

Chief Finance Officer Expertise in The Digital Age: Leveraging Derivatives for Strategic Financial Growth

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Abstract

The role of the Chief Finance Officer (CFO) has undergone a profound transformation, evolving from a traditional, backward-looking function focused on control and compliance to a forward-thinking, strategic role integral to value creation and long-term organizational impact. In an increasingly volatile and interconnected global economy, this evolution necessitates a new approach to financial instruments. This paper examines how modern CFOs, equipped with a strategic mindset and digital acumen, can leverage financial derivatives to drive corporate resilience and growth, particularly within the context of emerging markets. This study investigates the strategic role of Chief Finance Officer (CFO) financial expertise in the deployment of financial derivatives for corporate growth among listed firms in Kenya. Anchored in Upper Echelons Theory and guided by a longitudinal panel design, the research analyzes 195 firm-year observations from the Nairobi Securities Exchange between 2019 and 2023. Using hierarchical multiple regression and controlling for firm age and size, the findings reveal that CFO financial expertise has a positive and statistically significant effect on the use of financial derivatives ($\beta = 0.065$, $p < 0.05$). The study contextualizes this within Kenya's evolving derivatives market, highlighting the strategic imperative for digitally-enabled CFOs to leverage instruments such as swaps, futures, and options not merely for hedging but for value creation. It further explores the intersection of digital acumen, regulatory complexity, and executive leadership in shaping derivative strategy. The paper contributes to the discourse on financial leadership by extending UET to include digital fluency and offers a roadmap for CFOs in emerging markets to transform financial risk into strategic advantage.

Keywords: Financial Expertise, Financial Derivatives, Corporate Growth, Listed Firms, Digital Age

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Introduction

The role of the Chief Finance Officer (CFO) has undergone a profound transformation, moving beyond its traditional mandate of financial control and reporting to encompass a strategic, forward-looking function within the modern enterprise. Historically, the CFO was perceived as a "backward-looking scorekeeper" focused on ensuring compliance, accuracy in financial processes, and sound performance management (Chatpibal et al., 2024). This transactional and retrospective position, while essential, is no longer sufficient to navigate the complexities of the digital age. Today's CFO is expected to be a "forward-thinking strategist" and a "digital innovator" who actively contributes to value creation and long-term organizational impact (Sablinskiene, 2021).

The digital age has redefined the CFO's role from transactional oversight to strategic orchestration. As financial markets grow more volatile and interconnected, derivatives offer CFOs a powerful toolkit to hedge exposures, enhance liquidity, and unlock capital efficiencies (Becker et al., 2023). This paper examines how CFOs, equipped with digital fluency and governance acumen, can leverage derivatives to drive institutional resilience and growth. Modern CFOs are expected to integrate financial strategy with digital intelligence, regulatory foresight, and enterprise-wide risk management. Attributes such as predictive analytics, scenario modelling,

and real-time reporting are now essential. The CFO's influence spans capital allocation, ESG integration, and stakeholder engagement requiring a nuanced understanding of financial instruments like swaps, options, and futures (Martlew, 2025).

This evolution is driven by the recognition that financial leadership and technical expertise are no longer mutually exclusive. A successful CFO must possess a broad set of skills, including a robust analytical aptitude, a strong strategic mindset, and the ability to manage innovation and risk. They are uniquely positioned to be the architects of an organization's growth, leveraging advanced analytics and data to enhance operational value, maximize profitability, and steer the company's trajectory (Manzi & Martinelli, 2022). The modern CFO's role has consequently shifted from a transactional to an analytical one, requiring a deeper understanding of business models and a working knowledge of emerging technologies like Artificial Intelligence (AI) to connect financial outcomes with broader organizational goals. As a key member of the leadership team, the CFO is now tasked with leading cultural shifts, championing innovation, and fostering collaboration to transform the finance function into an agile, insight-driven engine of growth (Munir, 2025).

The Nairobi Securities Exchange Derivatives Market (NEXT) was launched in July 2019, with the primary goal of facilitating futures contract trading and

deepening Kenya's capital markets. The market offers two main types of contracts: Equity Index Futures and Single Stock Futures (SSFs) on selected high-cap, high-liquidity stocks (Muthanga, 2022). Despite its strategic intent, the market has not achieved the anticipated liquidity, with fluctuating performance and low investor participation. An analysis of market activity reveals that a few large corporations have been particularly active. Safaricom has been identified as the best-performing company in trading single futures derivatives contracts at NEXT, with the highest total turnover. It is closely followed by Equity Group Holdings and Kenya Commercial Bank (KCB Group), which also use these instruments to hedge against risk and for price speculation. While this use of SSFs for hedging is a foundational step, it is a limited application of the full potential of derivatives. For firms with complex, diversified portfolios, such as KCB Group with its regional banking subsidiaries and Safaricom with its extensive M-PESA and digital ecosystems, a defensive strategy is insufficient. A strategic, digitally-enabled CFO would need to use a wider range of derivatives to manage complex risks associated with these diversified business models and drive forward-looking growth (Muthine, 2021).

The Kenyan derivatives market is regulated by the Capital Markets Authority (CMA) under the Capital Markets Act. The legal framework includes the Capital Markets (Derivatives Markets) Regulations, 2015, which govern trading, and a licensing regime for clearing members and brokers. While this framework provides a necessary layer of oversight, recent tax regulations introduce a new layer of complexity (Mulei, 2019). The Income Tax (Financial Derivatives) Regulations, 2023, introduced a 15% withholding tax on gains from derivatives for non-resident persons.

More importantly, it requires resident persons to treat income or losses from financial derivatives as a "separate source of income," meaning losses from derivatives cannot be offset against gains from normal business operations. This "separate sourcing" rule creates a disincentive for hedging transactions, which are critical for mitigating supply chain disruptions and foreign currency fluctuations (Otsyula, 2020). It makes the CFO's decision-making process more complex, as they must now not only consider the financial risk but also the intricate tax implications of each transaction. This complex regulatory environment highlights why a modern CFO must possess deep financial expertise and strategic acumen to structure transactions in a way that minimizes tax implications while maximizing the strategic benefits of derivatives. The active participation of firms like Safaricom, Equity Group, and KCB Group in the derivatives market offers a window into the strategic calculus of Kenyan financial leadership. KCB Group, a non-operating holding company with eight banking subsidiaries and a host of non-banking businesses, has a well-diversified model that exposes it to a wide range of financial risks across different geographical and business segments. Similarly, Safaricom's strategy is guided by four transformative pillars, including strengthening its core business and becoming a leading financial services provider with its M-PESA platform (Muthanga, 2022).

While these firms' use of single stock futures is a documented step, a truly strategic finance function would extend far beyond this. For example, KCB could use interest rate swaps to manage risk across its regional banks, while Safaricom could employ cross-currency swaps to manage foreign exchange risk associated with its expansion into Ethiopia (Christopher et al., 2021). The success of

these firms in the nascent NEXT market can be attributed to their strategic, forward-looking finance functions. A digitally-enabled CFO at a firm like Safaricom would not only use derivatives to manage risk but also leverage AI-powered analytics to navigate the volatility of its diverse revenue streams (voice, data, M-PESA) and support its core strategy of becoming a "purpose-led technology Group" by 2025 (Gafsi, 2025). This demonstrates a shift from simple hedging to a multi-faceted strategic approach that aligns derivative use with long-term corporate vision.

In an increasingly complex and interconnected business world, firms face heightened exposure to various financial risks, including price, foreign exchange, and interest rate volatility. Financial derivatives are crucial instruments for mitigating these risks, yet a significant paradox exists in emerging markets (Nafiu et al., 2025). Despite the pervasive volatility that makes these tools vital for risk management, local derivatives markets remain underdeveloped, accounting for only a fraction of the global outstanding notional value (Al Amosh, 2025). For example, the Nairobi Securities Exchange Derivatives Market (NEXT), since its establishment in July 2019, has struggled to achieve its anticipated liquidity and participation rates.

This underutilization stems from a combination of external and internal challenges. The external environment is characterized by regulatory hurdles, such as inadequate legislative frameworks, fragmented oversight, and high transaction costs. Internally, a lack of executive expertise, low investor awareness, and insufficient risk management practices have hindered market development. These barriers are particularly challenging in emerging economies where prudential regulation and credit information infrastructure are

still developing (Martinez, 2023). The core problem is not a lack of available instruments but a deficiency in the executive expertise and institutional capacity required to navigate these complexities effectively and ethically. A CFO with a traditional, risk-averse mindset may view these challenges as insurmountable, focusing solely on the potential for misuse and reputational damage. However, a modern, digitally-enabled CFO, equipped with a strategic mindset and ethical leadership, is uniquely positioned to overcome these market deficiencies, turning a risk management function into a strategic advantage for financial growth (Willekes et al., 2022). This paper aims to address the critical gap between the strategic potential of financial derivatives and their underutilization in emerging markets.

The paper contributes to the academic and practical discourse by bridging the gap between theoretical discussions on executive leadership and the practical, technology-driven applications of financial instruments. It extends the Upper Echelons Theory by incorporating digital acumen as a key executive attribute and offers a novel framework for understanding how CFOs can drive financial growth in complex, underdeveloped markets. By focusing on the unique challenges and opportunities in Kenya, the paper provides a contextualized analysis that is relevant to other emerging economies, offering a roadmap for CFOs to transition from reactive scorekeepers to proactive value creators.

Literature Review

Financial Derivatives: Strategic Applications for Corporate Growth

Financial derivatives are instruments whose value is derived from an underlying asset, index, or rate

(Parameswaran, 2022). The most common types include options, futures, forwards, and swaps. Their primary use case is hedging, which involves mitigating financial risk exposures, such as price, foreign exchange, or interest rate volatility. A farmer, for instance, can sell wheat futures to lock in a price and hedge against a future drop in commodity prices, while an airline can use a forward contract to protect itself from rising fuel costs (Buckle & Thompson, 2020).

However, the strategic value of derivatives extends far beyond simple risk mitigation. By allowing firms to unbundle and transfer risks, derivatives enable a more efficient allocation of capital and create opportunities for portfolio diversification (Schofield, 2021). A CFO who successfully hedges against price volatility frees up capital and reduces uncertainty, thereby allowing the firm to pursue more aggressive growth strategies. For instance, a company can use an interest rate swap to convert a variable interest obligation into a fixed one, which provides greater certainty for future cash flow management. This reframes hedging not as a defensive act, but as a proactive step toward strategic financial growth (Vinitha & Kalarani, 2021). Moreover, derivatives can be used for speculation taking an educated gamble on short-term price movements or for gaining exposure to assets without owning them, which can be a cost-effective way to generate profits (Grima & Thalassinou, 2020). This demonstrates that a CFO with a strategic mindset would see these instruments as tools to unlock value and gain a competitive edge, not merely as a means to avoid risk. The CFO's aptitude in business analytics and risk assessment is paramount to leveraging these tools for value creation (Hairston & Brooks, 2019).

The Digital Chief Finance Officer: A New Paradigm for Derivative Strategy

Artificial Intelligence (AI) is rapidly becoming a cornerstone of quantitative finance, fundamentally transforming derivative pricing and risk assessment (Olanrewaju, 2025). As financial markets become more complex and interconnected, traditional methods often fall short. AI, through technologies like machine learning and deep learning, can process enormous datasets and identify complex patterns that human analysts might miss, thereby offering more accurate predictions and optimized pricing models (Huang et al., 2024). This enhanced predictive power is invaluable for derivative pricing, as AI can forecast the future prices of underlying assets by analyzing historical data, interest rates, and even unstructured data like news articles and social media sentiment.

For the CFO, AI functions as a crucial strategic enabler. It provides a structured, scalable approach to risk management by offering real-time anomaly detection, predictive risk analytics, and early warning signals of potential market stress (Yanney, 2025). This capability is particularly impactful for firms in emerging markets, as AI can "democratize advanced risk analytics," making sophisticated risk models accessible to a wider range of market participants. The CFO's role is therefore no longer just about compliance and loss prevention but about leveraging AI-driven insights to make risk-aware strategic decisions that drive profitability and resilience (Onabowale, 2025). This transition requires the CFO to champion AI strategy, ensure data integrity, and build AI literacy within finance teams, thereby transforming the finance function into an agile, insight-driven engine of growth.

Blockchain technology offers a new foundational layer for financial transactions, providing enhanced security,

transparency, and immutability. Within the context of financial derivatives, blockchain can be leveraged to create "smart contracts," which are self-executing digital agreements that automatically enforce and execute the terms of a contract when certain conditions are met (Jaiwani et al., 2023). This technology eliminates the need for intermediaries, thereby reducing transaction costs, processing time, and counterparty risk. In emerging markets like Kenya, where the legal and market infrastructure may be underdeveloped, the immutability and transparency of blockchain provide a critical layer of trust. Smart contracts can streamline the execution of derivative agreements, reducing the need for extensive documentation and legal oversight for every transaction (Nienhaus, 2019). This automation can mitigate fraud and operational risk, ensuring that financial reporting is built on a foundation of trustworthy data. A CFO who understands this technology can position their firm as a market leader by building more efficient, auditable, and trustworthy financial processes (Alao et al., 2024). This aligns with the modern CFO's role as an "ethical and moral compass" for the organization, responsible for ensuring transparency and trust in all financial and non-financial disclosures.

Theoretical Review and Hypothesis Development

Upper Echelons Theory (UET) posits that a firm's strategic choices and organizational performance are a reflection of the idiosyncratic characteristics of its top management team (TMT) (Gustavsson & Amador Regalado, 2020). These characteristics, including a manager's cognitive base and values, are reflected in observable demographic attributes such as age, education, functional background, career experiences, and financial position.

The theory suggests that in complex and uncertain situations, top managers interpret and respond to strategic challenges based on their unique experiences and beliefs, which in turn shape a firm's strategic direction (Ma et al., 2022).

While UET has traditionally been applied to the study of Chief Executive Officers (CEOs) and broad strategic decisions like sustainable disclosure, the framework is arguably even more salient for understanding a CFO's role in the strategic use of financial derivatives (Mahran & Elamer, 2024). The decision to employ complex financial instruments is not a matter of a firm's public image but rather a technical, high-stakes choice directly impacting core financial risk and reward. This makes the CFO's personal attributes; their comfort with risk, their education, and their specific professional expertise; a more direct and compelling determinant of derivative adoption than a CEO's attributes (Tilai et al., 2023). The CFO, as the steward of financial resources, must take a disciplined approach to new investments, rigorously assessing the business case, costs, benefits, and implementation risks. The decision-making process for financial derivatives, given their complexity and specialization, is therefore a direct reflection of the CFO's expertise and values (Bassiouny, 2023). Based on the theoretical framework and literature: review, this paper hypothesizes that;

H1: *Chief Finance Officer's financial expertise has a positive and statistically significant effect on the strategic use of financial derivatives for corporate growth.*

Methodology

Research Design, Sample and Data

The study employed an explanatory research design with a

longitudinal approach to establish a causal association between the variables. This design is particularly suitable for analyzing panel data, which consists of both time-series and cross-sectional dimensions. The target population for this study comprised all 67 firms listed on the Nairobi Securities Exchange (NSE) as of the end of 2023. The unit of analysis consisted of firms that had been consistently in operation for at least five years, from 2019 to 2023, and had provided complete and audited financial reports for this period. This approach yielded a total of 195 firm-year observations, which is considered a sufficient sample size for robust econometric analysis.

The study relied exclusively on secondary data. Information was collected from the audited annual reports and financial statements of the listed firms, which were sourced from the Capital Market Authority (CMA) and company websites. The use of audited financial data ensures a high degree of credibility and objectivity, as the information has been verified by seasoned auditors, making it a reliable basis for the analysis.

Measurement of Variables

The study's variables were classified into independent and dependent categories, each measured as follows: The dependent variable of this study is financial derivatives. The Black-Scholes model is a mathematical framework used to determine the fair price or theoretical value of European-style options. It provides a theoretical estimate by assuming that the asset's price follows a geometric Brownian motion and that a perfect hedge can be created to eliminate risk. The model uses five main inputs to calculate the price of an option:

1. **Stock Price (S):** The current market price of the underlying asset.
2. **Strike Price (K):** The price at which the option holder can buy or sell the underlying asset.
3. **Time to Expiration (t):** The time remaining until the option expires, measured in years.
4. **Risk-Free Interest Rate (r):** The return on a risk-free asset (like a government bond) over the option's life.
5. **Volatility (σ):** A measure of how much the underlying asset's price fluctuates. This is the most critical and difficult input to estimate.

The Black-Scholes formula is an equation that uses these five inputs to calculate the value of a call or put option.

Call Option Price (C): $C = S \cdot N(d_1) - K \cdot e^{-rt} \cdot N(d_2)$ Equation 1

Put Option Price (P): $P = K \cdot e^{-rt} \cdot N(-d_2) - S \cdot N(-d_1)$Equation 2

Where:

$N(d_1)$ and $N(d_2)$ are the cumulative standard normal distribution functions. They represent the probability that the option will expire "in the money" (i.e., be profitable to exercise).

e^{-rt} is the present value of the strike price, discounted at the risk-free rate.

d_1 and d_2 are intermediate values calculated using the five key inputs:

Control Variables

The study controlled for two firm-specific characteristics that could influence financial derivatives: Firm Age (FA): This was measured by calculating the number of years that had elapsed since the firm was incorporated. Firm Size (FS): This was measured using the natural logarithm of a firm's total assets, which is a standard approach in corporate finance literature.

Model Specification

A hierarchical multiple regression model, consistent with the methodology proposed by Baron and Kenny (1986), was used to test the hypotheses. The analysis was conducted in a series of steps to determine the effects of the control, independent, and moderating variables. The models were specified as follows:

Model 1. Testing the effect of control variables on the financial derivatives.

$$FP = \beta_0 + \beta_1FA_{it} + \beta_2FS_{it} + \varepsilon_{it}$$

Model 2. Testing the effect of independent variable (Chief Finance Officer Expertise) on financial derivatives.

$$FP = \beta_0 + \beta_1FA_{it} + \beta_2FS_{it} + \beta_3CFOE_{it} + \varepsilon_{it}$$

Results and Discussions

Descriptive statistics

This section presents the descriptive statistics for all variables included in the analysis. The study yielded a total of 195 firm-year observations from 39 listed companies on the NSE over the five-year period from 2019 to 2023. As presented in Table 1, the mean financial derivatives (FD), measured by The Black-Scholes model, was 0.192 with a standard deviation of 0.08, indicating moderate variation among the firms' derivatives.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Financial Derivatives	195	0.192	0.08	0.005	0.412
Firm Age	195	0.237	0.095	0.022	0.499
Firm Size	195	14.672	2.089	10.248	18.52
Chief Finance Officer Expertise	195	0.217	0.089	0.012	0.433

The average firm age was M = 0.237 with a standard deviation of SD = 0.095. Firm size had a mean of M = 14.67 and a standard deviation of 2.089. Chief Finance Expertise was 0.217 and a standard deviation SD = 0.089). The descriptive statistics confirm that the dataset is well-distributed and suitable for regression analysis.

Correlation Analysis

A pairwise correlation analysis was conducted to assess the nature and magnitude of the relationships between the study variables. The results, as shown in Table 2, indicate that financial derivative is positively and statistically significantly correlated with the independent and control variables.

Table 2: Correlation analysis results

Variables	FP	FA	FS	CFOE
(1) Financial Derivatives	1			
(2) Firm Age	0.503*	1		
(3) Firm Size	0.653*	0.494*	1	
(4) Chief Finance Officer Expertise	0.505*	0.145*	0.528*	1
*** $p<0.01$, ** $p<0.05$, * $p<0.1$				

Specifically, financial derivative has a positive correlation with firm age

($r=0.503$, $p<0.05$), firm size ($r=0.653$, $p<0.05$). The independent variable chief

finance officer expertise was positive and statistically significant ($r=0.505$, $p<0.05$). These findings provide an initial indication that as these variables increase, financial derivatives tend to improve. However, a correlation analysis does not establish causation; therefore, a more robust regression analysis is required to determine the direct and moderating effects.

Diagnostic Tests and Multiple Regression Analysis

Prior to the regression analysis, a series of diagnostic tests were performed to ensure the validity and reliability of the econometric models. The Unit Root Test, using the Harris-Tzavalis and Breitung methods, confirmed that all variables were stationary ($p<0.05$), ruling out the risk of spurious regression. The Multicollinearity Test, measured by the Variance Inflation Factor (VIF), showed values ranging from 1.066 to 1.133, all well below the threshold of 10, confirming the absence of multicollinearity among the independent variables. The Normality Test (Shapiro-Wilk) and the

Heteroscedasticity Test (Breusch-Pagan) also confirmed that the residuals were normally distributed and had constant variance, respectively. Finally, the Autocorrelation Test (Wooldridge) and the Error Specification Test (Ramsey RESET) indicated that there was no first-order autocorrelation and no omitted variable bias in the model. These rigorous checks validate the appropriateness of the regression models and strengthen the credibility of the findings.

The Hausman test was performed to determine the most suitable model for the panel data regression between the Fixed-Effects and Random-Effects models. The test, as shown in Table 3, yielded a chi-square value of 0.00 with a p-value of less than 0.05 ($p<0.05$). This result led to the rejection of the null hypothesis, which assumes the Random-Effects model is more appropriate. The conclusion was to use the Fixed-Effects model for all subsequent analyses, as it accounts for unobservable, time-invariant individual characteristics that may be correlated with the independent variables.

Table 3. Hausman Test Results
---- Coefficients ----

	(b) _est_fe	(B) _est_re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
FA	.1021995	.1021995	0.000	0.000
FS	.0451433	.0451433	0.000	0.000
FD	.1244502	.1244502	0.000	0.000
CFO	.0373828	.0373828	0.000	0.000

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic
 $\chi^2(0) = (b-B)'[(V_b-V_B)^{-1}](b-B)$
= 0.00
Prob> χ^2 = 0.001

The study employed a hierarchical multiple regression approach to test the

research hypotheses. The results of this analysis are presented in the subsequent section.

Test for Control Variables

Control variables are utilized to guarantee that the effects of independent variables on the dependent variable remain unconfounded by additional influential factors. This research controlled for both firm size and firm age. Established older firms typically possess a loyal customer base, extensive industry experience, and optimized operational efficiency, all of which can contribute to improved financial derivatives. If left uncontrolled, firm age may skew the influence of independent variables by introducing an experience-related bias in financial derivative results.

Large firms generally benefit from economies of scale, enhanced bargaining power, and increased access to capital, all of which can lead to improved financial derivatives. If firm size is not controlled for, fluctuations in financial derivatives may be incorrectly attributed to the independent variables instead of the benefits associated with size. Controlling for firm age and size allows the study to precisely isolate the effects of

the independent variables on financial derivatives. These variables reduce the likelihood of spurious correlations, ensuring that results are not influenced by firm-specific characteristics. Control variables improve the accuracy and dependability of results by addressing systematic variations.

Table 4 shows the results of the control variables of this study. The results indicate that the overall first model, was significant (F-value = 0.9897; $p < 0.05$). The p-value was less than 0.05 indicating that the overall model was fit. It means that the probability of confidence that the association amongst the control variables of the study is not by chance. The value coefficient of determination R^2 is 0.9897. This implies that the control variables of the model explained 98.97% of the variation in the dependent variable. Firm age was found to be positive and statistically significant ($\beta = 0.121$, $p < 0.05$) implying that it had an effect on financial derivatives. Firm size had a positive and a positive and significant effect ($\beta = 0.062$, $p < 0.05$) on financial derivatives.

Table 4: Results for Test of Control Variables

Fixed-effects (within) regression	Number of obs = 195					
Group variable: FIRM	Number of groups = 39					
R-sq: within = 0.9897	Obs per group: min = 5					
between = 0.8421	avg = 5.0					
overall = 0.9140	max = 5					
	F(2,154) = 7419.60					
corr(u_i, Xb) = -0.3491	Prob > F = 0.0000					
Financial Derivatives	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	
Firm Age	0.121	0.034	3.61	0.000	.055	0.187
Firm Size	0.062	0.001	67.99	0.000	.06	0.063
Constant	0.012	0.002	7.15	0.000	.008	0.015
Mean dependent var		0.192	SD dependent var		0.080	
R-squared		0.990	Number of obs		195	
F-test		7419.599	Prob > F		0.000	
Akaike crit. (AIC)		-1432.351	Bayesian crit. (BIC)		-1422.532	

*** $p < .01$, ** $p < .05$, * $p < .1$

Test for Direct Effect

Investigating the direct effect involves analyzing how the independent variable (Chief Finance Officer Expertise) effect the dependent variable (financial

derivatives). The regression results illustrating the direct effect for the fixed effect model are presented in Table 5 below.

Table 5: Test for Direct Effect

Fixed-effects (within) regression	Number of obs = 195
Group variable: FIRM	Number of groups = 39
R-sq: within = 0.9899	Obs per group: min = 5
between = 0.8486	avg = 5.0
overall = 0.9175	max = 5
	F(4,152) = 3732.04
corr(u_i, Xb) = -0.3474	Prob > F = 0.0000

Regression results

Financial Derivatives	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]
Firm Age	0.121	0.034	3.57	0.000	0.054	0.188
Firm Size	0.06	0.001	48.29	0.000	0.058	0.063
Chief Finance Officer Expertise	0.065	0.048	1.35	0.000	-0.03	0.16
Constant	0.012	0.002	7.34	0.000	0.009	0.016
Mean dependent var		0.192	SD dependent var			0.080
R-squared		0.990	Number of obs			195
F-test		3732.041	Prob > F			0.000
Akaike crit. (AIC)		-1432.027	Bayesian crit. (BIC)			-1415.662

*** $p < .01$, ** $p < .05$, * $p < .1$

Overall, the second model was significant (F-value = 3732.04; $p < 0.05$). The p-value was less than 0.05 indicating that the overall model was fit. It means that the probability of confidence that the association amongst the independent variables of the study is not by chance. The value coefficient of determination R^2 is 0.9899. This implies that the control variables of the model explained 98.99% of the variation in the dependent variable. Firm age was found to be positive and statistically significant ($\beta = 0.121$, $p < 0.05$) implying that it had an effect on financial derivatives. Firm size had a positive and a positive and significant effect ($\beta = 0.06$, $p < 0.05$) on financial derivatives. The independent variable specifically, chief finance officer expertise, had a positive

and statistically significant effect ($\beta = 0.065$, $p < 0.05$).

Hypothesis Testing

The study sought to establish the effect of Chief Finance Officer's financial expertise on financial derivatives for corporate growth among listed firms in Kenya. The study controlled for firm age and firm size. The hypothesis H_{01} , stated that Chief Finance Officer's financial expertise has no statistically significant effect on financial derivatives for corporate growth of listed firms in Kenya. Findings in Table 6 indicated that Chief Finance Officer's financial expertise was positive and statistically significant ($\beta = 0.065$, $p < 0.05$). Hence, the hypothesis H_{01} was rejected, and the conclusion was

made that Chief Finance Officer's financial expertise had a statistically significant effect on the financial derivatives of listed firms in Kenya. Studies such as Al Fazari *et al.* (2022) and Chikwira & Vengesai (2020) show that in African markets, including Kenya, derivatives are increasingly used to hedge against exchange rate and commodity price volatility. These instruments help stabilize cash flows and reduce financing costs, thereby supporting corporate growth.

Research on South African listed firms by Vengesai (2025) found that effective use of derivatives, often driven by CFO-led financial strategies, lowers the cost of capital and enhances financial stability. This supports the notion that CFO expertise translates into better risk management and financial performance. Similarly, a study on commercial banks in Rwanda by Mulyungi and Blaise (2018), found that financial derivatives positively affect financial performance, especially when guided by financially skilled executives. The use of derivatives was linked to improved Return on Assets (ROA), reinforcing the strategic value of financial expertise in derivative deployment.

Conclusion

The study concludes that CFO financial expertise is a critical determinant of strategic derivative use among listed firms in Kenya. The positive and significant relationship underscores the CFO's evolving role from transactional oversight to strategic orchestration in the digital age. Firms led by financially skilled CFOs are more likely to deploy derivatives not only for hedging but also for liquidity enhancement, capital efficiency, and long-term growth. The findings of this study offer a nuanced perspective on the relationship between corporate leadership and financial strategy, particularly in the context of emerging

markets. The core empirical finding, as presented in Table 6, is that a Chief Finance Officer's financial expertise has a positive and statistically significant effect on the use of financial derivatives among listed firms in Kenya. This result, with a coefficient of $\beta=0.065$ and a p-value less than 0.05, confirms the central hypothesis and demonstrates that the attributes of a firm's financial leader are a direct and compelling determinant of its financial strategy.

This outcome provides a critical extension of the Upper Echelons Theory (UET). While UET traditionally links the characteristics of the top management team to broad strategic choices, this study successfully applies the framework to a highly specialized and technical domain. The fact that the CFO's personal expertise is a direct and significant determinant of the adoption and use of complex instruments like derivatives reinforces the power of the UET framework. It suggests that in high-stakes financial decisions, the idiosyncratic attributes of the specific leader responsible may be even more influential than those of the broader leadership team. This finding elevates the CFO's role from a functional head to a primary driver of corporate strategy and a central figure in a firm's risk management and growth trajectory.

The findings also provide a powerful explanation for a pervasive paradox in emerging markets: the underutilization of financial derivatives despite a heightened need for risk management in volatile economic environments. The research material notes that the Nairobi Securities Exchange Derivatives Market (NEXT) has struggled with low liquidity and participation, which is often attributed to external factors like regulatory hurdles. However, the results of this study suggest that a significant contributing factor is an internal one, a deficiency in executive expertise and

institutional capacity. The causal chain is thus revealed: a lack of skilled financial leaders directly translates into an underutilization of sophisticated financial instruments, which in turn leads to low market liquidity and underdevelopment. This indicates that even if regulatory barriers were entirely removed, the market would not reach its full potential without a commensurate rise in the skills and strategic mindset of its key financial leaders.

The analysis of external factors also yields a critical implication. The Income Tax (Financial Derivatives) Regulations, 2023, which requires resident firms to treat derivative income and losses as a "separate source of income," is a textbook example of a regulatory disincentive creating market inefficiency. Hence, by preventing a company from offsetting derivative losses against gains from normal business operations, the rule makes hedging transactions financially irrational, even if they are strategically sound for mitigating supply chain disruptions or foreign currency risk. This regulatory complexity highlights why a modern CFO's role is no longer just about financial management but also about possessing the strategic acumen to navigate and mitigate the effects of adverse public policy, thereby structuring transactions in a way that maximizes strategic benefits while minimizing intricate tax implications. The study of firms like Safaricom and KCB Group further emphasizes this point, demonstrating that even with a limited use of derivatives, a strategic finance function is critical for success in a complex environment.

Recommendations

The findings of this research provide a clear and actionable roadmap for various stakeholders. The recommendations are tiered to address the specific roles and

responsibilities of corporate leaders, policymakers, and the academic community, with the overarching goal of unlocking the strategic potential of derivatives in emerging markets. CFOs must consciously transition from a defensive, risk-averse posture to a strategic, value-oriented mindset. The study indicates that the mere use of derivatives is insufficient; the strategic application is what drives corporate growth. Rather than viewing derivatives as tools for loss prevention, they should be reframed as proactive instruments to enhance capital efficiency, unlock value, and gain a competitive advantage.

This shift requires expanding the derivative toolkit beyond simple hedging, such as the limited use of Single Stock Futures (SSFs) currently prevalent in the Nairobi Securities Exchange Derivatives Market (NEXT). For example, a non-operating holding company like KCB Group, with its eight banking subsidiaries and diverse business segments, faces a wide range of financial risks. A strategic finance function would leverage interest rate swaps to manage fluctuating interest obligations across its regional banks, providing greater certainty for future cash flow management. Similarly, for a multinational corporation like Safaricom, which has a stated core strategy of expanding into new markets, cross-currency swaps could be employed to effectively manage the foreign exchange risk associated with its expansion into Ethiopia, thereby aligning financial strategy with long-term corporate vision.

Furthermore, the modern CFO must be a champion of digital transformation within the finance function. This involves not just adopting new technologies but integrating them into the core of financial strategy and risk management. AI-powered analytics can provide enhanced predictive power for derivative pricing and offer real-time risk

analytics, democratizing access to sophisticated risk models that have traditionally been out of reach for many firms in emerging markets. Blockchain technology, through smart contracts, can streamline derivative agreements, reduce counterparty risk, and enhance the transparency and immutability of financial transactions. A CFO who prioritizes data integrity and builds AI literacy within their teams can transform the finance function into an agile, insight-driven engine of growth.

The findings indicate that the regulatory and tax environment can create significant disincentives to the strategic use of derivatives. The Capital Markets Authority (CMA) and the Kenya Revenue Authority (KRA) should re-evaluate the Income Tax (Financial Derivatives) Regulations, 2023, and specifically the "separate sourcing" rule. This provision, by preventing the netting of derivative losses against operational gains, acts as a direct barrier to a robust hedging culture. Policymakers should consider a policy reform that allows for the netting of losses for bona fide hedging transactions to incentivize firms to use these instruments for legitimate risk management purposes, thereby promoting financial stability.

Given the documented "low investor awareness" and "lack of executive expertise," regulators and policymakers should actively engage in building institutional capacity. This could involve partnering with market participants and educational institutions to develop comprehensive, targeted training and certification programs on derivative strategies and risk management. Such initiatives would build the human capital necessary to effectively and ethically use financial derivatives, which in turn would increase market liquidity and participation on the NEXT market. Finally, the study highlights that high transaction costs and

fragmented oversight can be external hurdles to market development. Policymakers should explore opportunities to streamline the regulatory framework and consolidate oversight to make the market more attractive and accessible to a wider range of participants. While this study establishes a strong link between CFO expertise and the use of derivatives, several avenues for future research remain unexplored. Future studies should extend the Upper Echelons Theory by examining the role of a CFO's ethical values and a firm's governance structure in preventing the misuse of derivatives for speculative or fraudulent purposes. This would provide a more holistic understanding of how leadership attributes influence both the strategic and ethical dimensions of financial decision-making, which is of particular concern in developing markets. Additionally, a quantitative study is needed to specifically measure the financial impact of digital technologies on derivative strategy and corporate performance. This would provide empirical evidence to support the conceptual arguments made in this paper and would quantify the tangible benefits of AI-powered analytics and blockchain-enabled smart contracts. Finally, to test the generalizability of these findings, future research should conduct a comparative analysis of derivative adoption in other emerging markets with different regulatory, tax, and institutional environments. This would provide a more robust understanding of the interplay between internal executive characteristics and external market factors in driving the strategic use of financial derivatives.

References

- Al Amosh, H. (2025). Exchange rate volatility and ESG performance: an international empirical analysis. *Journal of Corporate Accounting & Finance*, 36(3), 14-28. <https://onlinelibrary.wiley.com/doi/abs/10.1002/jcaf.22774>

- Alao, O. B., Dudu, O. F., Alonge, E. O., & Eze, C. E. (2024). Automation in financial reporting: A conceptual framework for efficiency and accuracy in US corporations. *Global Journal of Advanced Research and Reviews*, 2(02), 040-050. <https://doi.org/10.58175/gjarr.2024.2.2.0057>
- Bassiouny, S. W. R. M. (2023). *The influence of CFO characteristics on the firm financial decisions: the case of Egypt* Universidade do Minho (Portugal)]. <https://www.proquest.com/openview/2a39b4524584552c49f0a56517d80033/1?pq-origsite=gscholar&cbl=2026366&diss=y>
- Becker, W., Nolte, M., & Schuhknecht, F. (2023). The role of the chief financial officer in the digital transformation of business models. In *The Digitalization of Management Accounting: Use Cases from Theory and Practice* (pp. 341-365). Springer. https://doi.org/10.1007/978-3-658-41524-2_21
- Buckle, M., & Thompson, J. (2020). Financial derivatives. In *The UK financial system (fifth edition)* (pp. 279-316). Manchester University Press. <https://doi.org/10.7765/9781526153692.00021>
- Chatpibal, M., Chaiyasoonthorn, W., & Chaveesuk, S. (2024). Driving financial results is not the only priority! An exploration of the future role of chief financial officer: a grounded theory approach. *Meditari Accountancy Research*, 32(3), 857-887. <https://www.emerald.com/crawlprevent/governor?content=%2fmedar%2farticle%2f32%2f3%2f857%2f1216103>
- Christopher, F. M., Njuguna, A., & Kiriri, P. (2021). Accelerators of Depth in Nascent Derivative Markets: Case of Nairobi Securities Exchange (NSE). *Kabarak Journal of Research & Innovation*, 11(1), 34-42. <https://journals.kabarak.ac.ke/index.php/kjri/article/view/92>
- Gafsi, N. (2025). Perspective Chapter: Financial Risk Management in the Age of Digital Transformation—Challenges and Opportunities in Africa. <https://www.intechopen.com/online-first/1222714>
- Grima, S., & Thalassinou, E. I. (2020). Financial Derivatives Use: A Literature Review. *Financial Derivatives: A Blessing or a Curse?*, 23-63.
- Hairston, S. A., & Brooks, M. R. (2019). Derivative accounting and financial reporting quality: A review of the literature. *Advances in accounting*, 44, 81-94. <https://doi.org/10.1016/j.adiac.2018.10.003>
- Huang, G., Xu, Z., Lin, Z., Guo, X., & Jiang, M. (2024). Artificial Intelligence-Driven Risk Assessment and Control in Financial Derivatives: Exploring Deep Learning and Ensemble Models. *Transactions on Computational and Scientific Methods*, 4(12). <https://doi.org/10.5281/zenodo.14499770>
- Jaiwani, M., Gopalkrishnan, S., Kale, V., Chatterjee, A., Khatwani, R., Kasam, N., & Mitra, P. K. (2023). The Blockchain Revolution: Disrupting Derivative Markets with Smart Contracts. 2023 IEEE International Conference on Technology Management, Operations and Decisions (ICTMOD), <https://ieeexplore.ieee.org/abstract/document/10438145/>
- Ma, S., Kor, Y. Y., & Seidl, D. (2022). Top management team role structure: A vantage point for advancing upper echelons research. *Strategic management journal*, 43(8), 01-028. <https://sms.onlinelibrary.wiley.com/doi/abs/10.1002/smj.3368>
- Mahran, K., & Elamer, A. A. (2024). Chief Executive Officer (CEO) and corporate environmental sustainability: A systematic literature review and avenues for future research. *Business Strategy and the Environment*, 33(3), 1977-2003. <https://doi.org/10.1002/bse.3577>
- Manzi, F., & Martinelli, M. (2022). The Many Skills of the CFO. *The CPA Journal*, 92(1/2), 72-74. <https://www.proquest.com/openview/d25fa59f2a51d03fdb0f9afc2a9781b0/1?pq-origsite=gscholar&cbl=41798>
- Martinez, J. (2023). Financial Risk Management in International Markets. *Center for Management Science Research*, 1(2), 1-11. <https://cmsrjournal.com/index.php/Journal/article/view/28>
- Martlew, C. (2025). *The Digital Executive: Creating Innovative, Resilient Organizations in the Age of AI & Digital*. Troubador Publishing Ltd.
- Mulei, M. M. (2019). Derivatives and Economic Growth in South Africa: Lessons for Kenya. University of Cape Town, South Africa. <https://open.uct.ac.za/handle/11427/31049>

- Munir, T. (2025). *Reimagine Finance: The CFO's Leadership Playbook for the Age of AI, Data, and Digital*. John Wiley & Sons.
- Muthanga, N. W. (2022). *The Impact of derivatives trading on the liquidity of stocks at the Nairobi Securities Exchange* Strathmore University]. <https://su-plus.strathmore.edu/server/api/core/bitstreams/2fab30fe-99d2-4e2d-84f7-cf2e27d4fe73/content>
- Muthine, P. (2021). *Relationship between financial derivatives and financial performance of selected listed commercial banks in Kenya* KeMUJ]. <http://41.89.31.5:8080/handle/123456789/1157>
- Nafiu, A., Balogun, S. O., Oko-Odion, C., & Odumuwaogun, O. O. (2025). Risk management strategies: Navigating volatility in complex financial market environments. *World Journal of Advanced Research and Reviews*, 25(1), 236-250. <https://eprint.scholarsrepository.com/id/eprint/60/>
- Nienhaus, V. (2019). Blockchain technologies and the prospects of smart contracts in Islamic finance. In *Fintech in Islamic Finance* (pp. 183-210). Routledge. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781351025584-13/blockchain-technologies-prospects-smart-contracts-islamic-finance-volker-nienhaus>
- Olanrewaju, A. G. (2025). Artificial Intelligence in Financial Markets: Optimizing Risk Management, Portfolio Allocation, and Algorithmic Trading. *International Journal of Research Publication and Reviews*, 6, 8855-8870. <http://www.ijrpr.com/>
- Onabowale, O. (2025). AI and Real-Time Financial Decision Support. *ijarpr.com*
- Otsyula, M. Z. (2020). *The Effect of Market Liquidity Dimensions on the Use of Financial Derivatives in Interest Rate Risk Management among Commercial Banks in Kenya* JKUAT-COHRED]. <http://ir.jkuat.ac.ke/handle/123456789/5393>
- Parameswaran, S. K. (2022). *Fundamentals of financial instruments: An introduction to stocks, bonds, foreign exchange, and derivatives*. John Wiley & Sons.
- Schofield, N. C. (2021). *Commodity derivatives: markets and applications*. John Wiley & Sons.
- Tilai, A., Tan Hwang, J. Y., & Liwan, A. (2023). CFO attributes and corporate risk management: evidence from top 100 firms in Malaysia. *International Journal of Service Management and Sustainability*, 8(2), 59-80. <https://ir.uitm.edu.my/id/eprint/85326/>
- Vengesai, E. (2025). The role of derivatives' use on firms' capital cost and financial stability: evidence from South African listed non-financial firms. *African Journal of Economic and Management Studies*.
- Vinitha, V., & Kalarani, T. (2021). Derivatives and Risk Management: An Overview. *Contemporary Research in Finance*, 101. https://www.researchgate.net/profile/Biju-A-V/publication/354850282_Contemporary_Research_in_Finance/links/61504604d2ebba7be74b2c47/Contemporary-Research-in-Finance.pdf#page=110
- Willekes, E., Wagensveld, K., & Jonker, J. (2022). The role of the accounting and control professional in monitoring and controlling sustainable value. *Sustainability*, 14(23), 15709. <https://doi.org/10.3390/su142315709>
- Yanney, A. A. S. (2025). Redefining Corporate Financial Governance Through AI-Powered Predictive Models for Global Business Risk Management.