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Market Anomalies And Stock Price Volatility Of Non-Financial Firms Listed At The Nairobi Securities Exchange

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Abstract
The study evaluates how market anomalies and idiosyncratic risk affect stock price volatility of non-financial companies listed on the Nairobi Securities Exchange from 2015 to 2024. Additionally, the study combines empirical and theoretical approaches from the Efficient Market Hypothesis, Prospect Theory, Modern Portfolio Theory, and Capital Asset Pricing Model to analyze how recurring market anomalies and behavioral biases affect firm-level volatility. The study also employed a quantitative longitudinal approach which utilized Nairobi Securities Exchange data and financial reports of firms. It evaluated idiosyncratic risk through residual returns and earnings volatility while stock return volatility was measured by standard deviation. Moreover, it employs both panel data regression and time-series models to analyze variable relationships. The findings exhibit that market anomalies create substantial volatility effects which turn out to be stronger when idiosyncratic risk is present. This study provides essential insights to investors and regulators and policymakers in emerging markets while demonstrating the need for customized financial approaches.

Keywords: *Market Anomalies, Idiosyncratic Risk, Stock Price Volatility, Nairobi Securities Exchange, Efficient Market Hypothesis, Panel Data Regression*

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I. Introduction

The Efficient Market Hypothesis (EMH) faces challenges from market anomalies especially in emerging markets like Kenya where investor behaviour, economic conditions, and institutional factors create price deviations. The Nairobi Securities Exchange (NSE) has shown susceptibility to anomalies such as calendar effects, behavioural biases, and investor sentiment due to its unique regulatory and economic dynamics. These phenomena frequently steer to increased stock price volatility, particularly in non-financial firms lacking sophisticated hedging strategies. Globally, anomalies are extensively studied, but there is a lack of research on their localized impact in Kenya, particularly with idiosyncratic risk as a mediating variable. Thus, this study bridges that gap by exploring the relationship between market anomalies, idiosyncratic risk, and stock price volatility in non-financial firms listed on the NSE. Subsequently, the study aims to investigate the impact of market anomalies on stock price volatility, the relationship between idiosyncratic risk and volatility, the moderating role of firm-specific factors in this relationship, and the influence of economic cycles on volatility among NSE-listed firms.

This study utilizes four key frameworks: Efficient Market Hypothesis, Modern Portfolio Theory, Prospect Theory, and Capital Asset Pricing Model. EMH propounded by Fama (1970) posits that stock prices reflect all available information, making it impossible to consistently achieve abnormal returns. However, the theory is facing increasing scrutiny due to the growing empirical evidence supporting it. Modern Portfolio Theory established by Markowitz (1952) emphasizes diversification for risk reduction, but idiosyncratic risk can persist, while Prospect Theory, introduced by Kahneman and Tversky, reveals that individuals prioritize fear of losses over the desire for equivalent gains in decision-making. The Capital Asset Pricing Model (CAPM) by Sharpe (1964) effectively accounts for systematic risk but often underestimates the importance of firm-specific risks in explaining variations in asset returns.

Empirical evidence indicates that the January effect, Monday effect, and investor sentiment patterns significantly influence stock price behavior. For instance, Naz et al. (2023) established calendar effects in cryptocurrency markets, indicating anomaly-driven patterns, while Kim and Shamsuddin (2023) found volatility clustering in emerging markets using GARCH models. Moreover, Fenner et al. (2020) and Chen et al. (2021) realized a link between idiosyncratic risk and lower returns and increased volatility, especially during financial distress. However, there is a significant gap in research on emerging markets, especially in Africa. Orenge and Ondiwa (2024) NSE studies investigate the impact of earnings quality on the correlation between firm-specific

risks and volatility. However, few studies have explored the relationship between market anomalies and idiosyncratic risk in influencing volatility. The current study explores the dynamics of non-financial firms, focusing on idiosyncratic risk as a mediating variable and its interaction with market anomalies in a unique, regulated, and behaviorally distinct market environment, filling a gap in existing literature.

II. Procedure Methodology

The study uses a positivist research philosophy, focusing on empirical, observable, and measurable data to test hypotheses and identify patterns, assuming reality is objective and quantifiable using scientific methods. This philosophical structure supports the study's objective of exploring the relationships between market anomalies, idiosyncratic risk, and stock price volatility through statistical analysis. The positivist paradigm is particularly suitable for financial and economic research, as it allows for systematic measurement of variables and outcomes (Creswell & Creswell, 2012; Saunders, Lewis, & Thornhill, 2019). The study uses a quantitative longitudinal research design to analyze data from 2015 to 2024, allowing for statistical testing of hypotheses and observation of trends and structural changes over time. The dual approach analyzes short-term and long-term stock price volatility patterns, enhancing the robustness of findings by capturing cyclical and macroeconomic influences on non-financial firms listed on the NSE (Bryman & Bell, 2022).

The target population comprises all non-financial firms listed on the NSE during the study period. These firms are selected because they operate in diverse sectors and are subject to different economic exposures compared to financial institutions. Financial firms are excluded due to their complex regulatory environments, different risk profiles, and varying financial reporting standards, which could confound the analysis of the relationship between market anomalies and stock price volatility (Shikumo et al., 2020).

Purposive sampling is used to select firms meeting specific criteria, including those with continuous listing and complete financial data from 2015 to 2024. It is a non-probability sampling technique that ensures consistency in financial reporting and reduces bias by focusing on a homogenous group, making it ideal for financial research requiring a specific subset for longitudinal analysis (Etikan, Musa, & Alkassim, 2016). The study utilizes secondary data from firm-level financial reports, the NSE database, and Bloomberg for cost-effective, time-efficient, and longitudinal analysis over multiple years. This method ensures the use of data, which has undergone regulatory oversight, enhanced statistical generalizability and facilitated robust time-series analyses. This study examines market anomalies, idiosyncratic risk, stock price volatility, and firm-specific moderating factors as primary variables.

Market anomalies are identified through the analysis of monthly and daily average returns, utilizing the January and Monday effects to identify consistent patterns. Price anomalies are evaluated using financial ratios like P/E and P/B (Naz et al., 2023; Zaremba & Maydybura, 2019). Idiosyncratic risk is assessed through residual variance from the Fama-French Three-Factor Model, earnings volatility, and residual returns (Fama & French, 1993). Stock price volatility is determined by analyzing historical stock returns, using GARCH and EGARCH models to analyze volatility clustering and asymmetric market responses. The study incorporates firm-specific moderators like firm size, leverage, and profitability to examine their impact on primary relationships.

To analyze data, the study employs descriptive statistics, correlation analysis, and panel data regression techniques to provide an overview of the data distribution and central tendencies. Correlation analysis evaluates the strength and direction of relationships among key variables using panel data regression models, including fixed and random effects models, to account for firm-level and time-specific variations. Furthermore, the Hausman test is utilized to identify the most suitable model for the analysis. Moreover, the study employs time-series methods, such as GARCH-type models, to examine volatility persistence and heteroskedasticity across firms and over time. Lastly, the study utilized Stata and EViews for data analysis to ensure accuracy, consistency, and reproducibility.

III. Result

The study reveals that market anomalies significantly impact the stock price volatility of non-financial firms listed on the Nairobi Securities Exchange. Calendar-based anomalies like January and Monday effects show significant increases in volatility during these periods. Additionally, the study indicates that firms with higher idiosyncratic risk, as measured by earnings volatility and residual returns, experience more significant stock price fluctuations during market fluctuations or macroeconomic instability. The panel data analysis reveals idiosyncratic risk mediates market anomalies' impact on volatility, with firm-specific characteristics like size, profitability, and leverage affecting this relationship. The findings are supported by robust statistical outputs from fixed and random effects models, validated by Hausman tests and robustness checks using GARCH-type models.

IV. Discussion

The study reveals that market anomalies significantly impact stock price volatility in non-financial firms listed on the NSE, confirming the Behavioral Finance Theory's core principles and challenging the Efficient

Market Hypothesis, which asserts asset prices always reflect all available information. The January and Monday anomalies suggest persistent inefficiencies in the NSE, possibly due to behavioral biases, informational asymmetries, and limited investor sophistication. Further, firms with high idiosyncratic risk experience greater price fluctuations during anomalies, underscoring the significance of firm-specific factors in market behavior. Moreover, the Fama-French Three-Factor Model is validated for capturing residual variance, indicating unsystematic risk remains a significant factor in volatility in emerging markets.

Additionally, Firm-specific attributes like size, leverage, and profitability can either buffer or exacerbate external market influences. Smaller firms with high leverage and low profitability show more volatility, underscoring their vulnerability to market shocks. The conclusions underscore the significance of recurring patterns and firm-level characteristics in influencing market volatility in non-Western contexts. It recommends that investors should refine risk management strategies and policymakers should enhance market stability. Thus, suggesting the need for targeted investor education, stronger regulatory oversight, and improved financial disclosure practices.

V. Conclusion

The study confirms that market anomalies significantly impact stock price volatility in non-financial firms listed on the NSE, with idiosyncratic risk acting as a key mediator. The NSE's unique characteristics, including low liquidity, limited diversification, and high investor sentiment, make it more susceptible to predictable volatility patterns. Policymakers and regulators should explore strategies to curb speculative activities and enhance market transparency. Institutional investors should consider firm-specific risks in portfolio strategies, and future research could expand this model to include behavioral survey data or comparative studies across African markets.

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