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Abstract:

Purpose: The study examined how the use of financial derivatives influences the financial performance of commercial parastatals listed on the Nairobi Securities Exchange (NSE). It specifically assessed the effects of currency, commodity, and interest rate derivatives on Return on Assets (ROA).

Methodology: A descriptive research design was applied, using a census of all seven Secondary panel data were obtained from audited financial statements covering 2019–2023. ROA was regressed on the usage of the three types of derivatives, and panel regression with Wald chi-square tests was used to assess the significance of the relationships.

Findings: The results showed mixed effects of derivative usage on financial performance. Currency derivatives had an insignificant positive effect (coef. = 0.0000235, p = 0.504), while interest rate derivatives also showed no significant influence (coef. = 0.0000131, p = 0.871). Commodity derivatives, however, displayed a significant negative relationship with ROA (coef. = –5.09e-06, p = 0.017). The overall model was significant (Wald chi² = 22.55, p = 0.0001) but explained only 25.59% of performance variation.

Unique Contribution to Theory, Practice and Policy: The study contributes to risk management theory by demonstrating the impact of derivatives in emerging market state-owned enterprises. Practically, it highlights the need for more proper and cost-effective hedging strategies to enhance the effective use of derivatives within parastatals.

***Keywords*:** *Financial Derivatives, Commercial Parastatals, Financial Performance, Risk, Nairobi Securities Exchange.*

JEL CODES: G32, G13, L32, C33

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1.0 INTRODUCTION

A. Background of the Study

The performance of commercial parastatals listed on the Nairobi Securities Exchange (NSE) is a key indicator of Kenya's public sector financial stability. These organizations provide essential services in sectors such as energy, transportation, and telecommunications, contributing to economic growth (Kariuki, 2019). Financial performance measures, including Return on Assets (ROA), Return on Equity (ROE), and profit margins, reflect their viability and effectiveness in achieving public objectives (Mwangi, 2021). Globally, public sector entities use financial derivatives such as interest rate swaps, currency futures, and commodity hedges to manage risks, stabilize cash flows, and optimize investments (Kashyap, 2019; Smith, 2020). In Africa, the adoption of derivatives is limited, with South African parastatals like Eskom and Transnet showing mixed results (Smith, 2020). Kenyan parastatals, including Kenya Power, Kenya Airways, and Kenya Pipeline Company, face financial challenges due to currency fluctuations, commodity price volatility, and rising operating costs. Although derivatives could mitigate these risks, their use is constrained by limited knowledge, regulatory barriers, and perceived complexity (Mwangi, 2021). This study examines the impact of currency, commodity, and interest rate derivatives on the financial performance of NSE-listed parastatals, assessing their effectiveness as risk management tools in a developing economy context.

Financial Performance of Parastatals

Performance is a multi-dimensional concept encompassing financial and non-financial aspects. Kaplan and Norton (1992) define it using a Balanced Scorecard approach, including customer satisfaction, internal processes, learning, and growth, while Barney (1991) views it as the organization's ability to achieve goals and satisfy stakeholders. For commercial parastatals, performance incorporates profitability, service efficiency, and attainment of public sector objectives (Akinyele, 2011; Miller, 2013; Mertens, 2015). Financial measures such as ROA, ROE, and profit margins are critical indicators of sustainability and shareholder value, while non-financial measures like service quality and stakeholder engagement complement the assessment (Kaplan & Norton, 1992; Akinyele, 2011). External factors, including economic volatility, political stability, and regulatory frameworks, influence performance, as seen in Kenya Airways, Kenya Power, and Kenya Pipeline Company (Kimani, 2018; Wambugu, 2021). This study focuses on ROA, ROE, and profit margin as primary indicators to evaluate the effect of financial derivatives on the performance of commercial parastatals listed on the NSE.

Financial Derivatives

Financial derivatives are instruments whose value derives from underlying assets such as currencies, commodities, or interest rates (Chepkorir, 2018). Public sector parastatals use derivatives to manage risks, stabilize finances, and optimize asset allocation (Allayannis & Weston, 2016). Common types include swaps, options, forwards, and futures, which allow hedging against exchange rate, interest rate, and commodity price volatility (Mihaljek & Packer, 2017). Currency derivatives hedge foreign exchange risks and allow speculation on future currency

fluctuations (Muthine, 2021; Maitha, 2020). Interest rate derivatives, including swaps, enable institutions to manage exposure to variable rates, enhancing stability in earnings and interest costs (Mburugu, 2023; Ndallah, 2020). Commodity derivatives protect against fluctuations in prices of products like oil, metals, and agricultural goods, offering access to commodity markets without holding physical assets (Hamza, Alinoor, Abdi, Nyabuti & Okiro, 2023; Kanini, 2020). This study investigates the role of currency, interest rate, and commodity derivatives in improving the financial performance of NSE-listed commercial parastatals in Kenya.

Commercial Parastatals Listed in Nairobi Securities Exchange, Kenya

Commercial parastatals in Kenya are state-owned entities with dual objectives of profitability and public service delivery, contributing to national economic development (Wasike, 2017). They operate in sectors such as energy, transportation, ports, and manufacturing (Keeley & Ragui, 2018; Kimani, 2014). Despite strategic importance, these organizations face financial challenges, including mismanagement, operational inefficiencies, and high exposure to international trade risks (Omosa & Josiah, 2014; Kimeo & Achuora, 2020). Between 2015 and 2020, the government provided substantial subsidies totaling Kshs. 21.4 billion to support underperforming parastatals, representing 3.5% of GDP (Gacheru, 2021; Presidential Taskforce on Parastatal Reforms, 2019). Poor performance in institutions such as Kenya Airways, Kenya Railways, and the National Cereals and Produce Board undermines public confidence and economic benefits (Neville, 2021; Ngugi & Were, 2019). Listing seven commercial parastatals on the NSE by December 2023 aims to enhance financial transparency, accountability, and sustainable performance in the sector (Appendix I).

B. Statement of the Problem

Kenya's commercial parastatals play a critical role in economic growth and service provision, with many listed on the NSE to promote competitiveness and shareholder value. However, their financial performance has been inconsistent due to fluctuating profits, operational inefficiencies, and rising risk exposure, raising concerns about sustainability (Ndung'u & Wambua, 2020). Globally, financial derivatives such as forwards, options, futures, and swaps are widely used to mitigate these risks and stabilize earnings (Ndung'u & Wambua, 2020). In Kenya, their adoption by parastatals remains limited despite exposure to exchange rate, interest rate, and commodity price volatility. The government has been forced to inject substantial subsidies to support loss-making parastatals, totaling Kshs. 21.4 billion between 2015 and 2020, equating to 3.5% of GDP (Gacheru, 2021). While literature supports derivatives' potential to enhance financial performance, empirical research on Kenyan NSE-listed parastatals is scarce. This study investigates the effect of currency, commodity, and interest rate derivatives on financial indicators such as ROA, ROE, and EPS.

C. Objectives of the Study

The research was guided by both general objective and the specific objectives.

General Objectives

The research general objective is to analyses the effect of financial derivatives usage and the performance of commercial Parastatals listed in the NSE, Kenya.

Specific Objectives

The specific objectives of the research are:

i. To determine the effect of currency derivatives usage on the performance of commercial Parastatals listed in the NSE, Kenya.
ii. To examine the effect of commodity derivatives usage on the performance of commercial Parastatals listed in the NSE, Kenya.
iii. To evaluate the effect of interest rate derivatives usage on the performance of commercial Parastatals listed in NSE, Kenya.

2.0 LITERATURE REVIEW

A. Theoretical Review

This study draws on three theories to explain the relationship between financial derivatives and the performance of commercial parastatals: Corporate Governance Theory, Arbitrage Pricing Theory, and Hedging Theory. These theories provide a foundation to understand risk management, stakeholder alignment, and financial performance in state-owned enterprises.

Corporate Governance Theory

Corporate Governance Theory, formulated by Berle and Means (1932), explains how businesses are directed to balance the interests of stakeholders, including shareholders, management, and society. It emphasizes accountability, transparency, and oversight to reduce agency conflicts between management and shareholders (Jones & Thompson, 2017). In commercial parastatals, which have profit motives yet serve public interests, corporate governance ensures efficiency, risk management, and financial transparency (Tricker, 2015). Effective governance allows clear role definitions, performance measures, and management accountability, fostering trust among stakeholders. In Kenya, entities like KenGen and Safaricom PLC have leveraged strong governance and transparency to enhance operational and financial performance (Ongore & Kusa, 2013; Mwangi & Jerotich, 2013). Similarly, Kenya Airways and KCB have strengthened governance to manage risk and improve efficiency (Kamau, 2017; Njoroge & Gathogo, 2014). Corporate governance guides parastatals in coordinating derivative use within risk management frameworks, appointing competent directors, and promoting disclosure, thereby aligning risk mitigation with financial objectives and stakeholder expectations.

Arbitrage Pricing Theory

Arbitrage Pricing Theory (APT), developed by Stephen Ross (1976), is a multi-factor model that explains asset returns through multiple systematic risk factors, including interest rates, inflation, exchange rates, and macroeconomic variables, unlike CAPM, which relies on a single market factor. APT is particularly suitable for Kenyan commercial parastatals listed on the NSE, such as

Kenya Airways and KenGen, which face diverse risks including regulatory changes, commodity price fluctuations, and economic volatility (Ross, 1976; Chen et al., 1986). By modeling multiple risk factors, APT allows these entities to assess the impact of financial derivatives on their portfolios, such as fuel hedging or energy price risk management. Its flexibility accommodates imperfect markets and real-world frictions, unlike CAPM, and provides a more accurate framework for portfolio management. Consequently, APT supports informed decision-making regarding risk exposure, capital allocation, and expected returns, enhancing financial stability and performance for commercial parastatals operating under complex market conditions.

Hedging Theory

Hedging Theory, first discussed by Alfred Marshall (1890), focuses on strategies that reduce or avoid exposure to financial risks. It emphasizes the use of instruments such as forwards, futures, and options to protect against price, interest rate, or currency fluctuations. Hedging mitigates potential losses, although it involves costs such as option premiums, transaction fees, and opportunity costs, and is subject to risks like basis risk or imperfect market conditions (Nguyen et al., 2020; Sikarwar & Gupta, 2019). In the context of Kenyan commercial parastatals, hedging through currency derivatives stabilizes foreign exchange exposure, while commodity derivatives help predict operational costs amid price volatility. The practice is increasingly relevant due to regulatory frameworks like the Income Tax (Financial Derivatives) Regulations, 2023, which formalize derivative taxation and treatment (EY, 2023). Despite challenges such as liquidity constraints and counterparty risks, hedging aligns risk management with strategic objectives, enhancing financial performance. Studies indicate growing adoption in Kenya, reflecting practical application of the theory in managing financial risks within parastatals

B. Empirical Review

This section reviews empirical studies on the use of financial derivatives and their effects on financial performance, highlighting gaps addressed by the current research on Kenyan commercial parastatals listed on the NSE.

Currency Derivatives Usage and Financial Performance

Several studies have explored the impact of currency derivatives on financial performance, mainly in banks. Omar and Banafa (2022) found no positive correlation between derivative use and the financial health of Kenyan banks, suggesting that excessive use may destabilize the sector. Similarly, Muthine (2021) observed that swaps, forwards, and options affected profitability but incurred costs and delays that reduced returns. Machio (2021) also found a high correlation between hedging strategies and financial performance, emphasizing risk exposure management. Harrison (2021) noted mixed effects of short- and long-term financing on bank performance, while Diero, Githui, and Omurwa (2019) highlighted that risk management enhances parastatal performance. Unlike these studies, which focused on commercial banks or general risk management, the present research examines currency derivatives alongside other financial derivatives and their impact on the performance of parastatals, filling a knowledge gap in non-banking listed entities in Kenya.

Commodity Derivatives Usage and Financial Performance

Commodity derivatives have been studied as tools for financial risk hedging. Mauti (2019) investigated Kenyan listed commercial and service firms, finding that credit, liquidity, and operational risk hedging significantly affected firm value, while foreign exchange hedging had minimal effect. Blaise and Mulyungi (2018) analyzed derivative usage in Rwandan commercial banks, concluding that financial innovation and market deregulation increased derivative activities, which directly influenced financial performance. In India, Dhandayuthapani and Sudha (2018) highlighted the growth of commodities trading as a key contributor to economic activity, though statistical evidence on performance effects was limited. These studies primarily focused on commercial banks or service firms outside Kenya. The current research extends this understanding to parastatals listed on the NSE, examining how commodity derivatives are applied to manage financial risks, improve performance, and stabilize returns, thus addressing the gap in empirical evidence for state-owned commercial enterprises.

Interest Rate Derivatives Usage and Financial Performance

Interest rate derivatives have mixed effects on organizational performance. Wen, Kang, Qin, and Kennedy (2021) studied Chinese firms, finding that derivative use often negatively affected poorly performing firms, potentially worsening their outcomes. Ndallah (2020) noted similar patterns in Kenyan non-financial companies, where derivatives primarily served hedging purposes but sometimes resulted in market value volatility. Taşkın and Sarıyer (2020) found that in Turkish banks, derivatives reduced profitability while increasing risk, highlighting the influence of firm-specific characteristics. Banda (2018) analyzed Zambian banks and observed a marginal but significant negative correlation between derivative usage and ROA, stressing the importance of cautious engagement with derivatives. While these studies provide insight into derivatives' risks and benefits, they focus on non-Kenyan contexts or non-parastatal entities. The current research targets Kenyan parastatals listed on the NSE, evaluating how interest rate derivatives, alongside currency and commodity derivatives, influence financial performance, thereby filling a critical gap in local empirical evidence.

3.0 RESEARCH METHODOLOGY

This study employed a descriptive research design to examine the relationship between financial derivatives and the financial performance of commercial parastatals listed on the NSE. The target population comprised all seven listed parastatals, and a census sampling method was applied to include all entities, ensuring comprehensive coverage. Secondary data were collected from audited financial statements, annual reports, policy documents, and archival records for the period 2019–2023, using structured data collection sheets. Reliability was ensured through credible and independently audited sources, while validity was reinforced via expert review, triangulation with regulatory reports, and alignment with research objectives. The study operationalized the variables with financial performance measured through ROA, while currency, commodity, and interest rate derivatives were assessed by type, number, and monetary value. Data were analyzed using descriptive statistics (percentages, means, standard deviations) and inferential statistics through

regression analysis to determine the effect of independent variables on financial performance. Findings were presented in tables with detailed interpretations based on study objectives.

4.0 DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

The chapter focus to the data analysis and discussion where the key focus is on the analysis of the data, derivation of important insights, and commencement of discussions about the results retrieved. It provides a general description of the dataset, its peculiarities, and insights on the sample.

Descriptive Analysis

The descriptive analysis is an essential part of the data analysis process as it is an essential base of summarizing and visualizing the main characteristics, patterns, and trends of the data collected. Its main aim is to arrange, display and interpret the information in a systematic way with the intent of drawing conclusions worthwhile on the research's variables. The output of the descriptive analysis

provided some insight into the statistical characteristics of the factors being studied including the mean, standard deviation, minimum and maximum values. These findings are presented in Table 1.

Table 1: Descriptive Results

Variable	Obs	Mean	Std. Dev.	Min	Max
Financial Performance	35	0.4263	0.2885	0.0717	1.1842
Currency Derivatives Usage	35	2254.00	733.17	604.00	3336.00
Commodity Derivatives Usage	35	27971.49	22931.75	5600.00	77482.00
Interest Rate Derivatives Usage	35	425.17	286.88	22.36	983.56

Source: Study Data (2025)

The descriptive statistics in Table 1 present an overview of financial performance, currency derivatives, commodity derivatives, and interest rate derivatives for the commercial parastatals studied. The mean financial performance was 0.4263 with a relatively high standard deviation of 0.2885, indicating substantial variation among entities. The minimum (0.0717) and maximum (1.1842) values demonstrate a wide performance gap, suggesting that while some parastatals performed strongly, others faced significant financial challenges. Such disparities may arise from industry characteristics, managerial practices, or macroeconomic conditions.

Currency derivatives recorded an average usage of KES 2,254 million with a standard deviation of KES 733.16 million, showing considerable variability in hedging practices. The minimum and maximum values, KES 604 million and KES 3,336 million respectively, indicate that some parastatals faced higher foreign exchange exposure, prompting greater reliance on derivative instruments, while others had limited need for such strategies.

Commodity derivatives displayed the highest variability, with a mean of KES 27,971.49 million and an exceptionally large standard deviation of KES 22,931.75 million. The wide range (KES

5,600 million to KES 77,482 million) suggests that some parastatals are heavily exposed to commodity price risks, whereas others are far less dependent on commodity-related hedging.
Interest rate derivatives exhibited moderate variability, with an average usage of KES 425.17 million and a standard deviation of KES 286.88 million. The minimum and maximum values (KES 22.36 million and KES 983.56 million) reflect differing levels of exposure to interest rate fluctuations, influenced by each organization's debt portfolio, capital structure, and risk management policies.

B. Correlation Analysis Results

Correlation analysis revealed the strength and direction of relationships between financial derivatives and performance, showing strong interdependence among listed Kenyan parastatals' variables. Table 4.4.

Table 2: Correlation Results

	Financial Performance	**Currency Derivatives Usage**	**Commodity Derivatives Usage**	**Interest Derivatives Usage**
Financial Performance	1.0000			
Currency Derivatives Usage	0.2089	1.0000		
Commodity Derivatives Usage	-0.4482*	0.4289*	1.0000	
Interest Derivatives Usage	0.2041	-0.3566*	-0.4530*	1.0000

Source: Study Data (2025)

Asterisks (*): significant

The study's correlation analysis showed important relationships between financial derivative use and the financial performance of commercial parastatals listed on the NSE. Currency derivatives had a weak positive correlation with financial performance (0.2089), suggesting that effective hedging of exchange-rate risks may slightly enhance stability and returns. This aligns with findings by Omar and Banafa (2022), Muthine (2021), and Machio (2021), who reported insignificant but directionally positive effects. Conversely, commodity derivatives demonstrated a significant negative relationship with financial performance (-0.4482*). This indicates that heavy reliance on commodity hedging may lower performance, likely due to price volatility and unpredictability. This supports earlier findings by Blaise and Mulyungi (2018) and Mauti (2019), who noted strong impacts of commodity-related risks on firm value. Interest rate derivatives also had a weak positive association with performance (0.2041), implying limited but favorable influence. However, their negative relationship with currency (-0.3566) and commodity derivatives (-0.4530) suggests firms may substitute among derivative types depending on shifting risk exposures. These results are consistent with Banda (2018), who identified mixed effects of derivatives on ROA, and with Ndallah (2020), who found positive hedging outcomes. Wen et al. (2021) also emphasized that derivative impacts on firm performance are often statistically insignificant.

C. Diagnosis Test

Normality Test Results

The Shapiro-Wilk test was used to determine whether the variables of study were normal. This test is used to check the hypothesis of a normally distributed population to which the sample data is based. Table 4.5 provides the results.

Table 3: Shapiro-Wilk Test Results

Variable	Obs	W (Shapiro-Wilk test statistic)	V - Variance	z-score	p-value
Financial Performance	35	0.88028	4.273	3.032	0.00122
Currency Derivatives Usage	35	0.92980	2.505	1.917	0.02760
Commodity Derivatives Usage	35	0.79932	7.163	4.110	0.00002
Interest Derivatives Usage	35	0.92782	2.576	1.976	0.02410

Source: Study Data (2025)

The results of the Shapiro-Wilk test reveal that, all the variables in the study such as financial performance, currency derivatives usage, commodity derivatives usage and interest rate derivatives usage had p-values that had p-values lower than the normal level of 0.05. This finding shows that the data of these variables significantly differs with a normal distribution and therefore the null hypothesis of normality has to be rejected. In order to correct these infractions, the research has used powerful regression models as these are less sensitive to non-normality and present more reliable estimates in case of non-normality (Onder and Zaman, 2009). The use of parametric methods is also supported by the Central Limit Theorem in the present case. As the sample size is above 30 observations, the sample mean assumes a normal distribution, irrespective of the data assuming normality (Bodnar, Mazur and Parolya, 2016). This statistical property allows applying regression analysis and testing both hypotheses provided that the dataset is not initially normal.

Heteroscedasticity Test Results

Heteroscedasticity occurs when error variances differ across observations, risking biased estimates; the study tested this using the Breusch–Pagan method (Table 4).

Table 4: Breusch-Pagan Test Results

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
Ho: Constant variance
Variables: fitted values of Financial Performance
chi2(1) = 3.98
Prob> chi2 = 0.0460

Source: Study Data (2025)

The chi-square statistic of the test was 3.98 with a p-value of 0.0460. The p-value is lower than the traditional level of significance 0.05; hence, we reject the null hypothesis of equal variance. This result demonstrates that the model has a heteroscedasticity, which implies that the variability

of the residues varies at varying levels of financial performance. However, to achieve the reliability of the outcome, through the employment of physically strong standard errors achieved the robustness of the parameter estimates and the standard errors of the estimated model.

Autocorrelation Test Results

Autocorrelation occurs when regression residuals correlate over time, causing inefficient estimates and invalid tests. The Breusch–Godfrey test checked its presence (5).

Table 5: Breusch-Godfrey test Results

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	36.49469	Prob. F(2,70)	0.0000
Obs*R-squared	25.04798	Prob. Chi-Square (2)	0.0000

Source: Study Data (2025)

The scores of the test indicated that there was a major problem of the existence of serial correlation in the residual of the regression model. The test was 36.49469 with a very small p-value at 0.0000 that resulted in the rejection of the null hypothesis that there is no serial correlation. This result generates significant evidence that the residuals have a systematic form of relation through time, which is contrary to the assumption of independence. King and Roberts (2015) therefore proposed employing strong standard errors to help reduce the impact of serial correlation and make valid statistical findings in regression analysis. In the same way, Kiefer and Vogelsang (2002) also gave a clear illustration of how strong standard errors can positively address the issues brought about by autocorrelation.

Multicollinearity Test Results

Multicollinearity arises when predictors are highly correlated, inflating standard errors and weakening coefficient reliability. A VIF threshold of 5 was applied (Table 6).

Table 6: VIF Results

Variable	**VIF**	**1/VIF**
Currency Derivatives Usage	1.28	0.782858
Commodity Derivatives Usage	1.40	0.712906
Interest Derivatives Usage	1.31	0.762536
Mean VIF	**1.33**	

Study Data (2025)

The overall VIF of all the variables is 1.33, which is significantly lower than 5. Such a low mean as a whole means that multicollinearity is not a major issue in the analysis. This indicates that the regression model is able to estimate the coefficients of the individual independent variables with a high degree of confidence without the chances of overstating the standard errors of the regressions. The multicollinearity between the independent variables was low, which indicates that the regression model was used to give credible estimates on the impacts of currency, commodity and interest derivatives usage on financial performance. This trustworthiness increases the possibility of making sound decisions out of the analysis.

Stationarity Test Results

Stationarity means constant mean and variance over time; non-stationary data require transformation. A Fisher-Type test confirmed suitability for reliable modelling (Table 7).

Table 7: Fisher-Type Test Results

Variable	Statistic	P-value	Comment
Financial Performance	79.6553	0.0000	Stationary
Currency Derivatives Usage	78.6879	0.0000	Stationary
Commodity Derivatives Usage	90.6873	0.0000	Stationary
Interest Rate Derivatives Usage	58.4844	0.0000	Stationary

Source: Study Data (2025)

All the variables yield test statistic of p-values of 0.0000 which means that are stationary. This implies that the all the factors do not show any trend or seasonal variations over time and therefore it is easier to analyze and predict future performance depending on the past data. The findings support the conclusion that the indicators of performance and the use of derivatives do not change over the period of time, which makes it possible to build more powerful analytical models and forecasting methods. This stability is especially advantageous to the decision-makers in such organizations as they will be able to make strategic choices and ensure the risk management practices based on historical data.

Model Specification Results

The term model specification is used to imply the procedure of selecting the right model structure and variables to well model the relationship between the dependent variable and independent variables in a panel dataset. This is as to how to use fixed effects models or random effects models. Hausman test was utilized to make this decision and Table 4.10 comprises the results.

Table 8: Hausman Test Results

	(b) Fixed	(B) Random	(b-B) Difference	Sqrt (diag(V_b-V_B)) S.E.
Currency Derivatives Usage	-7.09e-06	.0000235	-.0000306	.0000305
Commodity Derivatives Usage	-5.09e-06	-5.09e-06	2.19e-09	8.06e-07
Interest Rate Derivatives Usage	5.17e-06	.0000131	-7.97e-06	.0000195
Chi2 (3)	1.57			
Prob>chi2	0.6668			

Study Data (2025)

The Chi-squared test of the Hausman statistic is 1.57 and p-value 0.6668. The large p-value suggests that there is insignificant difference between the fixed and random effects estimate. As a result, the null hypothesis is not rejected, and it can be assumed that the random effects model can be used in this analysis. The large p-value indicates that the random effects model is right because it gives a flexible way of analyzing the data taking into consideration the unobserved heterogeneity.

D. Regression Results

Regression analysis quantified how financial derivatives influence NSE-listed parastatals' performance, helping predict variable effects. Related results are presented in Table 9.

Table 9: Regression Results

Financial Performance	Coef.	Robust Std. Err.	z	P>z	[95% Conf.	Interval]
Currency Derivatives Usage	.0000235	.0000352	0.67	0.504	-.0000455	.0000926
Commodity Derivatives Usage	-5.09e-06	2.13e-06	-2.40	0.017	-9.26e-06	-9.25e-07
Interest Rate Derivatives Usage	.0000131	.0000808	0.16	0.871	-.0001451	.0001714
_cons	.5100527	.1605752	3.18	0.001	.1953312	.8247743
Wald chi2 (3)	22.55					
Prob> chi2	0.0001					
R-Square	0.2559					

Study Data (2025)

The result revealed the constant term (intercept) value equals to 0.5100527 with a p-value of 0.001 showing that the constant value is significant in statistical terms. This implies that, averagely, other factors that are not incorporated in the model have a positive impact on the financial performance of these parastatals. The Wald chi-square statistic of = 22.55, p= 0.0001, shows that the entire regression model is statistically significant. This infers that the combination of the model can be handy in estimating the financial performance of these parastatals on how they use the financial derivatives. The value of the R-squared is 0.2559 which implies an observation that the usage of these financial derivatives is likely to explain between 25.59 and 100 percent of the variability in the financial health of the commercial parastatals. As a result of exposing the coefficient value related to the usage of currency derivatives is 0.0000235 and the p-value is 0.504, which reveals that the variable is not significant at the traditional levels. This implies that there is insignificant effect on the financial performance of such parastatals in the event that currency derivatives are used. Accordingly, the coefficient of the use of commodity derivatives is -5.09 whose p-value of 0.017 demonstrates that the factor is not statistically significant at 5 percent level. This is a negative coefficient that is indicative to the effect of more dependence on the commodity derivatives and a drop in the financial performance of these parastatals. Additionally, the correlation coefficient of interest rate derivatives use is 0.0000131, and the p-value of this is 0.871 which depict non-statistical significance. This implies that there is no apparent impact of interest rate derivatives use on the financial performance of parastatals.

4.7 Regression Results

Regression analysis examined how currency, commodity, and interest rate derivatives impact NSE-listed parastatals' performance, quantifying effects and significance (Table 10).

Table 10: Regression Results

Financial Performance	Coef.	Robust Std. Err.	z	P>z	[95% Conf.	Interval]
Currency Derivatives Usage	.0000235	.0000352	0.67	0.504	-.0000455	.0000926
Commodity Derivatives Usage	-5.09e-06	2.13e-06	-2.40	0.017	-9.26e-06	-9.25e-07
Interest Rate Derivatives Usage	.0000131	.0000808	0.16	0.871	-.0001451	.0001714
_cons	.5100527	.1605752	3.18	0.001	.1953312	.8247743
Wald chi2 (3)	22.55					
Prob> chi2	0.0001					
R-Square	0.2559					

Study Data (202

The result revealed the constant term (intercept) value equals to 0.5100527 with a p-value of 0.001 showing that the constant value is significant in statistical terms. This implies that, averagely, other factors that are not incorporated in the model have a positive impact on the financial performance of these parastatals. The Wald chi-square statistic of = 22.55, p= 0.0001, shows that the entire regression model is statistically significant. This infers that the combination of the model can be handy in estimating the financial performance of these parastatals on how they use the financial derivatives. The value of the R-squared is 0.2559 which implies an observation that the usage of these financial derivatives is likely to explain between 25.59 and 100 percent of the variability in the financial health of the commercial parastatals.

As a result of exposing the coefficient value related to the usage of currency derivatives is 0.0000235 and the p-value is 0.504, which reveals that the variable is not significant at the traditional levels. This implies that there is insignificant effect on the financial performance of such parastatals in the event that currency derivatives are used. Accordingly, the coefficient of the use of commodity derivatives is -5.09 whose p-value of 0.017 demonstrates that the factor is not statistically significant at 5 percent level. This is a negative coefficient that is indicative to the effect of more dependence on the commodity derivatives and a drop in the financial performance of these parastatals. Additionally, the correlation coefficient of interest rate derivatives use is 0.0000131, and the p-value of this is 0.871 which depict non-statistical significance. This implies that there is no apparent impact of interest rate derivatives use on the financial performance of parastatals.

5.0 CONCLUSIONS

Based on the findings, the study concludes that the use of financial derivatives has a limited and nuanced effect on the financial performance of commercial parastatals listed on the Nairobi Securities Exchange. Firstly, the usage of currency derivatives was found to have an insignificant positive effect, indicating that while they may contribute to stabilizing foreign exchange exposure, their impact on key performance metrics like ROA is not statistically definitive. Secondly,

commodity derivatives usage demonstrated a significant negative relationship with financial performance, suggesting that hedging activities in volatile commodity markets may introduce costs or complexities that outweigh their stabilizing benefits for these entities. Finally, interest rate derivatives showed no significant effect, implying that their role in managing debt-related risks does not translate into measurable performance improvements within this sample. Overall, the model explains only 25.59% of the variance in performance, highlighting that factors beyond derivative usage—such as governance, operational efficiency, and macroeconomic conditions are predominant drivers of financial outcomes for NSE-listed parastatals.

6.0 RECOMMENDATIONS

The study recommends that the management of commercial parastatals should adopt a more strategic and discerning approach to financial derivatives. Specifically, they should conduct rigorous cost-benefit analyses before engaging in commodity hedging, given its observed negative association with performance, to ensure such instruments align with specific risk exposures rather than being used generically. For currency and interest rate derivatives, boards should mandate clearer policies and enhanced disclosure to improve transparency and ensure these tools are used for genuine hedging purposes rather than speculation. Furthermore, regulatory bodies, including the Capital Markets Authority and the National Treasury, should develop targeted capacity-building programs to improve financial risk management literacy among parastatal executives and finance officers. This will empower them to design and implement more effective, performance-enhancing hedging strategies tailored to the unique public-commercial dual mandate of these institutions.

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