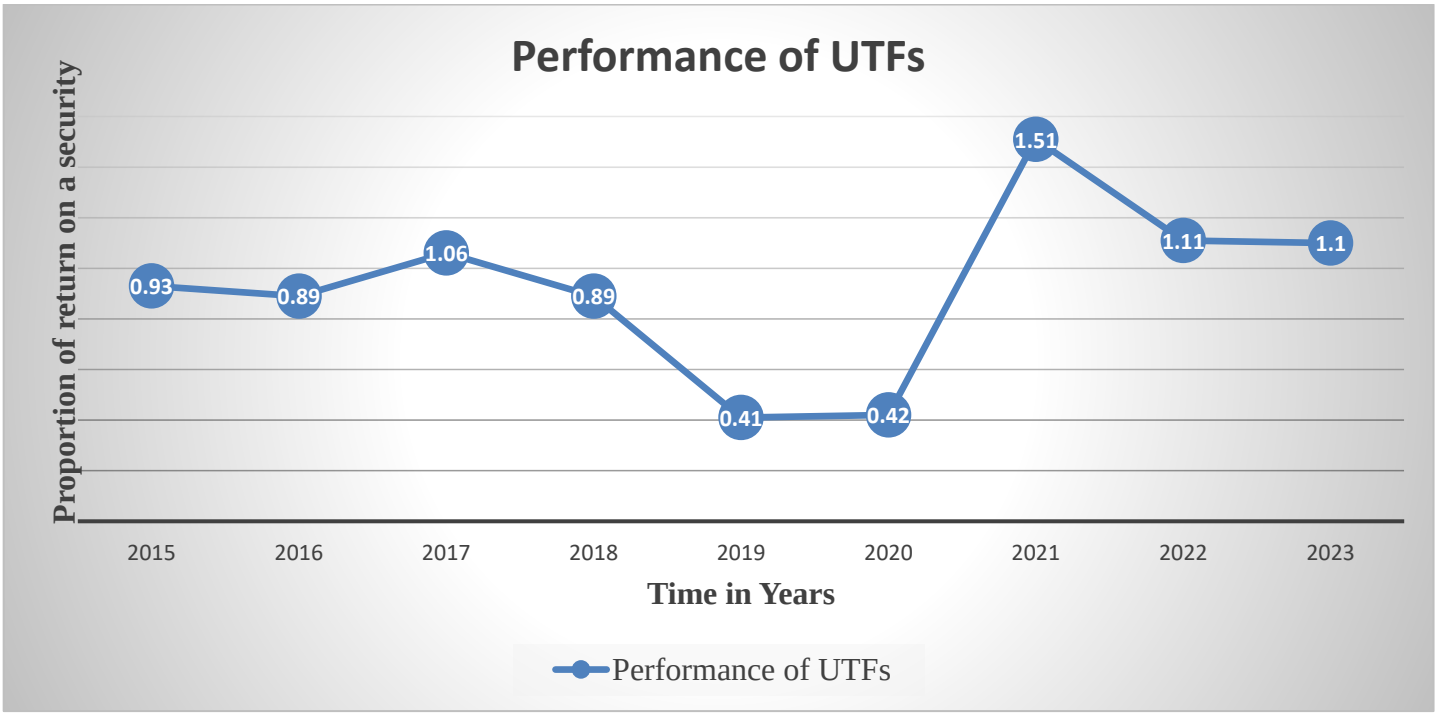

Figure 3: Trend curve for performance of selected UTFs between 2015 and 2023

In the above trend curve, the performance of UTFs depicted a negative trend between 2015 and 2016 as a consequence of volatility and economic downtowns. The performance of UTFs increased between 2016 and 2017 assignable to growth in assets. It decreased between 2017 and 2020 ascribable to high fees and charges and behavioral biases associated with poor management decisions. It increased between 2020 and 2021 due to effective asset allocation and selection and good diversification that reduced risk. A decrease in performance was recorded between 2021 and 2023 by reasons of high inflation that erodes returns and insufficient fund liquidity that limits opportunities and adaptability.

Diagnostic Tests

Normality of Residuals Results

One of the important regression assumptions is normality. It is good in any research to test whether the residuals followed a normal distribution. In practice, skewness and kurtosis are used to measure the distribution of a sample. As we know that the mean and variance of a sample are first and second moment respectively. The third moment is the skewness and the fourth moment is kurtosis. All these are from the sample estimates. Zero skewness and kurtosis of 3 implies data has symmetric distribution. Normality of residuals was tested using Jacque-Bera test (JB). Where $p > 0.05$, the assumption of normality would be upheld. Table 2 displayed the Jacque-Bera normality test results for all the variables under the study. The results indicated that all the p values for all the variables were greater than 0.05 for both skewness and kurtosis. These results therefore confirmed that the data was normally distributed.

Table 2: Jacque-Bera Normality Test Results

Variable	**Obs**	**Pr (Skewness)**	**Pr (Kurtosis)**	**Adj chi^2(2)**	**Prob>chi^2**
Investing in equity	252	0.2897	0.5648	71.28	0.0845
Fund size	252	0.3667	0.6134	12.64	0.9018
Performance of UTFs	252	0.2741	0.7101	.	0.3256

Serial Correlation Test Results

In statistics, auto-correlation or serial correlation is the relationship between variables that is independent variable and a lagged version of itself over various time intervals. Repeating patterns often show serial correlation when the level of a variable affects its future level (Durbin & Watson, 1951). It is the correlation of a variable with itself over successive observations (Montgomery et al., 2021). This was tested using the Durbin-Watson Test. The null hypothesis, H_0, was that there is no serial correlation. If the d-statistic is more than 1.5 but less 2.5, the study failed to reject the null hypothesis and concluded that no autocorrelation existed among the errors.

Table 3: Serial correlation Test Results

Source	**SS**	**Df**	**MS**	**Number of obs**	**252**
Model	3.855	1	9.637	F (4, 247)	0.57
Residual	3.725	250	0.017	Prob > F	0.6872
Total	**7.6**	**251**	**1.688**	R-squared	0.0102
				Adj R-squared	-0.0078
				Root MSE	1.309
				Durbin Watson	1.803
Performance of UTFs		**Coef.**	**Std. Err.**	**t**	**P>|t|**
Investing in equity		8.048	8.158	0.99	0.325
Cons		-9.878	9.338	-0.35	0.291

From the results in Table 3, the value for Durbin-Watson was 1.803. This value was *1.5< d=1.803<*2.5 confirming that investing in fixed deposits had no serial correlation amongst each other. Therefore, the variables

were suitable for the study. Breusch-Pagan-Godfrey test is a Chi-Squared test statistic distributed with k degrees of freedom was used test for heteroscedasticity. The null hypothesis was that residuals are homoscedastic. If $p < 0.05$, the H_0 was rejected and hence heteroscedasticity existed. Breusch-Pagan-Godfrey test results were presented in Table 4;

Table 4: Breusch-Pagan-Godfrey Test Results

Source	**SS**	**Df**	**MS**	**Number of obs**	**252**
Model	3.855	1	9.637	F (1, 250)	0.57
Residual	3.725	250	0.017	Prob > F	0.6872
Total	**7.6**	**251**	**1.688**	R-squared	0.0102
				Adj R-squared	-0.0078
				Root MSE	1.309
				$chi^2(4)$	71.93
				Prob > chi^2	0.0000
Performance of UTFs		**Coef.**	**Std. Err.**	**t**	**P>|t|**
Investing in equities		8.048	8.158	0.99	0.325
Cons		-9.878	9.338	-0.35	0.291

Table 5 shows that there was a chi^2 statistic of 71.93 with 4 degrees of freedom at the probability greater than chi^2 of 0.0000. This p value was less than 0.05 at 95% level of confidence ruling out presence of homoscedasticity. The results therefore failed to reject the null hypothesis implying that there was heterogeneity of variance across the panels. Multicollinearity was tested so as to determine whether the independent variables are highly linearly correlated. This was important because highly collinear independent variables result into estimators that are not best linear unbiased estimators (BLUE). Multicollinearity was tested using VIF and if VIF>10, it implied existence of serious multicollinearity problems. Findings were presented in Table 5.

Table 5: Multi-collinearity Test Results

Variable	Tolerance	VIF
Investing in equities	0.721	1.387
Fund size	0.521	1.919

In Table 5, all the VIF values lied below 10 which implied that there were no multicollinearity problems detected among the variables.

Random and Fixed Effects Tests

Hausman test conducted to aid in the selection of either fixed or random effects model. In the hausman test, H_0: stated that random effect was the best model while H_a: stated that fixed effect was the best model. The decision was further to be made based on the p-value, if the p-value exceeded 0.05, it meant that random effect was the preferred model and if otherwise, fixed effect model. However, before hausman test was ran, both fixed and random effects were tested and results presented below. Fixed effects results were presented in Table 6.

Table 6: Fixed Effects Test Results

Fixed-effects (within) regression			Number of obs	252
Group variable: unit trust funds			Number of groups	28
			Obs per group:	
R-sq:			Min	9
Within	0.0220		Avg	9.0
Between	0.0063		Max	9
overall	0.0004		F (1,251)	0.86

Corr (μ_i, Xb)	-0.2132			Prob > F	0.5083
Performance of UTFs		**Coef.**	**Std. Err.**	**Z**	**P>|t|**
Investing in equities		8.51e+07	8.51e+08	0.07	0.810
Fund size		-4.52e+07	5.55e+08	-0.08	0.935
Cons		-3.04e+08	1.77e+09	-0.17	0.863
sigma_ μ		9.603e+08			
sigma_e		9.870e+08			
Rho		.48633019	(Fraction of variance due to μ_i)		

F test that all μ_i = 0: F (27, 224) = 7.61 Prob > F = 0.0000

The null hypothesis, H_0 stated that random effect was the best model while, alternative hypothesis, H_a stated that fixed effect was the best model. In Table 6, p-value exceeded 0.05, which implied that the null hypothesis(H_0) was accepted that the preferred model was random effects. Table 7, presented the random effects test results.

Table 7: Random Effects Test Results

Random-effects GLS regression				Number of obs	252
Group variable: unit trust funds				Number of groups	28
				Obs per group:	
R-sq:				Min	9
Within	0.0198			Avg	9.0
Between Overall	0.0557 0.0374			Max Wald $chi^2(5)$	9 5.29
Corr (μ_i, X)	0 (assumed)			Prob > chi^2	0.3821
Performance of UTFs		**Coef.**	**Std. Err.**	**Z**	**P>|t|**
Investing in equity		2.02e+07	6.21e+07	0.33	0.749
Fund size		2.68e+08	2.10e+08	1.28	0.202
Cons		-1.21e+09	1.11e+09	-1.09	0.274
sigma_ μ		9.197e+08			
sigma_e		9.870e+08			
Rho		.46479343	(Fraction of variance due to μ_i)		

The null hypothesis (H_0) stated that the preferred model was random effects while the alternative hypothesis (H_a) stated that the preferred model was fixed effects. The null hypothesis was to be rejected if the p-value did not exceed 0.05. Table 8, shows that the p-value exceeded 0.05 which meant that H_0 was accepted, that the preferred model was random effects. Hausman test was conducted to determine whether to use Fixed Effects (FE) or Random Effects (RE) model. Hausman test results were presented in Table 8.

Table 8: Hausman Test Results

	---- Coefficients ----			
	(b)	**(B)**	**(b-B)**	**Sqrt (diag (V_b-V_B))**
	Fe	**Re**	**Difference**	**S.E.**
Investing in equity	8.61e+07	3.11e+08	-1.42e+08	3.49e+08
Fund size	-4.83e+07	2.61e+08	-3.57e+08	5.55e+08

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under H_0; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi^2 (5) = (b-B)'[(V_b-V_B) ^ (-1)] (b-B)

= 0.95

Prob > chi^2 = 0.9511

The value for chi-square statistic was 0.95 and its probability was 0.9511 which exceeded 0.05. The null hypothesis was accepted which meant that random effects regression model was appropriate for this study. This study therefore adopted the random effects model.

Stationarity Test Results

The Levin and Lin (1992, 1993) test treats panel data as being composed of homogeneous cross-sections, thus performing a test on a pooled data series. The data was analyzed on the STATA software with command xtuniroot with a demean option. This option removes cross-sectional means from the series to mitigate the effects of cross-sectional correlation. Levin-Lin-Chu requires that the number of panels in relation to time periods is asymptotically becoming zero. At critical value of -1.9470, all the variables test statistics are less than the critical value and also the p-values are less than the p at level of significance of 0.05. Thus, the data met the stationarity test as tested by Levin-Lin-Chu. This test was an improvement of Augmented Dickey Fuller test which is a conventional method of time series unit root test. It uses an inverse normal z-statistic from Augmented Dickey Fuller with two lags and assumes the data follows asymptotic normality. Its null hypothesis was that the panel has unit root. When the probabilities are less than 0.05 critical value, this hypothesis was rejected. The results were displayed in Table 9.

Table 9: Stationarity Test Results

Variable	Panels	Periods	Test Statistic	P-value
Investing in equity	28	9	-15.2765	0.0000
Performance of UTFs	28	9	-11.8400	0.0000

Note: Levin-Lin-Chu Null Hypothesis: Unit root. The test refers to inverse normal Z-statistic from the Augmented Dickey Fuller (ADF) unit root test with two lags, individual specific means, a linear time trend, and demeaned series. It assumes asymptotic normality. The null hypothesis was as follows; H_0: Panels has Unit Roots H_a: Panels are stationary/ has no unit root. The null hypothesis was rejected if $p< 0.05$. In this study, the study concluded that panels were stationary.

Correlation analysis

Correlation analysis was used to depict the nature, direction and strength of the relationship between investment in equity and performance of UTFs. The strength and direction of the relationship is usually shown by a correlation coefficient of between -1 and +1. The results were presented in Table 10.

Table 10: Correlation Matrix

		Performance of UTFs	Equity
Performance of UTFs	Pearson Correlation		
	Sig. (2-tailed)	1	
Equity	Pearson Correlation	.665*	
	Sig. (2-tailed)	.000	1

*. Correlation is significant at the 0.05 level (2-tailed).

Table 10 shows that investing in equity has a strong positive association with performance of UTFs in Kenya as substantiated by a correlation coefficient, r=0.665 and p=0.000. This correlation was significant at 5%

significance level. This implies that increase in the amount invested in equity contributes to improvement in the performance of UTFs in Kenya by 0.665. The study by Harelimana (2021) also established that investment in equity improves the performance of UTFs. This is associated with shareholders being in a position to benefit from the earnings of the UFTs and capital appreciation. With the investment in equity, equity shareholders vote for the directors of UTFs which has the potential to enhance adoption of good management practices that lead to profits that are high (Natarajan et al., 2020). Akinsola (2021) argues that sometimes equity investments face volatility which is a risk associated with prices of equity fluctuating which makes investors to lose money. In the study by Natarajan et al. (2020), it was established that equity investments do not always lead to better performance due to limited liability. This is because sometimes it may not be easy to sell equity shares and hence access of funds might be difficult. Mohammed (2019) stated that equity investments face risk of loss if UTFs fail to make profit and therefore shareholders might not earn any dividends.

Regression Model

In order to test the effect of investing in equity on performance of UTFs, a panel regression model was run and results were presented in Table 11. Panel regression analysis is a method in statistics that is used for data analysis that is used to track the same entities over multiple time periods, combining both cross-sectional and time-series data. Its adoption in this study is because it accounts for unobserved, time invariant and entity specific heterogeneity. It also provides more accurate, high quality and results that are robust compared to standard OLS regression.

Table 11: Investing in Equity and Performance of Unit Trust Funds

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		β	**Std. Error**	**Beta**		
1	(Constant)	11.964	0.567		19.099	.000
	Investing in Equity	0.270	0.038	0.294	7.609	.000
Panel Regression Model Summary Statistics						
	R	0.573				
	R-squared	0.324				
	Adjusted R-squared	0.321				
	Std. Error of the Estimate	3.62458				
Model Fitness Test Results (ANOVA)						
	F statistic	17.972				
	Prob (F statistic)	0.000				

a. Dependent Variable: Performance

Table 11 shows that investing in equity has a positive and significant effect on performance of unit trust funds in Kenya (β_1=0.270, $p<0.05$). Null hypothesis was rejected and the alternative hypothesis (Ha_1) that investing in equity has a significant effect on performance of unit trust funds in Kenya was accepted. The findings further imply that unit trust funds in Kenya cannot rely entirely on investing in equity for enhancement of their performance since it is not enough to improve performance. Therefore, they require other investment structures to support performance improvement. Findings also showed the importance of investing in equity as an investment structure to improve the performance of UTFs, i.e., Return on Investment. Findings were in-tandem with the market timing theory which states that firms time their equity issues whereby they issue new stock when the stock price is perceived to be overvalued all with the intention to improve performance (investment returns) (Baker & Wurgler, 2002). The study was in agreement with that of Harelimana (2021) that UTFs invest in equity; however, the amount invested in equity varied from one UTF to another. The study further agreed with that of Al-Tally (2019) that the amount of funds invested in equity has a significant effect on performance of UTFs. Findings were in agreement with that of Akinsola (2021) that besides UTFs investment in equity, they also invested in other investment structures with the intention to improve performance.

As per the findings of the study, the panel regression model was as follows;

$Y = 11.964 + 0.270 X_1$……...……..Equation 3

The study recorded a constant of 11.964 which implies that at zero investment in equity, the performance of UTFs was 11.964 units.

Moderated Panel Regression

Moderated panel regression model was as follows; $Y_{it} = \beta_0 + [\beta_1 X_{1it}]z + \varepsilon_{it}$. When β_1 was significant it indicated moderation. The moderated panel regression results were presented in Table 12.

Table 12: Moderated Panel Regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		β	**Std. Error**	**Beta**		
1	(Constant)	14.208	0.531		17.500	.003
	Investing in Equity*Z	0.724	0.073	0.733	2.480	.000
Panel Regression Model Summary Statistics						
	R-squared	0.753				
	Adjusted R-squared	0.721				
Model Fitness Test Results (ANOVA)						
	F statistic	13.023				
	Prob (F statistic)	0.000[b]				

a. Dependent Variable: Performance of UTFs

Table 12 shows a positive and significant moderating effect of fund size on the relationship between investing in equity and performance of unit trust funds (β_1=0.724, $p<0.05$). The results further implied that fund size strengthens the association between investing in equity and performance of unit trust funds. The null hypothesis ($H_0$2) that stated that fund size has no significant moderating effect on the relationship between investing in equity and performance of unit trust funds in Kenya was rejected. This meant that fund size has a significant moderating effect on the relationship between investing in equity and performance of unit trust funds in Kenya.

The panel data model after moderation was as follows;

$Y = 14.208 + 0.724 X_1 * Z$ ……...…..Equation 4

Where;

Y is the performance of UTFs

X_1*Z is the proportion of investing in equities*fund size

CONCLUSION & RECOMMENDATIONS

The study concluded that investment in equity improves the performance of unit trust funds. All unit trust funds invest in equity, however the amount that unit trust funds invest in equity differs from one unit trust fund to another. Unit trust funds that keep on increasing their proportion of investment in equity record an improvement in investment returns. Investing in equity by unit trust funds is not entirely enough for earning high investment returns. Unit trust funds require other investment structures to support performance improvement. Unit trust funds can therefore rely on the benefits of investing in equity for performance improvement. Fund size has a positive significant moderating effect on the relationship between investing in equities and performance of unit

trust funds. The study recommended that the fund managers of unit trust funds should increase the proportion on investment in equity as it improves investment returns. Other investment structures should be adopted as well, as it helps to further improve the performance of unit trust funds. Unit trust funds should continue to rely on the benefits of investing in equity to improve on investment returns. The Capital Market Authority should enhance regulations on how to optimize management fees and other associated costs should be reviewed from time to time. This will help to ensure the costs remain competitive while being able to meet all the operational costs. Regulations by Capital Market Authority should allow non-financial institutions to participate as trustees and be able to seize conflicts of interests in governance of capital markets. In such scenarios, when trustees of unit trust schemes are confined to banks, it limits options when considering the direct competition that exists between the banking industry and capital markets.

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