



REVIEW ARTICLE

EFFECT OF MACROECONOMIC FACTORS ON ASSET ALLOCATION DECISIONS OF MUTUAL FUNDS IN KENYA

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ABSTRACT

The study sought to determine the effect of macroeconomic factors on asset allocation decisions of mutual funds in Kenya. The study employed correlation and regression analysis to establish the relationship between the variables. The findings revealed that macroeconomic factors significantly affect asset allocation decisions. The regression model had an R Square of 0.903, indicating that 90.3% of the variation in asset allocation decisions is explained by the macroeconomic factors included in the model. The interest rate had a significant negative effect on asset allocation decisions ($\beta = -0.640$, $p = 0.000$), while the exchange rate had a significant positive effect ($\beta = 0.533$, $p = 0.000$). Inflation had a weaker but still significant negative impact ($\beta = -0.120$, $p = 0.041$), and unemployment showed no significant effect ($\beta = 0.000$, $p = 0.996$). These results suggest that interest rates and exchange rates are the most influential factors in determining how mutual funds allocate their assets, while inflation has a smaller effect, and unemployment has no notable effect. The study concluded that mutual funds in Kenya respond strongly to changes in interest and exchange rates, adjusting their asset allocation strategies to reflect prevailing macroeconomic conditions. The findings highlight the need for policymakers to stabilize interest rates and ensure a favorable foreign exchange environment to support diversified asset allocations by mutual funds. Fund managers should also closely monitor these variables to optimize their portfolio strategies. Recommendations include maintaining stable interest rates to support portfolio diversification and encouraging mutual funds to adopt foreign exchange risk management strategies. Suggestions for further research include expanding the range of macroeconomic factors considered, conducting comparative studies across different countries, and incorporating qualitative methods to capture the decision-making processes of fund managers.

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INTRODUCTION

Macroeconomic indicators such as economic growth, inflation rates, interest rates, and exchange rates are known to significantly impact investment strategies. The expected relationship between these macroeconomic factors and asset allocation decisions is multifaceted. For instance, during periods of economic expansion, mutual funds might allocate more capital towards equities to capitalize on potential growth opportunities (Alfiana *et al.*, 2024). Conversely, Wu and Wang (2024) during economic downturns or periods of heightened uncertainty, funds may favor safer assets such as bonds or cash equivalents to mitigate risks. Additionally, regulatory policies, market conditions, and investor sentiments further shape how these macroeconomic variables influence asset allocation decisions within the mutual fund industry (Bessler *et al.*, 2021).

Kamau (2022) define macroeconomic factors as the determinant variables which influence countries economic position regionally and globally. Murithi (2021) defines macroeconomic factors as the broad, overarching variables that influence the performance and behavior of an economy as a whole. These factors encompass a wide range of economic indicators and conditions that affect aggregate economic activity, including economic growth, inflation rates, unemployment levels, interest rates, exchange rates, government fiscal policies, and overall market liquidity. Macroeconomic factors are often interrelated and can have significant impacts on various aspects of the economy, including consumption, investment, savings, production, and international trade (Lemi *et al.*, 2020). The measurement of macroeconomic factors varies depending on the exact variable in question. Exchange rate measures the strength in a country's currency and is usually given by the rate of the home country to a given foreign currency (Dao *et al.*, 2022). Average lending rate is usually used as a measure of interest rates (Mbowe *et al.*, 2020).

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Inflation is usually measured using either the Consumer Price Index (CPI) or the inflation rate (Hałka&Leszczyńska-Paczesna, 2023). The most used indicator of unemployment is the unemployment rate and is significant for the entire system of national accounting. This study focused on interest rates measured as the average lending rate, exchange rate measured as the rate between Kenya shillings and United States dollar, inflation measured by inflation rate, and unemployment measured using quarterly unemployment rate. These macroeconomic factors were selected due to their well-established significance in influencing investment decisions, and their comprehensive coverage in economic literature and data sources (Sutiene *et al.*, 2024). *Asset allocation* decisions refer to the strategic distribution of an investment portfolio across various asset classes, such as stocks, bonds, real estate, and cash equivalents, with the aim of optimizing returns while managing risks. These decisions are crucial for achieving investment objectives and balancing risk and return according to investors' preferences, time horizons, and risk tolerances (Kanaparthi, 2024). According to Xu and Ye (2023) *asset allocation* strategies may vary depending on factors such as market conditions, economic outlook, regulatory environment, and investor sentiment. Additionally, Kabiri *et al* (2023) claim *asset allocation* decisions may also involve considerations of diversification, liquidity, and the correlation between different asset classes to achieve a well-balanced and resilient portfolio. *Asset allocation* decisions in mutual funds can be measured through various methods, each offering different insights into how investments are distributed across asset classes. One common approach is the mean-variance optimization, which focuses on balancing the trade-off between risk and return by analyzing the expected return and volatility of each asset class (Kanaparthi, 2024). Another method is the Sharpe Ratio, which evaluates the performance of an investment compared to a risk-free asset after adjusting for its risk (LeeKaivo-oja *et al.*, 2023). Despite the availability of these methods, this study employed the Herfindahl-Hirschman Index (HHI) due to its ability to quantify the degree of concentration or diversification in a straightforward manner. The HHI's adaptability to various economic contexts and its relevance in evaluating market concentration made it particularly suitable for assessing *asset allocation* decisions in mutual funds, where understanding the level of diversification in response to macroeconomic factors was crucial (Shen *et al.*, 2021).

RESEARCH PROBLEM: Changes in macroeconomic variables such as unemployment, inflation rates, interest rates, and exchange rates can significantly impact investment opportunities and risks across different asset classes (Alfiana *et al.*, 2024). For instance, during periods of economic expansion, mutual funds may allocate more capital towards equities to capitalize on potential growth opportunities, driven by optimistic economic outlooks and rising corporate profits. Conversely, Wu and Wang (2024) claim during economic downturns or periods of heightened uncertainty, funds may shift towards safer assets such as bonds or cash equivalents to mitigate risks and preserve capital. However, the efficacy of macroeconomic factors in guiding *asset allocation* decisions may vary depending on the level of market efficiency, investor sentiment, and the transmission mechanism of macroeconomic policies (Bessler *et al.*, 2021). In some cases, market inefficiencies, behavioral biases, or unexpected shocks may lead to deviations from rational decision-making, causing *asset*

allocation strategies to diverge from traditional macroeconomic models (Lemi *et al.*, 2020). There are empirical studies in this area, but they exhibit methodological gaps. For example, Sari and Wita (2024) focused on identifying factors influencing investment decisions in the capital market using a literature review approach. While the study highlighted influential factors such as knowledge, motivation, and risk considerations, its reliance on a literature review presents a methodological limitation, as it lacks empirical data analysis, reducing the applicability of its findings to specific contexts. Locally, Wesley and Kioko (2023) conducted a descriptive case study to investigate the impact of factors like affordability, information availability, and herding behavior on investment decisions within Kenyan mutual funds. However, the case study design limits the generalizability of the findings to other mutual funds in Kenya. The current research was based on these gaps and attempted to answer the research question; what is the effect of macroeconomic factors on *asset allocation* decisions of mutual funds in Kenya?

RESEARCH OBJECTIVE

To determine the effect of macroeconomic factors on *asset allocation* decisions of mutual funds in Kenya.

THEORETICAL REVIEW

This segment examines the theories which underpin the study of macroeconomic factors and *asset allocation* decisions. The study reviewed the modern portfolio theory, efficient market hypothesis and the CAPM.

Modern Portfolio Theory: Modern Portfolio Theory, proposed by Markowitz (1952), revolutionized the field of finance by introducing a quantitative framework for portfolio construction and risk management. At its core, MPT postulates that investors can construct portfolios that maximize expected returns for a given level of risk or minimize risk for a given level of return by diversifying their investments across assets with different risk-return profiles (Samartzis, 2023). The theory emphasizes the importance of considering not only individual asset characteristics but also the correlations between assets within a portfolio. By diversifying across assets with low or negative correlations, investors can reduce portfolio volatility and minimize the impact of individual asset fluctuations on overall portfolio performance (Lindquist *et al.*, 2022).

The theory was relevant in the current study as it provided a theoretical framework for understanding *asset allocation* decisions among mutual funds in Kenya. By considering the principles of diversification, risk-return trade-offs, and the efficient frontier, the study will assess how mutual funds construct portfolios in response to macroeconomic factors and market conditions. MPT has faced several criticisms over the years. One of the primary criticisms is its reliance on historical data and assumptions about investor behavior, which may not accurately reflect real-world market dynamics or investor preferences (Lukomnik& Hawley, 2021). Critics argue that MPT's assumptions of rationality, market efficiency, and stable correlations between assets may not hold true in practice, leading to suboptimal investment outcomes (Ou, 2023).

Efficient Market Hypothesis: The Efficient Market Hypothesis, introduced by Fama (1970), posits that financial markets are efficient in reflecting all available information, and asset prices fully reflect all known and relevant information at any given time. According to EMH, it is impossible for investors to consistently outperform the market through stock picking or market timing, as any new information is rapidly incorporated into asset prices, making it difficult to exploit mispricing's and earn abnormal returns (Mubarok&Fadhli, 2020). EMH categorizes market efficiency into three forms: weak, semi-strong, and strong. Weak form efficiency suggests that asset prices reflect all past trading information, semi-strong form efficiency extends this to include all publicly available information, and strong form efficiency encompasses all information, including private or insider information (Nyakurukwa&Seetharam, 2023).

This theory provided a theoretical framework for understanding the efficiency of financial markets and the implications for *asset allocation* decisions among mutual funds in Kenya. By assessing the degree of market efficiency in Kenya's financial markets, the study explored how mutual funds incorporate market information into their investment decisions and whether they are able to consistently outperform the market. Despite its widespread acceptance and influence in finance, EMH has been subject to various criticisms. One of the primary criticisms is that financial markets may not always be perfectly efficient due to factors such as investor irrationality, behavioural biases, information asymmetries, and market frictions (Özyeşil *et al.*, 2022). Critics argue that inefficiencies may persist in certain market conditions or asset classes, allowing skilled investors or insiders to exploit opportunities for abnormal returns (Neifar&Ellouz, 2023).

Capital Asset Pricing Model: The Capital Asset Pricing Model, introduced by Sharpe (1964), posits that the expected return of an asset is directly related to its systematic risk, as measured by its beta coefficient. The model asserts that an asset's return is determined by the risk-free rate, the asset's sensitivity to market movements (beta), and the expected market return. The model assumes that investors hold diversified portfolios, which eliminate unsystematic risk, and that only systematic risk, which cannot be diversified away, is rewarded with higher expected returns (Poncet&Portait, 2022). The Capital Asset Pricing Model was relevant to this study as it provided a framework for understanding how mutual funds assess the expected returns of assets based on their systematic risk (beta) in relation to market conditions. By applying CAPM, the study can analyze how macroeconomic factors like interest rates, inflation, and economic growth influence the risk-return trade-off in *asset allocation* decisions. Despite its growing acceptance, CAPM has faced several criticisms. One key criticism is its assumption of a linear relationship between an asset's beta and its expected return, which may not hold true in all market conditions. Empirical evidence has shown that the model often fails to accurately predict asset returns, particularly for high-beta or low-beta stocks (Mandala *et al.*, 2023).

METHODS

Descriptive design was adopted to determine how macroeconomic factors practices and *asset allocation* decisions

among mutual funds relate. Secondary data was relied on in this investigation which was extracted from Central Bank of Kenya, Kenya National Bureau of Statistics, and CMA from January 2014 to December 2023 and captured in data collection forms. The 10-year period provided the latest trends in the market.. Inferential statistics relied on correlation and regression analysis. Correlation determined the extent of the link between the research variables and a regression determined cause and effect among variables. A multivariate regression linearly determined the relationship between the dependent and independent variables. The following equation was applicable:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where: Y = *Asset allocation* decisions

β_0 = y intercept of the regression equation.

$\beta_1, \beta_2, \beta_3, \beta_4$ = are the regression coefficients

X_1 = Interest rate

X_2 = Exchange rate

X_3 = Inflation rate

X_4 = Unemployment

ε = error term

RESULTS

Table 1 presents the results of the Pearson correlation analysis, which assesses the strength and direction of the linear relationships between the variables in the study. The correlation between *asset allocation* decisions and interest rate is strong, negative and significant, with a Pearson correlation coefficient of -0.820 and a significance level of 0.000. This suggests that as interest rates increase, *asset allocation* decisions become more concentrated (higher Herfindahl-Hirschman Index), indicating less diversification. The relationship is statistically significant at the 0.01 level, meaning that the likelihood of this result occurring by chance is very low. The exchange rate shows a strong, positive and significant correlation with *asset allocation* decisions, with a Pearson coefficient of 0.692 and a significance level of 0.000. This implies that as the exchange rate (KES/USD) increases, *asset allocation* decisions become more diversified. The relationship is also statistically significant at the 0.01 level, indicating that the exchange rate plays a substantial role in influencing how mutual funds allocate their assets.

Inflation rate, on the other hand, exhibits a very weak negative and not significant correlation with *asset allocation* decisions, with a Pearson correlation coefficient of -0.076 and a p-value of 0.641, which is not statistically significant. This suggests that inflation has a minimal and insignificant effect on *asset allocation* decisions. Similarly, unemployment rate shows an even weaker negative correlation (-0.054) with *asset allocation* decisions, with a p-value of 0.743, indicating no meaningful relationship between unemployment and *asset allocation* decisions.

Regression Analysis: This section presents the results of the regression analysis conducted to examine the influence of macroeconomic factors on *asset allocation* decisions of mutual funds in Kenya. The findings include the model's overall fit, the significance of the predictors, and the individual contributions of each independent variable to the dependent variable.

Table 1. Correlation Analysis

		Asset allocation decisions	Interest rate	Exchange rate	Inflation rate	Unemployment rate
Asset allocation decisions	Pearson Correlation	1				
	Sig. (2-tailed)					
Interest rate	Pearson Correlation	-.820**	1			
	Sig. (2-tailed)	.000				
Exchange rate	Pearson Correlation	.692**	-.301	1		
	Sig. (2-tailed)	.000	.059			
Inflation rate	Pearson Correlation	-.076	.160	.276	1	
	Sig. (2-tailed)	.641	.323	.085		
Unemployment rate	Pearson Correlation	-.054	.071	-.018	-.017	1
	Sig. (2-tailed)	.743	.662	.910	.916	

** . Correlation is significant at the 0.01 level (2-tailed). b. Listwise N=40

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.950 ^a	.903	.892	.010664

a. Predictors: (Constant), Unemployment rate, Inflation rate, Interest rate, Exchange rate

Table 3. Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.037	4	.009	81.724	.000 ^b
	Residual	.004	35	.000		
	Total	.041	39			

a. Dependent Variable: Asset allocation decisions

b. Predictors: (Constant), Unemployment rate, Inflation rate, Interest rate, Exchange rate

Table 4. Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.147	.022		6.780	.000
	Interest rate	-.011	.001	-.640	-11.171	.000
	Exchange rate	.001	.000	.533	9.077	.000
	Inflation rate	-.003	.001	-.120	-2.119	.041
	Unemployment rate	-5.398E-6	.001	.000	-.005	.996

a. Dependent Variable: Asset allocation decisions

Table 2 provides the model summary, showing how well the independent variables—interest rate, exchange rate, inflation rate, and unemployment rate—explain the variation in asset allocation decisions. The R value of 0.950 indicates a very strong positive correlation between the predictors and asset allocation decisions. The R Square (0.903) suggests that 90.3% of the variation in asset allocation decisions is explained by the macroeconomic factors included in the model, demonstrating a high level of explanatory power.

The Adjusted R Square (0.892) takes into account the number of predictors and confirms that the model remains robust, even after adjusting for the number of variables. The standard error of the estimate (0.010664) reflects the average distance between the observed and predicted values, indicating a relatively small margin of error in the predictions. Table 3 presents the results of the ANOVA, which tests the overall significance of the regression model. The F-statistic is 81.724, with a corresponding p-value (Sig.) of 0.000, which is far below the 0.05 threshold. This indicates that the model is statistically significant and that the independent variables collectively have a significant effect on asset allocation decisions. The regression sum of squares (0.037) represents the variation explained by the model, while the residual sum of squares (0.004) represents the unexplained variation. The very low residual sum of squares compared to the total sum of squares (0.041) reinforces the model's strong explanatory power.

The standardized coefficients (β) in Table 4 indicate the relative strength of each independent variable's effect on asset allocation decisions, measured in standard deviation units, allowing for a direct comparison between variables. Interest rate has a significant negative effect on asset allocation decisions ($\beta = -0.640$, $p = 0.000$). This means that a unit increase in interest rates will lead to a -0.640 decrease in asset allocation decisions, implying that as interest rates rise, mutual funds tend to allocate assets in a more concentrated manner, reducing diversification.

Exchange rate shows a significant positive effect on asset allocation decisions ($\beta = 0.533$, $p = 0.000$). This indicates that a unit increase in the exchange rate will lead to a 0.533 increase in asset allocation decisions, suggesting that higher exchange rates encourage mutual funds to diversify their asset allocation. Inflation rate has a weaker but still significant negative effect on asset allocation decisions ($\beta = -0.120$, $p = 0.041$). This means that a unit increase in inflation will lead to a -0.120 decrease in asset allocation decisions, causing funds to become slightly more concentrated in their asset allocation as inflation rises. Unemployment rate has an almost negligible effect on asset allocation decisions ($\beta = 0.000$, $p = 0.996$), indicating that changes in unemployment do not significantly impact how mutual funds allocate their assets. This suggests that unemployment does not play a meaningful role in influencing asset allocation decisions within the mutual funds under study.

The coefficient of regression model was as below:

Asset allocation decisions = 0.147 - 0.640 (Interest Rate) +0.533 (Exchange Rate) - 0.120 (Inflation Rate)-0.000 (Unemployment rate)

CONCLUSION AND RECOMMENDATIONS

The study concludes that macroeconomic factors, particularly interest rates and exchange rates, have a significant effect on the asset allocation decisions of mutual funds in Kenya. Interest rates were found to have a strong negative effect, suggesting that as borrowing costs increase, mutual funds tend to concentrate their portfolios, reducing diversification. This highlights the sensitivity of asset allocation strategies to changes in the cost of capital, which can influence the overall investment landscape in Kenya's financial markets. Exchange rates, on the other hand, exerted a positive influence on asset allocation decisions, promoting diversification as currency fluctuations occur. This implies that mutual funds in Kenya are responsive to changes in the value of the Kenyan Shilling against foreign currencies, likely adjusting their portfolios to mitigate currency risk and capitalize on favorable exchange rate movements. The significant role of exchange rates emphasizes the importance of foreign exchange exposure in shaping mutual fund strategies.

While inflation was found to have a weaker, yet significant, negative effect on asset allocation, unemployment had no notable impact on mutual funds' decisions. This indicates that, although inflation is considered when allocating assets, its effect is not as pronounced as interest or exchange rates. Unemployment, in contrast, does not appear to be a major factor in asset allocation strategies, suggesting that mutual funds prioritize other macroeconomic indicators when making investment decisions.

RECOMMENDATIONS

Based on the findings of this study, it is recommended that policymakers, particularly in the Central Bank of Kenya, prioritize maintaining stable interest rates to foster a conducive environment for mutual funds to diversify their portfolios. Since higher interest rates were found to lead to more concentrated asset allocations, policymakers should consider implementing measures that balance borrowing costs to support broader investment in various asset classes. By promoting stable interest rates, mutual funds can better manage their portfolios and contribute to the overall growth of the financial sector. For fund managers, it is recommended to closely monitor exchange rate fluctuations and integrate foreign exchange risk management strategies into their asset allocation decisions. The significant positive impact of exchange rates on portfolio diversification underscores the importance of having a well-structured approach to managing foreign currency exposure. Mutual funds should consider hedging mechanisms and diversify across international markets to take advantage of favorable exchange rate movements while minimizing potential risks. Lastly, inflation should be closely monitored by both policymakers and fund managers, even though its impact on asset allocation was relatively weaker. Policymakers should aim for policies that maintain moderate inflation levels, which support investor confidence and long-

term investment planning. Fund managers, in turn, should incorporate inflation-sensitive instruments, such as inflation-linked bonds, into their portfolios to safeguard against potential inflationary pressures, ensuring more resilient and diversified asset allocations in volatile economic conditions.

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