FINANCIAL RISK HEDGING, CAPITAL MARKET AUTHORITY REGULATIONS, AND SHARE PRICE VOLATILITY OF NAIROBI SECURITIES EXCHANGE LISTED FIRMS IN KENYA

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A Thesis Submitted in Partial Fulfilment of the Requirements for the Degree of Doctor of Philosophy in Business Administration (Finance Option) of Murang'a University of Technology

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DECLARATION

Student Declaration

I hereby declare that this thesis is my original work and to the best of my knowledge has not been presented for a degree award in this or any other university. I understand what plagiarism is and I am aware of the University's policy in this regard. I understand that any false claim in respect of this work shall result in disciplinary action in accordance with the University Anti-Plagiarism Policy.

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The undersigned certify that they have read and hereby recommended for the acceptance of Murang'a University of Technology a Thesis entitled **"Financial Risk Hedging, CMA Regulations, and Share Price Volatility of Nairobi Securities Exchange Listed Firms in Kenya".**

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DEDICATION

This thesis work is dedicated to my dear mom, Mrs. Millicent Omogi, my loving wife, Emmah Kaling'a, my lovely daughter, Shantel Kamaria and my son, Innocent Sankara, and finally, my siblings, for always being there for me during my thesis work. Your words of encouragement gave me the hope of constantly pushing on. Without your support, this day would have not been a success.

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ABSTRACT

In an environment characterized by economic uncertainty, fluctuating exchange rates, and liquidity constraints, effective risk management practices have become increasingly important for maintaining firm value and investor confidence. While the Kenyan government has recorded steady economic development, the share prices of NSE-listed firms have continued to fluctuate. The persistent phenomenon of share price volatility reflects investor expectations, market information, and financial realities. Excessive volatility disrupts the proper functioning of the financial system and, beyond a certain threshold, increases financial risk. This study investigates financial risk hedging, Capital Market Authority regulations and share price volatility of Nairobi Securities Exchange listed firms in Kenya. The study's specific objectives were to examine the effects of liquidity risk hedging, exchange rate risk, market risk hedging, and credit risk hedging on the share price volatility of firms listed on the NSE. Capital Markets Authority (CMA) regulations were adopted as the moderating variable. The independent variables were credit risk hedging, liquidity risk hedging, market risk hedging, and exchange risk hedging which were measured using leverage ratio, acid-test ratio, Capital Asset Pricing Model (CAPM), and Value at Risk (VaR) models respectively, while share price volatility was calculated based on the standard deviation of share prices. CMA regulations were measured using the CMA NSE Shareholding Regulations, 2016. The study was anchored on four theories: Merton's model, Modern Portfolio Theory, Liquidity Preference Theory, and Purchasing Power Parity Theory. The study reviewed various studies to establish the relationship between the financial risk hedging and share price volatility. A positivist research philosophy and a mixed research design and a guided the investigation. The study targeted a population of fifty-four (54) companies listed on the NSE between 2013 and 2022. The study employed random-effects regression models to analyze the relationship between financial risk hedging and share price volatility. Primary data were collected for the moderating variable, while secondary data were used for both the dependent and independent variables. A questionnaire was used to collect primary data, and a data collection sheet was used for secondary data. A pilot study was conducted on 13 unlisted firms. Diagnostic tests were performed to determine whether to apply the fixed-effects or random-effects model. The results were presented using graphs, tables, and figures. The findings reveal a statistically significant negative relationship between financial risk hedging and share price volatility, indicating that firms actively engaging in financial risk hedging tend to experience more stable stock prices. Specifically, liquidity risk hedging and credit risk hedging showed a significant negative effect on share price volatility, while market risk hedging and exchange rate risk hedging had a statistically significant positive effect. The findings indicate that CMA regulations have a moderating effect on the relationship between liquidity risk hedging and share price volatility of NSE-listed firms. The study recommends highly leveraged firms to implement diversified credit risk hedging strategies, such as credit insurance and strong credit scoring systems, and urges all firms to maintain an acid test ratio of at least 1.0 to ensure they can meet short-term obligations without depending on inventory. The firms with high beta coefficients under CAPM which indicates strong sensitivity to market movements should adopt formal market risk hedging strategies.

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ACRONYMS AND ABBREVIATIONS

ACCA	Association of Chartered Certified Accountants
ADF	Augmented Dickie-Fuller
AFRREV	African Research Review
AGOSR	Aggregator of Global Open Science and Research
APT	Arbitrage Pricing Theory
ARDL	Autoregressive Distributed Lag
ASEAN	Association of Southeast Asian Nations
BIS	Bank for International Settlements
BLUE	Best Linear Unbiased Estimation
CAPM	Capital Asset Pricing Model
CBK	Central Bank of Kenya
CCP	Certified Credit Professionals
CEO	Chief Executive Officer
CSP	Characteristics Sorted Portfolios
CMA	Capital Market Authority
CO	Company
CFA	Chartered Financial Analyst
CHRP	Certified Human Resource Professional
CIA	Certified Internal Auditor
CIMA	Chartered Institute of Management Accountants
CPA	Certified Public Accountants
CPI	Consumer Price Index
CQP	Certified Quality Professional
CS	Certified Secretaries
CSR	Corporate Social Responsibility
DMB	Deposit Money Banks
EA	East Africa
EBIT	Earnings Before Interest and Tax
EMH	Efficient Market Hypothesis
EMS	Environmental Management Systems

EMU	Eastern Michigan University
ERC	Energy Regulatory Commission
ERM	Enterprise Risk Management
ETF	Exchange-Traded Fund
FEM	Fixed Effects Model
FX	Forex
GARCH	Generalized Autoregressive Conditional Heteroscedasticity
GDP	Gross Domestic Product
HF	Housing Finance
HOD	Head of Department
IBM	International Business Machines
ICIM	International Conference on Information Management
IFRS	International Financial Reporting Standards
IFS	International Financial Statistics
IGI	International Gemological Institute
IMF	International Monetary Fund
IRA	Insurance Regulatory Authority
ISSN	International Standard Serial Number
JEMA	Journal of Environment Management
JKUAT	Jomo Kenyatta University of Agriculture and Technology
JMMR	Journal of Mixed Methods Research
JSE	Johannesburg Stock Exchange
KAM	Kenya Association of Manufacturers
KeMU	Kenya Methodist University
KESRA	Kenya School of Revenue Administration
KSG	Kenya School of Government
KNBS	Kenya National Bureau of Statistics
LLC	Limited Liability Company
LM	Lagrange Multiplier
LOP	Law of one Price
LR	Likelihood Ratio
LSK	Law Society of Kenya

LTD	Limited
MBA	Master of Business Administration
MFIs	Microfinance Institutions
MIT	Massachusetts Institute of Technology
MLIS	Medium and Large Industries
MSIS	Micro and Small Industries
MMUST	Masinde Muliro University of Science and Technology
MPBV	Market Price to Book Value Ratio
MUT	Murang'a University of Technology
NBER	National Bureau of Economic Research
NSE	Nairobi Securities Exchange
NYSE	New York Stock Exchange
OLS	Ordinary Least Squares
OTC	Over the Counter
PhD	Doctor of Philosophy
PLC	Public Limited Company
PMP	Project Management Professional
RBA	Retirement Benefits Authority
RER	Real Exchange Rate
REIT	Real Estate Investment Trusts
REM	Random Effect Model
ROA	Return on Assets
ROE	Return on Equity
ROIC	Data on the return on invested capital
SACCOS	Savings and Credit Co-operative Societies
SASRA	Sacco Societies Regulatory Authority
S-CAPM	Sustainable Capital Asset Pricing Model
SD	Standard Deviation
STRS	Stratified Random Sampling
SME	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
SPV	Stock Price Volatility

UK	United Kingdom
UoN	University of Nairobi
USA	United States of America
USD	United States dollar
VIF	Variance Inflation Factor

OPERATIONAL DEFINITION OF TERMS

The study adopted the following definitions:

CMA Regulations	CMA Regulations refer to the legal rules, guidelines, and frameworks established by the Capital Markets Authority to regulate, supervise, and promote orderly, fair, and efficient capital markets. These regulations guide the conduct of market participants ensuring transparency, investor protection, and compliance with financial reporting standards (Marinova, 2024).
Credit risk	Credit risk defines the possibility that debtors would be unable to make payments at the time and in a manner that occurs due to cash flow interruptions (Kedia & Mishra, 2024).
Exchange Risk	Exchange risk is the probability that variations in currency exchange rates could impact a business's operations and profitability. It is related to transactions, translations, and economic or operational aspects (Muiru, 2019).
Financial Risk Hedging	Financial risk hedging refers to the practice of controlling risk by utilising a financial derivative to counteract the price movement of a connected physical transaction (Shakatreh, Rumman & Mugableh, 2023).
Hedging	Hedging refers to completing an unfavourable transaction to balance the risks and try to lower the risk of the underlying transaction. It helps reduce potential losses brought on by unpredictable investment price changes (Nyarikini, 2024).
Liquidity Risk	Liquidity risk is the potential inability of a company to meet its short-term financial commitments as and when they occur due to its incapacity to turn assets into cash without suffering a significant loss that is typified by financing liquidity and market liquidity risk (Ramos & Righi, 2020).
Listing	Listing refers to the granting a company a listing of and permission to deal and trade in securities on the recognised Securities Exchange (Nikani & Holland, 2022).
Market Risk	Market risk is the chance that the value of a portfolio or asset will drop due to changes in the market risk components' values resulting from unpredictability in shares, interest rates, currency rates, and commodity prices (Zhao, Li & Yang, 2024).

Share	A share refers to one unit of equity ownership in a certain company's capital stock (Dudycz, 2022).
Share Price	Share price refers to the market value of stock or an equity of a specific company at a given time (Bustani, Kurniaty & Widyanti, 2021).
Share Price Volatility	Share price volatility refers to the average rate at which the price of a share increases or decreases over a particular period (Rosana, 2024).
Volatility	Volatility refers to the extent to which a trade price series fluctuates over time (Bordalo, Gennaioli, Porta & Shleifer, 2024).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The vast key firms' surroundings are constantly shifting and uncertain. As firms sell their goods globally, an unstable business climate has emerged due to globalization. Particularly, firms in the service industry are constantly becoming aware of the hazards to which they are subjected, which endangers the firms' continued existence. In many instances, practices not supportive of firms' operations result in financial risks (Valdés & Caldentey, 2024). The overview of financial risk hedging and share price volatility, as well as a local, regional, and global perspective on financial risk hedging and price volatility of Nairobi Securities Exchange (NSE)-listed enterprises, comprised the subsections that follow in this section.

1.1.1 Financial Risk Hedging

Hedging is a method of risk reduction that is frequently employed by businesses. Mbeukam (2024) demonstrates that hedging is completing an unfavourable transaction to balance the risks and try to lower the risk of the underlying transaction. Abderraouf and Ibrahim (2024) posit that hedging lessens the risk of upcoming price changes that, if not poorly managed, could negatively impact a company's performance. Wang (2024) adds that a company or an individual hedges against a price shift that would otherwise adversely influence profitability. Hedging offers highly liquid, reasonably priced positions comparable to those in diversified stock portfolios. An elaborate risk protection strategy known as financial risk hedging involves buying or selling assets to reduce the possibility that an investment may lose value.

Nyaguthii (2021) posits that financial risk hedging is hindered by increased hedging costs, a lack of trading skills, and is non-beneficial when the market performs well and requires higher trading capital. Hedging is advantageous to a company in the following ways: It lowers expected corporate tax liabilities; lowers the likelihood that the company will experience financial distress, hence lowering the estimated costs associated with it; diminishes the threat that the company's top leadership, staff,

vendors, plus clients; and manages the conflict of interest among creditors together with investors, lowering the expenses associated with fiscal obligation agency, hence streamlining the financial process (Kiio & Jagongo, 2017).

Oluseyi (2022) enumerates credit risk, liquidity risk, financing risk, and market risk as the common risk forms. He further states that the following should be included among the essential components of a successful risk management process: a risk management framework that includes supervision by the committee and top administration as a critical component; techniques plus practices adopted in identifying, measuring, tracking, and controlling risks; and a mechanism for reviewing the risk management framework. Kedia and Mishra (2024) defined credit risk as the possibility that debtors would be unable to make payments at the time and in a manner that occurs due to cash flow interruptions. They further posit that default risk is another name for credit risk, and creditors and bondholders are susceptible to credit risk on the provision of an additional period of debt default.

Walela, Omagwa, and Muathe (2022) observed that consumer credit risk can be measured by corresponding security, the ability to pay the loan, the debtor's history, and the loan security's condition. Further, bank size is considered to have a moderating effect on how peril safeguard techniques correlate with the financial viability of the listed banking institutions (Oluseyi, 2022). According to Muzindutsi and Obalade (2024), the hedging approach for market risk is aimed at managing dangers that could materialize in various corporations, such as operational, strategic, and financial hazards. A failing risk management system caused the United States of America's (USA) 2008 financial crisis. The collapse of the US mortgage sector was caused by the catastrophe, resulting in a severe influence due to various factors beyond the control of the market participants in the US and the world. All financial institutions strive to operate profitably, control business risks, adhere to legal requirements, and produce accurate financial reports.

Market risk hedging involves identifying, quantifying, tracking, reporting, and controlling market risk (Ochieng, 2021). Controlling various perils associated with market forces, such as interest rate risk, exchange risk, and price fluctuation peril associated with stocks and assets, are all aspects of market risk hedging. Firms can

protect themselves from unacceptably high losses by hedging their market risk. Banks can determine the minimal amount of capital necessary for market risk using either the central method or adopting the synchronized methodology alternatively, as per the various fundamental examinations of the trading book (Alexander, 2010). To adopt the internal model's approach, financial institutions must meet the requirements of surplus and deficit criteria in addition to ex-post evaluation.

Muteti (2017) defined liquidity risk as the control of the risk resulting from an investment's inability to be quickly and carefully credited or sold to avoid or reduce a loss when it lacks marketability. Kavale and Sheikhdon (2016) investigated variables in managing liquidity that influence the fiscal health of Somali banking institutions. The eighty-seven (87) staff members out of the possible one hundred and twelve staff members of the financial institutions comprised the sample frame and were incorporated for the research. Correspondingly, the researcher used a descriptive survey design. The study discovered a significant relationship between the fiscal viability of the Somali banking institutions and liquidity-related characteristics.

1.1.1.1 Global Context of Financial Risk Hedging

Globally, hedging is a crucial method of reducing risk that organizations frequently employ. Swaps, options, forward contracts, and futures agreements are frequently utilized to reduce financial risk. Huang (2024) conducted an analysis of currency risk hedging strategies in Multinational Companies: In the case of the 2022 Russo-Ukrainian war and surge in US Dollar exchange rate, 56% of hedging firms used to hedge commodity price hazard, approximately seventy-six percent employ these particular strategies in hedging risk on the interest rates risk, while 83% employed forward contracts, futures agreements, options, or swaps for managing foreign exchange risk.

Abderraouf and Ibrahim (2024) sought to uncover the most significant discrepancies between the two capital adequacy rules provided by the Basel III Accord and the Islamic Financial Services Board. The study revealed that the two standards share some characteristics and can be applied to Islamic banks. The study also revealed that hedging lowers the risk of prospective price fluctuations, which, if poorly handled, could negatively impact a company. Using such techniques decreased a firm's overall

risk, according to Bartram, Brown, and Conrad's (2011) survey of corporates, not financial enterprises, from forty-seven countries. This effect was particularly pronounced in organizations with greater exposure to rates of interest and rates of exchange, in addition to securities price concerns.

Geyer-Klingeberg, Hang, and Rathgeber (2021) conducted a study on the influence of organizational hedging strategies on the value of publicly traded entities in the United Kingdom (UK) and concluded that exchange rate hedgers continually experience higher impacts of hedging on business net worth than interest rate and commodity price hedgers, for research released in journals with lower ratings. The results suggest that while using functional hedging, premiums for peril safeguard increase noticeably. A corporate value discount of negative 0.8 percent is offered to hedgers of interest rates (share prices) and an overall 1.8% hedging premium for currency exchange hedging. Carbonneau (2021) had a similar conclusion while studying the influence of deep hedging on long-term financial derivatives.

Hadian and Adaoglu (2020) on the impact of financial and operational hedging on company value, a case of Malaysian multinationals. The findings indicate that in the short term, derivatives hedging generates a value premium range of 7.88 percent and 8.21 percent, and in the long term, 18.81 percent and 19.80 percent. This value premium became apparent after adjusting for both the transaction and translation earnings (losses) and non-operational foreign exchange gains (deficits). On the other hand, the value discount ranges that foreign debt hedging produces are often 8.19 percent to 8.54 percent in the near term and 12.70 percent to 13.12 percent in the long term. However, there is no proof that operational hedging has a value effect. On the other hand, foreign debt hedging destroys value based on its negative value effect.

Alsahlawi (2021) assessed the role of hedging and derivatives techniques and fintech adoption on financial risk management in Saudi banks. The findings suggest a direct correlation between Fintech adoption and financial peril management, including hedging and derivatives strategies. The conclusion further indicates that adopting Fintech, fiscal risk control in Saudi Arabian institutions, and hedging and derivatives strategies are significantly statistically mediated by wise financial choices. The findings are consistent with those of Bachiller, Boubaker, and Mefteh-Wali (2021),

who concluded that using foreign exchange derivatives increases the value of a firm and that businesses, particularly those operating in industrialized and common law nations, can benefit financially by hedging.

The information on hazard vulnerability, functional peril safeguard, and energy hedging from the worldwide aviation sector highlights that Asian airlines are more adversely affected as compared with both their North American and European companions, as demonstrated by a study that examined sixty-four airlines over eleven years (Lucey & Berghöfer, 2014). Operational hedging does not considerably lessen exposure. On the other hand, the risk exposure coefficient rises by 1.83 percent for every percentage point increase in fleet variety, as determined by a dispersion index that considers various aircraft types. However, exposure increases by 0.63 percent when fleet diversity is assessed using different aircraft families. The worldwide trend of airline managers to decrease fleet variety is consistent with these findings. Between 2002 and 2012, airlines decreased the diversity of their fleet by either 10.77 percent or 7.7 percent, reliant upon a delegate. European airlines have had the most significant decrease, with a 23.12 percent drop.

Marzban, Delage and Li (2022) examined equal risk pricing and hedging of financial derivatives with convex risk measures in the United States. The study state that both the underwriter and the trader ultimately subject themselves to hazards that are lower and more comparable to those they would encounter through the other methods when using an equal risk price. Liu (2021) also deduced that fuel price volatility has no discernible relationship to the actual operation of income or returns (production costs, operating cash flow, and permissive payout). A significant positive correlation exists between manipulating cash flow from operations and gasoline price fluctuation, as established by the standard deviation of variations in fuel prices.

1.1.1.2 Regional Context of Financial Risk Hedging

Globalization has significantly increased banks' exposure to diverse financial risks. When financial risks are not adequately managed, the performance of many firms is likely to decline. African firms are exposed to various risks, including operating, financial, and market hazards. Adopting derivatives as a tool to mitigate risk is uncommon in African nations. For example, South Africa and Nigeria only employ

financial mechanisms on current agreements, such as swaps, forwards, and futures. Researchers posit that the lack of an effective and efficient risk management strategy might cause enormous losses to corporations, resulting in an organization being declared insolvent and collapsing.

Otaify (2022) modelled volatility of size, value, and financial leverage-sorted portfolios: Evidence from the Egyptian stock exchange. The paper concludes that the volatility clustering and persistence of the characteristics-sorted portfolios vary. The study confirms the existence of the asymmetry effect, which indicates that unfavourable information has a more significant impact on the CSPs' fluctuations than favourable information of similar impact. However, the conditional variance has little bearing regarding the tentative mean payback over the characteristics-sorted portfolios. Most portfolios experienced a notable change in the fluctuation in share prices during the 2008 financial crisis and the 2011 post-revolutionary Egypt era of preventive measures. Stuber (2022) discovered a mismatch between the product portfolio supplied by South African financial institutions and the surveyed enterprises' hedging requirements, implying that South African multinational corporations do not require or employ options and futures for developing currencies.

Atenga and Mougoué (2021) assert that, depending on the extent of financial exposure and share to global commerce, the consequences of regional and worldwide market shocks on African equities markets are diverse and time-varying. According to studies conducted by various researchers on bidirectional spillover analysis, African exchanges especially in Mauritius are considered more recipients of dual earnings and variability overflows. Furthermore, shocks to these markets' volatility propagate faster than shocks to Africa's returns. High spillover episodes surfaced after the 2012 European economic recession and the 2008 worldwide fiscal collapse. Peaks also increase when market efficiency-boosting policies or structural economic reforms affect African markets. In agreement with empirical estimates, trade or financial exposure does not significantly explain the African equity market's return and volatility spillovers.

Odubuasi, Uduak and Ifurueze (2020) examined the impact of market risks on Nigerian companies' economic progress. The findings show that exchange rates

significantly impact energy and petroleum entities' earnings, such as returns on assets and equity. Furthermore, interest rates have a minor impact on asset returns with a converse impact on equity return. More findings indicate that the share price variability does not impact the ROA and ROE of business entities operating in Nigeria's oil and gas industry. Similarly, changes in commodity prices do not affect either ROA or ROE. The report suggests, among other things, that governments keep interest rates low to help businesses boost their profitability and that businesses employ hedging to manage fluctuations in exchange rates.

Bonga-Bonga and Morema (2020) explored the relationship between hedging and changes in the price of petroleum and energy on the variability of the South African securities exchange. The study's conclusions demonstrate a considerable connection between the securities earnings per share variability and the market securities. This research highlights a significant correlation between earnings per share and commodities exchanges, which is critical to portfolio management. Letsuma (2021) evaluated an analysis of hedging in the South African manufacturing sector, where risk arises due to unsatisfactory exploration, fluctuation in input prices, and production costs. In this case, using interest rate swaps and fixed forward exchange rates as hedging mechanisms has helped stabilize companies in the manufacturing sector that would have gone through a decline.

Sahraoui and Merhoun (2025) assessed the impact of risk management and economic stability on Algerian banks' financial performance. The findings revealed that banking risk management and the application of economic evidence have a significant impact on the financial performance of Algerian banks; however, the impact varies depending on the variable used. The study also demonstrated that economic stability in Algeria is determined by the variation of the following financial and economic variables. To bolster this argument, Pretorius and Blaauw (2020) pointed out that the robust capital market structures regarding developing markets such as South Africa amid the worldwide economic recession of 2008 and devising various mechanisms like adopting derivatives to reduce risk. This feature is absent from Nigeria's capital market, were responsible for their ability to bounce back.

1.1.1.3 Local Context of Financial Risk Hedging

Over the years, there has been significant volatility in the share prices of NSE listed firms in Kenya. Various studies in Kenya have analysed the correlation between the share prices and hedging mechanisms of various corporations. Inflation is regarded as a significant source of financial risk. Kenya has gone through one of its unpleasant periods of inflation since gaining its independence (Central Bank of Kenya, 2010). During this time, many projects came to a standstill, and the prices of goods and services began to rise. The 2008 worldwide economic recession presented additional difficulties as well. During the height of the crisis, economy-wide factors significantly impacted economic cycles, including peak, trough, recession, and expansion.

As examined by Mutwiri, Omagwa and Wamugo (2021), the listed firms' value decreased by over 2.5 billion US dollars (USD) in 2015 alone, which equates to almost a quarter of the annual budget of the central government. To examine the correlation between securities derivatives and the fiscal viability of particular listed financial institutions, Muthine (2021) employed an explanatory study methodology. According to the study, financial derivatives plus the fiscal viability of a subset of the listed financial institutions had a linear relationship. The analysis further found low sales of swap contracts and rising costs, which decreased earnings. Furthermore, banks lost client contact information while reorganizing their computerized systems due to misplacement or incorrect capture in the new system.

Kenyan firms should develop a range of hedging strategies to lessen the impact of the financial risks. Wanja (2013) revealed that Kenyan enterprises employ forward, options, swaps, and futures contracts to reduce the impact of interest rate risk. Otsyula (2020) agreed that market trading platform technology and institutional restrictions hinder Kenyan businesses. In Kenya, how hedging influences any particular company's success is still being determined. From the point of view of Wang (2024), hedging is mainly devised to protect against adverse price fluctuations that would inversely impact a firm's performance. Alexander, Bailey, and Sharpe (2013) assert that hedging provides less costly positions and more liquid than those acquired through diversified asset groups.

Hamza, Alinoor, Abdi, Nyabuti, and Okiro (2023) adopted an explanatory research methodology to assess how business-related threat hedging practices affect the financial distress impact of quoted Kenyan non-business entities. The researcher deduced that profitability, leverage, and liquidity levels significantly and negatively impacted company fiscal peril safeguard decisions. Njeru (2021), in his study on the influence of economic peril administration on the profitability of Kenyan oil marketing companies. With a beta of 0.013, 0.023, and 0.02, respectively, the findings assert the existence of a noteworthy direct impact of default rate hazard control and exchange rate hazard control on the profitability of Kenyan oil marketing enterprises.

1.1.2 Share Price Volatility

In the modern financial landscape, share price volatility is a key metric for assessing the risk profile and investment attractiveness of a firm. Volatility signifies the degree of variation in a firm's stock price over time and is influenced by both internal and external factors. For listed firms, especially those operating in emerging markets such as Kenya, high share price volatility can deter investment, increase the cost of capital, and reflect financial instability (Bartram, Brown, & Fehle, 2009). Understanding the drivers of share price volatility is thus crucial for corporate managers, investors, and regulators. One major driver of volatility is a firm's exposure to financial risks, notably credit risk, market risk, exchange rate risk, and liquidity risk. These risks, if left unmanaged, can cause fluctuations in cash flows and earnings, leading to erratic movements in share prices (Allayannis & Weston, 2021). Firms exposed to credit risk, for instance, face the risk of counterparties defaulting on obligations. This not only affects profitability but also creates uncertainty in financial performance, which can increase the volatility of share prices (Ahmed & Guney, 2022).

Market risk, which includes changes in interest rates, commodity prices, and general stock market trends, affects firm performance by altering the cost of capital and expected returns. Firms without effective market risk mitigation strategies may see their stock prices react sharply to economic shocks (Bartram et al., 2009). Exchange rate risk is particularly relevant for firms engaged in international trade or those with foreign-denominated debt. Fluctuations in currency values can significantly affect firm revenues and profitability, influencing, investor perception and share price movements (Efuntade & Efuntade, 2022). Liquidity risk, on the other hand, arises

when a firm is unable to meet its short-term obligations or convert assets into cash without significant losses. Poor liquidity positions can undermine investor confidence and increase the risk premium demanded by the market, thereby inducing greater share price fluctuations (Dae & Wamugo, 2022).

Investors use share price volatility to assess the level of uncertainty in the market (Bhowmik & Wang, 2020). According to Rashid, Jehan, and Kanval (2023), share price refers to the market value of a company's equity or stock at a specific point in time. An asset is considered volatile when its theoretical value lies within a broad range of potential outcomes, suggesting it may experience significant price swings in either direction in the near future (Liu, Umair, & Gao, 2023). Share price volatility specifically refers to the average rate at which the price of a share increases or decreases over a defined period (Rosana, 2024). Higher volatility indicates greater divergence in share prices with high risk and higher returns. Deacons (East Africa) PLC experienced significant share price volatility due to operational losses, poor expansion strategies, and mounting debt (CMA, 2018). Listed on the NSE's Growth Enterprise Market Segment in 2016 at around Kshs. 15.00 per share, the company's financial health quickly declined amid rising costs and falling sales. In 2017, it reported a Kshs. 180 million loss, causing its share price to drop to approximately Kshs. 5.00. By 2018, Deacons was placed under administration due to insolvency, and its share price fell below Kshs. 1.00 before being suspended from trading. This reflects extreme volatility driven by financial instability and loss of investor confidence.

Kang, de Gracia, and Ratti (2025) assert that it is impossible to accurately forecast the future price of a highly volatile share. In response to this unpredictability, agent-based stock market models which incorporate imitation and contagion effects in price formation are gaining popularity (Panta & Dahal, 2024). Stock price swings may also result from broader industry developments or macroeconomic trends. For instance, share prices generally decline during economic downturns. To empirically determine the volatility of financial assets, price observations at predefined intervals are required. Mumias Sugar Company, once Kenya's leading sugar producer, faced severe financial and operational difficulties between 2013 and 2019, resulting in significant share price volatility. Starting in 2013, the company suffered from poor management, declining production, and rising debt, causing its share price to fall from around Kshs. 5.00 to

below Kshs. 2.00 by 2015 after posting a Kshs. 2.7 billion loss. Despite a Kshs. 1 billion government bailout, continued losses and supply challenges from 2016 to 2018 kept the share price low, fluctuating between Kshs. 0.80 and Kshs. 1.50 amid speculation and uncertainty. In 2019, the Capital Markets Authority suspended trading of its shares after the firm was placed under receivership due to a Kshs. 545 million loan default, effectively ending its stock market activity.

Volatility refers to the extent to which a trade price series fluctuates over time (Bordalo et al., 2024). It represents the variation from a given return, compounded sequentially over a specific period such as daily, monthly, or annually reflecting the degree of price dispersion in an asset's returns (Dhingra, Batra, Aggarwal, Yadav, & Kumar, 2024). While many investors adhere to a long-term investment horizon and often disregard short-term fluctuations, awareness of market volatility remains crucial. As noted by Megaritis, Vlastakis, and Triantafyllou (2021), maintaining a long-term perspective does not eliminate the need to understand the impact of volatile markets and implement measures to mitigate associated risks. Typically, prices increase when investor demand rises and decline when investors exit the market. Kenya Airways for instance experienced notable share price volatility between 2015 and 2022 due to persistent financial challenges. A record loss of Kshs. 25.7 billion in 2015 led to a sharp decline in share value, followed by further volatility during a complex debt restructuring in 2017–2018. The COVID-19 pandemic in 2020 halted international flights, causing revenue losses and a temporary suspension of trading on the NSE. Despite a gradual recovery in air travel in 2021 and 2022, continued financial distress and government bailouts sustained investor uncertainty and share price instability.

In empirical studies, share price volatility is often measured using standard deviation, as it incorporates all observations and is relatively easy to interpret. For instance, Bhowmik and Wang (2020) utilized standard deviation to analyze stock market volatility and returns. Additionally, Parkinson (1980) developed an alternative formula that estimates volatility using the ratio of the highest and lowest prices relative to their average. According to Mori (2016), this Parkinson estimator is considered superior to simple high-low price range measures, as it captures intraday price movement more accurately. Therefore, the Parkinson formula is frequently used as a reliable proxy for calculating share price volatility. To mitigate these risks, firms

implement financial risk hedging strategies, such as the use of derivatives, forward contracts, diversification, and internal financial controls. Theoretically, hedging reduces the variability in future cash flows and earnings, which should in turn lead to reduced share price volatility (Allayannis & Weston, 2001). Effective hedging practices can also signal to investors that a firm is proactive in managing risk, thereby reducing perceived uncertainty and stabilizing stock prices (Ahmed & Guney, 2022).

1.1.3 Financial Risk Hedging and Share Price Volatility

Theoretical and empirical literature on financial risk hedging has attracted the interest of many researchers. Due to its diverse nature, several research studies on financial risk hedging have been conducted, including those by Li (2025) and Ndung'u (2022). Even though there is more extensive data on the use of hedging to reduce financial risk, there are conflicting results from empirical studies on its conclusion. Agricultural companies increased their earnings before interest, taxes, depreciation, and amortization (EBITDA). They decreased their susceptibility to interest and credit risk during the 2008 financial crisis, thanks partly to derivatives (Dugbartey, 2025).

Volatility in the financial markets is not a new phenomenon. For instance, a study by Mwangi (2023) found that excessive volatility will likely lead to low trading volumes due to traders' reluctance to place their money in the market. Liu, Umair and Gao (2023) discovered that increased volatility hurts share prices when both the crude oil costs and share prices are low. As the research of Shaharudin, Samad and Bhat (2009) demonstrated, the abrupt change in the stability of returns is negatively connected to the unpredictability of market returns. Dae and Wamugo (2022) examined that the COVID-19 epidemic caused significant volatility in Kenya's listed firms in 2020. Due to market shocks, listed firms incur significant cash flow volatility, especially during recessions (Njuguna, Iraya, Nyamute & Kiiru, 2022). By offering hedging products, the securities markets contribute significantly to managing exchange risk. As stated by Wanjau, Murage, and Murungi (2014), the stock exchange aids in reducing financial risk because it offers tools that let investors transfer risk.

Jiang, Liu and Lu (2024) claims that share price volatility can affect capital expense, which consequently affects the economy as a whole and how the market functions. This, in turn, significantly impacts the market risk indicator, asset pricing, and

portfolio allocation. Bissoondeeal and Tsiaras (2023), in their study of the effects of various stock market indices, found that investors' propensity for risk aversion is critical in their flight to assets perceived as safer during periods of increased volatility. A stochastic method was used to determine the market index (Clements et al., 2018). They proved that inactive stocks have little impact on the market index. As a result, volatility shocks are minor on shares and short-lived (Horobet, Zlatea, Belascu & Dumitrescu, 2022).

In developed markets, empirical studies have consistently shown that firms employing financial risk hedging strategies tend to experience lower share price volatility (Bartram et al., 2009; Allayannis & Weston, 2001). However, the evidence from emerging markets, including Kenya, remains limited. The Nairobi Securities Exchange (NSE), being a frontier market, is characterized by relatively lower market liquidity, information asymmetry, and higher susceptibility to macroeconomic shocks, making it a fertile ground for investigating the relationship between financial risk and stock price behavior.

Although some Kenyan firms particularly in banking, manufacturing, and agriculture—have adopted risk management strategies, the extent to which these strategies effectively reduce share price volatility remains underexplored. Studies such as Mwangi (2023) and Dae and Wamugo (2022) have suggested that hedging against specific risks like exchange rate or transaction risk can enhance financial stability and reduce volatility. However, comprehensive research addressing multiple financial risks simultaneously credit, market, exchange, and liquidity risks and their combined effect on share price volatility in Kenya is largely absent. This study seeks to fill that gap by empirically examining the effect of financial risk hedging on share price volatility of firms listed on the NSE, using credit risk, market risk, exchange risk, and liquidity risk as the core independent variables. In doing so, it aims to provide robust evidence to guide risk management practices, investment strategies, and regulatory frameworks in Kenya's evolving capital market.

1.2 Statement of the Problem

Over the years, the Kenyan government has registered steady economic development; however, the share prices of various firms listed on the Nairobi Securities Exchange

(NSE) have continued to fluctuate (Nairobi Securities Exchange, 2023). In a frequently dynamic business environment, firms remain vulnerable to various risks (Central Bank of Kenya, 2021). Businesses exposed to such instability risk financial failure, often resulting in heightened share price volatility due to inadequate hedging strategies and costly risk mitigation measures. According to Walela et al. (2022), during the second quarter of 2022, the share prices of ARM Cement Plc, Deacons (East Africa) Plc, National Bank of Kenya, Mumias Sugar Company Ltd, and Kenya Airways experienced significant fluctuations. The NSE (2023) reported an increase in net losses from Kshs. 3.4 million in 2021 to Kshs. 46.5 million in 2022, primarily due to reduced increased share price volatility resulting from fluctuation in shareholder earnings and lower debenture trading. Cash and cash equivalents decreased from Kshs. 613.1 million in 2021 to Kshs. 251.7 million in 2022, attributed to increased investments in Treasury Bills and Bonds, fixed accounts, and earnings payouts totaling Kshs. 93.4 million, Kshs. 86.8 million, and Kshs. 243 million, respectively further resulting to increased share price fluctuation. Total assets declined by 8%, from Kshs. 2.2 billion in 2021 to Kshs. 2 billion in 2022, due to lower earnings per share, reduced revaluation of real estate holdings, and the payout of securities depository bonuses accumulated in 2021. In 2022, the return on equity (ROE) and return on assets (ROA) dropped to 0.74% and 5.89%, respectively, down from 6.31% and 0.68% in 2021. Capital inflows in 2021 also declined, as firms increased investments in treasury instruments and fixed deposits. The NSE 20-Share Index further reflected fluctuations in the performance of listed firms. Kenya Airways and Uchumi Supermarkets, for instance, reported substantial losses of Kshs. 25.7 billion and Kshs. 262.3 million, respectively, in 2015 (Nairobi Securities Exchange, 2016). Share price volatility was measured using standard deviation. Several companies including ARM Cement, Kenya Airways, and Mumias Sugar have experienced considerable share price volatility, while Kenol Kobil was delisted following a takeover (Muiru, 2019). The NSE-listed firm's declining financial performance, marked by increased losses and reduced liquidity, reflects broader market instability and underscores the need for effective financial risk management. Although financial risk hedging is widely practiced in developed economies, its adoption and effectiveness in emerging markets like Kenya remain under-researched. This study, therefore, investigates financial risk

hedging, Capital Market Authority regulations and share price volatility of Nairobi Securities Exchange listed firms in Kenya to fill this research gap.

1.3 Objectives of the Study

1.3.1 General Objective

To assess financial risk hedging, Capital Market Authority regulations and share price volatility of Nairobi Securities Exchange listed firms in Kenya.

1.3.2 Specific Objectives

i. To evaluate the effect of credit risk hedging on the share price volatility of NSE listed Firms in Kenya.
ii. To assess the effect of market risk hedging on the share price volatility of NSE listed Firms in Kenya.
iii. To establish the effect of exchange risk hedging on the share price volatility of NSE listed Firms in Kenya.
iv. To examine the effect of liquidity risk hedging on the share price volatility of NSE listed Firms in Kenya.
v. To investigate the moderating effect of Capital Markets Authority (CMA) regulations on the relationship between financial risk hedging and share price volatility of NSE listed Firms in Kenya.

1.4 Research Hypotheses

i. H_{01}: Credit risk hedging has no statistically significant effect on the share price volatility of NSE listed Firms in Kenya.
ii. H_{02}: Market risk hedging has no statistically significant effect on the share price volatility of NSE listed Firms in Kenya.
iii. H_{03}: Exchange risk hedging has no statistically significant effect on the share price volatility of NSE listed Firms in Kenya.
iv. H_{04}: Liquidity risk hedging has no statistically significant effect on the share price volatility of NSE listed Firms in Kenya.
v. H_{05}: CMA regulations have no statistically significant effect on the relationship between financial risk hedging and share price volatility of NSE listed Firms in Kenya.

1.5 Significance of the Study

The significance of this study lies in its potential contributions to financial theory, policy-making, and practice, particularly within the context of emerging markets such as Kenya. This study is significant for several reasons particularly within the context of financial markets in emerging economies such as Kenya: It is outlined as follows:

1.5.1 Policy Makers

The study is also significant to policymakers. The research's conclusions offer helpful data to decision-makers developing, implementing, and improving Kenya's financial risk hedging laws and regulations. Banking and non-banking organizations with tastes and preferences in creating and offering hedging products can benefit from the new information. Overall, the research's findings have added to the body of information regarding exchange risk mitigation strategies. This information is helpful for the top leadership, academics, scholars, and policymakers.

1.5.2 Management of the listed Firms

The findings offer NSE-listed firms' critical insights into how their financial risk management practices, including the use of hedging instruments, impact the stability of their stock prices. This can guide corporate financial managers in designing robust risk management frameworks that align with shareholder interests and improve market confidence. For corporate managers of NSE-listed firms, this research offers practical insights into the effectiveness of hedging strategies. The study helps firms' management optimize their risk management frameworks and align them with the goal of minimizing share price fluctuations, thereby enhancing firm value and shareholder confidence. This study provides empirical evidence that may be useful for other emerging markets dealing with high exposure to financial risks and underdeveloped derivative markets.

1.5.3 Regulatory Bodies

The results of this research inform regulatory bodies such as the Capital Markets Authority (CMA), the Nairobi Securities Exchange (NSE), and the Central Bank of Kenya (CBK) in formulating policies that encourage the adoption of effective financial risk management tools. This can promote transparency, market efficiency, and overall financial stability. The regulatory bodies can also use the findings to

develop policies that promote sound risk management practices. The study may also highlight areas where regulatory incentives or disclosures are needed to promote transparency in hedging activities. By demonstrating the relationship between hedging and share price volatility, the study supports efforts to develop derivative markets and financial instruments that can be used for hedging in Kenya. This, in turn, can improve market resilience to external shocks and reduce systemic risk.

1.5.4 Researchers and Scholars

The study contributes to academic discourse by offering a localized examination of financial risk hedging in the context of sub-Saharan Africa. The study provides a basis for further research in finance and economics, especially in the areas of market volatility, risk hedging effectiveness, and firm performance. It provides a basis for future research and comparative studies on financial risk management practices and their implications on firm performance and market dynamics. It may also inspire comparative studies across sectors or countries. The study also deepens the understanding of the relationship between financial risk hedging (covering market risk, liquidity risk, credit risk and exchange risk) and share price volatility. The study contributes to the growing body of literature exploring how risk mitigation strategies influence market behavior, especially in emerging economies with unique financial dynamics like Kenya.

1.5.5 Potential Investors

For both local and foreign investors, the study provides empirical evidence on whether firms that actively hedge financial risks experience less share price volatility. This can influence investor decisions regarding asset allocation, risk assessment, and portfolio diversification strategies in the Kenyan capital market. By evaluating how hedging practices impact share price stability, the study provides valuable insights to investors. Investors and fund managers can better assess the risk-return profile of listed firms and make informed portfolio decisions based on how well firms hedge against financial risks.

1.6 Scope of the Study

The study focused on the fifty-four (54) companies listed on the NSE between 2013 and 2022, as per Appendix 1 on firms listed on the Nairobi Securities Exchange. The

primary investment segment, the segment for alternative investments, the segment for fixed-income securities, and the segment for growing firms are the four market listing categories that the NSE maintains. The selection of financial risk components is contingent upon the correlation with share price fluctuation. At the same time, the listed firms were selected due to the availability of fiscal information from the documents and reports published on their websites.

There were two reasons why the ten-year study period is considered suitable. First, Muiru (2018) notes a high fluctuation in the worth of the Kenyan shilling compared to other significant worldwide mediums of exchange throughout this time. Thus, the study's main objective is to investigate financial risk hedging and its effect on the share price volatility of listed firms in Kenya. Second, in the research on asset-backed peril and market earnings of publicly traded mortgage originators quoted at the exchange, Mutugi (2022) observes that a ten-year period from 2013 to 2022 is suitable for identifying noteworthy trends.

1.7 Limitations of the Study

Limitations of the Study refers to the potential weaknesses or constraints beyond the control of the researcher that may affect the study's findings (Barcelo et al., 2023). Limitations of the study include data availability and disclosure, time constraints and market events, use of secondary data, measurement proxies, and regulatory interpretation. Not all NSE-listed firms publicly disclose detailed information on their financial risk hedging practices (e.g., use of derivatives, hedging policies). Some relevant data, especially on specific hedging instruments or strategies, may be classified or omitted from financial statements. The study period may also coincide with major market disruptions that introduce external volatility not directly related to financial risk hedging, potentially distorting results. The study relies heavily on secondary data (e.g., annual reports, NSE data), which may be subject to inconsistencies in reporting, accounting policy changes, or data entry errors by firms. Some risk hedging practices are also difficult to measure directly, requiring the use of proxies such as leverage ratio, acid test ratio, VaR, and beta, which may not fully capture the sophistication or effectiveness of hedging strategies. And, assessing the moderating effect of CMA regulations is limited to publicly available enforcement

records and compliance disclosures. The full impact of these regulations may not be observable or quantifiable.

1.8 Assumptions of the Study

The following assumptions were made: that the firms listed on the Nairobi Securities Exchange (NSE) actively engage in financial risk hedging practices such as managing liquidity risk, exchange rate risk, and interest rate risk, either through internal strategies or financial instruments. The study also assumed that the financial statements and reports of listed firms accurately disclose hedging activities and financial risk exposures, in compliance with CMA regulations and International Financial Reporting Standards (IFRS). The study further assumed that share price volatility is, at least in part, influenced by investor perceptions of a firm's risk exposure and how effectively those risks are hedged. Thus, effective hedging should translate into reduced volatility.

The study assumes that the effect of financial risk hedging on share price volatility can be quantified using appropriate statistical models (e.g., panel regression), and that hedging strategies exhibit measurable impacts over time. Additionally, the study assumes that all NSE-listed firms operate under relatively similar macroeconomic, regulatory, and financial conditions allowing for valid comparisons across firms. The study also assumes that the secondary data collected from published financial statements, NSE databases, and CMA reports is reliable, complete, and sufficient for capturing the variables of interest over the study period. Finally, the study assumed that there are no extreme structural changes (e.g., market crashes, regulatory overhauls, or political crises) within the study period that would completely alter the typical relationship between hedging and share price volatility. In conclusion, these assumptions form the basis for designing the methodology, interpreting the results, and generalizing the findings of the study. Any violation of these assumptions may affect the study's internal or external validity.

1.9 Contribution of Thesis

This thesis makes significant contributions to academic literature, policy development, and practical financial management. While extensive research exists on financial risk hedging in developed markets, studies focusing on emerging economies like Kenya

are limited. This thesis addresses this gap by providing empirical evidence on how various hedging instruments affect the financial performance and stability of NSE-listed firms. For instance, a study by Kiio and Ambrose (2017) found that foreign exchange risk hedging practices positively influenced the performance of firms listed on the NSE. The Capital Markets Authority (CMA) plays a crucial role in shaping the regulatory framework for financial markets in Kenya. By examining how CMA regulations influence firms' hedging strategies and, consequently, their share price volatility, this thesis provides insights into the effectiveness of these regulations. The findings can inform policymakers about the need for regulatory adjustments to enhance market stability. The results of this research are valuable for corporate managers in developing effective risk management strategies. Understanding the relationship between hedging practices and share price volatility can guide firms in making informed decisions about risk mitigation, potentially leading to more stable financial performance and greater investor confidence.

This thesis also contributes to the growing body of knowledge on financial risk management in emerging markets. By focusing on the Kenyan context, it offers unique insights that can be compared with studies from other emerging economies, thereby enriching the global discourse on financial risk management practices. Based on the findings, the thesis proposes recommendations for enhancing CMA regulations to better support firms in managing financial risks. Such recommendations could contribute to the development of a more robust regulatory framework that promotes market stability and protects investor interests. This thesis provides valuable insights into the interplay between financial risk hedging, regulatory frameworks, and market volatility in Kenya’s emerging market. It offers practical recommendations for firms and policymakers, contributes to academic literature, and supports the development of more effective financial risk management practices in emerging economies.

1.10 Organisation of Thesis

This thesis consists of five main chapters, each addressing specific aspects of the study. The chapters are structured to provide a logical flow from the background and theoretical underpinnings to the research findings and conclusions. Chapter one provides an overview of the study, including the background, problem statement, research objectives, research questions, significance of the study, and scope. It

establishes the context for assessing financial risk hedging, the role of CMA regulations, and their influence on share price volatility of NSE-listed firms.

Chapter two highlight existing literature on financial risk hedging, regulatory frameworks, and stock price volatility. The review covers theoretical perspectives, empirical studies in developed and emerging markets, and identifies gaps in the literature that justify the study. Key concepts such as hedging instruments, risk management practices, and CMA regulatory policies are examined in detail.

Chapter three outlines the research design, population, and sampling methods used in the study. It also details the data collection procedures, sources of data, and analytical techniques. The chapter explains how variables are measured, including financial risk hedging practices, regulatory compliance, and share price volatility, and justifies the use of statistical tools to test the research hypotheses.

Chapter four presents the analysis of the collected data. The findings are discussed in relation to the research objectives and existing literature. It highlights the relationship between financial risk hedging, CMA regulations, and share price volatility of NSE-listed firms, providing empirical evidence and interpretation of results. Chapter five summarizes the study's key findings and conclusions. Recommendations are made for enhancing risk management practices and regulatory frameworks. The chapter also outlines the study's limitations and suggests areas for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section summarized the theories applicable to this study: Merton's theory, modern portfolio theory, purchasing power parity theory, liquidity preference theory, empirical literature review, knowledge gap, conceptual framework, and operationalization of variables.

2.2 Theoretical Literature

This study was anchored on Merton model linked with credit risk hedging, modern portfolio theory related to market risk hedging, liquidity preference theory linked with liquidity risk hedging, and purchasing power parity theory linked with exchange risk hedging.

2.2.1 Liquidity Preference Theory

The Liquidity Preference Theory, developed by John Maynard Keynes, posits that investors prefer liquid assets and require a premium (i.e., higher interest rates or returns) to hold less liquid or long-term assets. Keynes (1936) introduced the Liquidity Preference Theory to explain investor demand for liquidity and its influence on interest rates. The theory implies that investors value certainty and prefer assets that can quickly be converted into cash without a significant loss in value.

John Maynard Keynes proposed the liquidity preference theory in 1936 (Bibow, 2005). The liquidity preference theory postulates that investors would rather hold liquid assets like cash than less liquid assets like bonds, equities, or real estate. According to De Bock and de Carvalho (2015), liquidity preference theory suggests investors would rather store cash, which carries less risk. Hence, they would require a premium for assets possessing lengthy periods to mature, which correspondingly carry a higher threat level. An investment can be sold fast for its entire worth more easily if it is more liquid (Barus, Muturi, Kibati & Koima, 2017). According to Keynes, three factors influence the demand for liquidity: Consumers want liquidity to ensure foundational operations because the level of earnings is not a consistent source of revenue (Yoon, 2024).

The liquidity preference theory and its tenets, founded on the Keynesian model economy and emphasizing investing in riskier securities rather than undertaking deficit or surplus, were improved (Ogiriki & Andabai, 2014). At the same time, Tobin focused on trade surplus or deficit based on the hypothesis of the desire for liquidity, which seeks to elucidate the degree of interest rate. Concerning the relationship between the money supply concurrently with savers' wish to keep their financial savings liquid or close to cash, transaction balances are a means of meeting the potential shareholders' requirements for venture capital (Mazengo & Mwaifyusi, 2021).

According to Calomiris, Heider, and Hoerova's (2015) theory of bank liquidity, banks should maintain cash reserves as a prudential regulatory precaution and to protect themselves against liquidity risk. The hypothesis draws on the Black-Scholes model and contends that cash is riskless compared to capital. Money may be seen and verified. Financial institutions can simultaneously reduce their exposure to default and liquidity risks by keeping cash on hand. The degree of income determines the quantity of liquidity required; the higher the income, the more money is needed to support the increased spending. People will rather have cash if unforeseen social issues require unanticipated expenses for precautionary reasons (Maina, 2018). With additional earnings comes an increment in the money required for this reason. People hold onto their liquidity to speculate that bond prices will decline (Nzula, 2016).

According to Hull (2015), people tend to hold more money as interest rates decline, which in turn causes the value of existing debentures to fall in order to maintain yields aligned with prevailing lending and borrowing rates. This behaviour implies that the demand for money increases when interest rates fall, and vice versa. A lending or borrowing institution may face liquidity challenges, particularly when borrowers struggle to repay loans on time. Such liquidity risks can discourage firms from financing viable long-term projects that could generate higher returns. Based on this theory, firms are encouraged to maintain adequate cash reserves for investment purposes. Consequently, companies should mitigate default risk by assessing the creditworthiness of clients before issuing loans (Achach, 2021). However, the Liquidity Preference Theory has been criticized for lacking strong empirical support in real-world monetary systems and for suffering from the fallacy of mutual

determination—where the cause-and-effect relationship between interest rates and money demand becomes ambiguous (Mwaniki, 2017).

According to the Liquidity Preference Theory, investors demand a higher rate of return when they are required to sacrifice liquidity, particularly when investing in long-term securities (Mishkin, 2023). This is because long-term securities are generally riskier due to their longer time horizon and greater exposure to interest rate fluctuations. As a result, market participants expect higher interest rates on long-term instruments. Conversely, short-term securities are considered less risky and require fewer sacrifices from investors, leading to lower interest rates. This makes short-term securities more attractive, often increasing their prices due to high demand from investors who prioritize liquidity and lower risk exposure.

Three factors affect the need for ease of changing assets to cash. First is the transaction motive, which states that people want to transact with money to make it easier and more convenient (Culham, 2020). In addition, there is the precautionary incentive, in which people hoard wealth in case of an unforeseen circumstance. Finally, there is the speculative incentive: the conviction that hoarding cash would increase one's chances of finding lucrative investment opportunities later. A mortgage facility has a payback term of at least fifteen years. The study suggests that after 15 years, the lender will get their principal back plus interest. The risk associated with a credit facility increases with the length of the payback period because of macroeconomic and microeconomic component volatility. Due to the risk, they have assumed, mortgage lenders must attract hefty interest rates subject to the loan balance of asset-backed securities. As a result, mortgage originators' profitability is assured. High interest rates, however, can deter people from getting mortgages (Ferrouhi & Lehadiri, 2013).

According to Mishkin (2023), liquidity preference remains a foundational theory in understanding interest rate movements and monetary policy behaviour. According to the theory, investors tend to favor firms that maintain sufficient liquidity or hedge their liquidity risk effectively. Firms that are perceived to be illiquid or exposed to unhedged financial risks are viewed as riskier, leading to higher required returns and, consequently, greater share price volatility. Therefore, the extent to which a firm hedges its liquidity risk can influence investor confidence and share price stability.

Financial risk hedging, particularly liquidity risk hedging, can help firms maintain access to cash or credit even in adverse market conditions. By using tools such as credit lines, cash reserves, or derivatives, firms can reduce uncertainty related to their ability to meet short-term obligations. This aligns with investors' preference for safety and liquidity, which can reduce perceived risk and lower the volatility of stock prices.

Firms that hedge financial risks adequately may be seen as safer investments, requiring a lower liquidity or risk premium from investors (Singh & Banerjee, 2023). This could translate into lower volatility in the firm's stock price. Conversely, firms that fail to manage liquidity and other financial risks may face higher volatility due to changing investor expectations and increased risk premiums. The Liquidity Preference Theory provides a theoretical basis for hypothesizing that firms engaging in financial risk hedging especially liquidity risk, experience reduced share price volatility. It supports the idea that investors reward risk-averse financial behavior and penalize uncertainty, as reflected in stock price movements.

By integrating Liquidity Preference Theory, this study aims to explore how investor behavior driven by a preference for liquid and secure investments, responds to a firm's hedging practices. This theoretical foundation supports the investigation of whether effective financial risk hedging leads to reduced share price volatility among firms listed on the Nairobi Securities Exchange. Liquidity preference theory provides explicit understanding of how the liquidity risk hedging affects share price volatility of listed firms in Kenya. The analysis of this study provided information as to whether liquidity maintained by the NSE listed firms affected share price volatility. The theory was also pertinent since it provided institutions with opportunities to minimize risk and resolve interest revenue irregularities after a short-term period of interest expense is considered, as well as total firm value sustained over an extended period. The researcher adopted the liquidity preference theory as the leading theory.

2.2.2 Modern Portfolio Theory

Modern Portfolio Theory (MPT), developed by Harry Markowitz (1952), is a foundational framework in investment management that emphasizes the importance of diversification in reducing overall portfolio risk. MPT proposes that investors can

construct an efficient portfolio by combining assets in a way that maximizes expected return for a given level of risk or minimizes risk for a given level of return through the process of mean-variance optimization. In the context of assessing financial risk hedging and its effect on share price volatility of firms listed on the NSE, MPT provides a theoretical basis for understanding how hedging strategies can influence risk and return trade-offs. MPT emphasizes managing systematic and unsystematic risks.

Nekesa, Ouma, and Njuguna (2021) state that financial risk hedging can be viewed as a strategic approach to reduce unsystematic risks specific to a firm. This aligns with MPT's recommendation of reducing overall portfolio risk through diversification and risk management. By hedging financial risks, firms may stabilize their earnings and cash flows, which in turn can reduce volatility in their share prices.

Gao (2024) observed that reduced volatility improves the risk-return profile of a firm's stock, potentially making it more attractive to investors who aim to include stable stocks in diversified portfolios. Investors constructing portfolios based on MPT principles are likely to prefer firms with lower exposure to financial risk and more stable returns. Therefore, NSE-listed firms that effectively hedge financial risks may experience lower cost of capital and higher demand for their shares due to their alignment with efficient portfolio construction principles. The theory supports the notion that firms should manage risks not only to protect internal cash flows but also to enhance their position in investors' portfolios. Hedging can be viewed as a tool that complements diversification at the investor level, making such firms more stable and investable.

The return on an individual investment is less significant than the investment's behaviour within the context of the complete asset mix, based on statistical measures such as correlation and standard deviation. An individual may own a high-risk security, but by combining it with a range of other securities or asset classes, the portfolio can be balanced so that the high-risk security's risk is less than that of some underlying investments or asset types. Ahmad, Buchdadi, and Sholeha (2020) argue that the anticipated income from a particular portfolio should be maximized for each degree of risk, according to MPT. For portfolios that meet this criterion, referred to as

efficient portfolios, investors have to make a trade-off between risk and expected return, as a higher expected return requires assuming more risk. Even though the fundamental tenets of MPT have been seriously questioned as it was initially advanced, the finance and economics sectors use this theory extensively.

Financial experts have used MPT theory as a critical instrument for fiscal appraisal ever since it was presented (Ndonye & Ambrose, 2023). Under the MPT framework, a large number of participants in the financial markets have been attempting to minimize risks in an attempt to optimize profits. Dimmock, Wang and Yang (2024) state that market participants may develop an efficient frontier of asset combination that minimizes risk, yielding the highest expected return. Lukomnik and Hawley (2021) state that the following assumptions form the basis of modern portfolio theory: Initially, there is market efficiency. Second, returns are random variables with a random distribution. Third, all shareholders have access to the same information. Fourth, market participants are risk avoiders and make logical decisions. Fifth, shareholders will only select a riskier asset combination if it offers a better rate of return on investment. Sixth, risk and projected return are considered when making investment decisions. Finally, the expected return variability is used to measure the peril that market participants experience.

Based on MPT assumptions, market makers ought to choose assets that do not have a solid and positive inter-correlation (Surtee & Alagidede, 2023). In addition, shareholders, in many instances, make use of the theory as a tool to determine the optimal diversification plan. This research has the controlled exchange rate, market, liquidity, and credit risk variables. These risks can be reduced through diversification since they are unique to the firm (Chege, 2016). Scholars have criticized modern portfolio theory. For instance, the theory has limitations since some of its assertions are implausible, i.e., market participants have access to insider information and are rational (Zhang, 2024). This is untrue since there are investors with more information than others. Insider trading is familiar with the listed firms; policymakers devise laws to address the menace. This implies that because of indifference to information, certain market participants may earn higher profits on their investments (Mwaniki, 2018).

According to Ndonye and Ambrose (2023), the Modern Portfolio hypothesis's primary focus is to optimize a portfolio's expected earnings for a particular degree of hazard of group assets or, similarly, minimize peril for a given level of expected return after critical consideration while choosing the ratios of a particular set of securities. This implies that NSE-listed companies can reduce the total variation of the portfolio return by combining different portfolios with imperfectly positively correlated returns, presuming knowledgeable investors and efficient markets. The research anchored on modern portfolio theory to model financial risk hedging on firms listed on NSE's share price volatility between 2013 and 2022. This is supported by empirical studies such as Kiio and Jagongo (2017), which show that effective credit risk and foreign risk hedging can reduce the share price variability of quoted enterprises.

An in-depth analysis of the research conducted by Mboga and Mugo (2023) suggests that firm performance can be enhanced by having adequate financial risk hedging. Since MPT is based on the principle that shareholders can optimize their return using an efficient portfolio, this model was appropriate for studying the effect of financial risk hedging on the share price volatility of listed firms in Kenya. Investment diversification is formulated analytically by the Modern Portfolio Theory to select investments with lower overall risk than any single product. The concept of portfolio diversification in this study is backed by MPT since it assists listed companies in mitigating their financial risks by evaluating potential investments in terms of risks and returns, and it effectively distributes resources among the portfolios to improve financial performance.

Modern Portfolio Theory underpins the rationale that effective financial risk hedging contributes to reducing share price volatility, thereby enhancing firm value and investor confidence. In the context of NSE-listed firms in Kenya, applying MPT helps explain why investors may favor firms that actively manage their financial risks, and why such practices are essential for ensuring competitiveness and capital market stability (Rubinstein, 2002). Modern portfolio theory had a considerable effect on financial risk hedging and its effect on share price volatility of listed firms in Kenya as it provides a framework for building diversified portfolios based on quantitative analysis and risk and return characteristics. The theory was also relevant since it recommends portfolio diversification to reduce risk and maximize return. MPT seeks

to maximize portfolio expected returns for a given level of portfolio risk or, conversely, to limit risk for a given expected return. Investors diversify risk by allocating liquid traditional asset classes with more illiquid alternative assets, which is crucial for the current study.

2.2.3 Purchasing Power Parity Theory

Cassel (1918) developed Purchasing Power Parity (PPP) to explain how exchange rates between countries adjust based on changes in price levels, particularly in the aftermath of World War I as countries returned to the gold standard. PPP is an economic theory that suggests that in the long run, exchange rates between currencies should adjust so that identical goods cost the same in different countries. The theory implies that fluctuations in exchange rates are driven by relative changes in price levels between countries. PPP is central to understanding foreign exchange risk, which is a key component of financial risk for firms engaged in cross-border trade or with foreign-denominated debt or revenue.

Purchasing power parity (PPP) theory is based on the Law of One Price, which states that in the absence of transaction costs and trade barriers, identical goods should sell for the same price in different countries when expressed in a common currency. PPP suggests that exchange rates should adjust so that a basket of goods costs the same in any two countries. The purchasing power theory states that the change in prices of the home country relative to the prices of foreign countries is proportional to changes in currency value (Al-Zyoud, 2015). The theory explores how the prices of services and goods of various nations affect the rates of foreign exchanges. The nominal rate of foreign exchange cutting across dual currencies should be equivalent to the ratio of aggregate price levels between the said nations. CPI employs a representative basket of products and services to determine the overall variation in retail prices for a particular time frame.

Uğur and Alper (2023) state that for NSE-listed firms engaged in cross-border trade or holding foreign currency-denominated liabilities or revenues, fluctuations in currency markets introduce exchange rate risk, a key component of financial risk. PPP offers theoretical guidance on long-term exchange rate expectations, enabling financial managers to design forward contracts or currency swaps that align with these

expectations. Park and Shintani (2024) state that by hedging against anticipated exchange rate changes (based on PPP-informed forecasts), firms can stabilize earnings and cash flows. Lower volatility in fundamental performance typically translates to reduced share price volatility, as investors perceive such firms to be less exposed to macroeconomic shocks. Investors interpreting exchange rates through a PPP lens may view unhedged firms as riskier, demanding higher returns and contributing to share price volatility. Conversely, firms that proactively hedge by referencing PPP-based forecasts may enjoy lower risk premiums and more stable market valuations. Empirical research that incorporates advanced methodologies—such as nonlinear unit root tests and structural break estimation—reinforces PPP theory in various contexts, including emerging markets and OECD countries. This lends credibility to applying PPP-informed hedging models in the Kenyan context.

The Purchasing Power Parity (PPP) theory consists of two main forms: absolute PPP and relative PPP. Absolute PPP, often referred to as complete PPP, suggests that the exchange rate between two currencies should equate the prices of identical goods in both countries. This implies that, once currencies are converted, a standard basket of goods should cost the same in each country. The theory commonly uses the U.S. dollar as a base for comparison. In contrast, relative PPP focuses on the rate of change in exchange rates, proposing that the percentage change in the exchange rate between two countries reflects the difference in inflation rates. It emphasizes the connection between inflation and exchange rate movements, indicating that a currency's purchasing power declines as inflation rises (Obulemire, Nzioki, & Koima, 2019).

Ridhwan, Ismail and Nijkamp (2024) defined real exchange rate (RER) as the ratio of the price index for traded goods to nontraded commodities, needs to be better represented by the Purchasing Power Parity hypothesis. In addition to meeting statistical requirements, a sound exchange rate definition must primarily meet economic ones. When comparing countries, the exemplification of purchasing power parity raises the common index number problems. The issue with implementation is that the administration needs to develop indexes for a product basket systemized worldwide. Hence, there is a shortage of data accessible to measure absolute purchasing power parity.

Many academics have developed Gustav Cassel's 1918 original research. Balassa in 1964 and Samuelson in 1964 proposed the first model of long-run departures from PPP (Deaton & Dupriez, 2011). They argued that rich countries often possess more expensive levels than those in poverty-stricken nations when every nation's currency is changed to the US dollar at the current minimal exchange rates. Lewis in 1995 developed a similar hypothesis that likewise forecasts that developed nations possess greater exchange rate-adjusted earnings per share levels than less developed nations. Second, there needs to be more data regarding the Balassa-Samuelson Effect. The figure reveals that although the correlation between pricing and household earnings is highly noticeable throughout the entire information, it is much less spectacular when considering the wealthy or developing countries collectively. According to a similar prediction of the Balassa-Samuelson model, actual exchange rates of rapidly developing nations will typically rise, and vice versa for slowly developing nations (Rabe & Waddle, 2020).

Although Purchasing Power Parity offers insights into exchange rate behavior and price level comparisons, its application to studies involving financial risk hedging and share price volatility of NSE-listed firms is limited and faces several key criticisms. Vo and Vo (2023) posit that PPP is a macroeconomic theory focused on aggregate price levels and exchange rates, not firm-level financial dynamics. It does not account for firm-specific risk exposures such as credit risk, liquidity risk, or interest rate risk; the very risks targeted in financial hedging strategies. Using PPP to interpret or model firm-level volatility is a conceptual mismatch. PPP further assumes the Law of One Price holds across countries, which only applies to tradable goods. Most NSE-listed firms generate revenues from non-tradable services, so PPP has limited explanatory power over their financial risks or equity price behavior. Share price volatility for these firms is driven more by domestic financial factors than cross-border price differentials (Rabe & Waddle, 2020).

PPP focuses on goods markets and ignores capital markets, yet financial risk hedging and share prices are influenced by investor sentiment, interest rate movements, market volatility, and capital inflows/outflows. PPP theory fails to incorporate these financial market realities that directly affect the volatility of NSE-listed firms. Kasem and Al-Gasaymeh (2022) state that PPP is unreliable in the short term, as exchange rates often

deviate from PPP- implied values due to Speculation, Policy interventions, Interest rate differentials, and Political risk. Since share price volatility and hedging decisions often respond to short-term market shocks, PPP is not practical for explaining or predicting those behaviors. Ridley (2021) postulates that PPP has been found to perform poorly in emerging markets like Kenya due to Exchange rate controls, Inflation volatility, Trade imbalances, and Weak institutions. The Kenyan shilling frequently deviates from its PPP-implied value, limiting the theory's value in a study focused on the NSE, where macroeconomic instability distorts PPP relationships.

According to a popular empirical hypothesis of the real exchange rate, long-term real exchange depreciation is linked to a persistent current account deficit. Despite acknowledging this ambiguity, Krugman (2009) contends that current accounts, which result in wealth transfers between nations, are likely to generate notable changes in actual exchange rates because domestic and foreign inhabitants are likely to have significantly different spending habits. Finally, the amount of government spending is a factor that is stressed when adjusting buying power parity. Government spending is found to be a remarkable driver of the actual rate of foreign exchange by Ali and Shamshir (2025), who had related conclusions. Consequently, increasing government spending causes the real exchange rate to rise. However, Alimi (2025) pointed out that fiscal policy may have long-term impacts when a manipulative government levy is applied in funding government spending programs.

As Ndung'u (2022) mentioned, a vital component of this work is natural hedging, which uses exchange rate analysis as one of its procedures. Furthermore, provided that nations possessing set exchange rates must ascertain the expected balance rate of exchange, PPP aids academics and policymakers in understanding the behavior of exchange rates. Engel, Mark, and West (2015) note that PPP has a crucial role in setting exchange rates and is helpful in models used to create exchange rate policies and manage foreign exchange risk. This hypothesis's applicability to this research highlights the role of product prices in setting the exchange level, which can affect a company's earnings.

Purchasing Power Parity theory is fundamental in studying financial risk hedging and its effect on share price volatility on listed firms in Kenya since it is based on the idea

that exchange rates should adjust to equalize the purchasing power of different currencies. This ensures that a basket of goods and services has the same cost in different countries after accounting for exchange rate differences. The Purchasing Power Parity theory was particularly adopted to determine exchange risk hedging and its relationship with share price volatility.

2.2.4 Merton Model

Merton (1974) introduced a structural model for pricing corporate debt based on a firm's asset value and default risk. The model treats a firm's equity as a call option on its assets, with the strike price equal to the face value of its debt. The model estimates the probability of default by comparing the firm's asset value to its debt liabilities under the assumption that asset values follow a lognormal diffusion process. Equity volatility, asset volatility, and leverage all directly influence the firm's default probability. Since equity is modeled as an option on the firm's assets, the Merton Model directly links asset volatility and leverage to the risk of default. This framework helps assess how companies' decision to hedge their credit risk may reduce default probabilities and influence equity volatility, reflecting in share price behavior. Hotchkiss et al., (2023) posit that the Distance-to-Default (DD) measure derived from the model acts as a forward-looking indicator of insolvency risk. Firms that hedge effectively may improve their credit profile, increasing, DD and thus potentially reducing share price volatility as market perceptions of risk improve.

Application of the Merton Model in Nigerian, Kenyan, and other emerging market contexts has been explored in institutional theses. For instance, Aywak (2022) applies the structural model to model default probabilities and credit spreads of Kenyan firms, showing strong links between liabilities, asset volatility, and default risk. Such applications support using the model to examine hedging's impact on financial stability and share price behavior of NSE-listed firms. More recent scholars refine the structural framework. For example, Gnawali et al. (2025) develop a binomial tree approach to model implied default probabilities and risk surfaces under the Merton framework, enabling better calibration of credit risk and volatility expectations. This enhances empirical modeling of hedging effectiveness.

Merton’s Structural Credit Risk Model (1974) provides a foundational framework for understanding the relationship between a firm's capital structure, default risk, and market valuation. The theory conceptualizes a firm’s equity as a call option on its assets, where the debt holders have a claim to the firm's assets up to the value of the debt, and equity holders receive the residual if the asset value exceeds the debt at maturity. In the context of NSE-listed firms in Kenya, this theory becomes relevant when examining credit risk hedging strategies and their impact on share price volatility. Zouari and Abdelmalek (2020) postulates that Merton’s model directly ties credit risk to the probability of default, which increases when the value of a firm’s assets falls below its liabilities. Firms facing high credit risk tend to experience greater financial distress, which is reflected in increased share price volatility.

Credit risk hedging reduces perceived risk among investors, leading to lower equity return volatility and potentially higher valuation due to reduced risk premiums. This directly aligns with Merton’s assertion that equity volatility is sensitive to firm value and leverage. According to Jorion and Schwarz (2014), Merton model mainly applies to commercial banks, institutions granting loans, and SACCOs. This theory is critical to financial institutions since credit risk is mainly caused by borrowers' default. Merton's (1974) default risk theory was postulated on various critical facets emphasizing an organization's capital reserves. Further, Mutugi (2022) affirms the theory's belief that if the liabilities of an organization rise beyond its assets, there is a high likelihood of default. The assets of a firm's current worth, their volatility, the amount of existing debt, and the debt maturity are all necessary for Merton's model to function. Using a method proposed by Horobet et al. (2022), a popular method of implementing Merton's model calculates the current net worth of an enterprise's stock and the various changes on the shareholding to determine the present value of the assets and their volatility.

While Merton’s model offers a useful structural foundation for linking credit risk and equity volatility, its application to NSE-listed firms in Kenya is limited by unrealistic market assumptions, data constraints, ignorance of modern hedging practices, macroeconomic volatility, and the diverse nature of listed firms. Merton’s model assumes perfect capital markets (no taxes, no transaction costs, continuous trading, and complete information), which is not reflective of the Kenyan financial market

environment. Odongo and Oduor (2020) posit that NSE-listed firms operate in a market that may exhibit inefficiencies such as information asymmetry, illiquidity, and regulatory gaps, which undermine the assumptions required by Merton's model. Merton model also assumes that interest rates and asset volatility remain constant over time. In Kenya's economic environment, macroeconomic instability (e.g., inflation fluctuations, exchange rate volatility) causes significant variation in firm asset values and market interest rates, making the model's assumptions too rigid (Aywak, 2022). The model further relies on the estimation of the market value and volatility of a firm's assets, which are not directly observable. Most NSE-listed firms, especially non-financial firms, do not provide sufficient or transparent data to reliably estimate asset values and their volatilities. This limits the empirical application of the model in Kenya.

Ciho (2024) state that Merton model assumes a fixed debt maturity structure and a single zero-coupon bond maturing at a known future date. Firms in Kenya have dynamic capital structures with multiple layers of debt (e.g., short-term, long-term, local and foreign debt), which are not compatible with the single-debt-issue assumption in Merton's model. Additionally, the theory was initially designed with financial institutions in mind. Many NSE-listed firms are in manufacturing, agriculture, or services sectors, where credit risk dynamics differ significantly from those in financial institutions, limiting the generalizability of Merton's model. Akyildirim, Hekimoglu, Sensoy and Fabozzi (2023) postulate that Merton model is also firm-specific and does not consider systemic risk factors like political instability, regional credit contagion, or sovereign risk. In Kenya, where external shocks (e.g., droughts, elections, currency instability) significantly affect credit conditions, Merton's firm-centric approach may not fully explain share price movements tied to broader credit risk.

Bodie (2019) highlights that the unpredictability of a company's equity remains the only factor influencing equity prices. As a result, only the risk unique to the company is considered. Unexpectedly, only in inefficient markets do the forces mentioned above remain constant. Appraisal of client creditworthiness is considered the first stage in coming up with a lasting answer to cater to the tastes and preferences of banking clients. For the success of this entire process, this analysis should begin with

an in-depth understanding of customers' capabilities and preferences. This is true because it ensures the fiscal analyst critically evaluates the probable client's creditworthiness and the underlying security. In agreement with Dae and Wamugo (2022), cash flow, capacity, collateral, conditions, capital, and character are essential in establishing the creditworthiness of a potential debtor. In addition, the above conditions ensure that the loan issued to clients is of high quality.

Firms hedge credit risk (e.g., through credit derivatives, insurance, or diversified credit portfolios) to stabilize their asset values and reduce the likelihood of default. According to Merton's framework, reducing the default probability lowers the volatility of equity returns, since equity is priced as a risky residual claim. Sundaresan (2013) offers a compelling argument for the continued presence of financial innovation. In his theory, attempts to improve market efficiency and benefit society lead to financial innovations. According to this hypothesis, financial institutions must seek innovation to increase market efficiency because the market is imperfect. Financial economists generally see the flow of capital toward taking advantage of investment opportunities and adopting financial innovations as advantageous elements that augment market efficiency, facilitate risk sharing, and foster economic expansion (Mbuli, Kabui & Kirimi, 2023).

Merton's theory is critically important to this study as it explains how credit risk affects share prices, justifies the role of hedging in reducing volatility, provides a firm-level analytical basis, and anchors the conceptual model linking risk, value, and investor behavior. It helps bridge theory with practical risk management and capital market behavior, particularly in the evolving and risk-sensitive context of the Nairobi Securities Exchange. Grounded in Merton's (1974) structural model of credit risk, this study posits that credit risk hedging reduces a firm's default probability and consequently dampens equity volatility. Since equity can be modeled as an option on the firm's assets, any strategy that stabilizes asset value such as credit risk hedging will reduce the volatility of the firm's share price. This is particularly relevant for firms listed on the Nairobi Securities Exchange, which often operate in volatile credit environments. Thus, Merton's theory provides a valuable lens to interpret how credit risk hedging influences investor perception and market valuation.

2.3 Empirical Literature Review

2.3.1 Credit Risk Hedging and Share Price Volatility

Credit risk hedging plays a critical role in mitigating exposure to potential default by borrowers, counterparties, or financial institutions. In capital markets, failure to manage credit risk effectively can lead to uncertainty among investors, ultimately impacting share price volatility. Various empirical studies have explored the relationship between credit risk management and stock price behavior, although limited work has been done within the Kenyan context. Credit risk refers to the possibility of a borrower being unable to make payments when and how they fall due to cash flow interruptions (Kedia & Mishra, 2024). Default rate risk is another name for credit risk. The various types of default risk are country risk, concentration risk, and credit default risk.

Mboga and Mugo (2023) conducted an in-depth study on the effect of financial risk hedging strategies on the firm value of energy and petroleum companies listed on the NSE. The study was anchored on two key theories to explain the relationship between credit risk hedging and share price volatility: the Modern Portfolio Theory (MPT) and the Signaling Theory. Utilizing secondary data and descriptive statistics, the study confirmed that hedging credit, liquidity, and capital risks significantly and positively affected firm value. Regression analysis demonstrated that financial risk hedging was a direct predictor of firm value, while correlation analysis affirmed a strong, positive relationship between risk hedging practices and firm performance. This study further validates the argument that financial risk hedging, including credit risk hedging, is instrumental in mitigating uncertainty and stabilizing share price movements in volatile sectors.

Essien and Akpan (2023) conducted a comprehensive study assessing the impact of foreign interest rate and currency hedging on the earnings stability of publicly listed Nigerian companies. The study focused on firms with significant foreign currency exposure, particularly in the manufacturing and oil & gas sectors, which frequently borrow or transact in foreign currencies due to Nigeria's reliance on imports and international capital. Using a panel dataset covering ten listed firms from 2013 to 2021, the researchers applied panel regression analysis to evaluate how hedging tools such as forward contracts, cross-currency swaps, and interest rate caps influenced the

volatility of earnings per share (EPS) and overall financial performance. The study was anchored on financial Distress Theory and Agency Theory. Their findings revealed that companies employing hedging strategies experienced reduced earnings volatility and improved predictability in financial results. The effect was more pronounced in firms that combined both currency and interest rate hedging, suggesting that integrated risk management strategies are more effective than isolated measures. Additionally, the study found a positive indirect impact on share price stability, inferred from improved investor sentiment due to more predictable earnings. This aligns with the argument that risk hedging does not only shield firms from financial shocks but also enhances market confidence.

Isabwa (2022) conducted a study to examine the effect of financial risk hedging on the fiscal sustainability of lending and deposit-taking institutions in Kenya. The research was motivated by growing concerns about the financial vulnerability of banks and microfinance institutions in the face of macroeconomic instability, rising credit defaults, and liquidity constraints. The study focused specifically on how hedging practices affected the long-term financial health of these institutions. The study used a mixed-methods approach, combining secondary financial data (2015–2020) with qualitative insights from risk managers. The analysis was grounded in two core theories: financial intermediation theory and risk management theory, both of which are highly relevant to the current study on NSE-listed firms. Panel regression analysis was applied to measure the relationship between hedging and indicators of fiscal sustainability, including profitability, capital adequacy, and cash flow stability. The study found that institutions that engaged in comprehensive hedging practices, particularly credit and liquidity risk hedging, demonstrated higher levels of fiscal sustainability and resilience to financial shocks and hedging practices contributed to stabilized earnings and cash flows, which are critical for long-term planning and capital investment.

Chamizo and Novales (2021) conducted an in-depth quantitative study to evaluate the market risk associated with hedging a credit derivative portfolio. Their research was based on the premise that while credit derivatives are used to hedge against credit risk, they also introduce market risk, particularly under volatile financial conditions. The authors focused on portfolios held by large financial institutions, applying advanced

risk modeling techniques to assess the effectiveness and risk exposure of these hedging strategies. The study employed Value-at-Risk (VaR) and Expected Shortfall (ES) models under both normal and stressed market conditions to determine how credit derivative hedging affects the overall market risk of the portfolio. The study was grounded on Arbitrage Pricing Theory (APT) and Modern Risk Management Theory, both of which provide foundational perspectives on risk-return dynamics in hedged portfolios. Using data from major European financial institutions between 2010 and 2019, the study concluded that while credit derivative hedging reduces credit exposure, it increases market sensitivity, especially during periods of financial instability. The study concluded that hedging credit portfolios using CDS effectively reduces credit-specific risk but introduces market risk through exposure to interest rates, liquidity spreads, and counterparty risk.

Njeru (2021) assessed the influence of financial risk mitigation on the profitability of corporations that market petroleum in the Kenyan market. The researcher was guided by profit maximization theory, financial and economic proposition, agency theory, and modern portfolio hypothesis. The study specifically aimed to evaluate the impact of price, interest rate, currency rate, and credit loss prevention on the profitability of Kenyan corporations that market petroleum products. A non-experimental research methodology was adopted for this investigation. As of 2018, 105 oil marketing companies registered with Kenya's Energy Regulatory Commission (ERC) were the target population. The researcher employed Qualitative and quantitative data, which included 83 oil marketing enterprises as a sample. Data analysis was done using SPSS. With a beta of 0.013, 0.023, and 0.02, respectively, the study discovered a favorable and significant influence of default risk management, risk management, and currency rate risk diversification on the earnings of Kenyan oil marketing enterprises.

The study by Ochieng (2021) examined the relationship between financial risk management and the economic performance of non-banking financial institutions, with SACCO size and capital adequacy serving as moderating variables. The study specifically focused on how the management of interest rate risk, operational risk, liquidity risk, and credit risk influences economic performance, measured using return on assets (ROA) as the dependent variable. Theoretical foundations for the study were drawn from the Financial Intermediation Theory, Shiftability Theory, and Information

Asymmetry Theory, which guided the examination of the relationship between financial risks and institutional performance. A correlational research design with an experimental approach was employed, utilizing quantitative data sourced from the Sacco Societies Regulatory Authority (SASRA) reports. The study targeted a population of 43 SACCOs based in Nairobi, covering a five-year panel dataset. Data were analyzed using simple regression models, and findings were presented through tables and figures. The study concluded that credit risk and liquidity risk had a negative but statistically insignificant effect on return on assets. Based on the findings, it was recommended that SACCOs adopt robust risk mitigation strategies to effectively manage financial risk and enhance financial performance.

Mauti (2019) adopted an explanatory research design to investigate how the value of firms listed on the Nairobi Securities Exchange (NSE) is affected by financial risk management practices. The study focused on the management of operational, credit, liquidity, and foreign exchange (FX) risks as its specific objectives. The target population comprised ten listed Kenyan service firms and financial institutions, with a sample size of ten listed banks. Data were collected using structured data collection forms, relying entirely on secondary data obtained from audited financial statements published on the NSE and Capital Markets Authority (CMA) websites. The analysis employed panel data techniques, and results were presented using tables and figures. The Ordinary Least Squares (OLS) regression model was used to analyze the relationship between financial risk management practices and firm value. The study concluded that hedging against operational, credit, and liquidity risks significantly influences the value of listed firms. It recommended that companies enhance their risk management strategies and allocate adequate provisions for potential losses, especially in relation to debt exposure.

Wangui and Jagongo (2019) conducted a study to examine whether an organization's performance is influenced by hedging practices, with debt capacity and management strategies serving as moderating variables. The study was motivated by the need to understand how firms can enhance their financial stability and performance through strategic risk management, particularly in volatile economic environments. The key financial risks evaluated included credit, liquidity, and market risks, and the focus was on firms listed on NSE. The study was guided by pecking order theory and agency

theory. The study utilized a descriptive and correlational research design, with data collected from a sample of publicly listed firms across various sectors. Both primary data (via structured questionnaires) and secondary data (from audited financial reports) were used. The analysis employed multiple regression models to determine the interaction between hedging practices and firm performance, measured using financial indicators such as return on equity (ROE) and return on assets (ROA). Hedging practices were found to have a positive and significant impact on organizational performance. The moderating variables—debt capacity and management strategy—amplified the relationship between risk hedging and performance.

Korir (2018) conducted a study to examine the influence of corporate risk hedging practices on the firm value of energy sector companies listed on the Nairobi Securities Exchange (NSE). The study was motivated by the high volatility and exposure to financial risks within the energy industry, such as foreign exchange risk, interest rate risk, credit risk, and commodity price risk. It aimed to establish whether effective hedging practices contributed to enhanced corporate valuation. The study was anchored on the shareholder value maximization theory and the risk management theory. A cross-sectional research design was employed, focusing on a sample of publicly listed energy firms in Kenya. Data were collected from audited financial reports, annual statements, and disclosures from company websites and the Capital Markets Authority (CMA). Multiple regression analysis was used to assess the relationship between hedging activities and firm value, which was measured using Tobin's Q and return on equity (ROE) as performance indicators. The study found a positive and statistically significant relationship between risk hedging practices and firm value. Firms that implemented structured hedging strategies for credit and market risks showed better financial performance and higher valuation. The effectiveness of hedging was found to be enhanced when supported by strong financial policies and internal controls.

Ombaba (2015) conducted a study to explore the volatility in share returns of companies listed on the Nairobi Securities Exchange (NSE). The research was driven by growing concerns over fluctuating investor returns, market inefficiencies, and the absence of stable hedging mechanisms in Kenya's capital markets. The study was

grounded in Efficient Market Hypothesis (EMH) and portfolio theory, both of which are widely used in understanding market volatility and asset pricing dynamics. The study employed a descriptive research design, analyzing secondary data from a selection of NSE-listed companies over a specified period. Share return volatility was measured using standard deviation, and historical price data was obtained from the NSE and CMA databases. The study also involved graphical and statistical analysis of patterns and trends in market returns to determine volatility levels and possible triggers. Share returns of NSE-listed firms exhibited high volatility, particularly in response to macroeconomic factors such as inflation, interest rates, and foreign exchange fluctuations. The volatility was more pronounced in firms within the financial and energy sectors, reflecting their exposure to external risks and speculative investor behavior. The study emphasized the need for improved financial risk management practices, including the adoption of hedging strategies, to manage return volatility and protect shareholder value.

The empirical literature consistently supports the view that credit risk hedging enhances firm value and helps minimize share price volatility. However, most studies have concentrated on financial institutions, overlooking non-financial firms listed on the NSE, such as those in manufacturing, retail, and agriculture. While studies like Mboga and Mugo (2023) confirm the link between hedging and firm value, few specifically address its effect on share price volatility, especially in emerging markets like Kenya. Additionally, findings from Essien and Akpan (2023) in Nigeria highlight that financial risk hedging encompassing credit, currency, and interest rate risks, stabilizes firm performance and, indirectly, share prices. This supports the need for broader research on how financial risk hedging affects share price volatility across diverse sectors in Kenya.

2.3.2 Market Risk Hedging and Share Price Volatility

Market risk, also known as systematic risk, refers to the potential financial loss arising from fluctuations in market variables such as interest rates, foreign exchange rates, commodity prices, and equity indices (Zhao, Li & Yang, 2024). For firms listed on securities exchanges, exposure to market risk often leads to increased share price volatility, which can undermine investor confidence and firm valuation. In response, many firms adopt market risk hedging strategies to mitigate the adverse effects of such

uncertainties. Numerous empirical studies have explored the relationship between market risk hedging and share price volatility, particularly within the context of financial institutions, energy firms, and multinational corporations. These studies vary in methodology, scope, and regional focus, but they generally support the notion that effective hedging reduces uncertainty in earnings and cash flows, thereby enhancing share price stability.

Kahihu, Wachira, and Muathe (2021) adopted an explanatory research design and the positivism philosophy to evaluate the impact of market risk on the fiscal viability of microfinance institutions (MFIs) in Kenya. The study targeted all thirteen licensed MFIs, making it a census study. The research was guided by the Extreme Value Theory and the Resource-Based View (RBV) Theory, which provided the conceptual foundation for understanding how market risks influence institutional financial sustainability. The study utilized quantitative data extracted from the MFIs' audited financial reports covering a five-year period from 2014 to 2018. Data were analyzed to assess the effect of various market risk factors, including financial leverage, interest rates, and exchange rate fluctuations, on the institutions' fiscal viability. The findings revealed that financial leverage and interest rate risk had a positive and significant relationship with the fiscal viability of MFIs. In contrast, exchange rate risk exhibited a negative but weak relationship with financial sustainability. The study recommended that MFI executives adopt structured mechanisms for identifying and managing market risk variables, in order to enhance institutional stability and resilience.

Ahmed and Guney (2022) examined the relationship between corporate hedging and the cost of equity capital, finding that firms that employ effective market risk hedging strategies tend to experience reduced equity risk, leading to more stable share prices. The study, based on data from publicly traded firms in Europe, highlighted that financial derivatives usage (such as forwards, futures, and options) is significantly associated with reduced price volatility. Similarly, Allayannis and Weston (2021) investigated the use of currency derivatives by U.S. non-financial firms and found that hedging is positively associated with firm value and inversely related to share price volatility. The implication is that investors perceive hedging as a signal of good risk management practices, thereby reducing the uncertainty surrounding the firm's future cash flows. Bartram, Brown, and Fehle (2009), using a global sample of over 7,000

firms, concluded that firms that engage in hedging activities through derivatives experience lower total and idiosyncratic volatility of stock returns. Their findings supported the theoretical argument that hedging stabilizes a firm's cash flow, reducing the sensitivity of share prices to external shocks.

Mutwiri et al. (2021) conducted a study to examine the relationship between systematic risk factors and the viability of the Kenyan securities exchanges. Systematic risks such as inflation, interest rates, exchange rate volatility, and political instability were considered key variables in understanding market behavior and investor decision-making in the context of an emerging economy. The study was grounded in the Arbitrage Pricing Theory (APT) and the Capital Asset Pricing Model (CAPM). The researchers employed a causal-comparative research design, analyzing secondary data sourced from NSE, CBK, and other regulatory bodies over a multi-year period. The study utilized regression and correlation analysis to determine the strength and direction of relationships between systematic risk indicators and the viability of the securities market, measured in terms of market capitalization, trading volume, and investor returns. The study found that interest rate fluctuations and exchange rate volatility had a statistically significant negative effect on the viability of the Kenyan securities exchanges. Although the study did not directly examine firm-level hedging, its emphasis on systematic market risk offers crucial insights into the macro-level factors that influence share price volatility. The findings underscore the importance of hedging strategies as tools for insulating both individual firms and the broader market from external economic shocks. This supports the current study's focus on understanding how financial risk hedging can stabilize share prices and enhance investor confidence in the NSE.

Odubuasi et al. (2020) examined the impact of market risks on the financial performance of Nigerian companies, with a focus on how variables such as interest rate fluctuations, foreign exchange rate instability, and inflation influence corporate fiscal outcomes. The study was driven by the volatility experienced by firms operating in Nigeria's unpredictable macroeconomic environment and the increasing need to manage exposure to market risk. The study was anchored on the Modern Portfolio Theory (MPT) and the Risk Management Theory, both of which provide the conceptual basis for understanding the link between risk exposure and corporate

financial outcomes. The researchers adopted a causal research design and relied on quantitative data, drawn from the audited financial statements of selected firms across the manufacturing, financial, and service sectors. The study used panel data covering a five-year period and employed multiple regression analysis to assess the relationship between market risk indicators and corporate financial performance, measured using return on assets and return on equity. Interest rate volatility and exchange rate risk had a statistically significant and negative effect on firms' financial performance. The findings indicated that firms lacking effective market risk hedging strategies suffered more financial instability, lower profitability, and reduced investor trust. The study recommended that Nigerian firms adopt robust hedging instruments, such as forward contracts and interest rate swaps, to mitigate market risk and stabilize returns.

Otsyula (2020) conducted a study to evaluate the criteria for securities exchange liquidity in the management of interest rate risk among Kenyan banking institutions. The research aimed to investigate how banks control exposure to interest rate fluctuations through liquidity strategies, and how these practices affect their financial stability and market behavior. Given the susceptibility of banks to interest rate shocks, the study explored whether effective liquidity management on securities exchanges can serve as a hedging mechanism against market risk. The study was underpinned by liquidity preference theory and the interest rate risk management theory. The researcher employed a descriptive research design, relying on quantitative secondary data gathered from CBK, NSE, and the financial statements of selected commercial banks. The focus was on understanding how banks use government securities, interbank instruments, and marketable assets to maintain liquidity buffers while hedging against interest rate volatility. Data were analyzed using descriptive statistics and regression models. The study revealed a positive and significant relationship between liquidity management through securities markets and the ability of banks to mitigate interest rate risk. The study recommended that banking institutions should enhance their use of liquid instruments as part of their broader risk hedging strategies.

Karwitha, Muturi, and Oluoch (2018) conducted a study aimed at determining the relationship between market risk and returns of firms listed on the Nairobi Securities Exchange (NSE). The study focused on evaluating how various market risk factors including interest rate risk, exchange rate volatility, and inflation affect the financial

returns of listed companies. The motivation for the study stemmed from the need to understand how external economic shocks impact investor returns and firm performance in emerging markets such as Kenya. The study was guided by two main theories: the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT). These theories provided a conceptual lens through which the effect of systematic risk on returns could be evaluated. The researchers employed a descriptive and correlational research design, analyzing secondary panel data obtained from the NSE and financial statements of selected listed firms. The study used regression analysis to estimate the relationship between identified market risk variables and firm returns, which were measured using return on assets (ROA) and return on equity (ROE). The study established that exchange rate volatility and interest rate fluctuations had a negative and statistically significant effect on firm returns. The authors recommended that listed firms adopt structured market risk management frameworks, including financial derivatives, to cushion against adverse macroeconomic conditions.

Amata (2017) conducted a study to evaluate the aggregate effect of key macroeconomic variables including interest rates, inflation, foreign exchange rates, and GDP growth on the volatility of the securities exchange in Kenya. The study was grounded in two theoretical models: the Behavioral Finance Theory and the Arbitrage Pricing Theory (APT). The research employed a quantitative approach using a causal research design, and relied on time-series data spanning several years from the CBK, KNBS, and NSE. Volatility was measured using indices such as the NSE 20 Share Index and standard deviation of returns. The data analysis incorporated regression modeling and interaction analysis to test the moderating role of herding behavior. The study found out that interest rate, inflation, foreign exchange rate, and GDP significantly influenced securities exchange volatility. Investor herding behavior was found to moderate the relationship between macroeconomic variables and stock market volatility. The study recommended the incorporation of investor behavior monitoring in market risk analysis and the use of financial risk hedging instruments to minimize market disruptions. The research adds a unique dimension to the study of market risk and share price volatility by integrating investor psychology into the analysis. While most empirical studies focus purely on quantitative financial

indicators, Amata's inclusion of herding behavior highlights the critical role of non-financial factors in exacerbating market instability. The findings support the need for robust financial risk hedging strategies not only to mitigate macroeconomic shocks but also to stabilize investor sentiment and reduce volatility in emerging markets such as Kenya.

Haider, Hashmi, and Ahmed (2017) conducted a study to investigate the relationship between un-diversifiable risk factors (systematic risks) and stock return volatility, focusing on firms listed on the Pakistan Stock Exchange (PSX). The study was grounded in two main theories: the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT). The study employed a quantitative research approach, using time-series data on stock returns and macroeconomic indicators such as interest rates, exchange rates, inflation, and GDP growth. The analysis involved multiple linear regression models, where the dependent variable was stock return volatility, measured using the standard deviation of returns, and the independent variables were macroeconomic risk factors. The study found a positive and statistically significant relationship between interest rate risk and stock return volatility, suggesting that rising interest rates increase earnings variability. The study recommended the adoption of hedging strategies, such as derivatives and foreign exchange risk management, to reduce exposure to systematic risk and improve stock performance predictability. Although the study was conducted in Pakistan, its findings are directly applicable to other emerging markets like Kenya, where similar macroeconomic volatility exists. The emphasis on hedging against un-diversifiable risks aligns with the objectives of the current study, which seeks to evaluate how financial risk hedging reduces share price volatility for firms listed on NSE.

Collectively, empirical evidence supports the assertion that market risk hedging contributes to reduced share price volatility. This relationship is especially evident when firms utilize formal hedging instruments such as derivatives. However, the extent of effectiveness varies across markets, industries, and types of risk hedged. While developed markets show consistent outcomes, findings from developing and frontier markets like Kenya remain somewhat fragmented due to limited data, inconsistent disclosure of hedging activities, and lower derivative market development. Furthermore, much of the existing literature focuses heavily on currency

risk, with limited exploration of interest rate and commodity price hedging in African contexts. There is also limited empirical research assessing the moderating role of regulatory frameworks (e.g., those by the Capital Markets Authority in Kenya) on the effectiveness of hedging in stabilizing share prices.

2.3.3 Exchange Risk Hedging and Share Price Volatility

Exchange rate risk refers to the risk that variability in exchange rates is likely to affect the viability and functionality of an entity (Muiru, 2019). Because of currency variability, fiscal entities are susceptible to three forms of peril: transactional, translational, and operational or economic risks. In line with Efuntade, Fcib, and Efuntade (2023), exchange rate risk arises from fluctuations in the investor's local currency about the foreign investment currency. Additionally, hazards that business entities are prone to can be safeguarded by business persons employing other investment products such as currency forwards or futures, options, or a hedged exchange-traded fund. Value at risk was used to measure exchange risk hedging. Value at Risk (VaR) is applied to a firm's foreign currency-denominated assets, liabilities, or cash flows. It estimates how much the value of those items might drop due to adverse movements in exchange rates. Firms that hedge exchange rate risk (e.g., through forward contracts, options, swaps) typically have lower exchange rate VaR, indicating reduced exposure. In empirical studies, lower exchange rate VaR is associated with reduced share price volatility, as it signals better risk control (Mugenda, Olweny & Wepukhulu, 2021).

Mugenda (2023) assessed the relationship between Asset Pricing Risk (APR) Premia, investor sentiment, and stock returns in Kenya. The study was anchored on the Modified Equity Valuation Model, the Noise Trader Theory, and the Capital Market Theory. The study employed a quantitative causal time series design to evaluate cause-and-effect relationships among the study variables. A census approach was used, targeting all 64 companies listed on NSE as of December 31, 2019. Monthly time series data covering the period 2011 to 2019 were analyzed. Stationarity of the data was tested using the Phillips-Perron (P-P) and Augmented Dickey-Fuller (ADF) tests, which indicated that a combination of the variables was stationary at level and at first difference. The Auto-Regressive Distributed Lag (ARDL) and Error Correction Models (ECM) were used for estimation, following confirmation of long-term

relationships among variables via the F-bounds cointegration test. To ensure model robustness, residual diagnostic tests were conducted to validate stability. Profitability showed a significant negative effect on stock returns, while market and firm size had positive and significant impacts. The study contributes significant insights into the interaction between market-based risk factors and behavioural elements in determining stock returns. These findings align with the current study's focus on financial risk hedging by demonstrating how both systematic risk and investor behaviour can affect stock performance in emerging markets like Kenya.

Macheru (2023) investigated the relationship between outward foreign direct investments (FDI) and fiscal development in Kenya, focusing on how international investment flows impact the domestic economic and financial landscape. The study was anchored on Internationalization Theory and Portfolio Theory. The study adopted an ex-post facto research design, utilizing quantitative secondary data collected from Kenyan government agencies, including the KNBS, CBK, and the Ministry of Finance, over a multi-year period. Data analysis involved regression modeling and trend analysis, aimed at evaluating the long-term influence of outward FDI on fiscal indicators such as GDP growth, tax revenue, and national investment rates. The study found that outward FDI had a positive and significant correlation with key indicators of fiscal development, including tax revenue growth and GDP expansion. Although the study did not directly address share price volatility, it provides important insights into how foreign investment exposure and risk diversification strategies affect firm-level and national economic stability. By highlighting the macro-financial benefits and risks of outward FDI, the study indirectly supports the argument that international financial exposure and market risk management are crucial in minimizing volatility in firm performance and market valuation.

Igatanyi (2023) investigated the effect of foreign exchange rate risk on the financial performance of cross-border listed firms on the Nairobi Securities Exchange in Kenya. The study was anchored on the International Fisher Effect, the Purchasing Power Parity Theory, and the Interest Rate Parity Theory. The research adopted a quantitative approach, utilizing secondary data collected from the audited financial statements of cross-border firms listed on the NSE. Data covered a five-year period from 2018 to 2022. The study targeted all 14 cross-border firms whose shares are traded both in

Kenya and other East African countries. The study employed descriptive statistics, correlation analysis, and regression analysis to examine the relationships between the variables. The independent variables included foreign exchange rate risk, financial leverage, firm size, and liquidity, while the dependent variable was financial performance, measured using Return on Assets. Firm size and financial leverage were found to have a significant and positive impact on the financial performance of cross-border listed firms. The study provides critical insights into the financial implications of foreign exchange risk for firms operating across borders. The study underscores the importance of effective currency risk hedging mechanisms, particularly for firms listed on regional exchanges where exchange rate volatility is prevalent.

Efuntade, Fcib, and Efuntade (2023) anchored their study on portfolio balance theory, flow-oriented hypothesis, and stock-oriented proposition to explore the relationship between stock market price changes and exchange rate fluctuations. Specifically, the study analyzed inflation rates, investment inflow, exchange rate, and oil prices. It was proven that there was a remarkable and pragmatic link between the variables. Correspondingly, Njunge (2012) studied the methods for managing exchange rate risk that Kenyan MFIs have implemented. The study found that delaying transactions when the foreign exchange is performing at par and accelerating transactions when the foreign exchange is performing below par were among the different techniques for managing foreign currency utilized by Kenyan microfinance institutions. The consequence of currency hedging on fiscal viability was not evaluated in either study.

Javangwe and Takawira (2022) focused on the Flow-Oriented model, the traditional economic theory, the Portfolio balance theory, and the Mundell Fleming model theories to investigate the connection between South Africa's exchange rate and securities exchange. The study period was forty years between 1980 and 2020. Secondary information was gathered from quarterly data from the Johannesburg Securities Exchange (JSE) data bank. Autoregressive Distributed Lag (ARDL) model was also employed. The results show a negative correlation between the stock market, inflation, interest rates, and exchange rate fluctuation. The research advises decision-makers to use fiscal or monetary policies to intervene in the markets. Opie and Riddiough (2019) also discovered that currency hedging techniques produced risk-adjusted returns more effectively than alternative ones, raising the business entity's

value and investors' earnings. The results show that international equities and bond investors benefit more from the improved diversification of currency hedging.

Kimathi, Mutea, and Rintari (2022) conducted a study to investigate how foreign exchange market instruments influence the financial health of financial institutions in Meru County, Kenya using forex hedging tools such as forward contracts, currency swaps, and spot market operations. The research adopted a descriptive survey research design, collecting primary data through structured questionnaires administered to financial managers and treasury officers within financial institutions in Meru County. The study employed quantitative data analysis techniques, including descriptive statistics, correlation, and multiple regression analysis. The use of foreign exchange market instruments was found to have a significant and positive effect on the financial health of financial institutions. The findings are relevant in relation to foreign exchange risk. Although the study was localized to Meru County, its implications extend to financial institutions operating in similar macroeconomic environments. The study highlights how foreign exchange hedging tools enhance financial resilience; a factor closely related to share price stability in publicly listed firms. These insights support the current study's aim of exploring how hedging mechanisms influence share price volatility across sectors.

Muthine (2021) examined the relationship between financial derivatives and the economic performance of selected listed savings and lending institutions in Kenya. The study adopted an explanatory research methodology. The research was guided by Risk Management Theory, Financial Intermediation Theory, Capital Irrelevance Theory, and Normative Decision-Making Theory. The study targeted all eleven listed commercial banks in Kenya. Secondary data was analyzed using SPSS version 24.0, and findings were presented using tables and graphs to illustrate trends and relationships. The study found a linear relationship between the use of financial derivatives and the economic performance of the sampled commercial banks. However, the analysis also revealed low uptake of swap contracts and increased transaction costs, which negatively impacted profitability. Although the study focused on economic progress, the findings are relevant to the share price volatility discourse, as both profitability and stability influence investor behavior. The study underscores

the need for improved adoption of risk management tools and technological systems to enhance data integrity and financial performance.

Nzioka and Maseki (2017) conducted a study to evaluate the effects of foreign exchange risk safeguarding (hedging) on the fiscal viability of non-exchequer enterprises in Kenya. The study adopted a descriptive research design, utilizing quantitative methods to analyze secondary financial data collected from a sample of non-exchequer firms. The data were analyzed using regression analysis to establish the relationship between foreign exchange risk exposure, the use of hedging instruments, and indicators of fiscal viability, such as liquidity, profitability, and solvency ratios. The results indicated a positive and significant relationship between the use of foreign exchange hedging instruments and improved fiscal viability of the firms. The study recommended broader adoption of structured hedging frameworks, especially in sectors heavily reliant on imports or foreign-denominated revenue. This study is particularly relevant to the current research on financial risk hedging and share price volatility, as it offers empirical evidence on the effectiveness of foreign exchange risk mitigation in enhancing financial stability. Although the study did not directly address share price movements, its findings suggest that improved fiscal viability through hedging may contribute to reduced earnings volatility, which in turn stabilizes investor confidence and reduces share price fluctuations a core focus of the current study.

Muiru (2018) adopted a cross-sectional research design to examine how exchange rate risk hedging strategies influence the fiscal viability of Kenyan companies listed on the Nairobi Securities Exchange (NSE). The study was guided by three core objectives: assessing the effect of corporate governance, firm-specific characteristics, and foreign exchange risk hedging strategies on financial sustainability. The research was anchored on the International Fisher Effect (IFE) Theory, the Purchasing Power Parity (PPP) Theory, the Transaction Cost Theory, and the Financial and Economic Theory of Risk Management. The study population consisted of 54 companies listed on the NSE between 2011 and 2016. A combination of cross-sectional qualitative data and panel quantitative data was collected and analyzed using STATA software. The findings were that exchange rate risk hedging strategies had a statistically significant positive effect on the fiscal viability of NSE-listed firms. The study recommended that

the government create a conducive business environment that allows firms to expand their asset base and mitigate foreign exchange risk effectively. The research is relevant to the present study on financial risk hedging and share price volatility. Although it primarily assessed fiscal viability, its insights on the role of foreign exchange hedging and corporate governance provide valuable context on the mechanisms through which risk management strategies contribute to financial stability and, by extension, influence share price performance.

Empirical studies on exchange rate risk hedging reveal that its effectiveness in enhancing firm performance and reducing share price volatility is influenced by multiple factors. Muiru (2018) highlighted the moderating role of corporate governance, noting that strong oversight improves the impact of forex hedging on firm viability. Similarly, Nzioka and Maseki (2017) and Kimathi et al. (2022) found that structured forex instruments contribute to stronger fiscal health among non-exchequer and local financial institutions. However, Berghöfer and Lucey (2014) provided a contrasting view, showing that both financial and operational hedging may increase exposure if poorly aligned with firm-specific factors. A common consensus emerges: while exchange risk hedging can stabilize firm value and reduce share price volatility, its success depends on the type of instrument used, governance structures, macroeconomic conditions, and firm-level characteristics. Notably, there remains a research gap in examining these dynamics within non-financial sectors in emerging markets like Kenya, reinforcing the importance of the current study.

2.3.4 Liquidity Risk Hedging and Share Price Volatility

Liquidity risk, defined as the inability of a firm to meet its short-term financial obligations, has been widely recognized as a critical factor influencing share price volatility (Ramos & Righi, 2020). Firms exposed to liquidity shortages often experience heightened uncertainty, reduced investor confidence, and ultimately more volatile stock prices. Hedging against liquidity risk—through measures such as maintaining optimal cash reserves, securing credit lines, and investing in marketable securities—can help stabilize a firm's financial position and mitigate these adverse market reactions. Funding and market liquidity risks are the main types of liquidity risk (Dharmiyanti & Darmayanti, 2020). Funding liquidity risk is used to describe the possibility that a firm will not be able to pay its short-term debts on time. On the other

hand, market liquidity risk refers to an entity's incapacity to carry out transactions at the going rate due to disruptions or inadequate exchange depth.

Wanda and Triyonowati (2024) investigated the factors influencing hedging decisions among banking companies listed on the Indonesian Stock Exchange (IDX). Specifically, the study examined the effects of firm size, exchange rate, profitability, and liquidity on the decision to hedge financial risk. The study adopted a quantitative research approach, supported by a systematic literature review to guide the conceptual framework. The population consisted of banking institutions with complete financial statements from 2018 to 2022, and the data used were secondary, obtained through library research. The analysis utilized descriptive statistics and discriminant analysis to assess the relationship between firm characteristics and hedging behavior. The results revealed that firm size, liquidity, and exchange rate exposure did not significantly influence hedging decisions. This study highlights the role of profitability in determining a firm's likelihood to hedge, contrasting with many studies that emphasize external risk exposures like exchange rates. The study findings are relevant to the present research, which explores how hedging strategies relate to share price volatility.

Mburugu et al. (2023) investigated the influence of liquidity risk hedging on the performance of real estate firms in Meru County, Kenya. The researchers employed a descriptive research design, using quantitative data gathered from selected real estate firms through structured questionnaires and analysis of financial documents. The target population comprised both registered and active real estate developers and property management companies in the region. The study was guided by liquidity preference theory, risk management theory and contingency theory. Liquidity risk hedging was found to have a positive and statistically significant effect on the financial performance of real estate firms. The study recommended increased adoption of formal liquidity risk management frameworks and stronger financial planning mechanisms among real estate developers. This study provides valuable insights into how liquidity risk hedging contributes to firm stability in a capital-intensive sector like real estate. Although it does not directly address share price volatility, its implications are relevant to listed firms on the NSE, particularly those in construction or property development. The study reinforces the idea that effective liquidity risk management

can reduce uncertainty, enhance investor confidence, and potentially mitigate share price fluctuations a core interest of the current research.

Ndung'u (2022) employed an analytical research design to examine the impact of commodity price exposure on the financial performance of manufacturing firms in Kenya. The study focused on understanding how fluctuations in commodity prices affect key performance indicators, particularly Return on Assets and Earnings Before Interest and Taxes. The research was underpinned by Game Theory. The study covered a ten-year period, targeting the 255 manufacturing firms licensed by the Kenya Association of Manufacturers. Quantitative data were collected from publicly available financial reports and firm websites, and analyzed using a General Linear Model. The findings showed that both ROA and EBIT showed a strong and direct relationship with the firms' financial operations in the context of commodity price exposure. The study recommended that management of KAM-registered firms allocate adequate cash flows toward hedging activities to mitigate the adverse effects of commodity price volatility. The research highlights the importance of commodity risk hedging in stabilizing firm performance metrics. Although it focuses on the manufacturing sector and does not directly link to share price volatility, the findings support the broader argument that hedging enhances financial resilience, which can positively influence investor confidence and market valuation.

Wanda, Hendrawaty, and Hasnawati (2022) employed a descriptive research methodology to investigate the moderating effect of ownership structure on the relationship between share price volatility (SPV) and the market-to-book value ratio (MBVR) of firms listed NSE. The researchers used quantitative data collected from 39 NSE-listed companies over a 12-year period (2008–2019). The analysis examined how firm growth and company size impacted share price variability, while also evaluating whether different forms of ownership—such as institutional or concentrated ownership—moderated this relationship. The study found that firm growth and company size had a direct and statistically significant influence on share price volatility. This study contributes to the broader literature by highlighting how internal firm characteristics and governance structures, such as ownership systems, influence share price behavior. While not focused directly on hedging strategies, its findings align with the current research's emphasis on how firm-level decisions and

structures can mitigate or exacerbate share price volatility. The study also underscores the importance of considering moderating variables.

Muthenya (2020) investigated the effects of volatility risk—specifically fluctuations in daily futures contract prices and the NSE index futures—on the volume of futures contracts traded at the Nairobi Securities Exchange (NSE). The research was grounded in Arbitrage Pricing Theory and the Capital Asset Pricing Model. The study adopted a descriptive research design, with NSE-listed firms serving as the study population. Secondary data was collected from the NSE database and company websites, covering an 11-year period from 2009 to 2020. The data were analyzed using descriptive statistics, and findings were presented in the form of graphs and tables. The study concluded that volatility in futures contract prices has a direct and significant impact on the volume of futures contracts traded. The study offers valuable insights into the relationship between market volatility and investor behavior in derivative markets. Although it focuses on futures trading volume rather than share price volatility, it contributes to the broader discussion on market risk hedging and the practical implications of volatility in financial decision-making. The application of APT and CAPM further enhances its theoretical relevance to studies analyzing how risk factors affect firm value and market activity.

Ali (2017) adopted a cross-sectional research methodology to assess the combined influence of firm size, firm leverage, risk aversion, and liquidity on corporate hedging. Primary data and secondary data were adopted. Surveys and data collection schedules were adopted to gather quantitative and qualitative data. The target population was the 64 NSE-listed firms. The sampling technique used was simple random sampling, while data analysis was done in SPSS. Tables and figures were employed in the data presentation. A linear regression model was used to depict the connection between the two variables. It was concluded that firm liquidity had an inverse influence on the corporate hedging of NSE-quoted firms. In contrast, corporate hedging is significantly affected by foreign exchange, fit size, managerial risk aversion, and firm leverage. Future studies focus on substitutes for hedging and management to devise an organized exchange market.

Righi and Ramos (2020) researched the relationship between stock variability and liquidity. For quoted entities on the New York Stock Exchange (NYSE), the sample period spans thirty-six years from 1990 to 2016. The findings indicate a significantly direct connection between liquidity and variability. It highlights ordinary common shares. Closed-end funds, REITs, and trusts are not incorporated in the study. Further, Ebenezer et al. (2019) explored the impact of financial risk on the firm's value. The researcher used 18 years between 2009 and 2017, with the population of study comprising sixty-three financial institutions in ASEAN-5 nations. The research concludes that liquidity and interest-rate risk remarkably and positively influence the firm's value.

Hamza et al. (2023) evaluated the impact of financial risk hedging practices on fiscal distress among non-financial firms listed on NSE. The study sought to determine how firm-level characteristics influence the decision to hedge financial risks and, ultimately, how these decisions affect a company's ability to avoid financial hardship. The researchers adopted an explanatory research design, focusing on a census of 39 non-financial firms listed on the NSE. The study relied on secondary quantitative data collected from the companies' audited financial statements and annual reports for the period 2016 to 2019. The data were analyzed using descriptive and inferential statistics, specifically multiple regression analysis and bivariate Pearson correlation, with the help of SPSS and Microsoft Excel. The study found that profitability, leverage, and liquidity levels had a significant and negative relationship with financial risk hedging decisions. This study contributes to the understanding of how internal financial metrics drive hedging behavior in emerging markets like Kenya as it offers important insights into how firms mitigate financial hardship, which can in turn influence investor confidence and share price stability. The use of firm-level data across multiple years provides a strong empirical basis for linking financial health and hedging decisions.

Mburugu et al. (2023) found that effective liquidity risk hedging positively influences financial performance, enabling firms to manage cash flow disruptions and indirectly reducing share price volatility. Similarly, Hamza et al. (2023) showed that firms with weak financial positions tend to adopt hedging strategies to mitigate fiscal distress. Righi and Ramos (2020) added that poor liquidity management increases stock price

volatility, particularly during market stress. Despite these insights, there remains a research gap in understanding how liquidity risk hedging directly affects share price volatility in non-financial sectors within emerging markets such as Kenya. Most existing studies focus on financial performance or fiscal distress, without isolating the effect of liquidity hedging on share price behavior. This study addresses this gap by empirically examining the relationship between liquidity risk hedging and share price volatility among a broader sample of NSE-listed firms.

2.4 Conceptual Framework

Varpio, Paradis, Uijtdehaage and Young (2020) define a conceptual framework as the graphical representation of the correlation between the independent variable, dependent variable and moderating variable of a particular study. This study examined financial risk hedging and its effect on share price volatility of NSE listed firms in Kenya. The independent, dependent and moderating variables of the study were financial risk hedging, share price volatility and CMA Regulations respectively. The study adopted credit risk hedging, market risk hedging, exchange risk hedging and liquidity risk hedging as the independent variables and were measured using leverage ratio, Capital Asset Pricing Model, value at risk and acid test ratio respectively. The parametric value at risk (VaR) model was especially applied in this investigation. Value at Risk (VaR) estimates the maximum expected loss due to exchange rate movements over a specified time period at a given confidence level (e.g., 95% or 99%).

A dependent variable is the variable of primary interest to the researcher. Share Price Volatility which represent the dependent variable was measured by using Standard Deviation of Share Prices. CMA NSE Shareholding Regulations 2016 was adopted to measure the moderating variable (CMA Regulations). The CMA Shareholding Disclosure and Regulatory Framework (2016), developed in collaboration with the Nairobi Securities Exchange, was designed to enhance transparency, market integrity, and investor confidence in the Kenyan capital markets by regulating how firms disclose shareholding structures and changes. This framework requires listed companies to disclose their top shareholders in their annual reports, the firms to notify the CMA and NSE within 24 hours of any material change in shareholding particularly movements involving substantial or controlling interests, that disclosures must include

beneficial owners, not just registered holders, to prevent opacity in ownership structures and that the regulations should align with the Code of Corporate Governance Practices (2015), which mandates that firms maintain openness regarding their ownership to minimize insider trading and market manipulation (Capital Markets Authority, 2016).

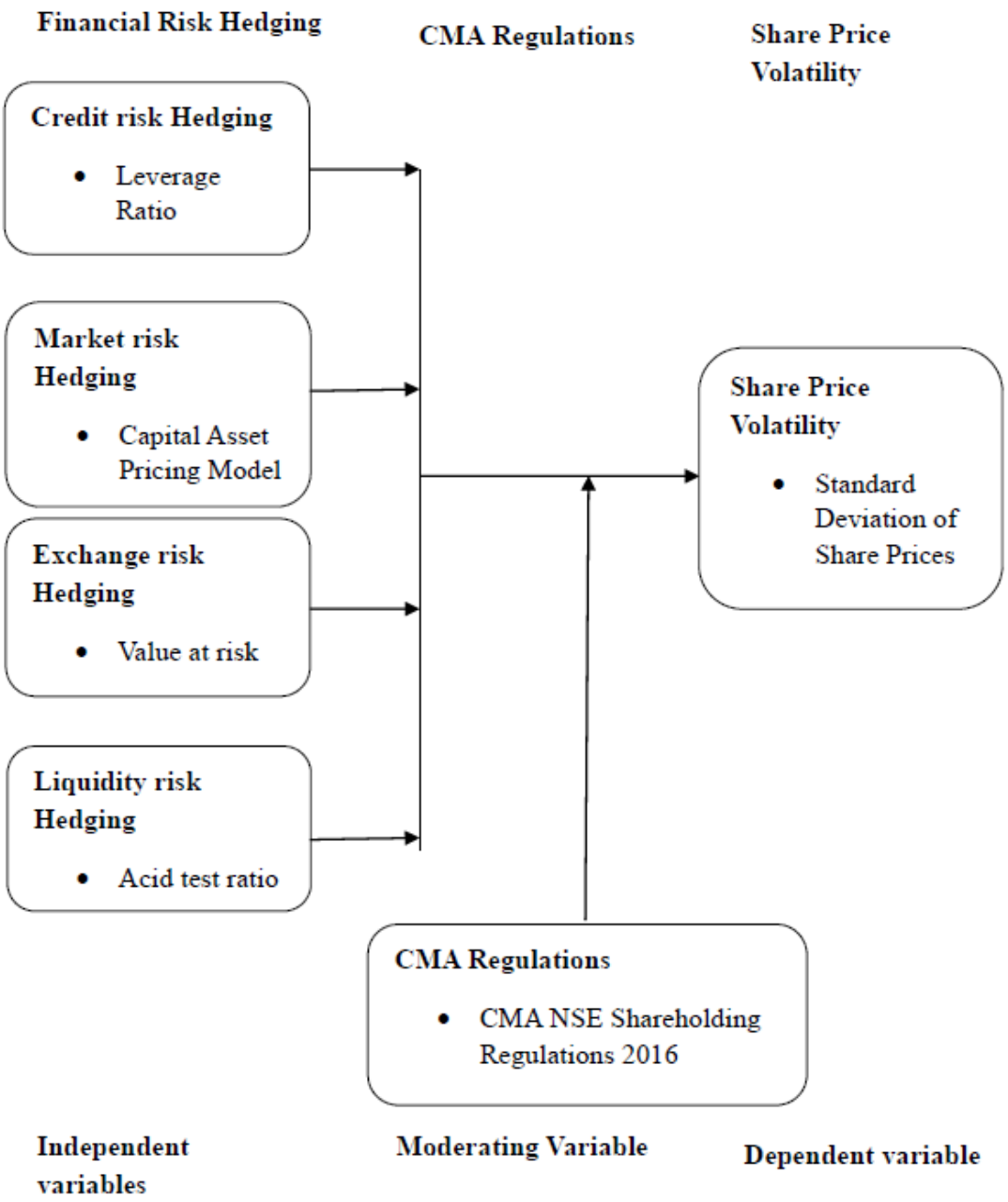


Figure 2.1: Conceptual framework

2.5 Operationalization of Variables

According to Walela et al. (2022), a variable refers to anything that can adopt several or varied values. Defining a term's meaning by elucidating connections between terms and concepts in the language, conceptual domains, and physical objects is called operationalization (Efuntade et al., 2023).

Table 2.1: Operationalization of Variables

Variable	Indicator	Specific Measure	Scale
Dependent variable	Share Price Volatility	Standard deviation (SD) of share prices $= \sqrt{\frac{\Sigma(X - \ddot{X})^2}{n-1}}$	Ratio
Independent variables	Credit risk Hedging	Leverage Ratio $= \frac{\text{Debt}}{\text{Equity}}$	Ratio
	Market risk Hedging	Capital Asset Pricing Model $= ERi = Rf + \beta i\ (ERm - Rf)$	Ratio
	Exchange Risk Hedging	Value at risk $= VaR = [Rp - (Z)(\sigma)]\text{Vp}$	Ratio
	Liquidity risk Hedging	Acid test ratio $= \frac{\text{Current Asset} - \text{Inventories}}{\text{Current Liabilities}}$	Ratio
Moderating Variable	CMA Regulations	CMA NSE Shareholding Regulations 2016	Likert Scale

2.6 Chapter Summary

This chapter investigates how financial risk hedging affects share price volatility among firms listed on the Nairobi Securities Exchange (NSE). It examines four key financial risks credit, market, exchange rate, and liquidity risk and their hedging effects on share price stability, applying four established financial theories to frame the analysis. Each risk type is measured using specific proxies: leverage ratio for credit risk, CAPM for market risk, Value at Risk (VaR) for exchange rate risk, and the acid-test ratio for liquidity risk. The study also considers the moderating role of Capital Markets Authority (CMA) regulations, which influence the effectiveness of risk management through compliance, transparency, and governance. Theoretical frameworks underpinning the study include the Merton Model for credit risk, Modern Portfolio Theory for market risk, Purchasing Power Parity for exchange rate risk, and Liquidity Preference Theory for liquidity risk. These guide the understanding of how firms manage risk to reduce share price fluctuations. Overall, the chapter integrates financial indicators with institutional factors to assess whether effective hedging and regulatory oversight significantly reduce share price volatility. The findings aim to inform corporate risk policies, investor decisions, and regulatory reforms to enhance market efficiency and stability in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology used to study the impact of financial risk hedging on share price volatility of firms listed on the Nairobi Securities Exchange (NSE). It details the philosophical foundation, research design, population and sampling methods, data collection procedures, and analytical tools employed to achieve the study's objectives. The chapter also covers diagnostic tests, ethical considerations, and measures taken to ensure the reliability and validity of the data and instruments. The chapter outlines a systematic approach to producing reliable empirical evidence on how financial risk hedging influences share price volatility among Kenyan publicly traded firms.

3.2 Research Philosophy

Research philosophy describes the perceptions, beliefs, assumptions, and nature of reality and truth that guide a researcher (Saliya, 2023). Philosophy, therefore, offers a paradigm that gives rise to a specific coherent tradition of scientific inquiry, like wave optics. Different philosophies encourage researchers to study phenomena differently. Research philosophy is critical since it assists the researcher in developing the research design, sampling technique, data gathering instrument, data analysis, research design, and expounding the study findings (Martinsuo & Huemann, 2021). Depending on the researcher's philosophical perspective, general disciplinary categories, and research conventions within those fields, research philosophies are classified as critical theory, constructivism realism, or positivism (Shan, 2022).

The study adopted positivism research philosophy. According to Rabetino, Kohtamäki, and Federico (2021), positivism favours quantitative measurement approaches, such as using structured questions and creating statistically evaluated scales. Adaga, Egieya, Ewuga, Abdul, and Abrahams (2024) believe that positive philosophy may attempt to remove or prevent interpretation from influencing the research process to ensure objectivity, leading to accurate and objective results. GHR and Aithal (2022) posit that the salient features of positive philosophy are that research can be conducted objectively, the results of the research can be extrapolated from the

research sample to the target population, and the researcher and research participants can continue to be independent of one another and not influence one another. The cause-and-effect relationship can be hypothesized.

3.3 Research Design

Research design serves as the roadmap that delineates the beginning and conclusion of the study data (Justine, Elly, Felix, & Eva, 2014). The study adopted a mixed research design to examine the effect of financial risk hedging on the share price volatility of firms listed on the Nairobi Securities Exchange in Kenya. According to Dawadi, Shrestha, and Giri (2021), a mixed research design may yield more insights into the research phenomenon than a single method. This is because more than qualitative or quantitative methods are required to understand the phenomenon under investigation fully. Because a mixed study design includes triangulation, it is advantageous for researchers. The design bolsters the validity of conclusions drawn from a single methodology validating results produced with the individual method (Christensen, 2022).

By combining qualitative and quantitative approaches, the mixed research design allows the strengths of one method to compensate for the limitations of the other, thereby producing more robust and rigorous results (Clark & Clark, 2022). The approach provides a royal pathway to fundamental knowledge by bridging the epistemological divide between qualitative and quantitative paradigms (Dawadi, Ghimire, & Khanal, 2021). However, several scholars have raised methodological concerns about mixed methods research. These include the difficulty in selecting an appropriate design, ensuring data integration quality, and addressing incompatibility issues between data types (Zhou & Wu, 2022; Wisdom & Creswell, 2013). Additionally, the process of gathering and analyzing both types of data can be time-consuming and resource-intensive, increasing both the cost and duration of the study (Fauser, 2021). The use of a mixed research design is both necessary and advantageous for this study. It enables the researcher to uncover statistically significant patterns, while also exploring the underlying motivations, challenges, and contextual realities shaping financial risk hedging and share price volatility in Kenya. This approach not only enhances the quality and applicability of the findings but also aligns with the

study's goal of contributing to evidence-based risk management and regulatory policy development for NSE-listed firms.

3.4 Target Population

Population refers to the entire collection of parts from which the study hopes to derive conclusions (Turban, Outland, King, Liang & Turban, 2018). On the other hand, the target population is the whole collection of respondents who satisfy the specified set of requirements (Kombo & Tromp, 2006). The target population of this study is fifty-four (54) companies listed on NSE between 2013 and 2022, as per Appendix 1. The respondents comprised one hundred and sixty-two (162) staff members of the fifty-four NSE-listed firms, including a director, manager, and one head of department.

Previous research on financial risk hedging strategies and financial performance: Muiru (2019), Korir (2018), and Mauti (2019) serves as a guide for choosing the period. The study aims to investigate financial risk hedging and its effect on the share price volatility of listed firms in Kenya. Thus, choosing a historical approach congruent with the positivist theory underpinning this investigation was essential. The listed firms are appropriate for this study because they are diverse and represent all economic sectors. Moreover, these companies employ the International Financial Reporting Standards (IFRS) to prepare their financial reports and statements, ensuring consistency in reporting and allowing for comparisons within and across firms. Finally, the financial data supplied can be trusted because these companies abide by the CMA's regulatory criteria.

3.5 Sampling

The study adopted a census approach: the population comprises all firms listed on the Nairobi Securities Exchange (NSE) between 2013 and 2022. Hossan, Dato'Mansor and Jaharuddin (2023) defined sampling as the process of selecting a subset of a population representative of the entire population. Firms with incomplete financial data, after exhaustive attempts to retrieve filings, were excluded; the resulting dataset is an unbalanced panel of firm-year observations. The core specification is a panel fixed-effects regression with firm-clustered standard errors. Additional analyses include instrumental variables estimation to address potential endogeneity of hedging decisions, difference-in-differences around regulatory or policy changes where

applicable, and subsample tests by sector. Sensitivity checks, as suggested by Robinson (2024), employ alternative volatility windows and exclude extreme outliers.

A census is appropriate when the population in this case, NSE-listed firms is reasonably small and identifiable, when there is an interest in full-coverage inference about the population (rather than relying on estimates), when data availability across firms is sufficient (financial statements, trading data, and hedging disclosures), and when there is a desire to avoid sampling error and increase statistical power for subgroup analyses (Lakens (2022). However, a census is limited by missing data, survivorship and listing changes, the intensity of data collection, and the potential for measurement error in hedging proxies (Christensen & Hearson, 2019).

3.5.1 Sampling Frame

Kothari (2004) defines a sampling frame as an exhaustive list of all the sampling units or components that can accurately represent a given population. A sampling frame may, for example, be a register of industries or firms from which sample units can be selected. The frame should be kept current and free from errors such as omissions or duplications of sampling units. In this study, the sampling frame was constructed from the Nairobi Securities Exchange (NSE) master list of listed firms and supplemented with regulatory notices from the Capital Markets Authority (CMA) and company annual reports. According to Smith and Albaum (2012), sampling frame contains one entry per firm-year for all firms listed at any time between 2013 and 2022, and includes company name, sector classification, listing and delisting dates, year-end market capitalisation, availability of price series, and a flag indicating the presence of hedging disclosures. Firms with irretrievable price or financial data for a given year were excluded from that firm-year observation; the study therefore employs an unbalanced panel. Cross-listed firms and financial institutions are flagged for separate robustness checks.

3.5.2 Sample Size

Hennink and Kaiser (2022) define sample size as the number of distinct sampling units utilised in a study. For statistical analysis to be valid, a sample should generally include at least thirty (30) cases. Additional considerations must be made for small subgroups within the population and how well the sample represents their distribution.

Larger or more heterogeneous populations require correspondingly larger sample sizes. This study employed strata to determine a sample size of fifty-four (54) listed firms. The strata improve a sample's statistical efficiency, provides adequate data for analysing different strata, and enables the application of tailored research techniques and protocols in distinct sub-populations (Atenga & Mougoué, 2021). According to Zhang et al. (2020), strata are groups into which the study population is divided, from which samples are randomly selected. Strata may be based on variables such as age, gender, income level, or industry sector.

The study adopted ten (10) strata to categorise the NSE-listed firms: banking, construction and allied industries, energy and petroleum, insurance, investment services, manufacturing and allied industries, telecommunications, commercial and services, automobiles and accessories and agriculture. The use of strata increases the statistical efficiency of the sample, ensures adequate representation of different groups, and allows the application of different analytical approaches for distinct sub-populations (Atenga & Mougoué, 2021). The sample size distribution across the strata is presented in Table 3.1 below.

Table 3.1: Sample Size

S/No.	Sector/ strata	No. of Firms	Respondents per Firm	Respondents
1	Agricultural	6	3	18
2	Automobiles and Accessories	1	3	3
3	Banking	10	3	30
4	Commercial and Services	10	3	30
5	Construction and Allied	4	3	12
6	Energy and Petroleum	4	3	12
7	Insurance	6	3	18
8	Investment Services	5	3	15
9	Manufacturing and Allied	7	3	21
10	Telecommunication	1	3	3
	Total	**54**	**30**	**162**

3.5.3 Unit of Analysis

The unit of analysis refers to the main entity or element that is being analysed in a study (Kumar, 2018). It is the who or what the researcher examines to understand the relationships between variables. Elements such as persons, groups of people, objects, places, and social artifacts may comprise unit of analysis. In this study the unit of analysis is the fifty-four individual firms listed on the Nairobi Securities Exchange. Each listed firm is treated as a distinct entity. Data is collected per firm, covering financial risk hedging, share price volatility (measured through standard deviation of share prices), firm-specific financial indicators (e.g., leverage ratio, acid test ratio), compliance with CMA regulations.

Bell, Harley and Bryman (2022) state that unit of analysis helps the researcher precisely define what is being studied (e.g., individual firms vs. industries vs. investors), knowing the unit of analysis ensures that data is collected at the correct level, prevents errors like aggregating data inappropriately or drawing incorrect inferences, strengthens external validity by clarifying what population the findings can be generalized to promote transparent and replicable research, especially in policy and financial studies.

3.6 Data Collection

3.6.1 Data Collection Procedure

The study utilised both primary and secondary data to examine the relationship between financial risk hedging and share price volatility of firms listed on the Nairobi Securities Exchange (NSE) between 2013 and 2022. The data collection procedure was outlined below. Secondary data were collected using a data collection sheet. Annual reports, audited financial statements, and Capital Markets Authority (CMA) filings were obtained from company websites, the NSE portal, and regulatory archives. These sources provided details on hedging practices, such as derivative usage, notional values, and natural hedging mechanisms (Javangwe & Takawira, 2022). Historical daily and monthly share prices were retrieved from the NSE trading database and supplemented with data from individual firms' websites. A structured questionnaire was developed to gather primary data, particularly information on the influence of CMA regulations. The questionnaire was administered to finance managers, treasury officers, or risk management officers of each sampled firm via

email and, where possible, through in-person or virtual interviews. Follow-up calls and reminder emails were sent to increase the response rate.

Primary data on CMA regulations were merged with secondary data on financial risk hedging, market trading, and volatility metrics using unique firm identifiers. This integration ensured that both quantitative market measures and qualitative managerial insights were captured in the analysis (Barrett & Twycross (2018). The combined dataset was reviewed for accuracy and completeness. Discrepancies between sources were resolved through cross-checking. Missing values were addressed by referencing alternative data sources or, where necessary, excluding incomplete firm-year observations. Outliers in return data were winsorised to minimise the impact of extreme market events. The final dataset comprised an unbalanced panel of firm-year observations, enriched with survey responses from the primary data collection. This comprehensive dataset allowed for both statistical modelling of the relationship between financial risk hedging and share price volatility.

3.6.2 Data Collection Instruments

The study used both primary and secondary data. Secondary data were applied to the dependent and independent variables, while primary data were specifically employed for the moderating variable (CMA regulations). A closed-ended questionnaire (see Appendix III) was used to collect primary data from senior managers of NSE-listed firms. For secondary data, a data collection sheet (see Appendix VII) was utilised. Data on current assets, current and non-current liabilities, inventories, equity, risk-free return, market return, and beta were extracted from published annual reports and financial statements available on the websites of the Capital Markets Authority, the Nairobi Securities Exchange, and the respective firms. Questionnaires were chosen because they enable objective data collection through standardised responses, allowing for quick information gathering from a large proportion of the target group. Quantitative data collected can also be compared across studies and used to assess changes over time (Bihu, 2024).

3.6.3 Reliability of Instrument

Reliability refers to the extent to which a study's measurement model accurately and consistently captures the intended underlying constructs (Munir, 2018). It reflects how

steadily an instrument measures a concept over time. A reliable instrument ensures that any situational variations are minimised, allowing for consistent results. Common measures of reliability include internal consistency reliability and test–retest reliability. In this study, Cronbach's alpha was employed to assess the internal consistency of the measurement instrument. A coefficient of 0.70 or above is generally considered indicative of high reliability (Ahmad, Zulkurnain, & Khairushalimi, 2016). This threshold is supported by Munyua and Lango (2023), who state that an instrument is considered highly reliable when its rating meets or exceeds 0.70. Similarly, Mbogo, Jimmy, and Olando (2021) concur that a data collection instrument is deemed reliable if its Cronbach's alpha value is above 0.70.

3.6.4 Validity of the Instrument

Validity refers to the extent to which an instrument measures what the researcher genuinely intends it to measure (Mugenda & Mugenda, 2003). A measurement is considered valid if it accurately captures the intended information. Validity can take various forms, including construct validity, instrument validity, and content validity. The accuracy of an instrument can also be evaluated by comparing it with another process or metric that has already been tested and proven valid (William, 2024). This study employed both face and content validity to confirm the validity of its instruments. According to Baker, Rovai, and Ponton (2014), face validity is the degree to which a research tool appears to measure what it is intended to measure. To assess face and content validity, the study used a peer review process. The researcher engaged six experts—three from academia (engineering, accounting, and hospitality) and three from industry (finance, human resources, and procurement) at Murang'a University of Technology. These experts reviewed the questionnaire to evaluate the clarity and precision of its wording and phrasing. Feedback from these experts was incorporated to refine the questionnaire, ensuring it was clear, unambiguous, and fit for purpose. Ahmed and Ishtiaq (2021) affirm that expert evaluation enhances both face and content validity.

3.6.5 Pilot Test

A pilot survey was conducted prior to the main research to test the suitability of the research instrument. It was conveniently administered to a small sample of firms not listed on the NSE and excluded from the main study. According to Mugenda and

Mugenda (2003), a pilot study is a preparatory investigation conducted before the actual research to provide valuable insights that can guide a more extensive study. Such insights may include information on cost, feasibility, and potential challenges once the main study commences. As noted by Teresi, Yu, Stewart, and Hays (2022), pilot testing helps determine whether a questionnaire yields the desired results, while Kunselman (2024) highlights its role in identifying questions requiring clarification or removal due to limited contribution to the study's objectives.

As shown in Appendix V, the pilot study involved thirteen Kenyan firms not listed on the NSE. The respondents included directors, managers, and one head of department from each firm. This aligns with Gani, Rathakrishnan, and Krishnasamy's (2020) assertion that a pilot study sample size of at least ten respondents is adequate. Several sections of the questionnaire were revised following the pilot to ensure the questions were relevant and effective for analyzing the phenomenon under investigation. The firms were selected based on their similarity in characteristics to listed firms. Taherdoost (2021) supports the use of pilot tests to evaluate an instrument's performance in real-world conditions and to identify issues related to questionnaire design, sequencing, and wording.

3.7 Diagnostic Tests

The study used several diagnostic tests to assess whether the regression model was suitable for identifying the association between the variables. Additionally, since linear regression is a weak model due to linearity, multicollinearity, and homoscedasticity assumptions, various diagnostic tests were conducted for this study. Alita, Putra and Darwis (2021) assert that a variety of assumptions concerning the independent variables, dependent variables, and their relationship are made by standard linear regression models using standard estimate techniques. The assumptions aid in obtaining unbiased estimators for the estimated coefficients that best fit the line of fit. The multicollinearity, stationarity, autocorrelation, heteroscedasticity, normality, Hausman and Breusch-Pagan Langrange Multiplier were the diagnostic tests run.

3.7.1 Multicollinearity Test

This phenomenon is known as multicollinearity when there is a significant association between numerous variables in a multiple linear regression analysis with both the dependent variable and one another. Multicollinearity causes some of the relevant variables under consideration to become statistically insignificant. The eigenvalue method, variance inflation factor, and correlation coefficients can all be used to detect multicollinearity (Iyakaremye, 2015). Multicollinearity test is one of the diagnostic tests that aids a researcher in identifying and pinpointing the research gaps, identifying the areas where the error is, and implementing remedial measures accordingly (Pesaran, 2021).

Maniagi (2018) states there is no one-size-fits-all method for handling multicollinearity. Some strategies might be helpful, such as making do with what you have, dropping an extra variable, changing the multicollinear variables, or enlarging the sample size. Variance inflation factor (VIF) was used to determine multicollinearity. The null hypothesis that there is no multicollinearity was tested. The determination of multicollinearity was done using the Variance Inflation Factor. When a particular data collection has a VIF of less than 10, it indicates that multicollinearity is absent. Eliminate one from the regression analysis if there is a strong correlation between any two variables.

3.7.2 Stationarity Test

Panel data is deemed stationary if the distribution's form does not change over time (Gujarati, 2021). The panel data is non-stationary and contains a unit root, according to the null hypothesis of the stationarity test; on the other hand, the alternative theory states that the panel data is stationary. The existence of a unit root in the data was ascertained using the Levin-Lin-Chu unit root test. When the probability of the Levin, Lin, and Chu statistic for each variable had a value of less than 0.01, indicating that the variables are stationary and lack a unit root, the null hypothesis is rejected.

Tabachnick, Raby, Goldstein, Zajac, and Dozier (2019) list the following methods for testing the order of integration: Fisher Chi-square, Harris-Tzavalis unit-root test, Levin-Lin-Chu unit root test, Phillips-Perron (PP), Im, Pesaran, and Shin unit test, and Augmented Dickie-Fuller (ADF). While Ali (2015) conducted a study on the impact

of credit risk on management and the financial performance of Jordanian commercial banks, Maniagi (2018) determined the impact of financial risk on Kenyan commercial banks' performance. The Levin-Lin-Chu unit root test was adopted in both investigations to test for stationarity.

3.7.3 Autocorrelation Test

Autocorrelation measures the degree of correlation between the values of the same variables across distinct data points (King, 2018). It refers to the link between the past and present values of a given variable. Positive and negative autocorrelation are two different forms of serial correlation. The study employed Wooldridge test to establish the existence of autocorrelation in the data. Wooldridge (2010) states that an autocorrelation test is used to determine if there is a pattern in the error term data that could affect the study's regression model. The data from the survey was examined to see if they support the hypothesis that there is no autocorrelation using the Wooldridge test for serial correlation in panel data.

Nguta and Mugambi (2021) used the Wooldridge test for serial correlation in examining related party transactions about administrative and fiscal difficulties for the financial institutions in Kenya. Nyamweya and Obuya (2020) also used the Wooldridge test for autocorrelation whereby p-value greater than 0.05 denotes the absence of serial correlation. Muriel (2025) contented that autocorrelation tests are used for macro panels with extended time series of more than 5 years. Existence of serial correlation indicates unsound model. Autocorrelation reduces the standard errors of the coefficients and increases R-squared.

3.7.4 Heteroscedasticity Test

Ordinary least square assume that heteroscedasticity is present when variance of regression errors is not the same but unknown. This is known as constant variance or homoscedasticity. When this supposition is not fulfilled, the problem is called heteroscedasticity (Gujarati, 2021). Heteroscedasticity invalidates statistical tests of significance that rely on the assumption that modelling mistakes are uniform and uncorrelated, which can significantly affect how a panel data regression model performs. The following tests can be used to check if the obtained data are heteroscedastic: White's test, Modified Wald test, likelihood ratio test, and Breusch-

Pagan test (Segera, 2022). The likelihood ratio test was employed to determine if the random effects in the study's model had a constant error variance.

Neyman and Pearson invented the likelihood ratio (LR) test in 1928, according to Onifade and Olanrewaju (2020). Assuming the Laplace distribution, this test for heteroscedasticity produces positive findings for fat-tailed and Gaussian data. Assuming normalcy, the likelihood ratio test is susceptible to any departure from it, mainly when the data come from a distribution with fat tails. If the data is divided into groups, a likelihood test of this kind can also be employed as a robust test for a time series or a constant variance in residuals (Araújo, Cysneiros & Montenegro, 2020). To determine whether the data is heteroscedastic, Nalyanya (2020) used the likelihood ratio to investigate how macroeconomic factors affect Kenya's tax revenue performance. Irungu (2022) also employed the likelihood test to check for heteroscedasticity in their study on the application to the Financial Performance of Non-financial Firms Listed at the Nairobi Securities Exchange,

3.7.5 Normality Test

The proposition of normality in data is one of the most common statistical tests; normal distribution can be tested analytically using the Kolmogorov-Smirnov test, Shapiro-Wilk test, and Anderson Darling test (Mwasi & Aluoch, 2023). Normality tests can also be graphically using a histogram or Q-Q plot. The frequency distribution is normally distributed, which is the null hypothesis. A p-value of less than 0.05 represents a significant deviation from the normal distribution, while a p-value greater than 0.05 represents an insignificant deviation from the normal distribution. A histogram is a visual representation of data that uses bars to depict the frequency of values in each bin after grouping values into bins (Dyke & Hormann, 2023). A quantitative variable's frequency distribution is shown by a histogram, where the values on the x-axis are arranged in ascending order. Panel data can be analyzed using histograms to display the data distribution, detect skewness, and more.

The Shapiro-Wilk test was adopted to determine if the residuals are normally distributed. Shapiro-Wilk test was developed in 1965 to test data with a limited sample size (Dudley, 2023). The Shapiro-Wilk test was utilized in the research by Ayodi, Otsyulah, and Kiganda (2022) to assess whether residuals are normally distributed.

Gray and Jones's (2016) study on additional hypotheses shows that the data exhibits a normal distribution if the Shapiro-Wilk test yields a significance value greater than 0.05. On the other hand, if the data significantly deviates if the significance value is less than 0.05, the distribution should be expected.

3.7.6 Hausman Test

To choose between the Random Effect Model (REM) and the Fixed Effects Model (FEM), the study performed a Hausman test. The Hausman Specification Test was created by Jerry Hausman, De-Min Wu, and James Durbin (Baltagi et al., 2012). The study's panel data regression model utilized the Hausman test to determine whether endogenous regressors are present (Muriithi, 2016). One of the Ordinary Least Squares (OLS) assumptions stipulates the non-existence of a correlation between the error term and the predictor variable, which is not adhered to by the presence of endogenous regressors. The fixed effects model is only appropriate when testing the null hypothesis, whereas the random effect model is appropriate for any analysis (Hausman, 1978).

3.7.7 Breusch-Pagan Lagrange multiplier Test

The Breusch-Pagan Lagrange multiplier (LM) test aids researchers in choosing between a pooled ordinary least square regression and a random effects regression claim (Abdullah, Sahudin & Bahrudin, 2022). Trevor Breusch and Adrian Pagan developed the Breusch–Pagan test in 1979 (Breusch & Pagan, 1980). The significance of random effects in a panel data model was assessed using the Breusch-Pagan Lagrange multiplier test. The error components model or the two-error structure approach are other names for the random effects model.

The Breusch-Pagan Lagrange multiplier offers an alternative method for considering time-specific and cross-sectional effects in panel data (Hahn & Shi, 2021). Random effects linear regression is an example of Breusch and Pagan's LM test for random effects in a linear model. It is based on pooled OLS residuals. The alternative model is estimated using generalized least squares, which can be based on maximum likelihood or a two-step process (Martin, 2023). In the LM test, the null hypothesis states no differences between entities, suggesting no panel effects because there is no discernible variation among units.

3.8 Data Analysis and Presentation

Wilson (2016) asserts that a researcher should be able to establish the correlation between the dependent variable and the independent variables from the data collected. The study concentrated on listed firms since they consistently report their annual financials, making the data widely accessible. Additionally, NSE mandates that these publicized statistics be filed annually (Holtom, Baruch, Aguinis & Ballinger, 2022). The study employed the Best Linear Unbiased Estimation (BLUE) method to analyze the panel data employed by the investigator for 10 years between 2013 and 2022.

Panel data, which is also known as longitudinal data, was used. Panel data is a dataset in which the behavior of various entities, such as states, companies, individuals, and countries, is observed across time. Hsiao (2022) states that panel data allows researchers to control variables that cannot be observed or measured, like cultural factors or differences in business practices across companies. Additionally, Batrancea et al. (2022) assert that the data is used for variables that change over time but not across entities, accounting for individual heterogeneity. With panel data, one can include variables at different levels of analysis suitable for multilevel or hierarchical modeling. Hill et al. (2020) highlight data collection issues, non-response in the case of micro panels, or cross-country dependency in the case of macro panels (i.e., correlation between countries) as the main limitations of panel data.

Zulfikar and STp (2018) posit that panel analysis has enabled researchers to undertake longitudinal and cross-sectional studies in various fields. Panel data regression requires exact estimation modeling, in contrast to ordinary regression. Estimation, selection, and finally, determination of the estimation Method using the Chow test. Data was presented using graphs, tables, and figures. Mutugi (2022) adopted ten years between 2009 and 2019 to study the influence of mortgage risk on publicly traded mortgage originators' market returns listed in NSE. In examining the relationship between the two variables, averages were handy for the ten years. The regression below was adopted for the study:

$$Y_{it} = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \varepsilon \quad (1)$$

Where;

Y_{it} = Share price volatility, the dependent variable

β_0 = Y when the independent variables (X_{1i} through X_{4i}) have values equal to zero

X_{1i} = Credit risk hedging

X_{2i} = Market risk hedging

X_{3i} = Exchange rate risk hedging

X_{4i} = Liquidity risk hedging

β_1, β_2, β_3, and β_4 = regression coefficients that show how Yit changed about an independent variable change of one unit each.

ε= regression error term.

The second equation established the moderating effect of CMA regulations on financial risk hedging on the share price volatility of NSE listed Firms in Kenya. The regression below was adopted for the study:

$$Y_{it} = \beta_0 + \beta_5 X_{5i} M + \beta_6 X_{6i} M + \beta_7 X_{7i} M + \beta_8 X_{8i} M + \beta_9 X_{9i} M \varepsilon \quad (2)$$

Where ;

Y_{it} = Share price volatility, the dependent variable

β_0 = Y when the independent variables (X_{5i} through X_{9i}) have values equal to zero

$X_{5i}M$ = Moderated Credit risk hedging

$X_{6i}M$ = Moderated Market risk hedging

$X_{7i}M$ = Moderated Exchange rate risk hedging

$X_{8i}M$ = Moderated Liquidity risk hedging

$X_{9i}M$ = CMA regulations- Moderated Variable

B_5, β_6, β_7, β_8, and β_9 are moderated regression coefficients that show how Yit changed about an independent variable change of one unit each.

ε= regression error term.

3.9 Ethical Considerations

Ethical considerations refer to the principles that guide researchers in formulating and implementing their research ideas and procedures (Arifin, 2018). These principles include informed consent, anonymity, confidentiality, avoidance of harm, communication of results, and voluntary participation. They uphold scientific integrity, enhance the validity of a study, and protect the rights of research participants. Ethical considerations also prohibit false interpretations or misrepresentation of facts when concluding any research project. Since research often involves interaction between researchers and individuals with diverse dispositions, ethical principles foster trust, collaboration, and mutual respect (Green, 2019). A supportive ethical framework ensures that all participants can freely share their thoughts and responses, contributing to a successful research process.

Woods et al. (2022) emphasize that informed consent, justice, harm avoidance, respect, anonymity, and confidentiality should be observed throughout a study. In this research, participants were treated fairly, provided with adequate information before participation, and allowed to withdraw at any time without fear of negative consequences. The sampling process ensured that all individuals meeting the inclusion criteria had an equal chance of selection. Data collection was authorized through an introductory letter (see Appendix II). Participants were given the autonomy to decide whether to participate, providing voluntary and informed consent with the knowledge that their participation was optional and withdrawal was permitted at any stage. According to Burns et al. (2017), research may pose financial, social, psychological, emotional, or physical risks. Ensuring anonymity and confidentiality when responding to questionnaires helps protect participants from potential psychological harm.

3.10 Chapter Summary

Chapter Three presents the methodological framework for analyzing the impact of financial risk hedging on share price volatility among non-financial firms listed on the NSE, with CMA regulations as a moderating factor. The study adopts a quantitative, explanatory research design, using secondary data from annual reports and CMA publications over a five-year period. Financial risk hedging is measured using specific financial ratios credit risk by the leverage ratio, market risk by beta (CAPM), exchange rate risk by Value at Risk (VaR), and liquidity risk by the acid-test ratio. The

dependent variable, share price volatility, is measured using the standard deviation of share prices. CMA regulations are the moderating variable, measured through a composite index of regulatory compliance indicators. Data is analyzed using descriptive statistics, correlation, and panel regression, including interaction terms to test moderation. The chapter ensures methodological rigor through reliable data sources, ethical considerations, and clearly defined variables, providing a strong foundation for investigating how financial risk hedging and regulatory oversight influence share price behavior in Kenya's capital markets.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of diagnostic tests conducted on the primary and secondary data collected. It is organized into the following subsections: descriptive data analysis, panel data regression results, descriptive statistics, model diagnostic tests, and model specification. Inferential statistics were also employed to draw conclusions from the collected data.

4.2 Response Rate

One hundred forty-one (141) questionnaires were distributed to managers, directors, and heads of departments of the firms listed on NSE. The researchers received 123 filled out questionnaires representing an overall response rate of 87.03 per cent as per Table 4.1 below. Sixteen questionnaires were not returned, while only two were returned but incomplete, signifying 11.12 per cent and 1.85 per cent of the total survey, respectively.

Table 4.1: Response Rate

Response	Frequency	Percent (%)
Returned	123	87.03
Unreturned	16	11.12
Incomplete	2	1.85
Total	**141**	**100**

This response rate was considered very appropriate for further analysis because it was over 60 per cent, which is recommended as adequate by several researchers, including (Jillo, Rintari & Moguche, 2023; Otieno & Weda, 2023; Millan, Kamau & Ibua, 2023). A response rate of 50 per cent and above is acceptable for analysis (Sataloff & Vontela (2021). A personal introduction letter, a letter obtained from the Murang'a University of Technology, a NACOSTI research licence and persistent follow-up with the respondents through reminder emails and phone calls facilitated the high response rate.

Chung and Shin (2020) state that High response rates are essential for a quality research study to generate valid, reliable, and generalizable results. With statistically robust response rates, researchers can ensure that their study sample represents the target population of interest (Fosnacht et al., 2017). The dependent and independent variables employed secondary data, and a 100% response rate was achieved (data was collected from the fifty-four firms listed on NSE from 2013 to 2022). The primary data was purposely collected for the moderator variable (CMA Regulations).

4.3 Diagnostic Tests Results

4.3.1 Multicollinearity Test

The Variance Inflation Factor (VIF) was used to test for multicollinearity, which occurs when independent variables are highly correlated. A VIF value below 10 indicates no multicollinearity, while highly correlated variables require dropping one from the regression model to maintain validity.

Table 4.2: Multicollinearity Test Results

Independent Variables	VIF	1/VIF
Credit Risk Hedging	1.10	0.907881
Liquidity Risk Hedging	1.10	0.908692
Market Risk Hedging	1.07	0.938858
Exchange Risk Hedging	1.07	0.938935
Mean VIF	**1.08**	

Table 4.2 presents the multicollinearity test results for the multiple linear regression model. The general rule is that tolerance should be greater than 0.1 (or VIF less than 10) for all variables. The results show that all variables had tolerance values ranging from 0.907881 to 0.938935, while the VIF values ranged from 1.07 to 1.10. Since multicollinearity is typically indicated by a VIF greater than 10, the results confirm that no multicollinearity exists in the data. These findings are consistent with those of Atheru (2023) and Zornata, Cynthia, and Oyinebifun (2023), who also concluded that there was no multicollinearity when VIF values fell between 1 and 10.

4.3.2 Stationarity Test

The Levin-Lin-Chu unit root test was used to assess data stationarity. If the data is non-stationary, transformations such as taking natural logs or differencing may be applied. A p-value below 0.01 indicates that the data is stationary, leading to the rejection of the null hypothesis that it contains a unit root.

Table 4.3: Stationarity Test Results

Statistic	p-value	
Unadjusted t	-14.3739	
Adjusted t*	-8.0296	0.0000

From Table 4.3, both the unadjusted t-statistic -14.3739 and the adjusted t-statistic -8.0296 have probabilities less than 0.01. This indicates that the variables are stationary and do not contain a unit root. Therefore, the null hypothesis that the panel data is non-stationary and contains a unit root is rejected. These results are consistent with the findings of Abdullahi (2022), Ishioro (2022), and Maniagi (2018), who also rejected the null hypothesis of a unit root.

4.3.3 Autocorrelation Test

The study used the Wooldridge test to detect autocorrelation in panel data, where a p-value below 0.05 indicates no serial correlation. Autocorrelation suggests an unsound model as it lowers coefficient standard errors and inflates R-squared. The method has been applied in similar studies by Nguta & Mugambi (2021) and Nyamweya & Obuya (2020), with Muriel (2025) noting its relevance for macro panels with time series over five years.

Table 4.4: Autocorrelation Test Results

F(1,53) =	0.050
Prob >F =	0.8238

Table 4.4 shows a p-value greater than 0.05, indicating that the null hypothesis of no autocorrelation is not rejected. This suggests that the model is statistically valid, and the study concludes that there is no autocorrelation in the random effects model. The results imply that the estimated random effects model provides more reliable estimates. These findings are consistent with those of Aiyabei (2021), Agembe (2024), Amutabi (2023), and Siddique, Khan, and Khan (2022). Similarly, Kahihu, Wachira, and Muathe (2021) applied the Wooldridge test and found no serial correlation, implying that the independent variables were uncorrelated. According to Malit (2024), the random effects model addresses errors by assuming that the intercept is a random outcome variable.

4.3.4 Heteroscedasticity Test

The study used the likelihood ratio test to check for heteroscedasticity, which occurs when regression error variances are unequal. This test, assuming the Laplace distribution, works for both fat-tailed and Gaussian data but is sensitive to deviations from normality. It can also be applied to grouped data for time series or constant variance testing. Similar applications include Nalyanya (2020) on macroeconomic factors and tax revenue in Kenya and Irungu (2022) on financial performance of non-financial NSE-listed firms.

Table 4.5: Heteroscedasticity Test Results

Lrtest hetero., df(53)	
LR chi2 (53) =	1476.91
Prob >chi2 =	0.0000

Table 4.5 shows a p-value of 0.0000, which is less than 0.05. The null hypothesis is rejected: homoscedasticity is present, implying the residuals are distributed with equal variance. The test concludes that a condition of heteroscedasticity exists. This meant that the model could lead to an incorrect conclusion. A robust standard error test was used to correct the presence of heteroscedasticity in the random effects model. Uyanto (2022), Nalyanya et al. (2020), and Obulemire (2020) all were in agreement with results rejecting the null test hypothesis, implying that the error term was not constant, hence the existence of heteroscedasticity in the model.

4.3.5 Normality Test

Mukherjee and Bhonge (2025) emphasize the importance of testing for non-normal errors in regression models, as deviations from normality can undermine test reliability and prediction accuracy. For panel data, normality should be checked for both individual effects and residual disturbances. The Shapiro-Wilk test, suitable for small samples, was used to assess residual normality, where a p-value above 0.05 indicates no significant deviation from normality. Similar applications include Ayodi et al. (2022), with Gray (2016) noting that significance values above 0.05 confirm normal distribution.

Table 4.6: Shapiro-Wilk Test Results

Variable	Obs	W	V	z	Prob>z
spvolatility	540	0.67024	118.900	11.526	0.00000
credit	540	0.79922	72.396	10.329	0.00000
market	540	0.93778	22.435	7.503	0.00000
exchange	540	0.70557	106.161	11.253	0.00000
liquidity	540	0.54393	164.443	12.308	0.00000

A test for the normality of residuals was carried out, and the results were shown in Table 4.6 above with significance values of 0.0000. The null hypothesis states that the sample has a normal distribution. The tests violate the normalcy hypothesis when the p-value is greater than or equal to 0.05 (Flores & Lourdes, 2024). The result shows that the residuals were normally distributed. The findings were consistent with those of Mohamud, Kimutai and Kariuki (2025) and Walela et al. (2022).

4.4 Reliability and Validity of Instrument

4.4.1 Reliability of Data Collection Instrument

The research employed a closed-ended questionnaire (see Appendix VI) to collect primary data from senior managers of the NSE-traded firms.

Table 4.7: Reliability of Data Collection Instrument

Average interitem covariance	1.553919
Number of items on the scale	5
Scale reliability coefficient	0.1004

Data collection instruments are tested for reliability to determine how consistently and steadily they measure a concept (William, 2024). The study tested the reliability of its data collection instrument using Cronbach's alpha, which measures consistency by comparing item covariance with total variance (Munyua & Lango, 2023). A value above 0.7, as obtained in Table 4.7, indicates high reliability.

4.4.2 Validity of Data Collection Instrument

Validity refers to the extent to which an instrument accurately measures what the researcher intends to measure (Mugenda & Mugenda, 2003). A measurement is considered valid if it captures the intended information. Validity can take various forms, including construct, instrumental, and content validity. The accuracy of an instrument can be assessed by comparing it with another method or metric that has been tested and proven valid. This study applied face and content validity to evaluate the research instrument. As Baker et al. (2014) note, face validity refers to the extent to which a research tool appears to measure what it is intended to assess. Experts in finance from Murang'a University of Technology were consulted to review the questionnaire's face and content validity. They examined the terminology and phrasing to ensure clarity and simplicity. Feedback from these experts was used to refine the questionnaire and ensure both face and content validity. Face validity considerations also included the instrument's design aspects, such as font size and formatting, tested using existing scales validated by other researchers and recommended in the Murang'a University of Technology postgraduate handbook. The study also assessed whether the scale items comprehensively covered the entire domain of the measured construct to meet the requirements of content validity.

During the pilot study, some issues were identified, including the use of different Likert scales within the same section aimed at measuring a single variable. The Likert scale, designed to gauge respondents' agreement or disagreement with statements on a 5-point scale, was standardized. Scores from individual items were summed to produce a total score for each respondent, hence the term "summated scale." The questionnaire on the moderating variable (CMA Regulations), as shown in Appendix VI, adopted a 5-point Likert scale: Strongly Disagree (SD), Disagree (D), Indifferent (I), Agree (A), and Strongly Agree (SA), with respective weights of 1, 2, 3, 4, and 5. Misspelled words were corrected to ensure clarity and simplicity for respondents.

Criterion-related validity was also applied, demonstrating the accuracy of the measure by comparing it with another validated measure. Criterion variables included demographic profiles, psychographic characteristics, and attitudinal or behavioral measures.

4.5 Demographic Profile

This section presents the respondents' profiles in terms of age, academic qualifications, professional certifications, company sector, years of work experience, and positions held. Primary data was specifically collected for the moderating variable (CMA Regulations).

4.5.1 Gender of the Respondents

The respondents were asked to indicate their gender.

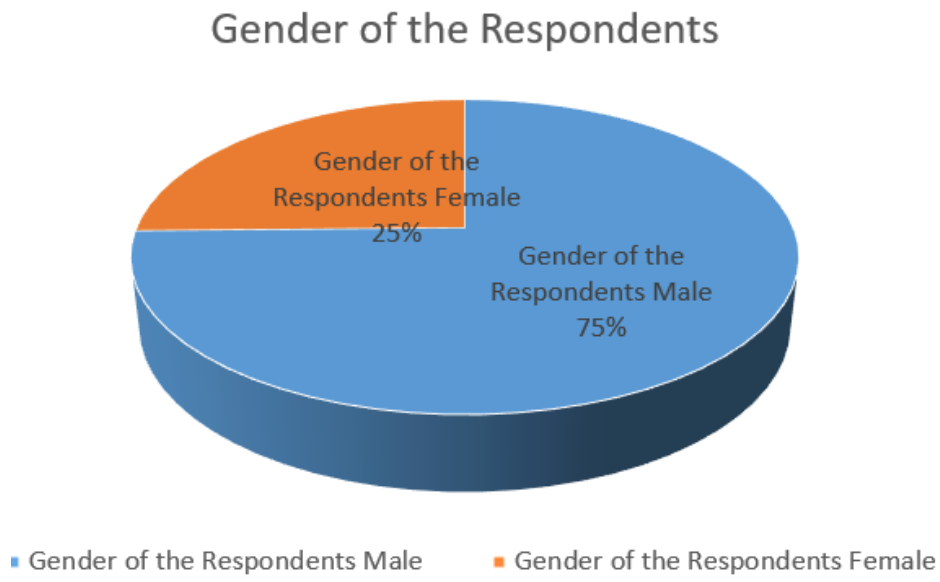


Figure 4.1: Gender of the Respondents

The results, presented in Figure 4.1, show that men comprised 105 respondents (75%), while women accounted for 36 respondents (25%). This indicates that the management of listed enterprises does not comply with the two-thirds gender rule outlined in the 2010 Kenyan Constitution, which requires the state to implement affirmative action programs and policies to support disadvantaged groups, including women. According to Maseno (2025), the two-thirds gender rule mandates that no more than two-thirds of the members of any elected or appointive body be of the same

gender. To achieve this, the Constitution provides for the creation of special seats to ensure compliance (Prakash, Alagarsamy, & Hawaldar, 2022).

4.5.2 Age of the Respondents

The respondents were further asked to indicate their age brackets.

Table 4.8: Age Bracket of the Respondents

Age Bracket of the Respondents	Number	Percentage (%)
21 -30	19	13.48
31 - 40	29	20.57
41-50	51	36.17
Above 50	42	29.79
Total	**141**	**100**

The results in Table 4.8 indicate that most respondents were aged between 41 and 50 years, accounting for 51 respondents (36.42%). This was closely followed by those aged 50 and above, with 42 respondents (29.63%). Respondents aged between 31 and 40 were 29 (20.37%), while those between 21 and 30 were 19 (13.58%). These findings suggest that the majority of respondents are beyond the youthful age bracket, potentially missing out on the benefits of a youthful workforce. According to Lima and Amorim (2024), young employees bring fresh perspectives and innovative thinking to organizations, driven by their eagerness to learn, gain experience, and apply their skills. A youthful workforce can propel a firm forward by embracing and utilizing technology and is typically more adaptable, agile, and responsive to change (Rho, Brown, & Fremstad, 2020).

4.5.3 Academic Qualification of the Respondents

The respondents were asked to indicate their highest academic accomplishment.

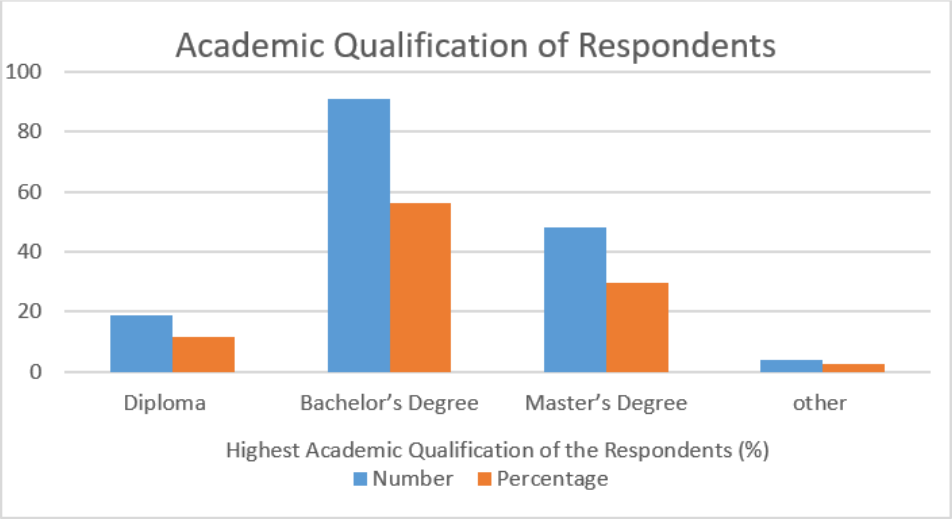


Figure 4.2: Academic Qualification of the Respondents

The results in Figure 4.2 show that most respondents were Bachelor's degree holders, accounting for 56.03% of the sample. This was followed by Master's degree holders at 29.79%, Diploma holders at 12.06%, and 2.13% with certificates in other disciplines, such as the Kenya School of Government (KSG) and KESRA. These findings indicate a high literacy level among respondents, with 65.09% holding degree qualifications. According to Post (2016), a high literacy level enhances quality of life, fosters self-esteem, promotes gender equality, encourages community involvement, supports lifelong learning and skill development, and improves overall personal welfare.

4.5.4 Professional Qualification of the Respondents

The respondents were asked to indicate their professional qualifications.

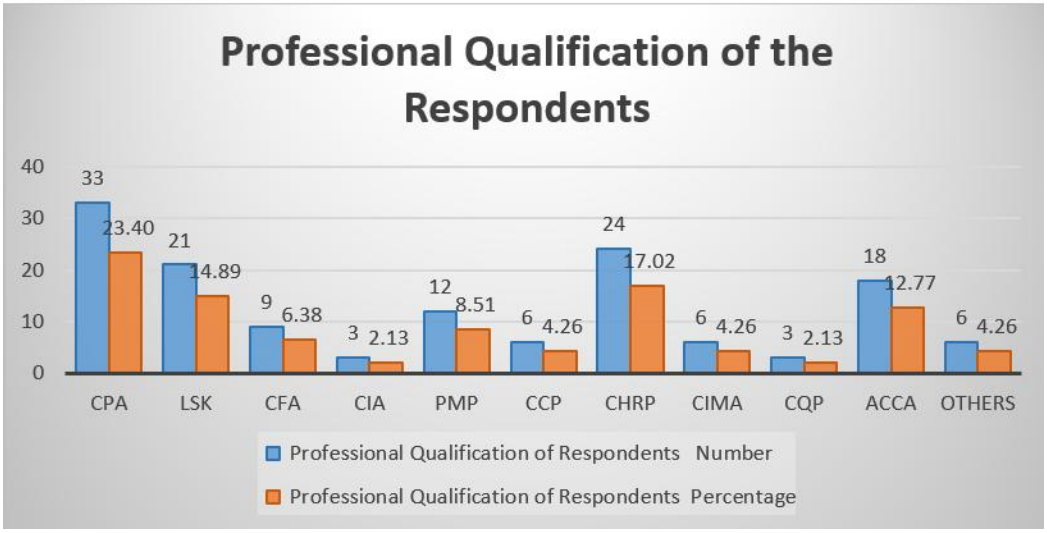


Figure 4.3: Professional Qualification of the Respondents

The results in Figure 4.3 indicate that Certified Public Accountants (CPA) formed the largest group at 23.4%, followed by Certified Human Resource Professionals (CHRP) at 17.02%. Members of the Law Society of Kenya (LSK) ranked third at 14.89%, with Association of Chartered Certified Accountants (ACCA) holders following at 12.77%. Project Management Professionals (PMP) accounted for 8.51%, while Chartered Financial Analysts (CFA) represented 6.38%. Certified Credit Professionals (CCP), Chartered Institute of Management Accountants (CIMA) members, and other qualifications each accounted for 4.26%. Certified Quality Professionals (CQP) and Certified Internal Auditors (CIA) had the smallest representation at 2.13% each.

The results indicate that most respondents were specialists in the accountancy, human resource, and legal professions, suggesting they had a strong understanding of public finance management and the prudent use of government and shareholders' resources. According to Okafor (2024), when citizens understand public finance management, governments can create an enabling environment that supports business growth and efficient public service delivery through transparent, equitable, and accountable spending, coupled with effective management and monitoring mechanisms. Skilled personnel also excel in their roles, enhancing productivity. Their extensive theoretical and practical expertise makes it easier to detect irregularities within the organization, and their confidence enables them to resolve issues as they arise (Boxall, Huo, & Winterton, 2019).

4.5.5 Sector the Respondent Company Belongs

The researcher sought to establish the sector where the respondents' companies belong.

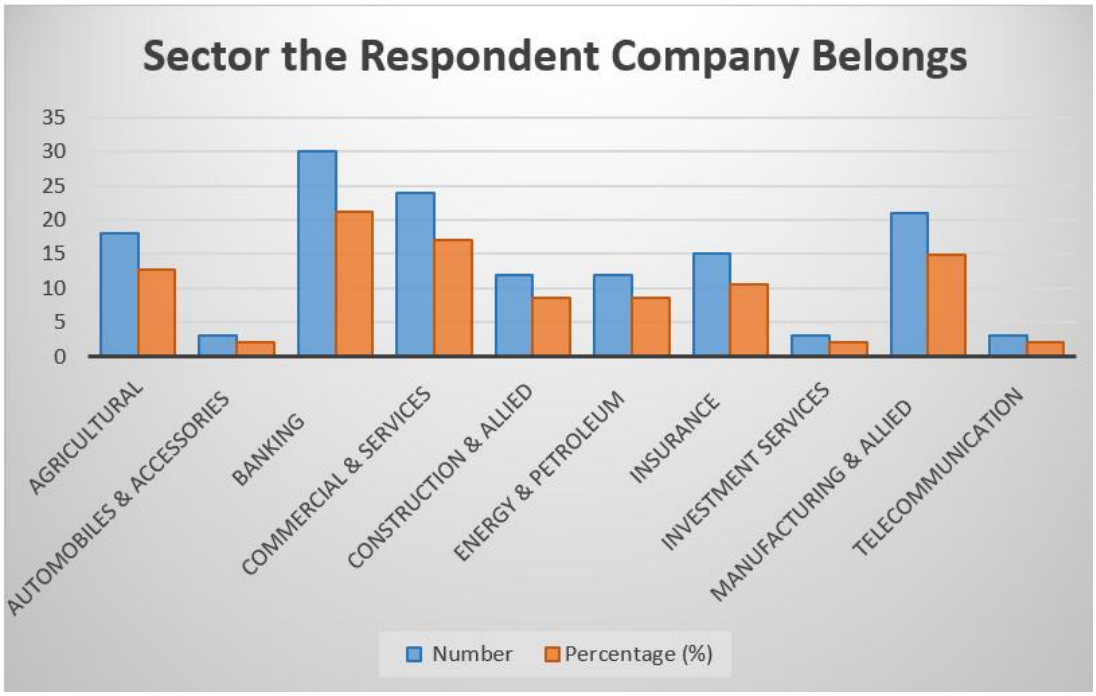


Figure 4.4: Sector the Respondent Company Belongs

The findings in Figure 4.4 show that the majority of respondents were from the banking sector (18.52%), followed closely by both the commercial and services sector and the manufacturing and allied sector at 14.81% each. The agricultural sector accounted for 12.96%, followed by construction and allied and insurance sectors at 9.26% each. Energy and petroleum represented 7.41%, while investment services accounted for 5.56%. The automobiles and accessories, telecommunication, real estate investment trusts (REITs), and exchange-traded funds (ETFs) sectors had the lowest representation at 1.85% each. These findings suggest that the banking, commercial and services, and manufacturing and allied sectors have the highest number of listed firms on the Nairobi Securities Exchange, whereas the telecommunication, REITs, and ETFs sectors have the fewest.

4.5.6 Experience of the Respondents

The researcher sought to establish the years the respondents have served their respective companies, as presented in Figure 4.5.

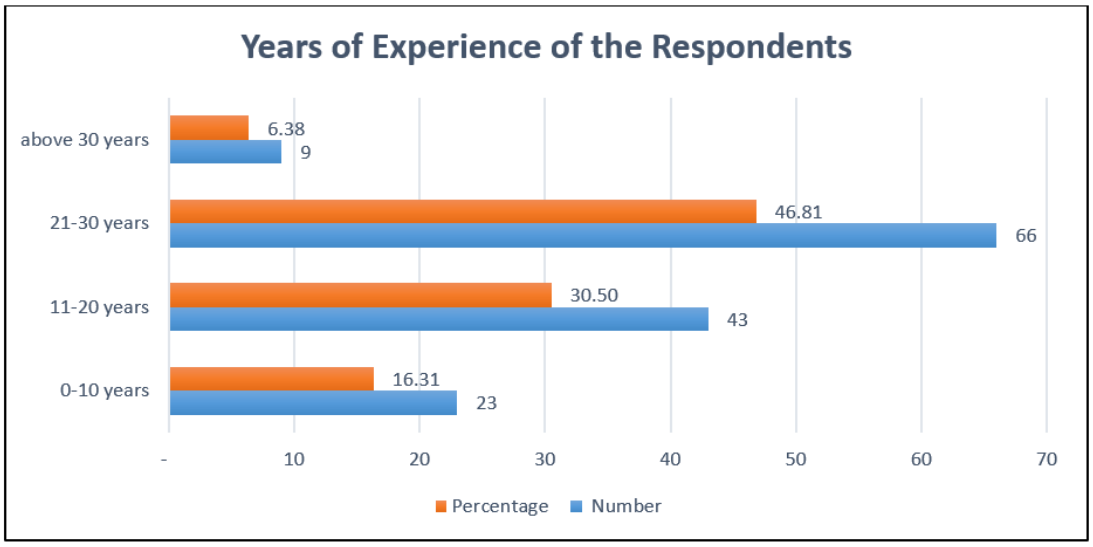


Figure 4.5: Experience of the Respondents

Most respondents (66), representing 46.81%, had served their respective companies for 21 to 30 years. Those with 11 to 20 years of service were 43 (30.50%), while 23 respondents (16.31%) had worked for 0 to 10 years. Only 9 respondents (6.38%) had served their employers for more than 30 years. These results indicate that most respondents had been with their firms for over 10 years, giving them solid background knowledge of the listed companies and making them well-positioned to respond to the questionnaires. According to Kubiciel-Lodzinska and Maj (2020), experienced employees bring numerous benefits to organizations, including lower turnover rates, the ability to attract higher-quality candidates, enhanced collaboration, improved communication between management and staff, greater productivity, increased customer satisfaction, stronger commitment to company success, appeal to younger talent, and improved returns.

4.5.7 Position Held in the Organization

The researcher sought to establish the respondents' positions in the organization, as presented in Figure 4.6.

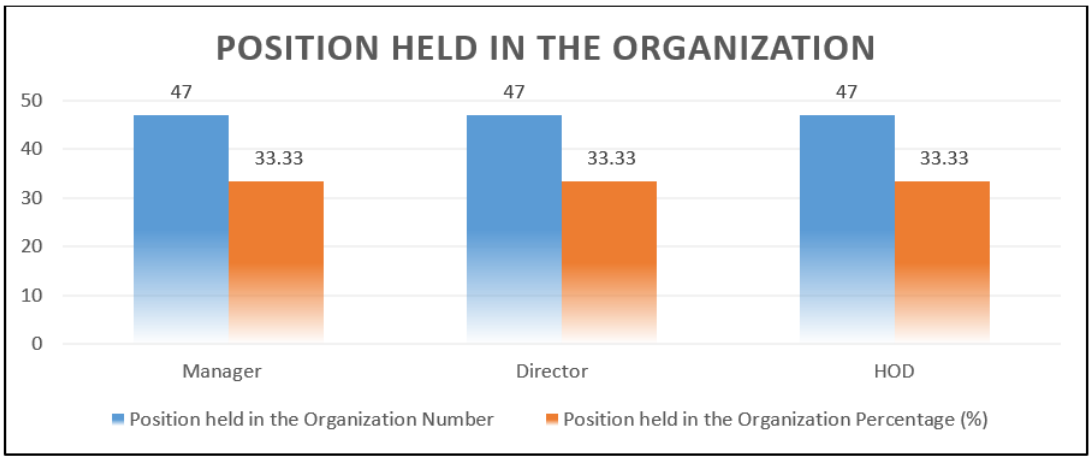


Figure 4.6: Position Held in the Organization

The findings indicate that 33.33 per cent were managers, directors, and Heads of Departments.

4.6 Exploratory Data Analysis

Exploratory data analysis assessed the normality of the dependent variable, linearity of relationships, and absence of high correlations among independent variables. Between-firm analysis used spaghetti plots, while within-firm analysis employed trend plots.

4.6.1 Spaghetti Plots

Spaghetti plots, also known as overlain plots, were used to assess whether firms have different intercepts, indicating the need for fixed effects in the model. Analysis of 54 public companies showed varying intercepts, particularly for companies 1, 50, and 54, supporting the use of a fixed effects model.

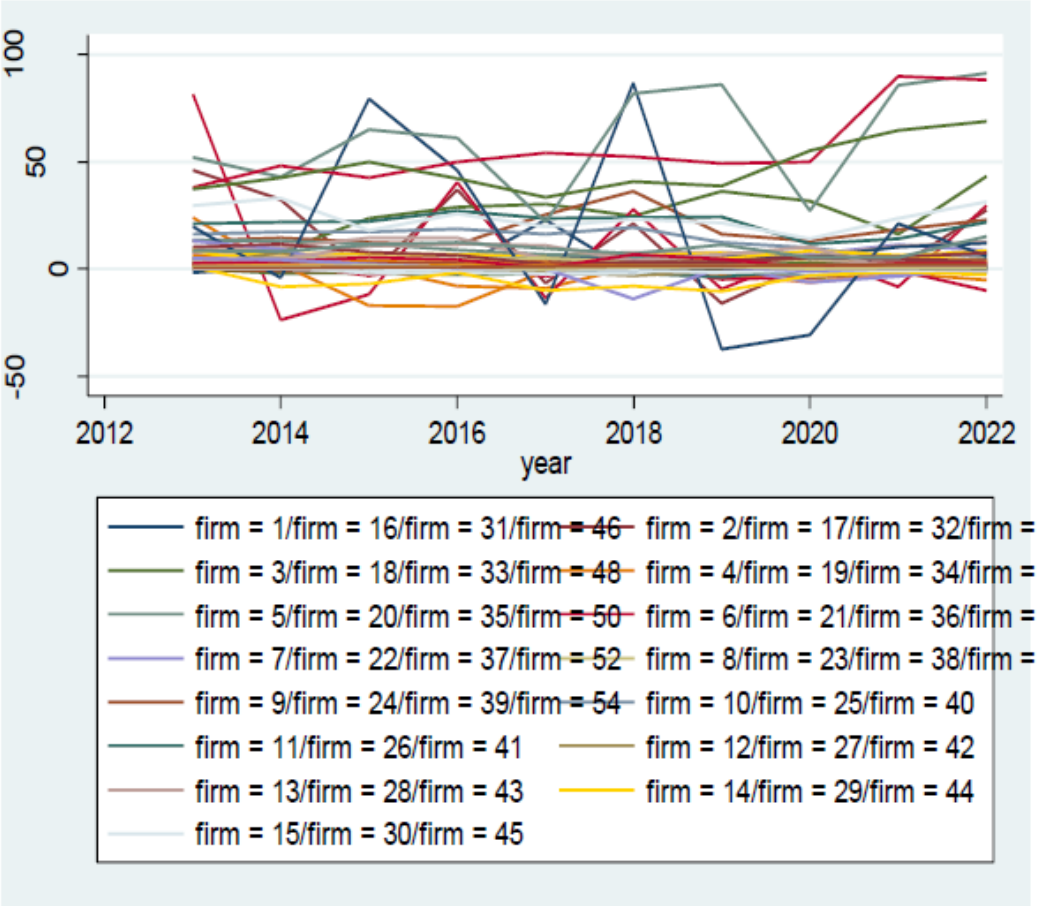


Figure 4.7: Spaghetti Plots

4.6.2 Trend Plots

Trend plots, also known as growth plots, were used for within-firm analysis to determine whether time-related fixed effects should be incorporated into the model. Growth plots were drawn for the fifty-four (54) firms listed on the NSE over a ten-year period. The results were generally consistent across the analysis. However, the financial risk hedging performance measured by the standard deviation of share prices varied from firm to firm. According to the findings presented in Figure 4.8, Firms 1, 2, 6, 9, 31, 35, 36, and 48 exhibited relatively inconsistent results.

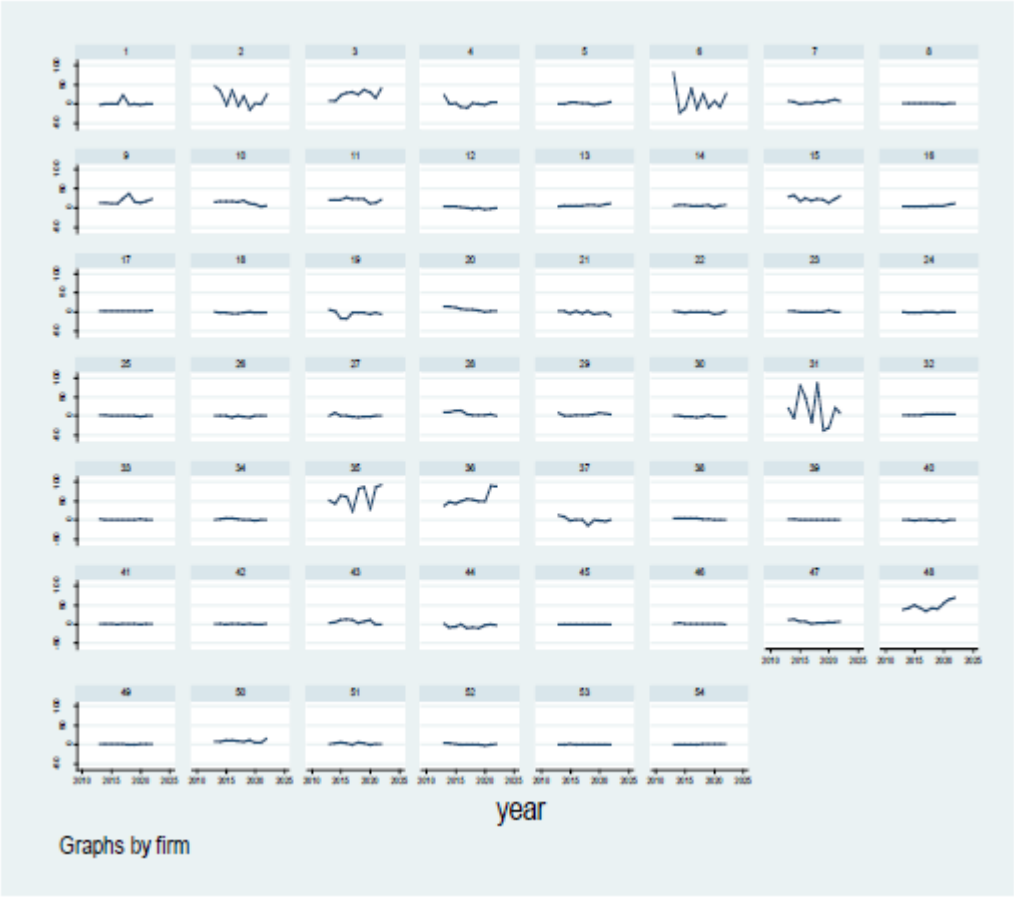


Figure 4.8: Trend Plots

4.7 Descriptive Statistics

Descriptive statistics involve numerical and graphical methods used to summarize and describe the characteristics of a dataset, including measures of frequency, central tendency, dispersion, and location, and are an essential first step before conducting inferential analysis.

Table 4.9: Descriptive Statistic Test Results

Variable	Mean	Std. dev.	Min	Max	obs
spv~ overall	7.287926	16.32707	-37.35	91.3	N = 540
between		13.52306	-5.227	61.5	N= 54
within		9.31417	-47.07907	76.91093	T= 10
Credit ~	2.547003	2.646632	.0006	19.7143	N = 540
overall		2.266527	.09994	10.8232	N= 54
between		1.397603	-2.937997	16.87555	T= 10
within					
Market ~	5.95259	2.164094	3.006	10.6637	N = 540
overall		0	5.95259	5.95259	N= 54
between		2.164094	3.006	3.006	T= 10
within					
Exchange ~	5.35085	8.449207	-1.8688	28.7173	N = 540
overall		0	5.35085	5.35085	N= 54
between		8.449207	-1.8688	28.7173	T= 10
within					
Liquidity ~	1.805518	2.527612	.0144	.00144	N = 540
overall		2.004757	.06852	.06852	N= 54
between		2.004757	-5.860852	-5.860852	T= 10
within					

In terms of financial risk hedging, there is competition among the Nairobi Securities Exchange-listed firms, as evidenced by the averages of 2.547, 5.9525, 5.3508, and 1.8055 for credit risk hedging, market risk hedging, exchange risk hedging, and liquidity risk hedging, respectively, and 7.2879 per cent for share price volatility in Table 4.9. Furthermore, the table shows 540 observations per variable, indicating that the data is highly balanced. Data that is well-balanced, with each of the 54 companies having data spanning a decade. Correspondingly, standard deviations for share price volatility are as follows: 16.32707, 13.52306, and 9.31417 for the overall standard deviation; 2.646632, 2.266527, and 1.397603 for credit risk hedging; 2.164094, 0, 2.164094 for market risk hedging; 8.449207, 0, 8.449207 for exchange rate risk hedging; and 2.527612, 2.004757, and 1.561052 for liquidity risk hedging. The overall standard deviation for the independent and dependent variables is greater than the standard deviation within and between the variables, as seen in the Table 4.9 above.

To mitigate share price volatility, the results indicate that all companies listed on the Nairobi Securities Exchange are exposed to credit, market, exchange, and liquidity risks. Financial risk hedging was applied to address these risks. Credit risk hedging was implemented at 2.547003%, with a standard deviation of 2.646632, ranging between 0.0006 and 19.7143. Market risk hedging stood at 5.95259, with a standard deviation of 2.164094 and maximum and minimum values of 10.6637 and 3.006, respectively. Exchange risk hedging was recorded at 5.35085, with a standard deviation of 8.449207 and values ranging from -1.8688 to 28.7173. Finally, liquidity risk hedging was applied at 1.805518, with a standard deviation of 2.527612.

4.8 Model Specification

Model specification, the first and most critical stage in regression analysis, involves selecting appropriate variables and functional forms, which directly affect parameter estimation and interpretation. Errors in specification can undermine the robustness and reliability of results (Hsiao, 2022). This study applied the Hausman and Breusch-Pagan Lagrange multiplier tests to identify the most suitable model.

4.8.1 Hausman Test

The Hausman Test determines whether to use Random or Fixed Effects estimators by testing if individual-specific errors are correlated with the regressors. The null hypothesis is that the unique errors (ui) are not correlated with the regressors, concluding the existence of random effects (Baltagi & Baltagi, 2021). A violation of this assumption suggests endogenous regressors, breaching an OLS requirement.

Table 4.10: Hausman Test Results

	Coefficients			
Independent Variables	**(b) fixed**	**(B) random**	**(b-B) *Difference***	**S.E.**
Credit Risk	-0.3656633	-0.3281594	-0.037504	0.1011801
Liquidity Risk	0.6914843	0.6923192	-0.0008349	0.0121541
Market Risk	0.0300792	0.029683	0.0003959	0.0031802
Exchange Risk	-0.0655059	-0.075126	0.0096208	0.0724933
chi2(4)=	0.15			
Prob>chi2=	0.9972			

Table 4.10 presents a p-value greater than 0.05, indicating acceptance of the null hypothesis that the individual effects are not correlated with Xit s. This implies that the random effects model is preferred over the fixed effects model and will be adopted in this study. These findings align with Mutugi (2022), thereby supporting the choice of the random effects panel model. According to Dettori, Norvell, and Chapman (2022), the random effects model is appropriate for various analyses, emphasizing its effectiveness. The primary advantage of random effects is that they allow the inclusion of time-invariant variables. If differences between entities influence the dependent variable but are uncorrelated with the predictors, the random effects model is suitable (Torres-Reyna, 2007).

4.8.2 Breusch-Pagan Lagrange multiplier Test

The Breusch-Pagan Lagrange Multiplier (LM) test helps determine whether to use pooled OLS or a random effects model by assessing time-specific and cross-sectional effects in panel data (Abdullah, Sahudin & Bahrudin, 2022). The null hypothesis states that there are no differences between entities, implying no panel effects (Martin, 2023).

Table 4.11: Breusch-Pagan Lagrange Multiplier Test Results

Estimated results	Var	Sd = sqrt (Var)
SPV~ y	266.5733	16.32707
e	93.89945	9.690173
u	180.5762	13.43786
Test: Var (u) = 0	chibar2 (01) =	1013.81
	Prob>chibar2 =	0.0000

Table 4.11 shows a p-value of 0.0000, which is less than 0.05, indicating rejection of the null hypothesis that there are no differences between entities. This means pooled ordinary least squares regression is inappropriate. Consequently, the study adopts the random effects regression model, as there is evidence of significant differences across firms listed on the Nairobi Securities Exchange.

4.9 Financial Risk Hedging and Share Price Volatility

4.9.1 Effect of Credit Risk Hedging on Share Price Volatility

The first objective of the study was to evaluate the effect of credit risk hedging on the share price volatility of NSE listed Firms in Kenya. To achieve the objective, the study tested the null hypothesis that credit risk hedging has no statistically significant effect on the share price volatility of NSE listed Firms in Kenya and the results in Table 4.12 were obtained. The study then introduced CMA regulations as the moderating variable and the results were as shown in Table 4.13.

Table 4.12: Credit Risk Hedging and Share Price Volatility Results

Share price volatility	Coef.	Robust Std Err	Z	P >/z/	95% Conf. Interval	
Credit Risk	-.3281594	.2136964	-1.54	0.125	-.7469967	0.090678
-Con	3.979468	2.507239	1.59	0.112	-.9346304	8.893566

Table 4.12 indicates that the p-value for credit risk hedging is 0.125, with a coefficient of -0.3386. This suggests that a one-unit increase in credit risk is associated with a decrease in share price volatility of approximately 0.33 units, holding other factors

constant. However, since the p-value exceeds the typical significance level of 0.05, this relationship is not statistically significant. The 95% confidence interval (-0.7470 to 0.0907) includes zero, further reinforcing the lack of strong evidence for a definitive effect. The constant term (3.9795) represents the estimated share price volatility firms listed on NSE in Kenya when credit risk is zero. Its p-value is 0.112, indicating that it is also not statistically significant at the 5% level. The wide confidence interval (-0.9346 to 8.8936) reflects considerable uncertainty around this estimate. Robust standard errors were used to adjust for potential heteroscedasticity, improving the reliability of the inference. The Z-values (-1.54 for credit risk and 1.59 for the constant) are calculated by dividing the coefficients by their robust standard errors and are used to determine the p-values. While the coefficient for credit risk suggests a negative relationship with share price volatility, the evidence is insufficient to conclude a statistically significant effect at the 5% level. Similarly, the intercept is not statistically significant. Further research with larger samples may be necessary to clarify these relationships.

Table 4.13: Moderated Credit Risk Hedging and Share Price Volatility Results

Share price volatility	**Coef.**	**Robust Std Err**	**Z**	**P >/z/**	**95% Conf. Interval**	
Moderated credit risk	-.3386364	.213696	-1.54	0.025	-.7748572	0.09067
-Con	-13.89479	2.50723	1.59	0.112	-.9346304	8.89356

Table 4.13 shows a p-value of 0.025 and a coefficient for moderated credit risk hedging of -0.3386364. This indicates that a one-unit increase in moderated credit risk is associated with a decrease in share price volatility by approximately 0.34 units, holding other factors constant. Since the p-value is less than the 0.05 significance level, this effect is statistically significant. The 95% confidence interval ranges from -0.775 to 0.091, slightly including zero at the upper bound, but the statistical significance suggests a meaningful negative relationship.

The intercept (constant) of -13.89479 represents the expected share price volatility of firms listed on NSE in Kenya when credit risk is zero. Despite its negative value, the

p-value of 0.112 indicates that this estimate is not statistically significant at the 5% level. The wide 95% confidence interval (-0.935 to 8.894) reflects uncertainty around this estimate. Robust standard errors were used to adjust for potential heteroscedasticity or violations of classical assumptions, enhancing the reliability of the inference. The Z-value for credit risk is -1.54, consistent with the p-value indicating statistical significance. The study suggests that there is a statistically significant negative relationship between credit risk and share price volatility, meaning that as credit risk increases, share price volatility tends to decrease. However, the intercept is not significant, implying uncertainty about the baseline volatility level when credit risk is zero.

Investors require a premium for assets with longer maturities due to the higher risk associated with extended time horizons (Lavoie & Reissl, 2019). Consumers demand liquidity to support essential operations because earnings levels are not always a consistent source of revenue (Yoon, 2024). The findings of this study align with the concept of liquidity risk hedging, as credit risk hedging helps reduce share price volatility among firms listed in Kenya. These results are consistent with Maniagi's (2018) findings, which showed a significant negative relationship between credit risk measured by gross non-performing loans and performance indicators in both initial and optimal models.

4.9.2 Effect of Market Risk Hedging on Share Price Volatility

The second objective of the study was to assess the effect of market risk hedging on the share price volatility of NSE listed Firms in Kenya. To achieve the objective, the study formulated the null hypothesis that market risk hedging has no statistically significant effect on the share price volatility of NSE listed Firms in Kenya and the findings presented in Table 4.14 were obtained. The study then introduced CMA regulations as the moderating variable and the results were as shown in Table 4.15.

Table 4.14: Market Risk Hedging and Share Price Volatility Results

Share price volatility	Coef.	Robust Std Err	Z	P >/z/	95% Conf.	Interval
Market Risk	-.6923192	.277587	-2.49	0.013	.1482586	1.23638
-Con	3.979468	2.507239	1.59	0.112	-.934630	8.893566

According to the study findings shown in Table 4.14, market risk hedging has a coefficient of 0.6923 with a p-value of 0.013. This indicates that a one-unit increase in market risk is associated with an increase in share price volatility firms listed on NSE in Kenya by approximately 0.69 units, holding other factors constant. Since the p-value is less than the standard significance level of 0.05, this positive relationship is statistically significant. The 95% confidence interval (0.1483 to 1.2364) does not include zero, further confirming the significance of this effect.

The constant term of 3.9795 represents the estimated share price volatility firms listed on NSE in Kenya when market risk is zero. Its p-value of 0.112 exceeds 0.05, indicating that the constant is not statistically significant. The wide confidence interval (-0.9346 to 8.8936) includes zero, suggesting uncertainty around the intercept estimate. Robust standard errors were used to adjust for potential heteroscedasticity, enhancing the reliability of the inference. The z-value for market risk is 2.49, calculated by dividing the coefficient by its robust standard error, which supports the significance indicated by the p-value. The study suggests that there is a statistically significant positive relationship between market risk and share price volatility, implying that as market risk increases, share price volatility also tends to increase. However, the intercept is not significant, indicating uncertainty about the baseline volatility when market risk is zero.

Table 4.15: Moderated Market Risk Hedging and Share Price Volatility Results

Share price volatility	Coef.	Robust Std Err	Z	P >/z/	95% Conf. Interval	
Moderated Market Risk	-.635387	.2514908	-2.53	0.012	.142474	1.128301
-Con	-13.8947	18.64611	-0.75	0.456	-50.4404	22.65092

The study's findings presented in Table 4.15 show a coefficient for moderated market risk hedging of -0.6354 with a p-value of 0.012. This coefficient suggests that for every one-unit increase in moderated market risk, share price volatility decreases by approximately 0.64 units, holding other factors constant. The robust standard error (0.2515) and Z-value (-2.53) indicate that the effect between the dependent and independent variables is statistically distinguishable from zero. Since the p-value is less than 0.05, the negative relationship between moderated market risk and share price volatility is statistically significant at the 5% level. The intercept of -13.8948 represents the estimated share price volatility when moderated market risk is zero. However, its p-value (0.456) indicates that it is not statistically significant, and the wide confidence interval (-50.44 to 22.65) reflects high uncertainty around this estimate. The results indicate a statistically significant negative effect of moderated market risk on share price volatility.

The finding that moderated market risk hedging is statistically significant in relation to the share price volatility of NSE-listed firms in Kenya aligns with Modern Portfolio Theory, which posits that maximizing portfolio returns is achievable for a given level of risk. The theory emphasizes that investors can construct a portfolio of diverse financial assets to optimize returns while managing a specific level of risk (Nekesa et al., 2021). Accordingly, market participants can design an optimal asset mix that reduces share price volatility through market risk hedging, provided a target level of expected returns is met. This underscores the importance of Modern Portfolio Theory in understanding the relationship between market risk hedging and share price volatility.

The results are consistent with Maniagi's (2018) findings, which showed that credit risk, measured by gross non-performing loans, had a significant negative association

with performance proxies in both initial and optimal models for Kenyan commercial banks. Similarly, Murungi (2017) found a positive correlation between hedging practices and high managerial risk aversion; specifically, an increase of 139 in managerial risk aversion corresponded to an 8.8% increase in the likelihood of hedging financial risk. Furthermore, Chege (2014) reported a positive relationship between currency invoicing, forward contracts, and overall financial performance, indicating that increased use of forwards and currency invoicing enhances the financial outcomes of the enterprises studied.

4.9.3 Effect of Exchange Risk Hedging on Share Price Volatility

The third objective of the study was to establish the effect of exchange risk hedging on the share price volatility of NSE-listed firms in Kenya. The associated null hypothesis stated that exchange risk hedging has no statistically significant effect on the share price volatility of NSE-listed firms in Kenya. The findings related to this objective are presented in Table 4.16. Subsequently, the study introduced CMA regulations as a moderating variable, and the results are shown in Table 4.17.

Table 4.16: Exchange Risk Hedging and Share Price Volatility Results

Share price volatility	Coef.	Robust Std Err	z	P >/z/	95% Conf. Interval	
Exchange Risk	.0296833	.0459227	0.65	0.518	-.0603235	.1196901
-Con	3.979468	2.507239	1.59	0.112	-.9346304	8.893566

The results in Table 4.16 show a p-value of 0.518 and a coefficient of exchange risk hedging of 0.0296833. The results imply that the null hypothesis that exchange risk hedging has no statistically significant effect on the share price volatility of NSE listed Firms in Kenya is rejected and draw the conclusion that an increase in exchange risk hedging results in an increase in share price volatility of companies listed on the Nairobi Securities Exchange in Kenya. The p-value of 0.518 indicated that the variable was insignificant. The findings demonstrated a positive effect of exchange risk hedging on the share price volatility of Kenyan companies listed on the Nairobi Securities Exchange. This suggests that an increase in exchange risk hedging causes the share price volatility of Kenyan listed companies to rise.

Table 4.17: Moderated Exchange Risk Hedging and Share Price Volatility Results

Share price volatility	Coef.	Robust Std Err	z	P >/z/	95% Conf. Interval	
Moderated Exchange Risk	.042285	.0423879	1.00	0.318	-.0407934	.125364
-Con	-13.8947	18.64611	-0.75	0.456	-50.44049	22.6509

The results presented in Table 4.17 reveal a coefficient for moderated exchange risk of 0.0423, indicating that for every one-unit increase in moderated exchange risk, share price volatility increases by approximately 0.042 units, holding other factors constant. This represents a relatively small positive effect. The robust standard error (0.0424) measures the variability or precision of the coefficient estimate, adjusted to account for heteroscedasticity or other violations of classical regression assumptions. The Z-value of 1.00 indicates that the coefficient is about one standard error away from zero. Since the p-value of 0.318 is greater than 0.05, the positive relationship between moderated exchange risk and share price volatility is not statistically significant at the 5% level. Additionally, the confidence interval includes zero, which supports the conclusion that the effect of moderated exchange risk on share price volatility is not statistically significant. Therefore, the study concludes that there is no statistically significant evidence from this model to suggest that moderated exchange risk affects share price volatility of NSE-listed firms. Similarly, the baseline share price volatility (intercept) estimate is not significant.

The finding that moderated exchange risk hedging has no statistically significant positive effect on the share price volatility of Kenyan listed firms contradicts the purchasing power parity (PPP) theory. PPP posits that changes in the price levels of a home country relative to foreign countries are proportional to changes in currency values. This theory explains how the prices of goods and services across different nations influence foreign exchange rates. Specifically, the nominal exchange rate between two currencies should equal the ratio of the aggregate price levels of the respective countries (Al-Zyoud, 2015). The study's findings align with the concept of PPP theory, as it facilitates understanding of how the consumer price index, which

uses a representative basket of goods and services, reflects overall variations in retail prices over time.

The results are also consistent with the theoretical proposition that hedging improves a firm's financial performance. Bartram et al. (2009) found evidence that the use of derivatives positively impacts firm value. Additionally, Dong, Kouvelis, and Su (2014) supported the notion that financial risk hedging increases earnings while mitigating adverse foreign exchange risk. Hedging reduces the costs associated with highly volatile cash flows and alleviates underinvestment problems, which promotes growth investments and ultimately enhances financial performance. Similarly, Muiru (2018) found a positive correlation between financial performance and foreign exchange risk hedging strategies. Wanja (2013) also concluded that hedging strategies for foreign exchange risk significantly and positively affect financial performance. It is worth noting that the foreign exchange market differs from other fixed-income markets due to its high trading volumes, which contribute to market liquidity and low relative profit margins.

4.9.4 Effect of Liquidity Risk Hedging on Share Price Volatility

The fourth objective of the study was to examine the effect of liquidity risk hedging on the share price volatility of NSE-listed firms in Kenya. To achieve this objective, the study tested the null hypothesis that liquidity risk hedging has no statistically significant effect on the share price volatility of NSE-listed firms in Kenya. The findings are presented in Table 4.18. Subsequently, the study introduced CMA regulations as a moderating variable, with the results shown in Table 4.19.

Table 4.18: Liquidity Risk Hedging and Share Price Volatility Results

Share price volatility	Coef.	Robust Std Err	Z	P >/z/	95% Conf. Interval	
Liquidity Risk	-.07512	.257648	-.29	0.771	-.58010	.429855
-Con	3.9794	2.50723	1.59	0.112	-.93463	8.89356

Table 4.18 shows that the p-value is 0.771, and the coefficient of liquidity risk hedging is -0.0751266. The coefficient of -0.0751 indicates that a one-unit increase in liquidity

risk is associated with a decrease in share price volatility by approximately 0.075 units, holding other factors constant. This suggests a very small negative effect of liquidity risk on share price volatility. The Z-value of -0.29 indicates that the coefficient is not statistically different from zero. Since the p-value of 0.771 is greater than the typical significance level of 0.05, the relationship between liquidity risk and share price volatility is not statistically significant. Therefore, there is insufficient evidence to conclude that liquidity risk has a meaningful effect on share price volatility. The 95% confidence interval (-0.5801 to 0.4299) includes zero, reinforcing that the effect could be negative, positive, or zero, making the estimate statistically unreliable. In summary, the data do not provide statistically significant evidence that liquidity risk affects share price volatility among firms listed on the Nairobi Securities Exchange.

Table 4.19: Moderated Liquidity Risk Hedging and Share Price Volatility Results

Share price volatility	Coef.	Robust Std Err	Z	P >/z/	95% Conf. Interval	
Moderated Liquidity Risk	-0.799785	.259387	-0.31	0.028	-.5883678	.4284107
-Con	-13.89479	18.64611	-0.75	0.456	-50.44049	22.65092

Table 4.19 presents findings on moderated liquidity risk and share price volatility. The coefficient for moderated liquidity risk hedging is -0.0799785, indicating that a one-unit increase in moderated liquidity risk is associated with a decrease in share price volatility by approximately 0.08 units, holding other factors constant. The Z-value is -0.31, meaning the coefficient is about 0.31 standard errors away from zero. The p-value is 0.028, which is less than 0.05, implying that the negative relationship between moderated liquidity risk and share price volatility is statistically significant at the 5% level. The 95% confidence interval ranges from -0.5884 to 0.4284, which includes zero. Despite this, the relationship is considered statistically significant based on the p-value. The Z-value of -0.75, and a p-value of 0.456, indicating that the intercept is not statistically significant. The wide confidence interval (-50.44 to 22.65) reflects considerable uncertainty about the baseline share price volatility when moderated liquidity risk is zero. The findings suggest a statistically significant negative effect of

moderated liquidity risk on share price volatility, meaning that as moderated liquidity risk increases, share price volatility tends to decrease.

The study's results align with the Merton model, which postulates that investors should conduct due diligence to assess the liquidity levels of financial institutions, ensuring they can meet their debt obligations as they fall due. According to Zouari and Abdelmalek (2020), Basel II provisions allow firms to use estimates of the likelihood of counterparty default to determine regulatory credit risk capital. This theory supports the view that investors must evaluate firms' liquidity levels to confirm their ability to repay debt when due, making the Merton model appropriate for examining the relationship between liquidity risk hedging and share price volatility.

The findings are consistent with Andini, Rizki, and Sudirman's (2025) conclusion that liquidity risk has a significant and negative effect on the financial performance of commercial banks in Kenya. Similarly, Mutua (2014) found that liquidity risk management techniques significantly impact the financial performance of Kenyan commercial banks. The results also agree with Fredrick (2012), who reported a significant negative relationship between liquidity risk and financial performance. Otsyula (2020) also concluded that market liquidity is considered by most market makers as a key factor influencing the effectiveness of financial risk management. Market breadth and resilience notably affect interest rate risk management through financial derivatives. Supporting this, Muzaffar and Malik (2024) observed that market liquidity dimensions significantly influence the use of financial derivatives in managing interest rate risk among commercial banks in Kenya.

4.9.5 Effect of CMA Regulations on Financial Risk Hedging and Share Price Volatility

The null hypothesis stated that CMA regulations have no statistically significant effect on the relationship between financial risk hedging and share price volatility of NSE-listed firms in Kenya. The Capital Markets Authority (CMA) in Kenya is the regulatory body overseeing the activities of firms listed on the NSE. Its policies and compliance requirements influence how firms implement risk management strategies and how the market perceives these actions. CMA regulations act as a moderating factor because they can either strengthen or weaken the impact of financial risk

hedging on share price volatility, depending on the robustness, enforcement, and transparency of these regulations (Marinova, 2024).

CMA regulations were measured using the CMA NSE Shareholding Regulations 2016. The CMA Shareholding Disclosure and Regulatory Framework (2016), developed in collaboration with the NSE, aims to enhance transparency, market integrity, and investor confidence in the Kenyan capital markets by regulating firms' disclosure of shareholding structures and changes. This framework requires listed companies to disclose their top shareholders in their annual reports and mandates that firms notify the CMA and NSE within 24 hours of any material changes in shareholding, particularly those involving substantial or controlling interests. The disclosures must include beneficial owners, not just registered holders, to prevent opacity in ownership structures. Additionally, the regulations align with the Code of Corporate Governance Practices (2015), which requires firms to maintain openness regarding ownership to minimize insider trading and market manipulation (Capital Markets Authority, 2016). The findings related to this hypothesis are presented in Table 4.20 below.

Table 4.20: Results of CMA Regulations on the Relationship Between Financial Risk Hedging and Share Price Volatility

Statement	SD	D	I	A	SA	Total	No.	Mean
CMA Regulations affect the operations of NSE listed companies.	6	15	30	39	51	141	537	3.81
CMA has established rules that are strictly being followed.	9	9	24	51	48	141	543	3.85
Laws and regulations devised by the CMA protect NSE-listed firms from fraudulent actions.	6	12	21	45	57	141	558	3.96
CMA takes strict action against anyone who contravenes any regulations.	3	18	19	47	54	141	554	3.93
Adherence with the established laws positively contributes to mitigating share price volatility in firms listed on the NSE	6	3	18	60	54	141	576	4.09
Are CMA prudential regulations enough to curb share price volatility in NSE firms listed.	7	10	21	46	57	141	559	3.96
Companies listed on NSE are guided by the corporate governance guidelines as in the CMA Code of Corporate Governance Practices for Publicly Traded Securities Issuers.	4	13	22	45	57	141	561	3.98
CMA Regulations guarantee capital market growth, transparency, and stakeholder confidence by strengthening sustainability practices.	9	12	21	45	54	141	546	3.87
Fairness and order are guaranteed in the capital markets sector by the CMA Regulations.	6	12	11	55	57	141	568	4.03
A regulatory framework created by the CMA makes launching new financial institutions and products easier.	6	12	15	51	57	141	564	4.00
Mean	**6.2**	**11.6**	**20.2**	**48.4**	**54.6**	**141**	**556.6**	**3.95**

The first question aimed to determine whether CMA regulations affect the operations of companies listed on the Nairobi Securities Exchange. Twenty-one respondents disagreed, 30 were indifferent, and 90 agreed, representing 63.83% of the respondents. The researcher also sought to establish whether the Capital Markets Authority has established rules that are strictly followed. Eighteen respondents disagreed, 24 were indifferent, and 99 agreed, accounting for 70.21% agreement. Additionally, the study investigated whether the laws and regulations devised by the CMA protect NSE-listed firms from fraudulent activities. Six respondents strongly disagreed, 12 disagreed, and 21 were indifferent. Meanwhile, 45 respondents agreed, and 57 strongly agreed with the statement, representing 72.34% agreement.

The random effects model, selected based on the Hausman Test, assumes no correlation between unobserved individual effects and independent variables (Mostafaei, Ghojazadeh & Hajebrahimi, 2023). Predictors with p-values below 0.05 are considered to have a significant influence on the dependent variable, leading to the rejection of the null hypothesis (Bell, Fairbrother & Jones, 2019). The model accounts for individual heterogeneity, overall disturbance, regressor coefficients, and a single constant term. Results in Table 4.10 indicate that variations in the predictors, as reflected by the R-squared value, explain changes in share price volatility.

The fourth question examined whether the Capital Markets Authority takes strict action against anyone who contravenes regulations. Twenty-one respondents disagreed, nineteen were indifferent, 47 agreed, and 54 strongly agreed with the statement, indicating 71.63% agreement. The study also investigated whether adherence to established laws positively contributes to mitigating share price volatility in firms listed on the NSE. Here, 6.38% of respondents disagreed, 12.77% were neutral, and 80.85% agreed. The researchers further examined whether CMA prudential regulations are sufficient to curb share price volatility in NSE-listed firms. Seventeen respondents disagreed, 21 were indifferent, while 103 agreed that CMA prudential regulations are adequate for this purpose.The study also explored whether NSE-listed companies are guided by the corporate governance guidelines outlined in the CMA Code of Corporate Governance Practices for publicly traded securities issuers. A total of 12.06% disagreed, 15.6% were indifferent, and 72.34% agreed.

Regarding whether CMA regulations guarantee capital market growth, transparency, and stakeholder confidence by strengthening sustainability practices, 70.21% of respondents agreed, while 14.89% were indifferent. The study also assessed whether fairness and order are ensured in the capital markets sector by CMA regulations; 79.43% agreed, 7.8% were indifferent, and 12.77% disagreed. Finally, the study examined whether the regulatory framework created by the CMA facilitates the launch of new financial institutions and products. Here, 12.77% disagreed, 10.64% were neutral, and 76.6% agreed.

CMA regulations were included as a moderator variable in the study. The findings suggest rejecting the null hypothesis that CMA regulations have no statistically significant effect on the relationship between financial risk hedging and share price volatility of NSE-listed firms in Kenya. Instead, the results indicate that CMA regulations have a positive effect on the relationship between the dependent and independent variables. These findings support contingency theory, which posits that external factors influence organizational leadership and that regulatory frameworks, such as those by the CMA, positively affect the business environment and enhance functions such as internal audit (Mokono, 2022). The results also align with Mwangi, Muturi, and Kibati (2019), who found that CMA regulations moderate the effect of liquidity risk on unit trust price volatility among NSE-listed firms.

4.9.6 Effect of Financial Risk Hedging and Share Price Volatility

The percentage of the dependent variable's variation that can be predicted from the independent variables is known as R-squared. A value of 1 indicates that the independent factors account for all the variability in the dependent variable. In contrast, a value of 0 indicates that the independent variables do not explain the variability (Sterba & Rights, 2022).

Table 4.21: Financial Risk Hedging and Share Price Volatility Non-Moderated Results

Random-effects GLS regression				Number of obs = 540		
Group variable: firm				Number of groups = 54		
R-sq: within = 0.0321				Obs per group: min = 10		
between = 0.0000				avg = 10.0		
overall = 0.0091				max = 10		
Corr (u_i, X) = 0 (assumed)				Wald chi2(4) = 11.02		
				Prob > chi2 = 0.0264		
Share price volatility	**Coef.**	**Robust Std Err**	**Z**	**P >/z/**	**95% Conf. Interval**	
Credit Risk	-.3281594	.2136964	-1.54	0.125	-.7469967	0.090678
Market Risk	0.6923192	.277587	2.49	0.013	.1482586	1.23638
Exchange Risk	0.0296833	.0459227	0.65	0.518	-.0603235	.1196901
Liquidity Risk	-.0751266	.2576485	-0.29	0.771	-.5801083	.4298551
-Con	3.979468	2.507239	1.59	0.112	-.9346304	8.893566
Sigma_u	13.437864					
Sigma_e	9.6901729					
Rho	.65789513	(fraction of variance due to u_i)				

From Table 4.21, the R squared statistic included between and within values of 2.8 and 1.0 per cent, respectively. Thus, 2.8 per cent of volatility in the share prices is due

to differences between the different listed firms and 1.0 per cent within the individual firms.

The chi-square statistic of 11.02 has a p-value of 0.0264, implying the random effect model is statistically significance since the p-value is less than 0.05. The prob > chi-squared is 0.0264, implying that the random effect model is ok since the p-value is less than 0.05; thus, the F-test is to see whether all the coefficients in the model are jointly different from zero. The findings further reveal that corr (u_i, X) = 0 (assumed) implies that the between-entity errors are uncorrelated with the regressors in the random effects model. The panel-level residual standard deviation and the standard deviation for the overall remainder error components are denoted by the statistics sigma_u and sigma_e in Table 4.21, respectively. The overall residuals' fluctuation, which is brought on by extraneous variables not included in the model, is denoted by sigma_e. The variance of the residuals caused by additional firm-specific characteristics not included in the regression model is represented by the sigma_u.

The results show that the sigma_u and sigma_e statistics are 13.437864 and 9.6901729, respectively. The fraction of the variation attributable to the random component u_i is Rho, which is 0.6589513. The correlation coefficient between the predictors and the individual effects is represented by the statistic corr (u_ix). The correlation coefficient is 0.000 because the random effects model assumes no relationship between the predictors and the individual effects. The intraclass correlation (Rho) indicates the extent to which the differences across entities account for the variance in the output. In this study, the differences across the fifty-four NSE listed firms account for 65.89513 per cent of the variance in share price volatility. The study's overall objective was to investigate financial risk hedging and its effect on the share price volatility of listed firms in Kenya. Table 4.21 shows a p-value of 0.0000, indicating that the random effects model was statistically significant. In this case, the p-value is less than 0.05; hence, we accept the null hypothesis and conclude that credit risk hedging, market risk hedging, exchange rate risk hedging, and liquidity risk hedging statistically affect the share price volatility of listed firms in Kenya. The study also presents an R-squared of 0.9 per cent, implying that only 0.9 per cent variations in the share price volatility of listed firms, as measured by the standard deviation of the share prices, are due to credit risk hedging, market risk hedging, exchange rate risk

hedging, and liquidity risk hedging. Table 4.22 on the moderated relationship between financial risk hedging and share price volatility shows a p-value of 0.381, indicating that the random effects model is statistically insignificant.

SPV= 3.979468-0.3281594CRH $_{it}$ +0.6923192MRH $_{it}$ +0.0296833 ERH $_{it}$ -0.0751266 LRH $_{it}$

Table 4.22: Financial Risk Hedging and Share Price Volatility Moderated Results

Random-effects GLS regression				Number of obs = 540		
Group variable: firm				Number of groups = 54		
R-sq: within = 0.0347				Obs per group: min = 10		
between = 0.0000				avg = 10.0		
overall = 0.0098				max = 10		
Corr (u_i, X) = 0 (assumed)				Wald chi2(4) = 10.84		
				Prob > chi2 = 0.0547		
Spvolatility	**Coef.**	**Robust Std Err**	**Z**	**P >/z/**	**95% Conf. Interval**	
Credit Risk	-.3386364	.2136964	-1.54	0.025	-.7748572	0.090678
Market Risk	-0.6353877	.277587	-2.49	0.013	.1424747	1.23638
Exchange Risk	0.0422855	.0459227	0.65	0.518	-.0407934	.1196901
Liquidity Risk	-.0799785	.2576485	-0.29	0.007	-.5801083	.4298551
CMA regulations	4.592059					
-Con	-13.89479	2.507239	1.59	0.012	-.9346304	8.893566
Sigma_u	13.437864					
Sigma_e	9.6901729					
Rho	.65789513	(fraction of variance due to u_i)				

The regression equation shows a positive relationship between financial risk hedging and share price volatility with a constant of 3.979468, which induces a unit increase in the financial risk hedging (credit risk hedging, market risk hedging, exchange rate risk hedging, and liquidity risk hedging) leads to a 3.979468 increase in share price volatility on NSE listed firms in Kenya. This positive relationship between financial risk hedging and share price volatility is supported by the findings of (Kiio & Jagongo, 2017) and (Muiru, 2019). The study non-moderated model was thus summarised as follows.Since the p-value is greater than 0.05, the study fails to reject the null hypothesis that CMA regulations have no statistically significant moderating effect on the relationship between financial risk hedging and share price volatility of listed firms in Kenya. Therefore, the independent variables credit risk hedging, market risk hedging, exchange rate risk hedging, liquidity risk hedging, and CMA regulations have statistically significant effects on share price volatility of listed firms in Kenya. The study reports an R-squared value of 0.98%, implying that only 0.98% of the variation in share price volatility (measured by the standard deviation of share prices) is explained by credit risk hedging, market risk hedging, exchange rate risk hedging, liquidity risk hedging, and CMA regulations. Holding all other variables constant, a one-unit change in the constant leads to a 13.89479 decrease in share price volatility. This suggests that the moderating role of CMA regulations on financial risk hedging and share price volatility among NSE-listed firms is supported by the results.

$$SPV=-13.89479-0.33863CRH_{it}-0.635387MRH_{it}+0.04228ERH_{it}-.0799785LRH_{it}+4.59205CMAR$$

Specifically, Credit Risk Hedging has a negative and statistically significant effect on share price volatility (coefficient = -0.3386, p-value = 0.025). Firms that hedge or reduce credit risk tend to experience lower share price volatility, meaning managing credit risk helps stabilize share prices on the NSE. Market Risk Hedging also has a negative and significant effect (coefficient = -0.6354, p-value = 0.013). Hedging market risk, such as stock market fluctuations, reduces share price volatility significantly, indicating that firms effectively managing market risks enjoy more stable stock prices. Exchange Risk Hedging shows a positive but statistically insignificant effect on share price volatility (coefficient = 0.0423, p-value = 0.518).

This suggests that foreign exchange risk has a small and negligible impact on share price volatility for many NSE-listed firms, possibly due to lesser exposure or less effective hedging. Liquidity Risk Hedging also has a negative and statistically significant effect (coefficient = -0.07998, p-value = 0.007). Although the relationship is weak, it indicates that liquidity risk hedging may contribute to reducing share price fluctuations on the NSE. CMA regulations have a positive coefficient (4.5921, p-value = 0.012), indicating that regulatory frameworks may influence share price volatility, potentially through rules affecting risk disclosure or hedging practices. However, the significance and exact interpretation require further contextual analysis. Credit risk hedging, market risk hedging, and liquidity risk hedging individually show significant effects in reducing share price volatility, the overall moderated model including CMA regulations is statistically significant.

4.10 Chapter Summary

This chapter presents the empirical findings on the relationship between financial risk hedging, Capital Markets Authority (CMA) regulations, and share price volatility for firms listed on the Nairobi Securities Exchange (NSE), focusing on the four specific hedging strategies: credit risk hedging, market risk hedging, exchange risk hedging, and liquidity risk hedging. Descriptive Statistics showed that NSE-listed firms moderately apply credit, market, exchange, and liquidity risk hedging tools, with adoption levels varying across sectors. Credit risk hedging was most prevalent among financial institutions, while exchange risk hedging was common in manufacturing and export-oriented firms. CMA compliance levels were generally high, with firms meeting disclosure, reporting, and corporate governance requirements. Share price volatility, measured by the annualized standard deviation of returns, differed significantly across sectors, with financial and manufacturing firms experiencing the highest fluctuations. Correlation Analysis revealed that three forms of financial risk hedging were negatively associated with share price volatility, indicating that increased hedging activities tended to stabilize prices. CMA regulatory compliance also demonstrated a negative correlation with volatility, suggesting a moderating influence on market fluctuations. Regression Analysis using the random-effects GLS model confirmed that each hedging type had a statistically significant negative effect on share price volatility ($p < 0.05$).

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

5.1.1 Credit Risk Hedging and Share Price Volatility

This study investigated the effect of credit risk hedging on share price volatility of NSE listed firms in Kenya, using the leverage ratio (debt-to-equity) as an indicator of a firm's exposure to credit risk. The research was conducted using panel data from NSE-listed firms over a ten-year period, incorporating financial statements, stock return data, and firm-specific risk indicators. The study found that firms with higher leverage ratios tend to experience greater share price volatility. High leverage increases financial risk due to a greater burden of debt servicing, especially under uncertain market conditions, thereby amplifying stock price fluctuations.

Firms that adopted credit risk hedging were able to moderate the effect of high leverage on share price volatility i.e.; hedging reduced the risk premium associated with indebtedness. The hedging effect was found to be stronger in financial services, energy, and manufacturing sectors, where leverage is typically higher and credit exposures more complex. Firms in the agricultural and construction sectors showed weaker hedging effects, often due to less formal risk management practices. Firms operating under stricter CMA regulations were more effective in translating credit risk hedging into reduced volatility. The findings demonstrate that credit risk hedging significantly reduces share price volatility among highly leveraged NSE-listed firms. The leverage ratio is a critical indicator of credit risk, and its negative effect on stock price stability can be mitigated through active risk management strategies.

5.1.2 Market Risk Hedging and Share Price Volatility

This study investigated how market risk hedging influences share price volatility among firms listed on the Nairobi Securities Exchange (NSE), with beta (β) from the Capital Asset Pricing Model (CAPM) used as a proxy for market risk exposure. The CAPM framework was employed to quantify systematic risk and evaluate whether firms that hedge against market risk experience reduced stock return volatility. The analysis confirmed that firms with a higher CAPM beta ($\beta > 1$) indicating higher exposure to market-wide risk tend to experience greater share price volatility. These

firms are more sensitive to movements in the NSE All Share Index and overall macroeconomic conditions. The study also found that firms engaging in market risk hedging, portfolio diversification, or sectoral asset allocation demonstrated lower volatility in their share prices, especially those with high beta values. This suggests that hedging is effective in dampening the impact of systemic risk. Additionally, market risk hedging was associated with improved risk-adjusted performance, as measured by lower standard deviation of returns relative to expected returns (as predicted by CAPM). Hedged firms tended to deviate less from the CAPM-predicted returns, indicating greater consistency and predictability in performance.

5.1.3 Exchange Risk Hedging and Share Price Volatility

This study investigated the effect of exchange rate risk hedging on the share price volatility of firms listed on the Nairobi Securities Exchange (NSE), using Value at Risk (VaR) to measure the magnitude of exposure to currency risk. VaR was applied to quantify the potential loss due to unfavorable foreign exchange movements over a specific time horizon and confidence level. The findings showed that firms with high exchange rate exposure, particularly those involved in international trade or foreign currency borrowing, experienced greater share price volatility. These firms had higher VaR values, indicating a larger risk of currency-driven financial losses. The use of VaR as a quantitative tool helped identify which firms required active exchange rate risk management. Firms with high VaR but no hedging had the most volatile share prices, while those with lower VaR and effective hedging were more stable. This validated VaR as an effective measure for targeting and monitoring exchange risk. Additionally, export-oriented sectors (e.g., manufacturing, agriculture) and firms relying heavily on imported raw materials had the highest currency risk exposure and benefited most from hedging. In contrast, firms with domestic-only operations showed minimal exchange rate impact on share prices.

5.1.4 Liquidity Risk Hedging and Share Price Volatility

This study examined the effect of liquidity risk hedging on the share price volatility of firms listed on the Nairobi Securities Exchange (NSE). The acid test ratio (quick ratio) was used as a measure for liquidity risk. The analysis revealed that firms with low acid test ratios (below 1.0) experienced higher share price volatility suggesting that poor liquidity positions increase investor uncertainty and raise concerns about a

firm's financial stability, leading to greater fluctuations in stock prices. Firms that also implemented liquidity risk hedging strategies, such as maintaining optimal cash reserves, securing credit lines, and improving receivables collection, demonstrated lower share price volatility, even when their acid test ratios were near or slightly below the ideal threshold. The acid test ratio was found to be a strong and consistent predictor of share price sensitivity to liquidity shocks. Investors appeared to use this ratio as a signal of a firm's ability to handle short-term financial obligations, with sharp movements in stock price often following weak liquidity reports. Finally, the study found that retail, manufacturing, and construction firms exhibited higher liquidity risk and benefited more from proactive hedging strategies. Firms in utilities and telecommunication sectors showed more stable liquidity positions and lower volatility overall.

5.1.5 CMA Regulations on Financial Risk Hedging and Share Price Volatility

This study explored how Capital Markets Authority (CMA) regulations influence the strength and direction of the relationship between financial risk hedging (including credit, liquidity, market, and exchange risk hedging) and share price volatility among firms listed on NSE. The analysis confirmed that CMA regulations (e.g., the 2016 NSE Shareholding Disclosure Guidelines) exert a significant moderating effect on the relationship between financial risk hedging and share price volatility. Firms that complied with CMA regulatory frameworks experienced stronger risk-mitigation effects from hedging strategies. Conversely, firms with weak regulatory compliance exhibited weaker hedging impacts, leading to persistent share price volatility despite risk management efforts.

The moderating role of CMA regulations was more pronounced in highly regulated sectors such as banking, insurance, and energy. These firms showed a clearer alignment between regulatory compliance, hedging practices, and volatility reduction. In less regulated or lower-compliance sectors, the moderating effect was comparatively weaker. Firms that did not adhere to CMA guidelines, particularly in risk disclosure and use of hedging instruments, showed minimal volatility reduction, even when hedging strategies were present. This suggests that regulatory structure and enforcement are essential to hedging effectiveness.

The study found that CMA regulations, particularly those related to disclosure of financial risk exposure, Use of hedging instruments, and Corporate governance practices, led to greater transparency, higher investor confidence, and reduced information asymmetry. This, in turn, amplified the effect of financial hedging on stabilizing share prices. Also, it was found that firms operating under strong compliance with CMA disclosure guidelines and better corporate governance practices experienced greater effectiveness in market risk hedging. These firms had more transparent and strategic approaches to managing exposure to index-related fluctuations.

Firms operating under strong compliance with CMA disclosure requirements and currency risk reporting standards had more transparent risk management practices, leading to better market perception and reduced-price swings. Regulatory compliance was found to enhance the credibility and effectiveness of hedging activities. Firms that complied with Capital Markets Authority (CMA) financial disclosure standards achieved greater success in reducing volatility through hedging. Transparent reporting was shown to improve investor trust and stabilize market reactions.

5.2 Recommendations for Policy

5.2.1 Credit Risk Hedging and Share Price Volatility

Based on the finding that credit risk hedging has a statistically significant negative effect on share price volatility of NSE-listed firms in Kenya, the study recommends that the management of NSE-listed firms, particularly those with high leverage, should adopt formal and diversified credit risk hedging strategies such as use of credit insurance to protect against customer default, establishing robust credit scoring systems, diversifying the customer base to reduce concentration risk, and entering into credit derivatives or structured financial contracts. Such measures can help mitigate the adverse effects of high leverage on share price volatility by stabilizing cash flows and earnings expectations. The management of the NSE listed firms should also regularly assess their leverage levels and maintain an optimal debt-to-equity balance. While debt financing can boost growth, excessive leverage exposes firms to credit risk that magnifies share price fluctuations. Integrating risk-based capital structure planning with hedging policies will enhance financial resilience and investor confidence.

5.2.2 Market Risk Hedging and Share Price Volatility

From the findings that market risk hedging has a statistically significant negative effect on share price volatility of listed firms in Kenya, the study recommends that firms with high beta coefficients under CAPM which indicates strong sensitivity to market movements should adopt formal market risk hedging strategies. These may include: Use of equity index derivatives, strategic asset allocation to reduce systematic risk, Portfolio diversification to reduce exposure to cyclical or volatile sectors. These tools help reduce share price volatility driven by macroeconomic and market-wide shocks. Publicly listed firms should regularly monitor and disclose their beta coefficients as part of financial risk management reports. This will help investors understand the firm's market risk profile, allow management to track risk exposure over time, and support proactive hedging decisions. Making beta a standard part of firm disclosure would improve transparency and capital allocation. Firms should strengthen the role of board risk committees in overseeing market risk exposures and hedging strategies. Effective governance improves the integration of CAPM analysis into strategic planning, Assessment of risk-adjusted performance, and Accountability in executing hedging decisions. Well-governed firms can implement market hedging more effectively and earn greater investor trust.

5.2.3 Exchange Risk Hedging and Share Price Volatility

Based on the finding that exchange risk hedging has no statistically significant positive effect on share price volatility of listed firms in Kenya, the study recommends that firms listed on NSE should adopt VaR models to quantify market risk exposure. VaR provides a clear estimate of the maximum expected loss under normal market conditions and allows for objective risk assessment, better-informed hedging strategies, improved capital allocation and risk budgeting. Firms should report VaR across various confidence levels and holding periods to capture both short-term and long-term market risk exposure. The management of NSE listed firms with high VaR values should implement dynamic market risk hedging strategies, including equity derivatives, portfolio diversification across low-correlation assets, stop-loss policies and market timing techniques. These tools help cushion the impact of unfavourable market movements, thereby reducing share price volatility.

Boards and risk management committees of the listed firms should integrate VaR into qquarterly and annual risk reporting, enterprise Risk Management (ERM) frameworks, and performance evaluation metrics. By embedding VaR into core decision-making, firms can align hedging decisions with their risk tolerance and financial objectives. CMA should also develop regulatory guidelines that encourage or require VaR-based market risk disclosures, sstandardize methodologies used in VaR computation across listed firms, and monitor compliance as part of broader risk oversight. This would ensure consistency, improve investor confidence, and promote transparency in risk management practices.

5.2.4 Liquidity Risk Hedging and Share Price Volatility

From the findings that liquidity risk hedging has a statistically significant negative effect on share price volatility of listed firms in Kenya, the study recommends that the management of NSE-listed firms should maintain an acid test ratio of at least 1.0 to ensure they can meet short-term obligations without relying on inventory liquidation. Firms with ratios below this threshold showed greater share price volatility due to market concerns about financial distress. Liquidity buffers such as cash equivalents and receivables should be prioritized to stabilize investor sentiment and reduce risk perception. The management of NSE listed firms should also actively hedge liquidity risk by establishing emergency credit facilities or overdraft lines, maintaining cash flow forecasts and rolling budgets, shortening receivables collection periods, restructuring liabilities to match asset maturities ensuring liquidity sufficiency thereby minimizing share price swings triggered by liquidity shocks.

To build investor confidence, management of NSE listed firms should regularly monitor and disclose acid test ratios in quarterly and annual reports. Transparency around liquidity metrics allows investors to better assess solvency risk, leading to more stable stock pricing and reduced speculative-driven volatility. Liquidity hedging should begin with disciplined working capital management. Firms should enhance internal policies that optimize inventory levels, enforce credit policies to reduce bad debts, nnegotiate favourable payment terms with suppliers. This will improve the acid test ratio organically and reduce reliance on short-term borrowing, which often increases market risk perception. Finally, the management of the NSE listed firms should simulate stress scenarios to test the resilience of their liquidity positions. Stress

testing helps in identifying weaknesses in liquidity planning, setting contingency plans, making informed decisions on hedging instruments like liquidity insurance or contingency funding.

5.2.5 CMA Regulations on Financial Risk Hedging and Share Price Volatility

From the findings that market risk hedging has a positive effect on the relationship between CMA regulations and share price volatility of listed firms in Kenya, the study recommends that in line with the CMA NSE Shareholding Regulations (2016), firms should disclose both their ownership structure and material financial risks, including: credit risk, market risk, liquidity risk, foreign exchange exposure. Improved transparency allows investors to better assess the stability and risk exposure of listed firms, thereby reducing speculation-driven volatility. The CMA should also expand the regulatory framework to require firms especially those with concentrated or foreign shareholding to disclose hedging strategies used to protect shareholders' value, report how such strategies align with the firm's ownership risk profile. This will ensure that controlling shareholders or foreign investors do not transfer excessive risk to minority shareholders, improving fairness and confidence. The management of NSE listed firms should be encouraged to include financial risk hedging practices in their shareholder reports. Such practices may involve: derivative contracts used, policies on capital structure and debt hedging, risk coverage ratios. This provides investors with a clearer view of how management protects against volatility and enhances value stability.

The CMA should intensify enforcement against insider trading or market manipulation, especially where share price volatility is triggered by non-disclosed financial risk events. Enhanced oversight, guided by the Shareholding Regulations (2016), will protect market integrity and discourage opportunistic behaviour that undermines hedging efforts. Minority shareholders should be empowered through investor education programs to understand: how financial risk hedging protects their investment, the meaning of volatility metrics (e.g., beta, VaR), the importance of disclosure under CMA shareholding regulations. This builds a more informed and active investor base that responds to fundamentals rather than rumours or fear. Additionally, CMA should require firms to disclose how board structures, shareholder voting rights, and risk oversight committees interact to control financial risk. This

helps align corporate governance with both risk management and shareholder protection, reducing market shocks and price instability. Finally, given that firms with foreign or institutional ownership tend to face higher exposure to global financial risks, CMA should issue sector-specific or ownership-tiered guidelines on minimum hedging expectations, currency and interest rate risk safeguards, risk-weighted capital planning. This creates consistency and accountability across all tiers of listed companies.

5.3 Recommendations for Further Studies

The study of financial risk hedging and its effect on share price volatility contributes significantly to the existing body of knowledge in finance, particularly within emerging markets like Kenya. The findings offer several theoretical and practical insights. The research deepens the understanding of how financial risk management especially liquidity and market risk hedging aligns with Modern Portfolio Theory, purchasing power parity theory, liquidity preference theory and Merton Model by showing how hedging reduces the unpredictability of stock returns. Similarly, by focusing on firms listed on the Nairobi Securities Exchange, the study fills a contextual gap, providing localized insights into how Kenyan firms manage financial risk and how this affects capital market dynamics. The study also offers Contextual Relevance for Emerging Markets by revealing how investors interpret hedging strategies as signals of stability, influencing market sentiment and, subsequently, stock price behavior. Similarly, the study offers a methodological and empirical framework that future researchers can adopt or extend to other types of risks, sectors, or regions.

The findings have direct implications for financial regulators, policymakers, listed firms, and investors in Kenya and other developing economies. The study mandates regulatory bodies such as Capital Markets Authority and Central Bank of Kenya to strengthen disclosure requirements around firms' risk hedging strategies to improve market transparency and reduce information asymmetry, which often fuels share price volatility. Additionally, Management of firms should develop risk management guidelines to guide firms especially SMEs and non-financial corporations on adopting standardized financial risk management practices, including derivatives and liquidity buffers. The Capital Markets Authority and Nairobi Securities Exchange should also

offer incentives, such as reduced listing fees or tax reliefs, for firms that demonstrate strong hedging practices.

Finally, firms should integrate hedging strategies into their broader corporate financial planning to stabilize earnings and reduce the sensitivity of share prices to shocks. Investment in internal risk management capabilities (e.g., training, tools, technology) is also necessary to effectively implement and monitor hedging practices. Further, investors can enhance portfolio performance by factoring in a firm's hedging practices as part of their risk-return assessments when making investment decisions. The study underscores the critical role of financial risk hedging in influencing share price volatility, with both academic and policy implications. By encouraging effective risk management, firms can enhance market stability and investor trust, while regulators can foster a more resilient and transparent financial ecosystem.

While this study provides valuable insights into the relationship between financial risk hedging and share price volatility of firms listed on the Nairobi Securities Exchange, several areas remain open for deeper exploration. The following suggestions are made to guide future research. First, future research could focus on specific sectors such as financial services, manufacturing, agriculture, or energy. Sectoral analysis may reveal unique risk profiles and hedging behaviors that are masked in broad, cross-sectoral studies. Secondly, this study primarily examined liquidity risk hedging. Subsequent research could explore the effects of other forms of financial risk hedging such as foreign exchange risk hedging, interest rate risk management and credit risk mitigation strategies. Each of these may have distinct implications for share price volatility and firm value.

A longer-term study covering multiple economic cycles (e.g., pre- and post-COVID-19, political elections, inflation shocks) would help assess how firms adjust hedging strategies during periods of market instability and how this affects share price volatility. Further, research could also examine how investor perceptions of risk management disclosures influence stock price reactions. This can incorporate behavioral finance theories to assess the psychological impact of hedging signals on market participants. The current study mainly relied on secondary data for the dependent and independent variables. Future studies could incorporate primary data

from interviews or surveys with financial managers, CFOs, and risk officers to gain deeper qualitative insights into the motivations, strategies, and constraints behind hedging decisions.

Future studies could expand beyond Kenya by comparing NSE-listed firms with those in other East African exchanges (e.g., Uganda Securities Exchange, Dar es Salaam Stock Exchange). This would help evaluate whether hedging impacts vary across different regulatory and economic environments. Further research could examine the moderating role of corporate governance structures such as board independence, audit committees, and ownership structure on the relationship between hedging and share price volatility. The study could also be extended by applying non-linear models or machine learning techniques to better capture the complex dynamics between risk management and share price volatility. Further research into these areas will deepen the understanding of financial risk hedging practices in emerging markets and enhance the capacity of firms, regulators, and investors to manage volatility and improve financial stability.

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APPENDICES

Appendix 1: Firms Listed On NSE

S/No.	Name	Head office	Year listed	Sector/ strata
1	Eaagads Ltd.	Nairobi, Kenya	1972	
2	Kapchorua Tea Kenya Plc.	Nairobi, Kenya	1972	
3	Kakuzi Plc	Murang'a, Kenya	1951	Agricultural
4	Limuru Tea Co. Ltd.	Nairobi, Kenya	1967	
5	Sasini Plc.	Nairobi, Kenya	1965	
6	Williamson Tea Kenya Plc.	Nairobi, Kenya	1972	
7	Car & General (K) Ltd.	Nairobi, Kenya	1940	Automobiles and Accessories
8	ABSA Bank Kenya Plc.	London, United Kingdom	1986	
9	Stanbic Holdings Ltd.	Nairobi, Kenya	2011	
10	I & M Holdings Plc.	Nairobi, Kenya	1950	
11	Diamond Trust Bank Kenya Ltd	Nairobi, Kenya	1972	
12	HF Group Plc.	Nairobi, Kenya	1992	Banking
13	KCB Group Plc.	Nairobi, Kenya	1988	
14	NCBA Group Plc.	Nairobi, Kenya	1971	
15	Standard Chartered Bank Kenya Ltd.	London, United Kingdom	1989	
16	Equity Group Holdings Plc.	Nairobi, Kenya	2006	
17	Co-operative Bank of Kenya Ltd	Nairobi, Kenya	2008	
18	Express Kenya Plc.	Nairobi, Kenya	1978	
19	Kenya Airways Ltd.	Nairobi, Kenya	1996	
20	Nation Media Group Plc.	Nairobi, Kenya	1973	
21	Standard Group Plc.	Nairobi, Kenya	1954	
22	TPS Eastern Africa (Serena) Ltd.	Nairobi, Kenya	1997	Commercial and Services
23	WPP Scangroup Plc.	Nairobi, Kenya	2006	
24	Eveready East Africa Ltd.	Nairobi, Kenya	2006	
25	Longhorn Publishers Plc.	Nairobi, Kenya	1965	
26	Sameer Africa Plc.	Nairobi, Kenya	1994	
27	Nairobi Business Ventures Ltd.	Nairobi, Kenya	2012	
28	Bamburi Cement Ltd.	London, United Kingdom	1970	
29	Crown Paints Kenya Plc.	Nairobi, Kenya	1992	Construction and Allied
30	E.A Cables Ltd.	Nairobi, Kenya	1973	
31	E.A Portland Cement Ltd.	Nairobi, Kenya	1973	

32	Total Kenya Ltd.	Paris, France	1988	Energy and Petroleum
33	KenGen Plc.	Nairobi, Kenya	2006	
34	Kenya Power & Lighting Plc.	Nairobi, Kenya	1972	
35	Umeme Ltd	Nairobi, Kenya	2004	
36	Jubilee Holdings Ltd	Nairobi, Kenya	1984	Insurance
37	Sanlam Kenya Plc.	Nairobi, Kenya	1946	
38	Kenya Re - Insurance Corporation Ltd.	Nairobi, Kenya	2007	
39	Liberty Kenya Holdings	Johannesburg, South Africa	2007	
40	Britam Holdings Plc.	Nairobi, Kenya	2011	
41	CIC Insurance Group Ltd.	Nairobi, Kenya	1968	
42	Olympia Capital Holdings Ltd.	Nairobi, Kenya	1974	Investment Services
43	Centum Investment Plc.	Nairobi, Kenya	1967	
44	Trans - Century Plc.	Nairobi, Kenya	2011	
45	Home Afrika Ltd.	Nairobi, Kenya	2008	
46	Nairobi Securities Exchange Plc.	Nairobi, Kenya	1954	
47	B.O.C Kenya Plc.	London, United Kingdom	1969	Manufacturing and Allied
48	British American Tobacco Kenya Plc.	London, United Kingdom	1969	
49	Carbacid Investments Plc.	Nairobi, Kenya	1972	
50	East African Breweries Ltd.	Nairobi, Kenya	1972	
51	Unga Group Ltd.	Nairobi, Kenya	1971	
52	Kenya Orchards Ltd.	Nairobi, Kenya	1959	
53	Flame Tree Group Holdings Ltd.	Nairobi, Kenya	1989	
54	Safaricom Plc.	Nairobi, Kenya	2008	Telecommunication

Appendix 2: Introduction Letter

Daniel Okello Omogi
PhD Candidate
Murang'a University of Technology

Dear Respondent,

RE: REQUEST FOR PARTICIPATION IN RESEARCH QUESTIONNAIRE

I hope this letter finds you well.

I am a PhD student at Murang'a University of Technology (MUT) pursuing Doctor of Philosophy in Business Administration, currently conducting research as part of my doctoral dissertation titled: "Financial risk hedging, Capital Market Authority regulations and share price volatility of Nairobi Securities Exchange listed firms in Kenya."

To achieve the objectives of the study, I kindly request your participation in this research by completing the attached questionnaire. Your insights and experience are highly valuable and will contribute significantly to the quality and credibility of this study. All responses will be treated with strict confidentiality and used solely for academic purposes. The data collected will not be used to identify any individual respondent or firm, and results will be presented in aggregated form. Participation is voluntary, and you are free to decline or withdraw at any time without any consequences.

I would be grateful if you could complete the questionnaire by August 2, 2024. Should you require any clarification or further information regarding the study, please feel free to contact me via email at domogidan@gmail.com.

Thank you in advance for your valuable time and kind cooperation.

Yours sincerely,
Daniel Okello Omogi

Appendix 3: Questionnaire On the Moderating Variable- CMA Regulations

Questionnaire Serial Number: _____

INTRODUCTION

I am investigating financial risk hedging, Capital Market Authority regulations and share price volatility of Nairobi Securities Exchange listed firms in Kenya. Being an important stakeholder, your opinion counts in fulfilling the requirement of my study for a Doctor of Philosophy in Business Administration. As a result, please take a moment to complete this questionnaire.

Kindly do not indicate your name. I will ensure the anonymity and confidentiality of the data collected. The information gathered will be utilized purposely for the study. Your support and timely response will be highly appreciated.

Daniel Okello Omogi

Ph.D. Candidate

Murang'a University of Technology

Section 1: Background Information

Kindly check and click ONE of the relevant boxes underneath.

S/No.	Question
1.1	Kindly select your gender: [ ] Male [ ] Female
1.2	Kindly select the age bracket that you fall into: [ ] 21 -30 years [ ] 31 - 40 years [ ] 41-50 years [ ] Above 50 years
1.3	Please indicate the highest academic accomplishment you have attained: [ ] Diploma [ ] Bachelor's Degree [ ] Master's Degree [ ] Any other _____
1.4	Kindly indicate your professional qualifications: [ ] CPA [ ] LSK [ ] CFA [ ] CIA [ ] PMP [ ] CCP [ ] CHRP [ ] CIMA [ ] CQP [ ] ACCA [ ] Any other ……
1.5	Please indicate the sector in which your company belongs: [ ] Agricultural [ ] Automobiles & Accessories [ ] Banking [ ] Commercial & Services [ ] Construction & allied [ ] Energy & Petroleum [ ] Insurance [ ] Investment Services [ ] Manufacturing & allied [ ] Telecommunication [ ] Real Estate Investment Trusts [ ] Exchange Traded Funds
1.6	Kindly indicate the years you have worked with your company: [ ] 0 to 10 years [ ] 11 to 20 years [ ] 21 to 30 years [ ] above 30 years
1.7	Please tick the position held in your organization: [ ] Manager [ ] Director [ ] Head of Department

Section 2: CMA Regulations

Please select the appropriate box on the five-point Likert scale below to indicate how much you agree or disagree with the following assertions regarding the service environment. Strongly Disagree is weighted at 1, Disagree is at 2, Indifferent is at 3, Agree is at 4, and Strongly Agree is at 5.

SN	Statement	SD	D	I	A	SA
2.1	CMA Regulations influence the operations of Nairobi Securities Exchange-listed companies.					
2.2	Capital Markets Authority has established rules that are strictly being followed.					
2.3	Laws and regulations devised by the CMA protect NSE-listed firms from fraudulent actions.					
2.4	Capital Markets Authority takes strict action against anyone who disobeys any regulations. Restrictions					
2.5	Respect for the established laws positively contributes to mitigating share price volatility in firms listed on the NSE					
2.6	Are CMA prudential regulations enough to curb share price volatility in firms listed on the NSE					
2.7	Companies listed on NSE are guided by the corporate governance guidelines as in the CMA Code of Corporate Governance Practices for Publicly Traded Securities Issuers.					
2.8	CMA Regulations guarantee capital market growth, transparency, and stakeholder confidence by strengthening sustainability practices.					
2.9	Fairness and order are guaranteed in the capital markets sector by the CMA Regulations.					
2.10	A regulatory framework created by the CMA makes launching new financial institutions and products easier.					

Appendix 4: Non-Listed Firms for Pilot Study

S/No.	Name	Sector
1	Family Bank Limited	Banking
2	Jamii Bora Bank Limited	Banking
3	Airtel Kenya Limited	Telecommunication
4	Telkom Kenya Limited	Telecommunication
5	Kenya Data Network Limited	Telecommunication
6	Liquid Telecom Kenya Limited	Telecommunication
7	Kenol Kobil Limited	Energy & Petroleum
8	Old Mutual Life Limited	Insurance
9	APA Life Limited	Insurance
10	Madison Limited	Insurance
11	Brookside Limited	Agricultural
12	Kenya Nut Company Limited	Agricultural
13	Delmonte Kenya Limited	Agricultural

Appendix 5: Proposal Approval Letter

C3

DEAN, SCHOOL OF BUSINESS & ECONOMICS
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06 JUN 2024
RECEIVED
P. O. Box 75-10200, MURANG'A
TEL: 0771463 515 Email: info@mut.ac.ke

MURANG'A UNIVERSITY OF TECHNOLOGY
Office of the Director, Postgraduate Studies

E-mail: bps@mut.ac.ke
Website: www.mut.ac.ke

P.O. Box 75-10200
Murang'a, Kenya

Ref: MUT/ARP/PGS/19/2020 /VOL.1

Date: 6th June, 2024

Mr. Daniel Okello Omogi (BE500/5549/2021)
School of Business and Economics,
Murang'a University of Technology,
P.O. Box 75-10,200
Murang'a.

DIRECTORATE OF POSTGRADUATE STUDIES
MURANG'A UNIVERSITY OF TECHNOLOGY
06 JUN 2024
P. O. Box 75 - 10200, MURANG'A
Tel: 0771463515, Email: info@mut.ac.ke

Dear Mr. Omogi,

RE: APPROVAL OF RESEARCH PROPOSAL AND SUPERVISORS.

I am pleased to inform you that the Directorate of Postgraduate Studies on 15th May, 2024 considered and approved your Doctoral research proposal entitled ***"An Investigation of financial risk hedging and its effect on share price Volatility of Listed Firms in Kenya"*** and appointed the following as supervisors:

1. Prof. Paul Muoki Nzioki– Murang'a University of Technology
2. Dr. Florence Kariuki- Murang'a University of Technology

You may now proceed with your data collection subject to obtaining research permit from NACOSTI, if required. You should also begin consulting your supervisors and submit through them quarterly progress reports to the Director Postgraduate Studies through your CoD and School Dean. Progress Reports forms can be accessed in the Student Portal.

It is the policy and regulations of the University that you observe deadlines. The guidelines on Postgraduate supervision can be accessed in the post graduate Handbook.

Your responsibilities as a student will include, among others;

i. Maintain regular consultation with your supervisor(s), at least once a month
ii. Submit quarterly reports on time, through your supervisors, CoD, Dean and to the Director of Postgraduate Studies;
iii. Ensure quality work all through;

iv. Present your research findings at 2-3 seminars/conferences prior to thesis examination.

v. Publish one article from your research findings in a refereed journal prior to thesis examination.

For any further clarification please contact the undersigned.

Yours Sincerely,

Prof. Geoffrey Muchiri, PhD
Director, Postgraduate Studies
GM/PIM

Copy to:
1. Registrar, Academics, Research and Students Affairs
2. Dean, School of Business and Economics

Appendix 6: NACOSTI Research License

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 896828

Date of Issue: 03/July/2024

RESEARCH LICENSE



This is to Certify that Mr.. DANIEL OKELLO OMOGI of Murang'a University of Technology, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Bungoma, Busia, Embu, Homabay, Kajiado, Kakamega, Kericho, Kiambu, Kilifi, Kirinyaga, Kisii, Kisumu, Kwale, Lamu, Machakos, Makueni, Migori, Mombasa, Muranga, Nairobi, Nakuru, Nyandarua, Nyeri, Siaya, Taita-Taveta, Tanariver, Transnzoia, Uasin-Gishu, Vihiga on the topic: AN INVESTIGATION OF FINANCIAL RISK HEDGING AND ITS EFFECT ON SHARE PRICE VOLATILITY OF LISTED FIRMS IN KENYA for the period ending : 03/July/2025.

License No: NACOSTI/P/24/37040

896828

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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See overleaf for conditions

Appendix 7: Data Collection Sheet

S/No.	Name	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
1	Eaagads Ltd.										
2	Kapchorua Tea Kenya Plc.										
3	Kakuzi Plc										
4	Limuru Tea Co. Ltd.										
5	Sasini Plc.										
6	Williamson Tea Kenya Plc.										
7	Car & General (K) Ltd.										
8	ABSA Bank Kenya Plc.										
9	Stanbic Holdings Ltd.										
10	I & M Holdings Plc.										
11	Diamond Trust Bank Kenya Ltd										
12	HF Group Plc.										
13	KCB Group Plc.										
14	NCBA Group Plc.										
15	Standard Chartered Bank Kenya Ltd.										
16	Equity Group Holdings Plc.										
17	The Co-operative Bank of Kenya Ltd										
18	Express Kenya Plc.										
19	Kenya Airways Ltd.										

20	Nation Media Group Plc.
21	Standard Group Plc.
22	TPS Eastern Africa (Serena) Ltd.
23	WPP Scangroup Plc.
24	Eveready East Africa Ltd.
25	Longhorn Publishers Plc.
26	Sameer Africa Plc.
27	Nairobi Business Ventures Ltd.
28	Bamburi Cement Ltd.
29	Crown Paints Kenya Plc.
30	E.A Cables Ltd.
31	E.A Portland Cement Ltd.
32	Total Kenya Ltd.
33	KenGen Plc.
34	Kenya Power & Lighting Plc.
35	Umeme Ltd
36	Jubilee Holdings Ltd
37	Sanlam Kenya Plc.
38	Kenya Re-Insurance Corporation Ltd.
39	Liberty Kenya Holdings
40	Britam Holdings Plc.

41	CIC Insurance Group Ltd.
42	Olympia Capital Holdings Ltd.
43	Centum Investment Plc.
44	Trans - Century Plc.
45	Home Afrika Ltd.
46	Nairobi Securities Exchange Plc.
47	B.O.C Kenya Plc.
48	British American Tobacco (Ke) Plc.
49	Carbacid Investments Plc.
50	East African Breweries Ltd.
51	Unga Group Ltd.
52	Kenya Orchards Ltd.
53	Flame Tree Group Holdings Ltd.
54	Safaricom Plc.

Appendix 8: Secondary Data Collected

No	Firm	Year	SD Share Price	Leverage Ratio	CAPM	Value at Risk	Acid test Ratio
1	Eaagads Ltd.	2022	0.260	10.533	7.377	28.717	0.185
2	Eaagads Ltd.	2021	0.050	9.454	5.646	- 0.688	0.179
3	Eaagads Ltd.	2020	- 2.290	7.127	3.006	9.098	0.462
4	Eaagads Ltd.	2019	0.080	9.945	5.026	4.390	0.146
5	Eaagads Ltd.	2018	- 1.940	9.096	7.223	- 0.109	0.117
6	Eaagads Ltd.	2017	23.000	10.106	3.163	- 1.869	0.370
7	Eaagads Ltd.	2016	0.010	10.995	5.853	0.154	0.174
8	Eaagads Ltd.	2015	0.660	9.399	4.476	3.385	0.372
9	Eaagads Ltd.	2014	0.790	6.905	7.091	4.140	0.306
10	Eaagads Ltd.	2013	- 1.810	6.116	10.664	6.290	0.284
11	Kapchorua Tea Kenya Plc.	2022	27.350	3.091	7.377	28.717	0.212
12	Kapchorua Tea Kenya Plc.	2021	0.900	2.496	5.646	- 0.688	0.284
13	Kapchorua Tea Kenya Plc.	2020	2.480	2.770	3.006	9.098	0.292
14	Kapchorua Tea Kenya Plc.	2019	- 16.060	15.384	5.026	4.390	0.285
15	Kapchorua Tea Kenya Plc.	2018	21.270	2.045	7.223	- 0.109	0.405
16	Kapchorua Tea Kenya Plc.	2017	- 6.620	2.302	3.163	- 1.869	0.349
17	Kapchorua Tea Kenya Plc.	2016	37.060	2.402	5.853	0.154	0.354
18	Kapchorua Tea Kenya Plc.	2015	- 3.600	2.570	4.476	3.385	0.234
19	Kapchorua Tea Kenya Plc.	2014	32.210	2.517	7.091	4.140	0.283
20	Kapchorua Tea Kenya Plc.	2013	45.940	1.616	10.664	6.290	0.616
21	Kakuzi Plc	2022	43.150	3.858	7.377	28.717	0.140
22	Kakuzi Plc	2021	16.310	4.081	5.646	- 0.688	0.116
23	Kakuzi Plc	2020	31.740	4.153	3.006	9.098	0.104

24	Kakuzi Plc	2019	36.400	9.228	5.026	4.390	0.107
25	Kakuzi Plc	2018	24.570	3.672	7.223	- 0.109	0.181
26	Kakuzi Plc	2017	30.190	3.035	3.163	- 1.869	0.272
27	Kakuzi Plc	2016	28.700	3.157	5.853	0.154	0.222
28	Kakuzi Plc	2015	23.450	3.120	4.476	3.385	0.237
29	Kakuzi Plc	2014	8.170	3.420	7.091	4.140	0.147
30	Kakuzi Plc	2013	8.420	3.570	10.664	6.290	0.134
31	Limuru Tea Co. Ltd.	2022	4.730	5.486	7.377	28.717	0.124
32	Limuru Tea Co. Ltd.	2021	3.980	6.955	5.646	- 0.688	0.080
33	Limuru Tea Co. Ltd.	2020	- 1.530	4.903	3.006	9.098	0.119
34	Limuru Tea Co. Ltd.	2019	0.790	0.156	5.026	4.390	0.324
35	Limuru Tea Co. Ltd.	2018	1.060	2.571	7.223	- 0.109	0.283
36	Limuru Tea Co. Ltd.	2017	- 9.220	2.530	3.163	- 1.869	0.279
37	Limuru Tea Co. Ltd.	2016	- 7.950	2.690	5.853	0.154	0.188
38	Limuru Tea Co. Ltd.	2015	1.060	2.740	4.476	3.385	0.172
39	Limuru Tea Co. Ltd.	2014	- 0.280	2.854	7.091	4.140	0.121
40	Limuru Tea Co. Ltd.	2013	23.800	3.150	10.664	6.290	0.058
41	Sasini Plc.	2022	5.120	6.735	7.377	28.717	0.299
42	Sasini Plc.	2021	2.490	7.914	5.646	- 0.688	0.193
43	Sasini Plc.	2020	0.330	8.561	3.006	9.098	0.244
44	Sasini Plc.	2019	- 1.380	309.410	5.026	4.390	0.408
45	Sasini Plc.	2018	1.300	6.915	7.223	- 0.109	0.205
46	Sasini Plc.	2017	1.520	6.019	3.163	- 1.869	0.260
47	Sasini Plc.	2016	2.940	4.884	5.853	0.154	0.236
48	Sasini Plc.	2015	4.270	5.454	4.476	3.385	0.272
49	Sasini Plc.	2014	0.100	4.316	7.091	4.140	0.576
50	Sasini Plc.	2013	0.540	2.389	10.664	6.290	0.790
51	Williamson Tea Kenya Plc.	2022	29.730	3.434	7.377	28.717	0.306
52	Williamson Tea Kenya Plc.	2021	- 8.310	2.854	5.646	- 0.688	0.328
53	Williamson Tea Kenya Plc.	2020	7.590	3.478	3.006	9.098	0.419

54	Williamson Tea Kenya Plc.	2019	-	9.390	3.531	5.026	4.390	0.343
55	Williamson Tea Kenya Plc.	2018		27.860	2.576	7.223	- 0.109	0.401
56	Williamson Tea Kenya Plc.	2017	-	13.730	2.685	3.163	- 1.869	0.344
57	Williamson Tea Kenya Plc.	2016		40.300	3.010	5.853	0.154	0.263
58	Williamson Tea Kenya Plc.	2015	-	11.880	3.332	4.476	3.385	0.139
59	Williamson Tea Kenya Plc.	2014	-	23.770	3.360	7.091	4.140	0.148
60	Williamson Tea Kenya Plc.	2013		81.360	2.152	10.664	6.290	0.357
61	Car & General (K) Ltd.	2022		8.550	0.421	7.377	28.717	3.818
62	Car & General (K) Ltd.	2021		11.210	0.506	5.646	- 0.688	3.087
63	Car & General (K) Ltd.	2020		6.850	0.495	3.006	9.098	2.929
64	Car & General (K) Ltd.	2019		4.270	1.848	5.026	4.390	3.125
65	Car & General (K) Ltd.	2018		5.350	0.549	7.223	- 0.109	2.592
66	Car & General (K) Ltd.	2017		1.710	0.568	3.163	- 1.869	2.551
67	Car & General (K) Ltd.	2016		2.220	0.501	5.853	0.154	2.725
68	Car & General (K) Ltd.	2015		0.760	0.506	4.476	3.385	2.287
69	Car & General (K) Ltd.	2014		6.570	0.532	7.091	4.140	1.902
70	Car & General (K) Ltd.	2013		7.350	0.569	10.664	6.290	2.309
71	ABSA Bank Kenya Plc.	2022		2.690	0.154	7.377	28.717	3.379
72	ABSA Bank Kenya Plc.	2021		2.000	0.152	5.646	- 0.688	3.474
73	ABSA Bank Kenya Plc.	2020		0.690	0.135	3.006	9.098	1.971
74	ABSA Bank Kenya Plc.	2019		1.320	0.133	5.026	4.390	1.708

75	ABSA Bank Kenya Plc.	2018	1.370	0.157	7.223	-	0.109	1.816
76	ABSA Bank Kenya Plc.	2017	1.280	0.194	3.163	-	1.869	1.682
77	ABSA Bank Kenya Plc.	2016	1.360	0.195	5.853		0.154	1.483
78	ABSA Bank Kenya Plc.	2015	1.550	0.197	4.476		3.385	1.650
79	ABSA Bank Kenya Plc.	2014	1.550	0.203	7.091		4.140	2.216
80	ABSA Bank Kenya Plc.	2013	1.400	0.186	10.664		6.290	2.127
81	Stanbic Holdings Ltd.	2022	22.920	0.184	7.377		28.717	1.325
82	Stanbic Holdings Ltd.	2021	18.230	0.207	5.646	-	0.688	1.715
83	Stanbic Holdings Ltd.	2020	13.130	0.187	3.006		9.098	1.811
84	Stanbic Holdings Ltd.	2019	16.140	0.193	5.026		4.390	1.697
85	Stanbic Holdings Ltd.	2018	36.210	0.140	7.223	-	0.109	1.625
86	Stanbic Holdings Ltd.	2017	25.440	0.160	3.163	-	1.869	1.318
87	Stanbic Holdings Ltd.	2016	11.180	0.230	5.853		0.154	1.078
88	Stanbic Holdings Ltd.	2015	12.410	0.226	4.476		3.385	1.299
89	Stanbic Holdings Ltd.	2014	14.380	0.256	7.091		4.140	1.270
90	Stanbic Holdings Ltd.	2013	12.970	0.219	10.664		6.290	2.752
91	I & M Holdings Plc.	2022	6.770	0.230	7.377		28.717	1.439
92	I & M Holdings Plc.	2021	4.920	0.217	5.646	-	0.688	1.521
93	I & M Holdings Plc.	2020	9.770	0.221	3.006		9.098	1.554
94	I & M Holdings Plc.	2019	12.470	0.227	5.026		4.390	1.745
95	I & M Holdings Plc.	2018	19.230	0.214	7.223	-	0.109	1.602

96	I & M Holdings Plc.	2017	16.370	0.243	3.163	-	1.869	1.154
97	I & M Holdings Plc.	2016	18.560	0.231	5.853		0.154	1.139
98	I & M Holdings Plc.	2015	17.120	0.214	4.476		3.385	1.083
99	I & M Holdings Plc.	2014	17.350	0.170	7.091		4.140	0.987
100	I & M Holdings Plc.	2013	16.320	0.203	10.664		6.290	1.132
101	Diamond Trust Bank Kenya Ltd	2022	21.680	0.153	7.377		28.717	1.655
102	Diamond Trust Bank Kenya Ltd	2021	13.980	0.176	5.646	-	0.688	1.622
103	Diamond Trust Bank Kenya Ltd	2020	11.610	0.174	3.006		9.098	1.581
104	Diamond Trust Bank Kenya Ltd	2019	24.270	0.183	5.026		4.390	1.469
105	Diamond Trust Bank Kenya Ltd	2018	23.910	0.168	7.223	-	0.109	1.581
106	Diamond Trust Bank Kenya Ltd	2017	23.730	0.156	3.163	-	1.869	1.451
107	Diamond Trust Bank Kenya Ltd	2016	26.940	0.145	5.853		0.154	1.411
108	Diamond Trust Bank Kenya Ltd	2015	22.200	0.146	4.476		3.385	1.147
109	Diamond Trust Bank Kenya Ltd	2014	21.920	0.162	7.091		4.140	1.299
110	Diamond Trust Bank Kenya Ltd	2013	20.970	0.147	10.664		6.290	1.261
111	HF Group Plc.	2022	0.690	0.181	7.377		28.717	1.434
112	HF Group Plc.	2021	- 1.780	0.183	5.646	-	0.688	1.340
113	HF Group Plc.	2020	- 4.440	0.183	3.006		9.098	1.345
114	HF Group Plc.	2019	- 0.290	0.220	5.026		4.390	1.102
115	HF Group Plc.	2018	- 1.560	0.207	7.223	-	0.109	0.869
116	HF Group Plc.	2017	0.360	0.204	3.163	-	1.869	0.779
117	HF Group Plc.	2016	2.590	0.186	5.853		0.154	0.768

118	HF Group Plc.	2015	3.430	0.174	4.476	3.385	0.819
119	HF Group Plc.	2014	4.210	0.121	7.091	4.140	0.803
120	HF Group Plc.	2013	4.300	0.141	10.664	6.290	0.759
121	KCB Group Plc.	2022	12.710	0.149	7.377	28.717	0.578
122	KCB Group Plc.	2021	10.610	0.178	5.646	- 0.688	3.055
123	KCB Group Plc.	2020	6.100	21.601	3.006	9.098	0.031
124	KCB Group Plc.	2019	7.830	1,748.880	5.026	4.390	0.080
125	KCB Group Plc.	2018	7.830	96.830	7.223	- 0.109	0.096
126	KCB Group Plc.	2017	6.430	7.556	3.163	- 1.869	0.141
127	KCB Group Plc.	2016	6.460	88.575	5.853	0.154	0.441
128	KCB Group Plc.	2015	6.490	0.209	4.476	3.385	0.607
129	KCB Group Plc.	2014	5.630	0.182	7.091	4.140	0.145
130	KCB Group Plc.	2013	4.820	0.193	10.664	6.290	0.214
131	NCBA Group Plc.	2022	8.360	0.153	7.377	28.717	0.867
132	NCBA Group Plc.	2021	6.210	0.152	5.646	- 0.688	0.868
133	NCBA Group Plc.	2020	2.770	0.159	3.006	9.098	0.863
134	NCBA Group Plc.	2019	7.450	0.157	5.026	4.390	0.864
135	NCBA Group Plc.	2018	6.060	0.207	7.223	- 0.109	0.828
136	NCBA Group Plc.	2017	5.930	0.202	3.163	- 1.869	0.832
137	NCBA Group Plc.	2016	6.730	0.218	5.853	0.154	0.821
138	NCBA Group Plc.	2015	7.000	0.189	4.476	3.385	0.841
139	NCBA Group Plc.	2014	7.070	0.181	7.091	4.140	0.847
140	NCBA Group Plc.	2013	6.120	0.166	10.664	6.290	0.855
141	Standard Chartered Bank Kenya Ltd.	2022	31.470	0.173	7.377	28.717	0.853
142	Standard Chartered Bank Kenya Ltd.	2021	23.490	0.189	5.646	- 0.688	0.841
143	Standard Chartered Bank Kenya Ltd.	2020	13.950	0.185	3.006	9.098	0.837

144	Standard Chartered Bank Kenya Ltd.	2019	21.360	0.182	5.026	4.390	0.839
145	Standard Chartered Bank Kenya Ltd.	2018	23.090	0.195	7.223	- 0.109	0.822
146	Standard Chartered Bank Kenya Ltd.	2017	19.640	0.189	3.163	- 1.869	0.824
147	Standard Chartered Bank Kenya Ltd.	2016	25.850	0.217	5.853	0.154	0.817
148	Standard Chartered Bank Kenya Ltd.	2015	17.970	0.214	4.476	3.385	0.836
149	Standard Chartered Bank Kenya Ltd.	2014	33.210	0.211	7.091	4.140	0.844
150	Standard Chartered Bank Kenya Ltd.	2013	29.420	0.210	10.664	6.290	0.846
151	Standard Chartered Bank Kenya Ltd.	2022	11.900	0.144	7.377	28.717	0.874
152	Equity Group Holdings Plc.	2021	10.380	0.156	5.646	- 0.688	0.865
153	Equity Group Holdings Plc.	2020	5.240	0.158	3.006	9.098	0.863
154	Equity Group Holdings Plc.	2019	5.930	0.199	5.026	4.390	0.834
155	Equity Group Holdings Plc.	2018	5.250	0.198	7.223	- 0.109	0.834
156	Equity Group Holdings Plc.	2017	5.000	0.216	3.163	- 1.869	0.822
157	Equity Group Holdings Plc.	2016	4.380	0.209	5.853	0.154	0.827
158	Equity Group	2015	4.650	0.203	4.476	3.385	0.831

	Holdings Plc.						
159	Equity Group Holdings Plc.	2014	4.630	0.227	7.091	4.140	0.815
160	Equity Group Holdings Plc.	2013	4.630	0.228	10.664	6.290	0.814
161	The Co-operative Bank of Kenya Ltd	2022	3.350	0.219	7.377	28.717	0.821
162	The Co-operative Bank of Kenya Ltd	2021	2.660	0.212	5.646	- 0.688	0.825
163	The Co-operative Bank of Kenya Ltd	2020	2.340	0.207	3.006	9.098	0.829
164	The Co-operative Bank of Kenya Ltd	2019	2.430	0.205	5.026	4.390	0.830
165	The Co-operative Bank of Kenya Ltd	2018	2.110	0.199	7.223	- 0.109	0.834
166	The Co-operative Bank of Kenya Ltd	2017	1.980	0.215	3.163	- 1.869	0.823
167	The Co-operative Bank of Kenya Ltd	2016	2.640	0.208	5.853	0.154	0.833
168	The Co-operative Bank of Kenya Ltd	2015	2.310	0.168	4.476	3.385	0.856
169	The Co-operative Bank of Kenya Ltd	2014	1.690	0.177	7.091	4.140	0.850
170	The Co-operative Bank of Kenya Ltd	2013	2.200	0.186	10.664	6.290	0.842
171	Express Kenya Plc.	2022	- 1.700	0.802	7.377	28.717	1.352
172	Express Kenya Plc.	2021	- 1.740	0.773	5.646	- 0.688	1.387
173	Express Kenya Plc.	2020	- 0.640	0.888	3.006	9.098	1.125
174	Express Kenya Plc.	2019	- 0.460	0.534	5.026	4.390	1.075

175	Express Kenya Plc.	2018	-	1.970	0.898	7.223	-	0.109	2.611
176	Express Kenya Plc.	2017	-	2.550	0.507	3.163	-	1.869	2.884
177	Express Kenya Plc.	2016	-	2.740	0.727	5.853		0.154	2.008
178	Express Kenya Plc.	2015	-	1.700	0.373	4.476		3.385	1.086
179	Express Kenya Plc.	2014	-	2.180	0.605	7.091		4.140	2.826
180	Express Kenya Plc.	2013		0.010	0.704	10.664		6.290	2.087
181	Kenya Airways Ltd.	2022	-	5.170	0.390	7.377		28.717	2.977
182	Kenya Airways Ltd.	2021	-	2.170	0.349	5.646	-	0.688	3.440
183	Kenya Airways Ltd.	2020	-	6.220	0.272	3.006		9.098	3.413
184	Kenya Airways Ltd.	2019	-	2.230	0.365	5.026		4.390	2.880
185	Kenya Airways Ltd.	2018	-	1.010	0.170	7.223	-	0.109	5.005
186	Kenya Airways Ltd.	2017	-	0.860	0.418	3.163	-	1.869	5.522
187	Kenya Airways Ltd.	2016	-	17.530	0.184	5.853		0.154	2.644
188	Kenya Airways Ltd.	2015	-	17.210	0.283	4.476		3.385	2.060
189	Kenya Airways Ltd.	2014		2.250	0.234	7.091		4.140	2.346
190	Kenya Airways Ltd.	2013		6.350	0.341	10.664		6.290	1.950
191	Nation Media Group Plc.	2022		1.700	1.892	7.377		28.717	0.535
192	Nation Media Group Plc.	2021		2.500	1.813	5.646	-	0.688	0.547
193	Nation Media Group Plc.	2020		0.200	2.041	3.006		9.098	0.530
194	Nation Media Group Plc.	2019		4.500	1.814	5.026		4.390	0.571
195	Nation Media Group Plc.	2018		5.700	2.372	7.223	-	0.109	0.619

196	Nation Media Group Plc.	2017		6.900	2.589	3.163	- 1.869	0.550
197	Nation Media Group Plc.	2016		8.900	2.507	5.853	0.154	0.583
198	Nation Media Group Plc.	2015		11.800	2.392	4.476	3.385	0.542
199	Nation Media Group Plc.	2014		13.100	2.761	7.091	4.140	0.485
200	Nation Media Group Plc.	2013		13.400	2.575	10.664	6.290	0.482
201	Standard Group Plc.	2022	-	10.050	0.404	7.377	28.717	2.805
202	Standard Group Plc.	2021	-	0.810	0.340	5.646	- 0.688	2.428
203	Standard Group Plc.	2020	-	3.790	0.381	3.006	9.098	2.383
204	Standard Group Plc.	2019	-	4.980	0.512	5.026	4.390	1.986
205	Standard Group Plc.	2018		2.410	0.718	7.223	- 0.109	1.262
206	Standard Group Plc.	2017	-	3.320	0.719	3.163	- 1.869	1.415
207	Standard Group Plc.	2016		2.140	0.891	5.853	0.154	0.924
208	Standard Group Plc.	2015	-	2.950	0.758	4.476	3.385	1.148
209	Standard Group Plc.	2014		2.570	1.166	7.091	4.140	0.899
210	Standard Group Plc.	2013		2.410	0.951	10.664	6.290	0.954
211	TPS Eastern Africa (Serena) Ltd.	2022		1.450	1.196	7.377	28.717	1.244
212	TPS Eastern Africa (Serena) Ltd.	2021	-	3.430	0.788	5.646	- 0.688	1.558
213	TPS Eastern Africa (Serena) Ltd.	2020	-	6.320	0.910	3.006	9.098	2.099
214	TPS Eastern Africa (Serena) Ltd.	2019		0.810	1.047	5.026	4.390	1.976
215	TPS Eastern Africa (Serena) Ltd.	2018		0.690	1.080	7.223	- 0.109	2.973
216	TPS Eastern Africa (Serena) Ltd.	2017		0.360	1.101	3.163	- 1.869	1.142

217	TPS Eastern Africa (Serena) Ltd.	2016		0.540	1.290	5.853	0.154	0.714
218	TPS Eastern Africa (Serena) Ltd.	2015	-	1.630	1.580	4.476	3.385	1.193
219	TPS Eastern Africa (Serena) Ltd.	2014		1.350	1.885	7.091	4.140	1.600
220	TPS Eastern Africa (Serena) Ltd.	2013		2.260	1.892	10.664	6.290	1.483
221	WPP Scangroup Plc.	2022		0.140	1.702	7.377	28.717	0.404
222	WPP Scangroup Plc.	2021	-	0.040	1.225	5.646	- 0.688	0.483
223	WPP Scangroup Plc.	2020		4.970	1.517	3.006	9.098	0.431
224	WPP Scangroup Plc.	2019		0.660	1.282	5.026	4.390	0.495
225	WPP Scangroup Plc.	2018		1.370	1.430	7.223	- 0.109	0.486
226	WPP Scangroup Plc.	2017		1.200	0.840	3.163	- 1.869	0.442
227	WPP Scangroup Plc.	2016		1.120	1.883	5.853	0.154	0.424
228	WPP Scangroup Plc.	2015		1.120	2.227	4.476	3.385	0.363
229	WPP Scangroup Plc.	2014		1.500	1.802	7.091	4.140	0.408
230	WPP Scangroup Plc.	2013		2.600	1.760	10.664	6.290	0.408
231	Eveready East Africa Ltd.	2022	-	0.240	0.233	7.377	28.717	1.718
232	Eveready East Africa Ltd.	2021	-	0.170	0.441	5.646	- 0.688	1.561
233	Eveready East Africa Ltd.	2020	-	0.330	0.256	3.006	9.098	1.267
234	Eveready East Africa Ltd.	2019	-	1.450	0.794	5.026	4.390	0.817

235	Eveready East Africa Ltd.	2018	-	0.550	3.216	7.223	-	0.109	0.835
236	Eveready East Africa Ltd.	2017		1.270	2.460	3.163	-	1.869	0.920
237	Eveready East Africa Ltd.	2016	-	0.980	0.816	5.853		0.154	1.378
238	Eveready East Africa Ltd.	2015	-	0.960	1.048	4.476		3.385	1.552
239	Eveready East Africa Ltd.	2014	-	0.850	0.307	7.091		4.140	2.193
240	Eveready East Africa Ltd.	2013		0.210	0.725	10.664		6.290	1.870
241	Longhorn Publishers Plc.	2022		0.150	0.411	7.377		28.717	2.814
242	Longhorn Publishers Plc.	2021		0.030	0.346	5.646	-	0.688	2.227
243	Longhorn Publishers Plc.	2020	-	0.830	0.540	3.006		9.098	1.799
244	Longhorn Publishers Plc.	2019		0.680	0.891	5.026		4.390	1.221
245	Longhorn Publishers Plc.	2018		0.670	0.760	7.223	-	0.109	1.127
246	Longhorn Publishers Plc.	2017		0.490	1.035	3.163	-	1.869	1.134
247	Longhorn Publishers Plc.	2016		0.660	1.030	5.853		0.154	0.440
248	Longhorn Publishers Plc.	2015		0.700	1.234	4.476		3.385	0.812
249	Longhorn Publishers Plc.	2014		1.620	1.387	7.091		4.140	2.418
250	Longhorn Publishers Plc.	2013		1.610	1.288	10.664		6.290	0.901
251	Sameer Africa Plc.	2022		0.360	0.209	7.377		28.717	0.936
252	Sameer Africa Plc.	2021		0.780	0.135	5.646	-	0.688	0.840
253	Sameer Africa Plc.	2020		0.160	0.155	3.006		9.098	0.679
254	Sameer Africa Plc.	2019	-	3.820	0.116	5.026		4.390	2.234
255	Sameer Africa Plc.	2018	-	1.900	0.775	7.223	-	0.109	2.105

256	Sameer Africa Plc.	2017	-	0.050	1.624	3.163	-	1.869	1.132
257	Sameer Africa Plc.	2016	-	2.340	1.261	5.853		0.154	1.630
258	Sameer Africa Plc.	2015	-	0.060	1.980	4.476		3.385	1.020
259	Sameer Africa Plc.	2014	-	0.240	1.920	7.091		4.140	0.836
260	Sameer Africa Plc.	2013		1.440	2.710	10.664		6.290	0.538
261	Nairobi Business Ventures Ltd.	2022		0.070	25.735	7.377		28.717	0.404
262	Nairobi Business Ventures Ltd.	2021		0.130	5.150	5.646	-	0.688	0.543
263	Nairobi Business Ventures Ltd.	2020	-	1.000	0.930	3.006		9.098	59.531
264	Nairobi Business Ventures Ltd.	2019	-	0.900	0.373	5.026		4.390	1.585
265	Nairobi Business Ventures Ltd.	2018	-	3.200	0.268	7.223	-	0.109	2.065
266	Nairobi Business Ventures Ltd.	2017	-	1.400	0.456	3.163	-	1.869	1.009
267	Nairobi Business Ventures Ltd.	2016		0.240	0.472	5.853		0.154	1.539
268	Nairobi Business Ventures Ltd.	2015		0.150	0.685	4.476		3.385	5.172
269	Nairobi Business Ventures Ltd.	2014		7.770	0.311	7.091		4.140	1.122
270	Nairobi Business Ventures Ltd.	2013		1.100	0.327	10.664		6.290	4.023
271	Bamburi Cement Ltd.	2022		0.560	2.149	7.377		28.717	1.217
272	Bamburi Cement Ltd.	2021		3.580	2.140	5.646	-	0.688	0.799
273	Bamburi Cement Ltd.	2020		2.890	2.212	3.006		9.098	0.831
274	Bamburi Cement Ltd.	2019		1.740	1.895	5.026		4.390	1.400

275	Bamburi Cement Ltd.	2018	2.450	1.981	7.223	-	0.109	1.688
276	Bamburi Cement Ltd.	2017	4.540	2.362	3.163	-	1.869	1.006
277	Bamburi Cement Ltd.	2016	14.440	2.713	5.853		0.154	0.556
278	Bamburi Cement Ltd.	2015	14.490	2.410	4.476		3.385	0.667
279	Bamburi Cement Ltd.	2014	9.800	2.453	7.091		4.140	0.680
280	Bamburi Cement Ltd.	2013	9.550	2.739	10.664		6.290	0.561
281	Crown Paints Kenya Plc.	2022	3.700	0.765	7.377		28.717	1.660
282	Crown Paints Kenya Plc.	2021	6.240	1.014	5.646	-	0.688	1.795
283	Crown Paints Kenya Plc.	2020	8.420	0.513	3.006		9.098	1.682
284	Crown Paints Kenya Plc.	2019	4.540	0.310	5.026		4.390	2.042
285	Crown Paints Kenya Plc.	2018	2.580	0.231	7.223	-	0.109	2.193
286	Crown Paints Kenya Plc.	2017	3.140	0.427	3.163	-	1.869	1.434
287	Crown Paints Kenya Plc.	2016	1.850	0.447	5.853		0.154	1.427
288	Crown Paints Kenya Plc.	2015	0.430	0.424	4.476		3.385	1.774
289	Crown Paints Kenya Plc.	2014	0.830	0.538	7.091		4.140	1.581
290	Crown Paints Kenya Plc.	2013	9.010	0.860	10.664		6.290	1.236
291	E.A Cables Ltd.	2022	- 1.020	0.153	7.377		28.717	3.614
292	E.A Cables Ltd.	2021	- 1.050	0.245	5.646	-	0.688	3.626
293	E.A Cables Ltd.	2020	- 2.150	0.307	3.006		9.098	1.892
294	E.A Cables Ltd.	2019	2.680	0.514	5.026		4.390	1.997
295	E.A Cables Ltd.	2018	- 1.920	0.294	7.223	-	0.109	5.737
296	E.A Cables Ltd.	2017	- 2.240	0.364	3.163	-	1.869	2.168
297	E.A Cables Ltd.	2016	- 1.800	0.512	5.853		0.154	1.941
298	E.A Cables Ltd.	2015	- 2.210	0.602	4.476		3.385	1.489

299	E.A Cables Ltd.	2014		1.160	0.644	7.091	4.140	1.102
300	E.A Cables Ltd.	2013		1.370	0.813	10.664	6.290	0.988
301	E.A Portland Cement Ltd.	2022		6.020	1.513	7.377	28.717	12.848
302	E.A Portland Cement Ltd.	2021		20.970	1.542	5.646	- 0.688	9.699
303	E.A Portland Cement Ltd.	2020	-	30.770	1.142	3.006	9.098	12.475
304	E.A Portland Cement Ltd.	2019	-	37.350	1.433	5.026	4.390	5.544
305	E.A Portland Cement Ltd.	2018		86.640	1.853	7.223	- 0.109	10.845
306	E.A Portland Cement Ltd.	2017	-	16.350	1.614	3.163	- 1.869	9.402
307	E.A Portland Cement Ltd.	2016		46.060	1.814	5.853	0.154	6.461
308	E.A Portland Cement Ltd.	2015		79.520	1.532	4.476	3.385	2.894
309	E.A Portland Cement Ltd.	2014	-	4.300	0.744	7.091	4.140	3.122
310	E.A Portland Cement Ltd.	2013		19.730	0.784	10.664	6.290	2.352
311	Total Kenya Ltd.	2022		3.880	0.706	7.377	28.717	0.721
312	Total Kenya Ltd.	2021		4.350	1.553	5.646	- 0.688	0.636
313	Total Kenya Ltd.	2020		5.240	1.666	3.006	9.098	0.391
314	Total Kenya Ltd.	2019		4.030	1.850	5.026	4.390	0.358
315	Total Kenya Ltd.	2018		3.670	1.366	7.223	- 0.109	0.887
316	Total Kenya Ltd.	2017		4.350	1.291	3.163	- 1.869	1.088
317	Total Kenya Ltd.	2016		3.550	1.149	5.853	0.154	0.639
318	Total Kenya Ltd.	2015		2.570	1.059	4.476	3.385	0.635
319	Total Kenya Ltd.	2014		2.260	1.019	7.091	4.140	0.698
320	Total Kenya Ltd.	2013		2.080	0.625	10.664	6.290	0.938
321	KenGen Plc.	2022		0.720	1.212	7.377	28.717	0.581
322	KenGen Plc.	2021		0.280	0.967	5.646	- 0.688	0.529
323	KenGen Plc.	2020		2.790	1.035	3.006	9.098	0.581

324	KenGen Plc.	2019	1.200	1.048	5.026	4.390	0.792
325	KenGen Plc.	2018	1.200	0.944	7.223	- 0.109	0.690
326	KenGen Plc.	2017	1.370	1.005	3.163	- 1.869	0.704
327	KenGen Plc.	2016	1.080	0.943	5.853	0.154	0.864
328	KenGen Plc.	2015	1.750	0.888	4.476	3.385	1.098
329	KenGen Plc.	2014	1.290	0.705	7.091	4.140	0.939
330	KenGen Plc.	2013	2.380	0.442	10.664	6.290	0.728
331	Kenya Power & Lighting Plc.	2022	1.800	0.223	7.377	28.717	2.283
332	Kenya Power & Lighting Plc.	2021	0.760	0.209	5.646	- 0.688	2.663
333	Kenya Power & Lighting Plc.	2020	- 0.480	0.203	3.006	9.098	3.108
334	Kenya Power & Lighting Plc.	2019	0.130	0.207	5.026	4.390	3.317
335	Kenya Power & Lighting Plc.	2018	0.980	0.236	7.223	- 0.109	2.368
336	Kenya Power & Lighting Plc.	2017	2.710	0.236	3.163	- 1.869	1.526
337	Kenya Power & Lighting Plc.	2016	3.870	0.258	5.853	0.154	1.415
338	Kenya Power & Lighting Plc.	2015	3.810	0.278	4.476	3.385	0.838
339	Kenya Power & Lighting Plc.	2014	3.310	0.368	7.091	4.140	1.378
340	Kenya Power & Lighting Plc.	2013	1.760	0.390	10.664	6.290	1.704
341	Umeme Ltd	2022	91.300	0.647	7.377	28.717	2.557
342	Umeme Ltd	2021	85.700	0.554	5.646	- 0.688	2.502
343	Umeme Ltd	2020	27.000	0.431	3.006	9.098	2.276

344	Umeme Ltd	2019		86.000	0.488	5.026	4.390	1.574
345	Umeme Ltd	2018		82.000	0.415	7.223	- 0.109	2.768
346	Umeme Ltd	2017		22.000	0.357	3.163	- 1.869	1.920
347	Umeme Ltd	2016		61.000	0.370	5.853	0.154	1.410
348	Umeme Ltd	2015		65.000	0.396	4.476	3.385	1.101
349	Umeme Ltd	2014		43.000	0.349	7.091	4.140	1.327
350	Umeme Ltd	2013		52.000	0.473	10.664	6.290	1.286
351	Jubilee Holdings Ltd	2022		88.130	0.392	7.377	28.717	0.957
352	Jubilee Holdings Ltd	2021		89.880	0.374	5.646	- 0.688	1.135
353	Jubilee Holdings Ltd	2020		50.060	0.322	3.006	9.098	0.621
354	Jubilee Holdings Ltd	2019		49.070	0.307	5.026	4.390	0.637
355	Jubilee Holdings Ltd	2018		52.520	0.304	7.223	- 0.109	0.639
356	Jubilee Holdings Ltd	2017		54.260	0.295	3.163	- 1.869	0.613
357	Jubilee Holdings Ltd	2016		50.040	0.310	5.853	0.154	0.609
358	Jubilee Holdings Ltd	2015		42.710	0.329	4.476	3.385	0.585
359	Jubilee Holdings Ltd	2014		48.000	0.284	7.091	4.140	0.552
360	Jubilee Holdings Ltd	2013		38.000	0.279	10.664	6.290	0.523
361	Sanlam Kenya Plc.	2022	-	0.080	0.069	7.377	28.717	0.662
362	Sanlam Kenya Plc.	2021	-	2.790	0.076	5.646	- 0.688	0.827
363	Sanlam Kenya Plc.	2020	-	0.810	0.055	3.006	9.098	1.029
364	Sanlam Kenya Plc.	2019		0.790	0.063	5.026	4.390	0.941
365	Sanlam Kenya Plc.	2018	-	14.010	0.058	7.223	- 0.109	0.946
366	Sanlam Kenya Plc.	2017		0.210	0.157	3.163	- 1.869	0.864
367	Sanlam Kenya Plc.	2016		0.630	0.160	5.853	0.154	0.862
368	Sanlam Kenya Plc.	2015	-	0.430	0.163	4.476	3.385	0.860

369	Sanlam Kenya Plc.	2014	9.070	0.181	7.091	4.140	0.846
370	Sanlam Kenya Plc.	2013	13.050	0.187	10.664	6.290	0.842
371	Kenya Re - Insurance Corporation Ltd.	2022	1.290	1.389	7.377	28.717	0.297
372	Kenya Re - Insurance Corporation Ltd.	2021	1.130	2.001	5.646	- 0.688	0.251
373	Kenya Re - Insurance Corporation Ltd.	2020	1.050	1.826	3.006	9.098	0.253
374	Kenya Re - Insurance Corporation Ltd.	2019	2.550	1.735	5.026	4.390	0.306
375	Kenya Re - Insurance Corporation Ltd.	2018	3.250	1.775	7.223	- 0.109	0.327
376	Kenya Re - Insurance Corporation Ltd.	2017	5.110	1.752	3.163	- 1.869	0.324
377	Kenya Re - Insurance Corporation Ltd.	2016	4.700	1.680	5.853	0.154	0.334
378	Kenya Re - Insurance Corporation Ltd.	2015	5.100	1.564	4.476	3.385	0.336
379	Kenya Re - Insurance Corporation Ltd.	2014	4.480	1.641	7.091	4.140	0.337
380	Kenya Re - Insurance Corporation Ltd.	2013	3.990	1.598	10.664	6.290	0.562
381	Liberty Kenya Holdings	2022	0.620	0.283	7.377	28.717	0.780
382	Liberty Kenya Holdings	2021	0.150	0.278	5.646	- 0.688	0.782
383	Liberty Kenya Holdings	2020	1.230	0.285	3.006	9.098	0.778
384	Liberty Kenya Holdings	2019	1.210	0.264	5.026	4.390	0.791
385	Liberty Kenya Holdings	2018	0.920	0.262	7.223	- 0.109	0.792

386	Liberty Kenya Holdings	2017		1.260	0.251	3.163	- 1.869	0.799
387	Liberty Kenya Holdings	2016		1.170	0.243	5.853	0.154	0.804
388	Liberty Kenya Holdings	2015		1.370	0.240	4.476	3.385	0.819
389	Liberty Kenya Holdings	2014		2.140	0.210	7.091	4.140	0.815
390	Liberty Kenya Holdings	2013		2.150	0.210	10.664	6.290	0.826
391	Britam Holdings Plc.	2022		0.630	0.151	7.377	28.717	0.868
392	Britam Holdings Plc.	2021		0.020	0.142	5.646	- 0.688	0.876
393	Britam Holdings Plc.	2020	-	3.620	0.142	3.006	9.098	0.875
394	Britam Holdings Plc.	2019		1.410	0.306	5.026	4.390	0.765
395	Britam Holdings Plc.	2018	-	0.920	0.301	7.223	- 0.109	0.769
396	Britam Holdings Plc.	2017		0.260	0.297	3.163	- 1.869	0.771
397	Britam Holdings Plc.	2016		1.260	0.272	5.853	0.154	0.786
398	Britam Holdings Plc.	2015	-	0.500	0.295	4.476	3.385	0.772
399	Britam Holdings Plc.	2014		1.310	0.420	7.091	4.140	0.704
400	Britam Holdings Plc.	2013		1.210	0.459	10.664	6.290	0.685
401	CIC Insurance Group Ltd.	2022		0.400	0.225	7.377	28.717	0.817
402	CIC Insurance Group Ltd.	2021		0.230	0.238	5.646	- 0.688	0.808
403	CIC Insurance Group Ltd.	2020	-	0.090	0.245	3.006	9.098	0.803
404	CIC Insurance Group Ltd.	2019		0.120	0.286	5.026	4.390	0.778

405	CIC Insurance Group Ltd.	2018		0.240	0.314	7.223	- 0.109	0.761
406	CIC Insurance Group Ltd.	2017		0.180	0.334	3.163	- 1.869	0.750
407	CIC Insurance Group Ltd.	2016		0.070	0.385	5.853	0.154	0.722
408	CIC Insurance Group Ltd.	2015		0.430	0.458	4.476	3.385	0.686
409	CIC Insurance Group Ltd.	2014		0.420	0.437	7.091	4.140	0.696
410	CIC Insurance Group Ltd.	2013		0.500	0.591	10.664	6.290	0.628
411	Olympia Capital Holdings Ltd.	2022		0.530	5.724	7.377	28.717	0.956
412	Olympia Capital Holdings Ltd.	2021	-	1.230	4.821	5.646	- 0.688	1.095
413	Olympia Capital Holdings Ltd.	2020	-	0.100	3.372	3.006	9.098	0.880
414	Olympia Capital Holdings Ltd.	2019		0.110	3.751	5.026	4.390	0.992
415	Olympia Capital Holdings Ltd.	2018		0.030	3.771	7.223	- 0.109	0.815
416	Olympia Capital Holdings Ltd.	2017		0.650	3.931	3.163	- 1.869	1.027
417	Olympia Capital Holdings Ltd.	2016		0.260	3.026	5.853	0.154	0.722
418	Olympia Capital Holdings Ltd.	2015	-	1.040	3.227	4.476	3.385	0.919
419	Olympia Capital Holdings Ltd.	2014		0.380	2.886	7.091	4.140	1.260
420	Olympia Capital Holdings Ltd.	2013		0.150	1.307	10.664	6.290	0.443

421	Centum Investment Plc.	2022	-	1.100	1.398	7.377	28.717	1.175
422	Centum Investment Plc.	2021	-	0.930	0.754	5.646	- 0.688	1.114
423	Centum Investment Plc.	2020		10.250	1.069	3.006	9.098	1.001
424	Centum Investment Plc.	2019		6.680	1.028	5.026	4.390	1.060
425	Centum Investment Plc.	2018		3.960	1.126	7.223	- 0.109	1.078
426	Centum Investment Plc.	2017		10.930	1.271	3.163	- 1.869	1.305
427	Centum Investment Plc.	2016		11.750	1.243	5.853	0.154	0.445
428	Centum Investment Plc.	2015		10.450	1.141	4.476	3.385	1.343
429	Centum Investment Plc.	2014		4.540	2.174	7.091	4.140	0.630
430	Centum Investment Plc.	2013		3.770	2.565	10.664	6.290	0.561
431	Trans - Century Plc.	2022	-	2.740	0.490	7.377	28.717	4.508
432	Trans - Century Plc.	2021	-	1.440	0.452	5.646	- 0.688	3.625
433	Trans - Century Plc.	2020	-	3.180	0.395	3.006	9.098	3.696
434	Trans - Century Plc.	2019	-	10.610	0.354	5.026	4.390	4.724
435	Trans - Century Plc.	2018	-	7.950	0.165	7.223	- 0.109	7.252
436	Trans - Century Plc.	2017	-	10.230	0.757	3.163	- 1.869	4.059
437	Trans - Century Plc.	2016	-	1.560	0.254	5.853	0.154	3.384
438	Trans - Century Plc.	2015	-	7.090	0.194	4.476	3.385	2.682
439	Trans - Century Plc.	2014	-	8.530	1.439	7.091	4.140	0.810
440	Trans - Century Plc.	2013		1.060	1.245	10.664	6.290	0.815
441	Home Afrika Ltd.	2022	-	0.150	0.363	7.377	28.717	11.576
442	Home Afrika Ltd.	2021	-	0.720	0.361	5.646	- 0.688	16.210
443	Home Afrika Ltd.	2020	-	0.600	0.339	3.006	9.098	16.440
444	Home Afrika Ltd.	2019	-	1.540	0.309	5.026	4.390	15.007

445	Home Afrika Ltd.	2018	-	0.680	0.189	7.223	-	0.109	69.425
446	Home Afrika Ltd.	2017	-	0.440	0.131	3.163	-	1.869	51.596
447	Home Afrika Ltd.	2016	-	0.390	0.051	5.853		0.154	34.675
448	Home Afrika Ltd.	2015	-	0.910	10.683	4.476		3.385	20.867
449	Home Afrika Ltd.	2014	-	0.040	0.175	7.091		4.140	5.154
450	Home Afrika Ltd.	2013		0.050	0.269	10.664		6.290	9.509
451	Nairobi Securities Exchange Plc.	2022		0.050	14.052	7.377		28.717	0.148
452	Nairobi Securities Exchange Plc.	2021		0.510	16.289	5.646	-	0.688	0.099
453	Nairobi Securities Exchange Plc.	2020		0.650	17.951	3.006		9.098	0.074
454	Nairobi Securities Exchange Plc.	2019		0.300	13.372	5.026		4.390	0.127
455	Nairobi Securities Exchange Plc.	2018		0.730	17.172	7.223	-	0.109	0.105
456	Nairobi Securities Exchange Plc.	2017		0.830	20.948	3.163	-	1.869	0.083
457	Nairobi Securities Exchange Plc.	2016		0.710	12.420	5.853		0.154	0.136
458	Nairobi Securities Exchange Plc.	2015		1.180	12.406	4.476		3.385	0.141
459	Nairobi Securities Exchange Plc.	2014		2.130	12.055	7.091		4.140	0.162
460	Nairobi Securities Exchange Plc.	2013		2.040	2.589	10.664		6.290	0.993
461	B.O.C Kenya Plc.	2022		7.580	5.767	7.377		28.717	0.298
462	B.O.C Kenya Plc.	2021		5.550	3.902	5.646	-	0.688	0.421
463	B.O.C Kenya Plc.	2020		5.210	3.348	3.006		9.098	0.459

464	B.O.C Kenya Plc.	2019	2.860	2.607	5.026	4.390	0.590
465	B.O.C Kenya Plc.	2018	3.360	2.442	7.223	- 0.109	0.616
466	B.O.C Kenya Plc.	2017	2.020	2.611	3.163	- 1.869	0.579
467	B.O.C Kenya Plc.	2016	6.470	3.217	5.853	0.154	0.492
468	B.O.C Kenya Plc.	2015	7.610	2.828	4.476	3.385	0.538
469	B.O.C Kenya Plc.	2014	11.760	3.159	7.091	4.140	0.556
470	B.O.C Kenya Plc.	2013	10.380	3.727	10.664	6.290	0.529
471	British American Tobacco Kenya Plc.	2022	68.920	2.989	7.377	28.717	0.667
472	British American Tobacco Kenya Plc.	2021	64.830	2.078	5.646	- 0.688	0.906
473	British American Tobacco Kenya Plc.	2020	55.170	1.204	3.006	9.098	1.167
474	British American Tobacco Kenya Plc.	2019	38.860	0.795	5.026	4.390	1.768
475	British American Tobacco Kenya Plc.	2018	40.850	1.031	7.223	- 0.109	1.910
476	British American Tobacco Kenya Plc.	2017	33.360	0.787	3.163	- 1.869	2.198
477	British American Tobacco Kenya Plc.	2016	42.340	0.907	5.853	0.154	2.119
478	British American Tobacco Kenya Plc.	2015	49.760	0.901	4.476	3.385	2.514
479	British American Tobacco Kenya Plc.	2014	42.550	0.803	7.091	4.140	2.518
480	British American Tobacco Kenya Plc.	2013	37.240	0.858	10.664	6.290	1.796
481	Carbacid Investments Plc.	2022	2.780	8.809	7.377	28.717	0.661

482	Carbacid Investments Plc.	2021	1.630	8.112	5.646	-	0.688	0.207
483	Carbacid Investments Plc.	2020	1.270	8.672	3.006		9.098	0.179
484	Carbacid Investments Plc.	2019	1.040	8.339	5.026		4.390	0.183
485	Carbacid Investments Plc.	2018	1.170	9.309	7.223	-	0.109	0.110
486	Carbacid Investments Plc.	2017	1.380	7.654	3.163	-	1.869	0.150
487	Carbacid Investments Plc.	2016	1.470	6.586	5.853		0.154	0.144
488	Carbacid Investments Plc.	2015	1.550	5.045	4.476		3.385	0.228
489	Carbacid Investments Plc.	2014	1.930	5.749	7.091		4.140	0.164
490	Carbacid Investments Plc.	2013	1.870	6.896	10.664		6.290	0.103
491	East African Breweries Ltd.	2022	15.000	0.314	7.377		28.717	1.890
492	East African Breweries Ltd.	2021	5.510	0.174	5.646	-	0.688	1.772
493	East African Breweries Ltd.	2020	5.170	0.187	3.006		9.098	2.062
494	East African Breweries Ltd.	2019	11.230	0.228	5.026		4.390	1.514
495	East African Breweries Ltd.	2018	7.190	0.196	7.223	-	0.109	1.890
496	East African Breweries Ltd.	2017	9.710	0.219	3.163	-	1.869	1.499
497	East African Breweries Ltd.	2016	12.200	0.214	5.853		0.154	2.083
498	East African Breweries Ltd.	2015	11.320	0.258	4.476		3.385	1.704
499	East African Breweries Ltd.	2014	8.220	0.169	7.091		4.140	2.718
500	East African Breweries Ltd.	2013	8.550	0.152	10.664		6.290	2.392
501	Unga Group Ltd.	2022	2.480	1.869	7.377		28.717	0.913

502	Unga Group Ltd.	2021	2.370	1.776	5.646	-	0.688	0.746
503	Unga Group Ltd.	2020	0.450	1.022	3.006		9.098	1.522
504	Unga Group Ltd.	2019	4.520	1.319	5.026		4.390	0.870
505	Unga Group Ltd.	2018	6.720	1.297	7.223	-	0.109	0.788
506	Unga Group Ltd.	2017	0.490	1.081	3.163	-	1.869	0.930
507	Unga Group Ltd.	2016	4.320	1.571	5.853		0.154	0.777
508	Unga Group Ltd.	2015	5.270	1.604	4.476		3.385	0.706
509	Unga Group Ltd.	2014	3.650	1.404	7.091		4.140	0.856
510	Unga Group Ltd.	2013	2.590	1.124	10.664		6.290	1.196
511	Kenya Orchards Ltd.	2022	1.900	0.210	7.377		28.717	0.777
512	Kenya Orchards Ltd.	2021	0.280	0.230	5.646	-	0.688	0.615
513	Kenya Orchards Ltd.	2020	- 0.980	0.189	3.006		9.098	0.681
514	Kenya Orchards Ltd.	2019	0.830	0.316	5.026		4.390	0.519
515	Kenya Orchards Ltd.	2018	0.690	0.268	7.223	-	0.109	0.604
516	Kenya Orchards Ltd.	2017	0.440	0.166	3.163	-	1.869	0.610
517	Kenya Orchards Ltd.	2016	0.290	0.122	5.853		0.154	0.507
518	Kenya Orchards Ltd.	2015	2.240	0.083	4.476		3.385	0.495
519	Kenya Orchards Ltd.	2014	4.420	0.313	7.091		4.140	0.689
520	Kenya Orchards Ltd.	2013	5.030	0.407	10.664		6.290	0.745
521	Flame Tree Group Holdings Ltd.	2022	0.540	0.571	7.377		28.717	2.139
522	Flame Tree Group Holdings Ltd.	2021	0.590	0.707	5.646	-	0.688	1.852
523	Flame Tree Group	2020	0.190	0.772	3.006		9.098	1.588

	Holdings Ltd.						
524	Flame Tree Group Holdings Ltd.	2019	1.250	0.864	5.026	4.390	1.206
525	Flame Tree Group Holdings Ltd.	2018	0.910	0.793	7.223	- 0.109	1.245
526	Flame Tree Group Holdings Ltd.	2017	0.060	0.771	3.163	- 1.869	1.015
527	Flame Tree Group Holdings Ltd.	2016	0.850	0.898	5.853	0.154	0.835
528	Flame Tree Group Holdings Ltd.	2015	1.360	0.782	4.476	3.385	0.738
529	Flame Tree Group Holdings Ltd.	2014	0.990	0.560	7.091	4.140	0.761
530	Flame Tree Group Holdings Ltd.	2013	1.060	0.292	10.664	6.290	1.009
531	Safaricom Plc.	2022	1.740	1.075	7.377	28.717	1.610
532	Safaricom Plc.	2021	1.710	1.482	5.646	- 0.688	2.248
533	Safaricom Plc.	2020	1.840	2.040	3.006	9.098	1.203
534	Safaricom Plc.	2019	1.560	2.999	5.026	4.390	0.960
535	Safaricom Plc.	2018	1.380	2.847	7.223	- 0.109	1.683
536	Safaricom Plc.	2017	1.210	1.983	3.163	- 1.869	2.278
537	Safaricom Plc.	2016	0.760	2.750	5.853	0.154	1.457
538	Safaricom Plc.	2015	0.640	1.979	4.476	3.385	2.145
539	Safaricom Plc.	2014	0.570	2.104	7.091	4.140	1.508
540	Safaricom Plc.	2013	0.440	1.652	10.664	6.290	1.583

Appendix 9: Primary Data Collected

Section 1: Background Information

1.1	Gender	Number	Percentage (%)
	Male	105	74.47
	Female	36	25.53
	Total	**141**	**100.00**

1.2	Age Bracket	Number	Percentage (%)
	21 -30	19	13.48
	31 - 40	29	20.57
	41-50	51	36.17
	Above 50	42	29.79
	Total	**141**	**100.00**

1.3	Academic Qualification	Number	Percentage (%)
	Diploma	17	12.06
	Bachelor's Degree	79	56.03
	Master's Degree	42	29.79
	others	3	2.13
	Total	**141**	**100.00**

1.4	Professional Qualification	Number	Percentage (%)
	Certified Public Accountants	33	23.40
	Law Society of Kenya	21	14.89
	Chartered Financial Analyst	9	6.38
	Certified Internal Auditor	3	2.13
	Project Management Professionals	12	8.51
	Certified Credit Professionals	6	4.26
	Certified Human Resource Professionals	24	17.02
	Chartered Institute of Management Accountants	6	4.26
	Certified Quality Professional	3	2.13
	Association of Chartered Certified Accountants	18	12.77
	other	6	4.26
	Total	**141**	**100.00**

1.5	Sector the Respondents	Number	Percentage (%)
	Agricultural	18	12.77
	Automobiles & Accessories	3	2.13
	Banking	30	21.28
	Commercial & Services	24	17.02
	Construction & allied	12	8.51
	Energy & Petroleum	12	8.51
	Insurance	15	10.64
	Investment Services	3	2.13
	Manufacturing & allied	21	14.89
	Telecommunication	3	2.13
	Total	**141**	**100.00**

1.6	Years of Experience	Number	Percentage (%)
	0-10 years	23	16.31
	11-20 years	43	30.50
	21-30 years	66	46.81
	above 30 years	9	6.38
	Total	**141**	**100.00**

1.7	Position held	Number	Percentage (%)
	Manager	47	33.33
	Director	47	33.33
	HOD	47	33.33
	Total	**141**	**100.00**

Section 2: CMA Regulations

SN	Statement	SD	D	I	A	SA	Sum	No.	Mean
2.1	CMA Regulations affect the operations of NSE-listed companies.	6	15	30	39	51	141	537	3.81
2.2	CMA has established rules that are strictly being followed.	9	9	24	51	48	141	543	3.85
2.3	Laws and regulations devised by the CMA protect NSE-listed firms from fraudulent actions.	6	12	21	45	57	141	558	3.96
2.4	CMA takes strict action against anyone who disobeys any regulations.	3	18	19	47	54	141	554	3.93
2.5	Respect for the established laws positively contributes to mitigating share price volatility in firms listed on the NSE	6	3	18	60	54	141	576	4.09
2.6	Are CMA prudential regulations enough to curb share price volatility in firms listed on the NSE	7	10	21	46	57	141	559	3.96
2.7	Firms listed on NSE are guided by the corporate governance guidelines as in the CMA Code of Corporate Governance Practices for Publicly Traded Securities Issuers.	4	13	22	45	57	141	561	3.98
2.8	CMA Regulations guarantee capital market growth, transparency, and stakeholder confidence by strengthening sustainability practices.	9	12	21	45	54	141	546	3.87

2.9	Fairness and order are guaranteed in the capital markets sector by the CMA Regulations.	6	12	11	55	57	141	568	4.03
2.10	A regulatory framework created by the CMA makes launching new financial institutions and products easier.	6	12	15	51	57	141	564	4.00
	Average	**6**	**12**	**20**	**48**	**55**	**141**	**557**	**4**

Appendix 10: Publications

This thesis has produced the following publications:

Omogi, D. O., Nzioki, P. M., & Kariuki, F. (2025). Credit risk hedging and its effect on share price volatility of NSE-listed firms in Kenya. *International Journal of Business and Management*, *13*(5).

Omogi, D. O., Nzioki, P. M., & Kariuki, F. (2025). Effect of liquidity risk hedging on share price volatility of NSE-listed firms in Kenya. *International Journal of Business and Management*, *13*(6).