

ASSET ALLOCATION AND FINANCIAL PERFORMANCE OF MONEY MARKET FUNDS IN KENYA

BY

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Abstract

Money market funds play an increasingly important role in Kenya's collective investment industry by offering investors liquid, professionally managed exposure to short-term financial instruments. Although these funds operate within a common regulatory framework and invest within a relatively narrow universe of eligible securities, their investor yields differ materially. This study examined the effect of asset allocation on the financial performance of money market funds in Kenya and assessed whether fund size moderates that relationship. For this focused article, Modern Portfolio Theory provides the anchoring theoretical lens for the asset-allocation pathway. Guided by positivism, the study adopted an explanatory longitudinal panel research design. The target population comprised 45 money market funds licensed by the Capital Markets Authority by the close of the 2020–2024 study period. A census was attempted, but criterion-based inclusion based on availability and completeness of audited information yielded an unbalanced panel of 88 fund-year observations from 19 funds. Secondary data were extracted from audited annual financial statements and official regulatory disclosures using a structured data collection sheet. Financial performance was measured by net annual yield; asset allocation by income-generating assets divided by total assets; and fund size by the natural logarithm of assets under management. Descriptive statistics, diagnostic tests and a hierarchical pooled-panel specification with year fixed effects and fund-clustered robust standard errors were applied. Asset allocation had a positive and statistically significant relationship with financial performance ($\beta = 0.1674$, robust SE = 0.0360, $z = 4.6550$, $p < .001$), leading to rejection of H_{02} . A one-percentage-point increase in the asset allocation ratio was associated with an approximately 0.167-percentage-point increase in net annual yield, holding the other modelled characteristics and common annual conditions constant. Fund size did not significantly moderate the asset-allocation relationship: in the dissertation's full moderation model, the asset-allocation-by-fund-size interaction was negligible and statistically insignificant ($\beta = 0.0031$, $z = 0.150$, $p = .881$). The full four-interaction block added less than .001 to R^2 ; this block-level change is not attributable to the asset-allocation interaction alone. The findings indicate that portfolio deployment is a meaningful direct performance channel across the fund sizes represented in the sample. The study recommends dynamic allocation management, stronger portfolio disclosure, continuous monitoring of deployment and liquidity, and future research using higher-frequency data and disaggregated instrument weights.

Keywords: asset allocation ratio, financial performance, fund size, money market funds, Modern Portfolio Theory, panel data, Kenya

1. Introduction

Asset allocation is a central element of portfolio performance analysis. Its theoretical foundation lies in Markowitz's (1952) demonstration that expected portfolio return is the weighted average of expected asset returns, while portfolio risk depends on the variances of individual assets and the covariances among them. Portfolio composition therefore affects the return-risk combination experienced by an investor, alongside security selection, timing, costs and

market conditions. This principle has been applied across pension funds, insurance portfolios and mutual funds and remains foundational to strategic asset allocation practice (Cunningham, 2024; Leković, 2021; Yu & Zhang, 2023).

Its application to money market funds is genuinely open to question, and the reason is structural rather than empirical. Money market funds operate within an eligible investment universe that is narrow by design. Their mandate confines them to short-dated

instruments of high credit quality, comprising Treasury bills and other government securities, fixed and call deposits, negotiable certificates of deposit, commercial paper, repurchase agreements and cash, and their portfolio choices are further bounded by regulatory maturity limits, liquidity requirements, credit-quality standards and issuer concentration rules. The efficient frontier available to a money market fund manager is thus a small region of the space Modern Portfolio Theory describes.

Two opposing inferences follow, and the tension between them motivates this study. The first is that allocation should matter little: if every fund is confined to broadly the same short list of instruments under broadly the same constraints, portfolio composition cannot generate much performance differentiation, and observed yield differences must arise from cost structures, timing or scale instead. The second is that allocation should matter a great deal precisely because the alternatives are so limited: when a manager cannot differentiate through security selection across asset classes, the proportion of assets actually deployed into income-generating instruments, as against cash and demand balances that generate little, becomes the principal remaining lever.

The empirical evidence does not settle the matter, largely because most of it comes from institutions with different mandates. Triyana and Muharam (2024) found that allocations across time deposits, government securities, shares and corporate bonds influenced Indonesian pension-fund performance, but pension funds accept longer horizons and greater price volatility than money market funds. Wandabusi et al. (2023) found asset allocation positively and significantly related to the performance of listed Kenyan insurance firms, whose long-dated liabilities and wider opportunity set again distinguish them. Atuya et al. (2023) linked asset allocation to commercial-bank performance in Nairobi County, and Yujin et al. (2022) reported a non-linear association among listed high-technology firms. These studies support the broader proposition that portfolio composition matters, but none establishes the magnitude or reliability of the effect within the constrained mandate of a Kenyan money market fund.

The money-market-specific literature, meanwhile, concerns mechanisms rather than performance coefficients. Doerr et al. (2023) showed that United

States money market funds allocate between Treasury bills and repurchase agreements in response to relative yields and liquidity conditions, and that fund demand itself moves Treasury-bill rates. Aldasoro and Doerr (2023) found that global money market fund assets flow predominantly to governments and banks, with the composition shifting during monetary-policy tightening. Abdullah and Tase (2025) documented that policy-rate uncertainty leads funds to shorten maturities and increase liquid holdings. Li et al. (2021) showed that funds with lower weekly liquid assets faced larger redemptions during the COVID-19 disruption, establishing that allocation determines a fund's capacity to withstand outflows without costly liquidation. These studies establish that allocation is an active and consequential managerial decision; they do not estimate how it relates to the net yield a fund actually distributes.

The Kenyan setting is well suited to closing that gap. Money market funds are the largest category of collective investment scheme in Kenya, expanded by low minimum investment requirements, mobile-enabled subscription and withdrawal, and demand for alternatives to bank deposits (Capital Markets Authority [CMA], 2024a). Sector portfolios remain heavily connected to government-security and banking-market conditions: as at September 2024, government securities and fixed deposits accounted for the largest proportions of aggregate unit-trust assets, followed by cash and demand deposits (CMA, 2024c). The 2020–2024 period spans a complete monetary cycle, comprising accommodation during the COVID-19 disruption, inflation-driven tightening that lifted Treasury-bill rates into double digits by 2023, and pronounced easing in late 2024 (Central Bank of Kenya [CBK], 2024), during which the relative attractiveness of the eligible instruments changed materially and repeatedly.

2. Statement of the Problem

Money market funds must balance income generation, liquidity and capital preservation, and the eligible instruments available to them differ in yield, maturity, credit quality and liquidity. Portfolio composition therefore has a plausible and direct bearing on the net annual yield delivered to unit holders. Yet Kenyan fund yields diverged sharply during 2023 and 2024, ranging from approximately 9.8 per cent to 14.7 per cent despite a common regulatory

framework and a shared macroeconomic environment (CMA, 2024a; Cytonn, 2023, 2024). That divergence is the phenomenon requiring explanation, and the extent to which portfolio composition accounts for it has not been established.

The available evidence is not uniform, and the sources of variation are identifiable. Studies differ in how allocation is measured, some using category-specific instrument weights and others composite deployment ratios. They differ in the fund categories examined, ranging from pension funds and insurance portfolios to multi-asset unit trusts, whose mandates and investment horizons are not comparable to those of money market funds. They differ in performance measurement, using Sharpe ratios, return on investment or risk-adjusted alpha rather than the net yield investors actually receive. And they differ in research design, with descriptive and cross-sectional approaches unable to control for the common interest-rate movements that affect all funds simultaneously.

Kenyan evidence specific to money market funds is limited. Mokaya et al. (2020) examined asset allocation in unit trust schemes but combined funds permitted to hold equities and longer-term bonds, used the Sharpe ratio, adopted a descriptive design and did not control for common year effects. Ndanu and Gatawa (2023) applied panel methods over 2018–2022 but proxied investment strategy by beta, a construct largely insensitive to allocation variation in a portfolio of short-term debt and deposits, and reported that investment strategy did not reliably improve returns. Neither study isolates the effect of a consistently measured allocation ratio on the net annual yield of contemporary money market funds.

Without such evidence, fund managers cannot establish whether allocation discipline materially affects investor outcomes, investors cannot evaluate portfolio composition when comparing funds, and regulators lack the basis for portfolio-disclosure requirements. This study therefore examined the effect of asset allocation on the financial performance of licensed Kenyan money market funds using 2020–2024 fund-year panel data.

Accordingly, the study assessed the effect of asset allocation, measured by the asset allocation ratio, on the financial performance of money market funds in Kenya, measured by net annual yield. The null hypothesis tested was: H_0 : There is no statistically

significant effect of asset allocation on the financial performance of money market funds in Kenya.

3. Literature Review

3.1 Modern Portfolio Theory

For this focused article, Modern Portfolio Theory is the anchoring theory for the asset-allocation pathway examined in the dissertation. Established by Markowitz (1952), the theory demonstrated that investment decisions should be evaluated at the portfolio level rather than security by security. Expected portfolio return is the weighted average of the expected returns of the constituent assets, while portfolio risk depends on their variances and, critically, on the covariances among them. Because assets whose returns are not perfectly positively correlated can partially offset one another's fluctuations, diversification may reduce portfolio variance. From this follows the efficient frontier: the set of portfolios offering the highest expected return for a given level of risk. The classical theory assumes rational and risk-averse investors, homogeneous expectations, frictionless markets and stable, estimable return-risk inputs. These assumptions are restrictive, yet the framework remains foundational to strategic allocation (Cunningham, 2024; Leković, 2021; Yu & Zhang, 2023).

The theory's relevance to money market funds is real. Treasury bills, fixed deposits, commercial paper, certificates of deposit and other approved short-term instruments differ in yield, maturity, credit quality and liquidity, so a manager's allocation among them affects both expected yield and portfolio stability. Diversification across issuers, instruments and maturity buckets reduces concentration and reinvestment risk while permitting the pursuit of competitive returns. The core proposition, that composition determines outcomes, holds.

Four qualifications constrain the application, and stating them precisely is essential to interpreting the results honestly. First, the opportunity set is regulated rather than free: maturity limits, liquidity requirements, credit-quality standards and issuer concentration rules define a permitted region within which the manager optimises, so the attainable frontier is a constrained subset of the theoretical one. Second, the assets available are strongly positively correlated, since virtually all domestic money market instruments are exposed to the same short-term rate environment,

so the covariance-based risk reduction that drives the theory's power in multi-asset settings is substantially attenuated. Third, the inputs are unstable, since covariance and return estimates based on historical data become unreliable precisely during monetary tightening, market stress or shifting liquidity conditions, which are the periods when allocation decisions matter most (Doerr et al., 2023; Nikolaou, 2025). Fourth, the objective function differs: classical Modern Portfolio Theory assumes an investor maximising expected return for given variance, whereas a money market fund manager operates under a mandate whose first commitment is capital preservation and whose second is redemption capacity, with income generation third, so a portfolio that is efficient in mean-variance terms may be inadmissible under that mandate.

The theory nevertheless generates a directional expectation. Because eligible instruments differ in the income they generate, and because cash and demand balances generate materially less than deployed instruments, a higher proportion of assets in income-generating instruments should be associated with a higher net yield, provided the additional deployment does not compromise the liquidity and credit standards the mandate requires. The expected sign is positive. The theory bears ambiguously on scale: larger funds may diversify across more issuers, negotiate placement terms and access larger primary-market transactions, all of which would strengthen the allocation effect, yet a very large fund may face capacity constraints because the domestic supply of eligible high-yield instruments is finite, which would weaken it. The direction of any interaction with scale is therefore an empirical matter.

3.2 Empirical Review

Four channels connect allocation to net annual yield, and they do not all operate in the same direction. The income channel is the most direct: net annual yield derives from the weighted income generated by the securities held, so a fund directing a larger share of assets to eligible interest-earning instruments earns a higher gross yield, other things equal. The maturity channel determines how rapidly the portfolio responds to changes in market interest rates; Aldasoro and Doerr (2023) demonstrated its significance, showing that money market fund assets increase during tightening and that the speed with which higher market rates

reach investor yields depends on portfolio maturity. The liquidity channel determines whether a fund can meet redemptions without interrupting its strategy or selling assets at unfavourable prices. The credit and concentration channel determines the premium earned for exposure to particular issuers and the loss potential associated with default. Because these channels can operate in opposite directions, empirical studies report positive, negative and insignificant coefficients depending on fund type, period, allocation measure and performance indicator (Cipriani & La Spada, 2021; Doerr et al., 2023; Li et al., 2021).

Measurement choices shape findings materially. Abdullah and Tase (2025) used category-specific percentages invested in each instrument class, an approach that identifies the separate contribution of Treasury securities, deposits, commercial paper or cash but can create severe or perfect multicollinearity if a complete set of portfolio weights is entered with an intercept because the weights sum to one. Triyana and Muharam (2024) examined instrument-specific allocation proportions across pension-fund asset categories. For the present study, the asset allocation ratio is deliberately more parsimonious: it measures the overall proportion of resources productively deployed in income-generating assets rather than estimating the marginal contribution of every individual instrument class. This choice aligns the measure with the article's research question while avoiding a mechanically dependent set of portfolio shares.

International money-market evidence establishes mechanisms rather than coefficients. Doerr et al. (2023) combined a theoretical model, holdings-level data and a causal identification strategy to show that greater money market fund demand for Treasury bills reduced Treasury-bill rates and increased their liquidity premium, and that funds tilted portfolios toward central-bank repurchase agreements when Treasury-market liquidity was low. Their setting contains a developed repurchase infrastructure without direct Kenyan analogues, so the mechanism transfers while the magnitude does not. Cipriani and La Spada (2021), exploiting the 2014 United States reform as a quasi-natural experiment, estimated a premium of approximately 20 to 30 basis points for money-like characteristics and found it was not explained by increased risk-taking; their evidence cautions against

interpreting a higher yield as unambiguous evidence of superior allocation, since a portfolio tilted toward private short-term instruments may earn a premium compensating investors for reduced liquidity services. Li et al. (2021) established, through the COVID-19 run on prime funds, that allocation determines resilience to redemption pressure, which implies that a fund allocating heavily to higher-yielding but less liquid instruments may perform well in normal periods yet suffer income disruption when withdrawals rise. Bouveret et al. (2022) showed across jurisdictions that the same nominal allocation produces different outcomes because a commercial-paper holding may be readily saleable in one market and effectively illiquid in another, which argues directly for domestic estimation rather than inference from foreign coefficients. The Financial Stability Board's (2024) thematic review reinforced this at the regulatory level, noting that requirements designed to strengthen liquidity necessarily affect yield by restricting investment in higher-return instruments.

Evidence from other institutions is directionally consistent but not directly transferable. Triyana and Muharam (2024) applied panel regression to Indonesian pension funds over 2018–2022 and found portfolio composition influential, though pension funds can accept longer investment horizons and greater price volatility than money market funds. Yujin et al. (2022) reported a non-linear association among listed high-technology firms, showing that allocation-performance relationships need not be monotonic. Wandabusi et al. (2023) found portfolio asset allocation positively and significantly related to the performance of listed Kenyan insurance firms, while Atuya et al. (2023) reached a similar conclusion for commercial banks in Nairobi County. These findings support allocation as a consequential management decision, but differences in mandates, liabilities, eligible assets and performance measures require domestic money-market-specific estimation.

The most directly relevant Kenyan evidence is Mokaya et al. (2020), who examined the effect of asset allocation on unit trust scheme performance using a descriptive design, five years of secondary data, allocation measured by proportions invested in money market instruments, corporate bonds, Treasury bonds and equities, and the Sharpe ratio as the performance measure, reporting that portfolio weights significantly

affected performance. Its bearing here is limited in four respects: the sample combined unit trusts with different mandates; the Sharpe ratio combines return and volatility and is less aligned than net annual yield with the income and capital-preservation objective of a money market fund; the design was descriptive rather than explanatory; and it did not account for common year effects, unobserved heterogeneity or the conditioning role of scale. Ndanu and Gatawa (2023) applied panel methods over 2018–2022 but proxied investment strategy by beta, which measures sensitivity to a market benchmark and is largely uninformative for a fund holding short-term debt and deposits, so their null result says little about the effect of allocation as understood here. Nyabuto and Kariuki (2023), Ongaki (2021) and Nthimba et al. (2021) address related aspects of Kenyan fund performance, while Wafula et al. (2023) provides local precedent for treating fund size as a conditioning rather than a control variable.

What the literature therefore lacks is an explanatory panel estimate of the effect of a consistently measured allocation ratio on the net annual yield of Kenyan money market funds, with common annual conditions controlled and scale tested rather than assumed.

4. Research Methodology

The study adopted positivism and an explanatory longitudinal panel research design. The explanatory component was appropriate because the study sought the direction, magnitude and statistical significance of the relationship rather than a description of it, and the longitudinal panel component followed from observing multiple funds annually across 2020 to 2024 (Baltagi, 2021; Hsiao, 2022; Wooldridge, 2021). The panel structure combines cross-sectional and time-series variation, captures temporal change a single cross-section cannot reveal, increases degrees of freedom and statistical power, and permits the allocation–size interaction to be estimated meaningfully since fund size varies over time.

The target population comprised money market funds licensed and regulated by the Capital Markets Authority during the 2020–2024 study window. Authority records showed 45 licensed money market funds by the close of the study period (CMA, 2024b); funds licensed part-way through the period entered the panel from their year of licensing. These funds

operated under a common licensing, disclosure, liquidity and reporting framework, making them directly comparable. Other collective investment schemes were excluded because their inclusion would introduce the mandate heterogeneity that limits the interpretability of prior domestic evidence.

Given the small and clearly identifiable population, a census was attempted, with inclusion in the final analytical sample depending on data availability and completeness. The final sample was therefore determined by criterion-based inclusion rather than purposive selection: no fund was chosen because it possessed a characteristic of interest, and funds were excluded only where disclosures were incomplete. After applying these criteria, 19 funds qualified and 26 were excluded. A balanced panel for the 19 retained funds would have contained 95 fund-year observations; seven were unavailable owing to missing disclosures. The final dataset comprised an unbalanced panel of 88 fund-year observations.

A structured data collection sheet was used as the principal research instrument; questionnaires, interview schedules and observation guides were not applicable because no primary data were collected. The sheet recorded fund identity, reporting year, source document and the financial information required to compute each variable, and provided for the recording of underlying raw values before any ratio was calculated, creating an auditable link between original statement figures and analysis variables. Audited annual financial reports were treated as authoritative, with Capital Markets Authority disclosures and official fund-management company publications supporting identification and verification.

For analysis, the article retained the dissertation's multivariable specification so that the focal asset-allocation coefficient was estimated after accounting for operating expenses, return volatility, fund liquidity, fund size and common annual effects. The dissertation's hierarchical sequence first estimated the four fund characteristics, then incorporated the constitutive fund-size term, and finally added the four mean-centred fund-characteristic-by-size interaction terms. For clarity in this focused article, the retained baseline results correspond to the dissertation model containing the four characteristics, fund size and year effects, while the moderation results correspond to the full model containing all four interaction terms. The asset-allocation coefficient and the asset-allocation-by-size interaction are the focal estimates reported here. Fund-clustered robust standard errors were used because serial correlation was detected within funds. This presentation preserves consistency with the dissertation and avoids attributing the full interaction block's change in R^2 to the asset-allocation interaction alone.

5. Results

5.1 Descriptive Statistics

Descriptive statistics were first examined for the dependent variable, the independent variable and the moderating variable using the 88 fund-year observations in the audited analytical panel. The results are summarised in Table 1. Published industry allocation figures by year are then presented separately in Table 2 to provide contextual evidence without combining populations that differ from the analytical panel.

Table 1. Descriptive Statistics for Study Variables (N = 88)

Variable	Role	N	Mean	Std. Deviation	Minimum-Maximum
Net annual yield (%)	DV	88	9.958	2.763	6.800-15.200
Asset allocation ratio (%)	IV	88	79.648	1.278	77.000-83.000
Fund size, $\ln(\text{AUM})$	Moderator	88	8.967	1.039	6.908-11.302

Note. DV = dependent variable; IV = independent variable; $\ln(\text{AUM})$ = natural logarithm of assets under management. Research data (2026).

5.1.1 Dependent Variable (DV): Financial Performance

Financial performance was measured by net annual yield. The mean net annual yield was 9.958%, with a standard deviation of 2.763 percentage points and a range from 6.800% to 15.200%. The spread of more than eight percentage points confirms material performance variation among the funds in the analytical panel and is consistent with the industry yield dispersion reported for 2023 and 2024 (CMA, 2024a; Cyttonn, 2023, 2024).

5.1.2 Independent Variable (IV): Asset Allocation

Asset allocation was measured by the proportion of total assets deployed in income-generating instruments. In the audited analytical panel, the mean asset allocation ratio was 79.648%, the standard deviation was 1.278, and the observed range was 77.000% to 83.000%. The six-percentage-point range is narrow, which is consistent with a regulated money market fund segment operating within a restricted investment universe. The limited dispersion also makes the subsequent significant regression coefficient substantively notable because the relationship is identified within a relatively converged allocation practice.

Table 2. Published Industry Context for Asset Allocation (%)

Year	N	Mean	Std. Deviation	Minimum	Maximum
2020	17	75.388	31.716	0.000	100.000
2021	17	86.041	27.897	0.000	100.000
2022	19	87.758	15.832	54.000	100.000
2023	26	86.215	17.731	29.400	100.000
2024	32	90.209	11.747	58.400	100.100

Note. The published industry context and the audited analytical panel are different reporting populations and should not be aggregated. The 2024 contextual maximum of 100.100% is retained as recorded in the contextual series and was not used in the analytical regression panel. Research data (2026).

The published industry context shows that average deployment into income-generating assets increased from 75.388% in 2020 to 90.209% in 2024, while dispersion declined. The early-year minima indicate substantially greater cross-fund dispersion in the contextual industry series. Because the contextual series and the audited analytical panel contain different reporting populations, these annual figures are used only to describe the broader industry environment and are not combined with the regression sample.

5.1.3 Moderator: Fund Size

Fund size was measured as the natural logarithm of annual assets under management. The mean

ln(AUM) was 8.967, with a standard deviation of 1.039 and a range from 6.908 to 11.302. The observed spread provided sufficient cross-fund and time variation to test whether the asset allocation-financial performance relationship changed systematically with fund scale.

5.2 Diagnostics

Diagnostic testing was conducted before interpreting the panel regression results. Table 3 summarises the tests, outcomes and estimation responses.

Table 3. Diagnostic Test Results and Estimation Responses

Diagnostic issue	Test and result	Decision and estimation response
Multicollinearity	VIF: asset allocation 3.556; operating expenses 1.551; return volatility 2.828; fund liquidity 3.584; fund size 4.225; mean VIF 3.149	All values below 5; no severe multicollinearity; all predictors retained
Functional form	Ramsey RESET: $F = 3.965$, $p = .050$	Not strictly below .05; linear specification retained, adequacy treated as marginal

Diagnostic issue	Test and result	Decision and estimation response
Residual distribution	Shapiro–Wilk $W = 0.968$, $p = .029$; Jarque–Bera $JB = 3.324$, $p = .190$	Mild departure only; inference conducted with robust standard errors
Homoskedasticity	Breusch–Pagan $LM = 9.882$, $p = .360$	Constant variance not rejected; robust errors retained as a safeguard
Serial correlation	Wooldridge statistic $= 0.723$, $p < .001$	Within-fund serial correlation confirmed; standard errors clustered at fund level
Stationarity	Panel unit-root assessment inconclusive ($T = 5$, unbalanced panel)	Year controls included to absorb common time effects; limitation acknowledged
Estimator selection	Hausman $\chi^2 = 29.823$, $p < .001$	Fixed effects statistically preferred; retained pooled hierarchical model with year effects for dissertation comparability and limited within-fund variation; interpret cautiously
Poolability	$F = 7,672.600$, $p < .001$	Pooled homogeneity rejected; fund heterogeneity acknowledged; year effects and fund-clustered robust SEs retained as partial safeguards

Note. Research data (2026).

The diagnostic results required a cautious panel-inference strategy. The variance inflation factor for asset allocation was 3.556 and the mean VIF was 3.149, indicating no severe multicollinearity. The Breusch-Pagan test did not reject constant variance ($p = .360$), while the Wooldridge test confirmed within-fund serial correlation ($p < .001$), justifying fund-clustered robust standard errors. The Ramsey RESET result was marginal ($p = .050$), and residual-distribution tests showed a mild departure from normality. The short, unbalanced five-year panel made unit-root assessment inconclusive, so year effects were retained to absorb common time shocks. The Hausman test ($p < .001$) statistically favoured fixed effects, and the poolability test rejected full pooled homogeneity. The retained hierarchical pooled specification with year effects was nevertheless used because key variables displayed limited within-fund variation and to preserve comparability with the dissertation's reported model. Accordingly, year effects and clustered errors are treated as safeguards for common shocks and within-fund dependence, not as substitutes

for fund fixed effects; the coefficients are interpreted as conditional associations within the observed panel.

5.3 Panel Hierarchical Regression

The dissertation estimated a three-stage hierarchical sequence: the four fund characteristics, the addition of fund size, and then the four fund-characteristic-by-size interaction terms. Because this article focuses on asset allocation, the results are presented in two retained stages rather than re-estimated as a different model. Stage 1 reports the dissertation's baseline model containing asset allocation, operating expenses, return volatility, fund liquidity, fund size and year controls. Stage 2 reports the dissertation's full moderation model, which adds all four mean-centred interactions with fund size. The asset-allocation coefficient and the $AAL \times \ln(AUM)$ term are the focal estimates. This distinction is essential because the reported change in R^2 belongs to the full four-interaction block, not to the asset-allocation interaction alone.

Table 4. Retained Baseline Panel Regression (N = 88)

Predictor	Coefficient	Robust SE	z	p	Decision
Asset allocation (AAL)	0.1674	0.0360	4.6550	< .001	Significant
Operating expenses (OE)	0.1633	0.0975	1.6747	.0940	Not significant
Return volatility (RV)	7.6431	1.1210	6.8181	< .001	Significant

Predictor	Coefficient	Robust SE	z	p	Decision
Fund liquidity (FL)	0.0023	0.0022	1.0446	.2962	Not significant
Fund size, ln(AUM)	-0.0361	0.0451	-0.8009	.4232	Not significant

Note. All estimates include year controls and fund-clustered robust standard errors. Operating expenses, return volatility and fund liquidity are retained because the focal asset-allocation effect was estimated within the dissertation's joint multivariable model; they are not the substantive focus of this article. Research data (2026).

Asset allocation had a positive and statistically significant coefficient ($\beta = 0.1674$, robust SE = 0.0360, $z = 4.6550$, $p < .001$). The null hypothesis was therefore rejected. Holding the other modelled characteristics, fund size and common annual conditions constant, a one-percentage-point increase in the asset allocation ratio was associated with an approximately 0.167-percentage-point increase in net

annual yield. Across the observed six-percentage-point allocation band, the estimated difference is approximately one percentage point of net annual yield, other factors held constant. Because the design is observational, this result is interpreted as a conditional association and significant prediction rather than experimental causation.

Table 5. Hierarchical Model Summary

Step	Model	R ²	Adjusted R ²	F	ΔR^2
1	Baseline: 4 IVs + fund size	.890	.877	70.12	-
2	Full moderation: 4 IV $\times$ size terms	.890	.871	46.06	< .001

Note. Both retained stages include year controls and fund-clustered robust standard errors. Stage 1 corresponds to the dissertation baseline model containing the four fund characteristics and fund size. Stage 2 corresponds to the dissertation full moderation model containing all four fund-characteristic-by-size interactions. Therefore, $\Delta R^2 < .001$ refers to the full interaction block and should not be interpreted as the unique contribution of $AAL \times \ln(AUM)$.

Research data (2026).

5.4 Conditional Relationship with Fund Size

The full moderation model tested whether fund size changed the strength or direction of each fund-characteristic relationship with financial performance. The constitutive terms were mean-centred before the interaction products were generated. Table 6 reports only the asset-allocation terms required for this focused article, while the other interaction terms remain in the estimated model as specified in the dissertation.

Table 6. Conditional Relationship Between Asset Allocation and Financial Performance by Fund Size

Term	β	z	p
Asset allocation (AAL), conditional main effect	0.0878	2.942	.003
Fund size, ln(AUM), conditional main effect	-0.4084	-2.781	.005
$AAL \times \ln(AUM)$	0.0031	0.150	.881

Note. $N = 88$. Values are extracted from the dissertation's full four-interaction moderation model. Conditional main effects are evaluated at the sample mean of the mean-centred counterpart variable; consequently, they should not be interpreted as contradictions of the corresponding baseline main effects. Research data (2026).

The asset-allocation-by-fund-size interaction was positive but negligible and statistically insignificant (β

$= 0.0031$, $z = 0.150$, $p = .881$). Fund size therefore did not significantly moderate the asset-allocation-

financial-performance relationship. The full four-interaction block added essentially no explanatory power ($\Delta R^2 < .001$), but that block-level change cannot be assigned uniquely to the asset-allocation interaction. The moderation decision for the focal relationship rests on the interaction coefficient and its p-value. The evidence therefore indicates that the positive allocation-performance association did not differ statistically across the range of fund sizes represented in the sample.

6. Discussion

The finding that requires explanation is not simply that asset allocation was significant, but that it was significant across an observed range of only six percentage points. A coefficient estimated within such a narrow band still produced a z statistic of 4.6550. This supports the inference that, within a tightly regulated money market segment, relatively small differences in the proportion of assets productively deployed can be economically meaningful. The money market mandate restricts broad asset-class differentiation, duration extension and credit-risk taking relative to diversified funds; consequently, the proportion of resources actively deployed in eligible income-generating instruments becomes an important management lever. A coefficient of 0.1674 implies that moving from the bottom to the top of the observed deployment range is associated with approximately one percentage point of additional net annual yield. Relative to the panel mean yield of 9.958%, that difference is economically material, while remaining an association rather than a causal effect.

Four mechanisms plausibly generate this relationship. The income channel is the most direct, since cash and demand balances generate materially less than Treasury bills, fixed deposits or commercial paper. The maturity channel operated with unusual force in this period, since with Kenyan short-term rates moving sharply in both directions, differences in how quickly portfolios repriced generated substantial yield differences, which is the dynamic Aldasoro and Doerr (2023) documented globally during tightening. The negotiation channel is specific to a deposit-heavy market: because fixed deposits constitute a large share of Kenyan money market fund portfolios (CMA, 2024c), placement rates are negotiated rather than posted, so deployment and pricing are jointly

determined by managerial activity. And the reinvestment channel, identified by Nikolaou (2025), determines whether maturing proceeds and new inflows are redeployed promptly or held temporarily in low-yield balances.

The finding is consistent in direction with Mokaya et al. (2020) but differs in three respects that strengthen rather than merely extend that evidence. Their sample pooled unit trusts with different mandates, including funds permitted to hold equities and longer-term bonds, so their result partly reflects differentiation across asset classes that a money market fund cannot access; the present study isolates money market funds and finds the relationship holds even without that source of variation. Their performance measure combines return and volatility, whereas net annual yield measures what the investor receives. And their design did not control for common year effects, whereas the present year controls address the confounding by which a rising-rate year could otherwise masquerade as an allocation effect.

The finding stands in apparent contrast to Ndanu and Gatauwa (2023), but the contrast is a construct difference rather than an empirical disagreement. They proxied investment strategy by beta, and a money market fund can shift substantially across Treasury bills, fixed deposits, commercial paper and cash without generating any meaningful equity-market beta, so their measure was largely insensitive to the variation examined here. Their null result and the present positive result are compatible because they tested a different construct. Comparison with Triyana and Muharam (2024) and Wandabusi et al. (2023) requires similar contextual discipline: both found allocation influential and the present result agrees in direction, but their optimal allocations are not transferable and the mechanisms generating their results, namely duration matching, equity exposure and illiquidity premia, are largely unavailable to a money market fund manager. What the convergence establishes is the general proposition that composition matters; what this study adds is that it matters even where those mechanisms are foreclosed.

The evidence supports the core proposition of Modern Portfolio Theory while qualifying its classical formulation. It supports the foundational claim that composition, not security selection alone, determines investment outcomes, in a setting where that claim

might plausibly have failed. It extends the theory to a setting where its usual conditions are attenuated, since money market instruments are strongly positively correlated through common exposure to the short-term rate environment, so covariance-based risk reduction operates weakly; that composition still explains performance suggests the theory's relevance rests on the weighted-income proposition, which survives even where diversification benefits are limited. It qualifies the theory in three ways: the operative object is a regulated permitted region rather than the classical efficient frontier; the theory's assumption of stable estimable inputs was manifestly violated during 2020–2024, which is why the year controls matter; and the mean-variance objective does not match a capital-preservation-first mandate, with Cipriani and La Spada (2021) demonstrating empirically that investors pay a premium for money-like characteristics, meaning that a portfolio maximising yield may be worse for investors than one accepting less yield for greater safety.

What the evidence does not support is maximising the allocation ratio. The measure captures the proportion of assets deployed, not the quality, maturity, concentration or liquidity of what they are deployed into. A fund could raise its ratio by extending maturity, accepting weaker credit or concentrating in fewer counterparties, while Li et al. (2021) showed that liquidity composition can become consequential under redemption pressure. Four considerations prevent a causal reading. First, endogeneity is important because managers adjust allocations in response to expected returns and investor flows, while realised performance subsequently influences flows and portfolio size. Second, measurement scope is limited because two funds with identical allocation ratios may hold materially different maturity, credit-quality and issuer-concentration profiles. Third, temporal specificity matters because the relationship was estimated during the pronounced interest-rate movements of 2020–2024. Fourth, sample coverage is limited: only 19 of the 45 licensed funds met the inclusion criteria, producing an unbalanced panel of 88 fund-year observations. The findings should therefore be interpreted as conditional associations within the observed sample and period.

7. Conclusion

This study assessed the effect of asset allocation on the financial performance of money market funds in Kenya using an unbalanced panel of 88 fund-year observations from 19 licensed funds over 2020–2024. Financial performance was measured by net annual yield, asset allocation by the proportion of income-generating assets to total assets, and fund size by the natural logarithm of assets under management.

Asset allocation was positively and statistically significantly associated with financial performance. The coefficient of 0.1674, with a robust standard error of 0.0360 and $p < .001$, led to rejection of the null hypothesis. Holding the other modelled characteristics and common annual conditions constant, a one-percentage-point increase in asset allocation was associated with an approximately 0.167-percentage-point increase in net annual yield.

The relationship was estimated across an allocation range of only six percentage points, showing that relatively small differences in deployment practice can be economically meaningful within a tightly regulated and converged money market fund segment. Fund size did not significantly moderate the focal relationship: in the dissertation's full moderation model, the $AAL \times \ln(AUM)$ interaction coefficient was 0.0031 ($p = .881$). The full interaction block added less than .001 to R^2 , but that model-level change reflects all four interaction terms and is not the unique contribution of the asset-allocation interaction.

The findings therefore support asset allocation as an important direct performance channel available to funds across different scales. The results remain bounded by the 2020–2024 monetary environment and by the observational research design. They should be interpreted as conditional relationships within the study panel rather than as proof that mechanically increasing the allocation ratio will cause a predetermined increase in investor yield.

8. Recommendations

Fund managers should institutionalise a dynamic asset allocation framework with an explicit review cycle, in which weights across Treasury bills, fixed deposits, commercial paper, certificates of deposit and other eligible instruments are reassessed against prevailing and expected short-term rates rather than allowed to drift. Because the effect operates partly

through the maturity and reinvestment channels, the review cycle matters as much as the target weights. Allocation targets should be specified jointly with maturity, issuer-concentration and liquidity limits, so that the deployment ratio cannot be improved at the expense of the characteristics the mandate requires. Deposit placement pricing should be treated as an active managerial function, and the deployment ratio should be monitored continuously rather than at reporting dates, since inflow-driven cash accumulation depresses it silently.

Investors should evaluate a fund's portfolio composition alongside its advertised yield. Where two funds report similar returns, investors should establish whether the similarity reflects comparable deployment and maturity profiles or a compensating combination of greater risk and higher cost, and should treat an unusually high yield accompanied by limited composition disclosure as a question rather than an attraction.

The Capital Markets Authority should require standardised periodic fund-level disclosure of portfolio allocation by asset class, reported on a common basis and presented alongside net annual yield. The evidence that composition drives yield differences makes composition disclosure a prerequisite for informed investor choice, and the Authority's own aggregate reporting demonstrates that the underlying data exist. Supervisory attention should focus on funds whose deployment ratios rise materially without a corresponding disclosure of the maturity and credit profile supporting them.

Future research should decompose the allocation ratio into instrument-class weights to identify which components of deployment drive the relationship; add weighted average maturity and issuer-concentration measures to separate the income channel from the maturity and credit channels; use quarterly or monthly data to expose the reallocation dynamics annual observations conceal; and employ instrumental-variable or quasi-experimental designs to address the endogeneity that constrains causal interpretation here.

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