GREAT JOURNS

Journal of Finance

Vol.4 No.2, November 2026

Risk Tolerance and Adoption of Derivative Instruments by Commercial Banks in Kenya

[1]Moffart Ombiro Ayub
Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya
Corresponding author: Moffart Ombiro Ayub

[2]Dr. Julius Miroga
Lecturer
Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya
Corresponding author: Moffart Ombiro Ayub



Great Journs
ISSN: 2328-4870
Vol.4 No.2, November , 2026

Journal homepage: www.greatjourns.com

ABSTRACT

This paper reports the first objective of a wider study on firm-specific antecedents of derivative adoption: to evaluate the influence of risk tolerance on the adoption of derivative instruments by commercial banks in Kenya. Kenya's derivatives market remains shallow despite the launch of the NEXT derivatives market at the Nairobi Securities Exchange, and the value of financial derivatives held in the financial sector fell from Ksh 462.3 million in 2016 to Ksh 219.6 million in 2018. The study was anchored on agency theory and Markowitz's modern portfolio theory. A descriptive survey design and a census of commercial banks licensed by the Central Bank of Kenya were adopted. Structured questionnaires were administered to financial risk managers in 36 banks, and 32 usable responses were obtained (88.9%). The nine-item risk tolerance scale was reliable (Cronbach's alpha = 0.737). Data were analysed using descriptive statistics, Pearson correlation and multiple regression. Respondents strongly agreed with statements describing their banks' risk posture (overall mean = 4.34 on a five-point scale), and the costs of a derivatives programme were seen as exceeding its benefits (mean = 4.44). Risk tolerance had a weak to moderate, negative and significant correlation with adoption ($r = -0.342$, $p = 0.028$). In the multiple regression model, which explained 83.2% of the variation in adoption ($F = 33.388$, $p < 0.001$), the effect of risk tolerance was negative but not statistically significant ($\beta = -0.100$, $t = -1.140$, $p = 0.264$). The study concludes that risk appetite on its own does not determine whether Kenyan banks adopt derivatives; its influence appears to operate through the perceived cost and complexity of derivative contracts. Bank boards should set explicit hedging policies that do not depend on managerial risk appetite, and regulators should lower the cost of entry into derivative markets.

Keywords: *Risk Tolerance, Derivative Instruments, Hedging, Commercial Banks, Agency Theory, Kenya*

1. Introduction

1.1 Background of the Study

A derivative is a financial contract whose value is derived from an underlying asset, rate or index (Baker, 2022). Derivatives are traded either on organised exchanges, through a clearing house that guarantees settlement, or over the counter (OTC), where two parties negotiate a contract tailored to their needs (Sanghvi, Sharma & Chandani, 2024; Mwita, 2023). Forwards, futures, options and swaps allow firms to fix the price of currencies, interest rates and commodities in advance, and so reduce the volatility of their cash flows and earnings. Banks play a dual role in these markets: they use derivatives to hedge their own balance sheets, and they act as market makers that provide liquidity to corporate clients (Al Janabi, 2022).

Derivative markets are one of the four pillars of a complete capital market, alongside securities markets, banking, and insurance and pension funds (Dodd, Kalimipalli & Chan, 2021). Europe now accounts for about 38% of global derivatives activity (Dzedulionis, 2025), and India's market has grown steadily in volume and number of contracts since trading was re-introduced in 2000 (Vinitha & Sureshbabu, 2022). In Sub-Saharan Africa, only South Africa, Nigeria and Ghana have developed financial derivative markets of any depth (Usman, Oladejo, Adeoye & Alimi, 2023). South Africa's market grew from the informal launch of the South African Futures Exchange (SAFEX) in 1987, which the JSE absorbed in 2001 (Chikwira, 2021).

Kenya launched its derivatives market, NEXT, at the Nairobi Securities Exchange (NSE) in 2016. The launch responded to growing volatility in asset prices, closer integration of Kenyan

and international financial markets, and the availability of more sophisticated risk management tools (Mohamud, Kimutai & Kariuki, 2025). NEXT trades equity index futures and single stock futures, cleared through an NSE subsidiary whose clearing members are banks and other financial institutions (Oyucho, Ochieng' & Agong', 2023). Commercial banks therefore sit at the centre of the market's design. They are expected to clear trades, make markets and use derivatives to manage their own foreign exchange, interest rate and credit exposures.

1.2 Statement of the Problem

Uptake of derivatives by Kenyan firms has been slow. About 60% of commercial banks report using some form of derivative for hedging, speculation or both (Chome & Willis, 2024), and only 54.1% of listed non-financial firms hedge their financial exposures with derivatives (Alinoor, Hamza & Okiro, 2023). Data from the Kenya National Bureau of Statistics show that the value of financial derivatives held in the financial sector fell from Ksh 462.3 million in 2016 to Ksh 323.2 million in 2017 and Ksh 219.6 million in 2018. Practitioners attribute the slow uptake to the legal framework, poor market development, low investor awareness and complex contracts (Koskei, 2024), but few studies have tested these explanations in the banking sector.

One explanation that has not been tested for Kenyan banks is risk tolerance: the willingness of a bank and its managers to carry unhedged exposure. Agency theory suggests that managers whose pay is tied to short-term profit may avoid the cost of hedging and accept more risk than shareholders would choose. Studies of listed non-financial firms in Kenya (Hamza, Alinoor, Abdi, Nyabuti & Okiro, 2023), life insurers in Korea (Chidaushe & Njaya, 2022) and listed firms in Pakistan (Khan et al., cited in Irungu, 2021) found that risk-averse firms hedge more. None of these studies examined commercial banks, whose exposures, regulation and role as market makers differ from those of other firms. It is therefore not known whether the risk posture of Kenyan banks helps to explain their limited use of derivatives.

1.3 Objective and Hypothesis

The wider study examined four firm-specific antecedents of derivative adoption: risk tolerance, contract complexity, public awareness framework and liquidity. This paper reports its first specific objective, which was to evaluate the influence of risk tolerance on the adoption of derivative instruments by commercial banks in Kenya. The objective was tested through the following null hypothesis:

H01: Risk tolerance has no significant influence on the adoption of derivative instruments by commercial banks in Kenya.

The paper makes three contributions. It provides the first bank-level evidence from Kenya on the link between risk posture and derivative use. It tests the effect of risk tolerance while controlling for the other three antecedents, which shows whether risk tolerance has an independent effect. Finally, it draws out implications for bank boards, the Central Bank of Kenya (CBK) and the Capital Markets Authority (CMA). Section 2 reviews theory and evidence, Section 3 describes the methodology, Section 4 presents the results, Section 5 discusses them and Section 6 concludes.

Great Journs
ISSN: 2328-4870
Vol.4 No.2, November , 2026

Journal homepage: www.greatjourns.com

2. Literature Review

2.1 Theoretical Review

Agency theory. Jensen and Meckling (1976) describe the firm as a nexus of contracts in which shareholders (principals) delegate decisions to managers (agents). Because the interests of the two parties differ, managers may take decisions that serve their own pay, prestige or job security rather than shareholder value (Aluchna, 2023; Al-Faryan, 2024). Hedging is one such decision. A derivatives programme has visible costs in the form of premiums, margin, systems, specialist staff and reporting, while its benefits, the losses avoided, are much less visible. A manager whose bonus is tied to reported profit may therefore avoid hedging and accept more exposure than shareholders would choose. Agency theory thus predicts that managerial risk appetite influences derivative use, with more risk-tolerant management hedging less.

Modern portfolio theory. Markowitz (1952) showed that the risk of a portfolio depends on the variances of individual assets and on the covariances among them, so that a combination of assets can carry less risk than any single holding. Portfolio construction is a continuous process of adding and removing assets until the risk–return trade-off matches the investor's preferences (Berk & Tutarlı, 2021; Lindquist, Rachev, Hu & Shirvani, 2022). For a bank, derivatives are instruments whose pay-offs are negatively correlated with existing exposures; a currency forward, for example, gains when the bank's foreign currency assets lose value. How far a bank uses them depends on where it chooses to sit on the efficient frontier. A risk-tolerant bank accepts higher variance in return for higher expected return and has less reason to pay for hedges, whereas a risk-averse bank will pay to reduce variance.

Taken together, the two theories predict a negative relationship between risk tolerance and derivative adoption where derivatives are used for hedging. The prediction may be reversed where derivatives are used for speculation, since speculative positions are themselves a form of risk taking (Hemrajani, Rajni & Dhiman, 2024).

2.2 The Concept of Risk Tolerance

Risk tolerance is the willingness and psychological ability of an investor to bear the possibility of losing money on an investment (Hemrajani et al., 2024). In Markowitz's framework, risk taking depends on expected return, expected risk and the decision maker's attitude to risk (Bunyamin & Wahab, 2022). For a firm, risk tolerance is shaped by the board's appetite for risk, the attitudes of senior managers, the exposures its business model creates and the buffers it holds against loss, and it can change with economic conditions. Table 1 shows how risk tolerance and the other study variables were operationalised.

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ISSN: 2328-4870
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Table 1

Operationalisation of Study Variables

Variable	Role in this paper	Indicators
Risk tolerance	Independent (focus)	Firm attitude to risk; managerial risk appetite; cross-border operations; reserves and provisions
Contract complexity	Control	Skills required; valuation of derivatives; ease of liquidation; trading technology
Public awareness framework	Control	Trading platforms; information symmetry; financial literacy; specialised departments
Liquidity	Control	Capital above the regulatory minimum; profitability; liquid assets
Adoption of derivative instruments	Dependent	Use of forwards, futures, options and swaps

Note. Control variables are the other three antecedents examined in the wider study.

2.3 Empirical Review

Evidence from outside banking consistently links risk aversion with greater hedging. In Kenya, Murungi (cited in Hamza et al., 2023) studied non-financial firms listed at the NSE using logit regression on survey and financial report data, and found that firms whose managers were risk averse were more likely to hedge than firms whose managers had a high risk appetite. In Korea, Hee and Song (cited in Chidaushe & Njaya, 2022) found that risk-averse life insurers used derivatives to control their exposures, and that derivatives were cheaper than traditional reinsurance and covered macroeconomic risks that reinsurance does not.

Khan, Ali, Kiran, Mubeen, Khan and Ali (cited in Irungu, 2021) studied 51 non-financial firms in Pakistan between 2010 and 2013. Using logistic regression with derivative use as a binary outcome, they found that financially distressed firms, firms with lower interest cover, firms with more foreign sales and firms with lower managerial shareholdings were more likely to hedge foreign exchange risk, and that risk tolerance was negatively related to the decision to use derivatives. Phan, Nguyen and Faff (cited in Bachiller, Boubaker & Mefteh-Wali, 2021) reached a similar conclusion for Australian firms, which used derivatives to reduce the expected costs of financial distress and to enhance firm value rather than to protect managers' wealth.

Evidence from banks is thinner. Al-Slehat, Al-Sharif and Qwader (cited in Osundwa & Abayo, 2022) surveyed the 13 commercial banks in Jordan and found that contract complexity and limited investor awareness, rather than risk attitudes, were the main barriers to derivative use. In Kenya, Kamenchu (cited in Isabwa, 2022) found that technology, the legal framework and trade liberalisation were the leading drivers of derivative use among commercial banks, but did not test risk attitudes. A study in Israel found that only 22% of commercial banks had adopted derivatives, with most avoiding swaps and options (Osundwa & Abayo, 2022).

2.4 Research Gap

Three gaps emerge from this review. First, the evidence linking risk tolerance to derivative use comes almost entirely from non-financial firms and insurers, whose exposures differ from those of banks. Second, Kenyan studies of derivative use by banks have focused on technology, regulation, market infrastructure and liberalisation, and none has measured risk tolerance directly. Third, most studies test risk attitudes in isolation, so it is not known whether risk tolerance has an effect of its own once the cost, complexity and information barriers to derivative use are taken into account. This paper addresses these gaps by testing the effect of risk tolerance on derivative adoption among Kenyan commercial banks while controlling for contract complexity, public awareness framework and liquidity.

3. Research Methodology

3.1 Research Design, Population and Respondents

The study adopted a descriptive survey design, which allows data to be collected in a standardised form from members of a population and the relationships between variables to be examined (Ghanad, 2023; Firdaus, Zulfadilla & Caniago, 2021). The target population was the 40 commercial banks licensed by the CBK as at 31 December 2019; banks in receivership were excluded. Because the population was small, a census was adopted, which removes sampling error (Mishra & Alok, 2022). Four banks were used for the pilot study and excluded from the main survey, leaving 36 banks. In each bank the respondent was the financial risk manager, or the manager directly responsible for formulating and executing derivatives policy.

3.2 Research Instrument, Validity and Reliability

Data were collected with a structured, closed-ended questionnaire rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Risk tolerance was measured with nine statements covering the bank's attitude to risk, management's risk appetite, cross-border operations, and reserves and provisions for derivative risk. The adoption of derivative instruments was measured with six statements on the use of forwards, futures, options and swaps. Items on adoption were worded as statements of non-use, so agreement indicates limited use of the instrument. Content validity was established by having finance scholars review the instrument. The pilot study in four Nairobi banks, about 10% of the population as recommended by Wadood, Akbar and Ullah (2021), was used to refine ambiguous items.

Reliability was tested with Cronbach's alpha, with coefficients above 0.70 taken as acceptable (Coleman, 2022). As Table 2 shows, all scales met this threshold, including the risk tolerance scale ($\alpha = 0.737$).

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Table 2

Reliability of the Research Instrument

Variable	Number of items	Cronbach's α
Risk tolerance	9	.737
Complexity of derivatives contract	10	.809
Public awareness framework	9	.806
Liquidity	8	.844
Adoption of derivative instruments	6	.837

Note. Coefficients of .70 or higher indicate acceptable internal consistency.

3.3 Data Collection and Analysis

After obtaining an introduction letter from the university and a research permit from the National Commission for Science, Technology and Innovation (NACOSTI), the researcher delivered one questionnaire to the head office of each bank through its public relations office. Respondents were given two weeks to complete the questionnaire. Responses were coded and analysed in SPSS. Means and standard deviations summarised the risk tolerance and adoption items, Pearson correlation measured the association between the variables, and ordinary least squares multiple regression estimated the effect of risk tolerance while controlling for the other three antecedents. The model was specified as:

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \varepsilon$$

where Y is the adoption of derivative instruments, X1 is risk tolerance (the focus of this paper), X2 is complexity of derivatives contract, X3 is public awareness framework, X4 is liquidity, β0 is the constant, β1 to β4 are the coefficients and ε is the error term. H01 was tested at the 0.05 level of significance: it is rejected if the p-value of β1 is below 0.05. The model was checked for multicollinearity using the variance inflation factor (VIF), for normality using the Shapiro–Wilk test and for linearity using a scatter plot with a fitted regression line.

4. Results

4.1 Response Rate

Of the 36 questionnaires issued, 32 were completed and returned in usable form, a response rate of 88.9%. Three questionnaires (8.3%) were not returned and one (2.8%) was incomplete. A response rate at this level is adequate for analysis and reporting.

4.2 Risks Facing Commercial Banks

Respondents were first asked to rate the extent to which various risks affect their banks' operations. Credit risk was rated the most serious, with 81.3% of banks reporting a very high extent, followed by foreign exchange risk (96.9% high or very high) and interest rate risk (90.7% high or very high), as shown in Table 3. Liquidity risk was rated the least serious. Foreign

exchange and interest rate risks are precisely the exposures that forwards, futures, options and swaps are designed to hedge, so Kenyan banks face material hedgeable risk.

Table 3

Extent to Which Risks Affect the Operations of Commercial Banks

Risk type	Less extent	Moderate extent	High extent	Very high extent
Credit risk	0 (0.0%)	0 (0.0%)	6 (18.8%)	26 (81.3%)
Foreign exchange risk	0 (0.0%)	1 (3.1%)	18 (56.3%)	13 (40.6%)
Interest rate risk	1 (3.1%)	2 (6.3%)	19 (59.4%)	10 (31.3%)
Operational risk	1 (3.1%)	7 (21.9%)	19 (59.4%)	5 (15.6%)
Liquidity risk	10 (31.3%)	19 (59.4%)	3 (9.4%)	0 (0.0%)

Note. $N = 32$. Values are frequencies, with percentages in parentheses.

4.3 Descriptive Statistics for Risk Tolerance

Table 4 presents responses to the nine risk tolerance statements, ordered from the most to the least supported. Respondents agreed or strongly agreed with every statement, with an overall mean of 4.34 (SD = 0.619). The most strongly supported statement was that the costs of establishing and maintaining a derivatives programme exceed its expected benefits (mean = 4.44, SD = 0.716). Respondents also agreed that their banks hold financial instruments across Kenya's borders (mean = 4.41) and have subsidiaries abroad (mean = 4.38). This means that the banks carry cross-border exposures that could be hedged.

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ISSN: 2328-4870
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Table 4

Descriptive Statistics for Risk Tolerance

Statement	Min	Max	*M*	*SD*
Costs of establishing and maintaining a derivative programme exceed the expected benefits	2	5	4.44	0.716
The bank holds financial instruments across the border of Kenya	3	5	4.41	0.615
The use of derivative instruments increases bank investment risks in the medium and long term	3	5	4.41	0.560
The bank has subsidiaries abroad	2	5	4.38	0.660
The bank lacks adequate reserves and provisions to cover the financial risks related to derivative instruments	3	5	4.38	0.609
Profit and loss fluctuation associated with the use of financial derivatives is high	3	5	4.38	0.554
The bank does not intend to establish specialised departments for derivative risk management	3	5	4.28	0.523
Bank top management are risk averse	2	5	4.25	0.762
The bank has a reserved outlook on the opportunities existing in derivative instruments	3	5	4.16	0.574
Overall mean score			4.34	0.619

Note. $N = 32$. Items were rated on a five-point scale (1 = strongly disagree, 5 = strongly agree).

The pattern of responses describes a particular risk posture. Banks carry substantial foreign exchange and cross-border exposures, yet they see derivatives themselves as a source of risk: they agreed that derivatives increase investment risk (mean = 4.41) and produce high profit and loss volatility (mean = 4.38). They also reported that they lack the reserves to cover derivative-related risk (mean = 4.38) and have no plans to create specialised derivative risk departments (mean = 4.28). In other words, the banks are willing to carry unhedged exposure on their balance sheets but are reluctant to take on the different risks, costs and capacity requirements of a derivatives programme.

4.4 Adoption of Derivative Instruments

The adoption scale had an overall mean of 4.03 (SD = 0.835). Because the adoption items were worded as statements of non-use, this indicates that use of derivatives among the banks was low. The statement most strongly supported was that banks avoid futures contracts in their investment instruments (mean = 4.22, SD = 0.792), while the least supported was that banks do not purchase

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ISSN: 2328-4870
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options contracts (mean = 3.75, SD = 0.842). Options were therefore the instrument most often used, and futures the least.

4.5 Diagnostic Tests

The VIF for risk tolerance was 1.153 (tolerance = 0.867), and the VIFs for the other predictors ranged from 1.135 to 1.557, well below the threshold of 10, so multicollinearity was not a concern. The Shapiro–Wilk test showed some departure from normality for the risk tolerance scores ($W = 0.740$, $p < 0.001$), which is common with Likert-scale data clustered at the upper end of the scale. Because the study used a census rather than a sample, this was not considered a serious problem for estimation. The scatter plot showed observations distributed along the fitted line, supporting the assumption of linearity.

4.6 Correlation Analysis

Table 5 reports the Pearson correlations between risk tolerance and the other variables. Risk tolerance had a weak to moderate, negative and statistically significant correlation with the adoption of derivative instruments ($r = -0.342$, $p = 0.028$). Banks with a stronger risk tolerance posture therefore tended to report lower levels of derivative adoption. Risk tolerance was also positively and significantly correlated with complexity of derivatives contract ($r = 0.356$, $p = 0.023$), but not with public awareness framework ($r = -0.164$, $p = 0.184$) or liquidity ($r = 0.165$, $p = 0.183$).

Table 5

Pearson Correlations Between Risk Tolerance and Other Study Variables

Variable	*r*	*p*
Adoption of derivative instruments	−.342*	.028
Complexity of derivatives contract	.356*	.023
Public awareness framework	−.164	.184
Liquidity	.165	.183

Note. $N = 32$. Significance values are one-tailed. *$p < .05$.

4.7 Regression Analysis and Hypothesis Test

Table 6 summarises the multiple regression model. Together, the four antecedents had a strong correlation with adoption ($R = 0.912$) and explained 83.2% of its variation ($R^2 = 0.832$; adjusted $R^2 = 0.807$). The ANOVA confirmed that the model as a whole was statistically significant ($F(4, 27) = 33.388$, $p < 0.001$).

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Table 6

Model Summary and Analysis of Variance

R	R^2	*Adjusted* R^2	SE of estimate	*F(4, 27)*	*p*
.912	.832	.807	0.148	33.388	< .001

Note. $N = 32$. Predictors: (constant), risk tolerance, complexity of derivatives contract, public awareness framework and liquidity. Dependent variable: adoption of derivative instruments.

Table 7 reports the regression coefficients. Holding the other antecedents constant, the coefficient of risk tolerance was negative but not statistically significant ($\beta 1 = -0.100$, SE = 0.088, standardised Beta = −0.097, $t = -1.140$, $p = 0.264$). Since $p > 0.05$, the study failed to reject H01. Risk tolerance therefore has no significant independent influence on the adoption of derivative instruments by commercial banks in Kenya. By contrast, complexity of derivatives contract ($\beta = -0.157$, $p = 0.005$), public awareness framework ($\beta = 0.475$, $p < 0.001$) and liquidity ($\beta = -0.063$, $p = 0.042$) were all significant.

Table 7

Regression Coefficients

Variable	*B*	*SE*	β	*t*	*p*
(Constant)	3.418	0.492		6.948	< .001
Risk tolerance (X1)	−0.100	0.088	−.097	−1.140	.264
Complexity of derivatives contract (X2)	−0.157	0.051	−.305	−3.098	.005
Public awareness framework (X3)	0.475	0.064	.627	7.451	< .001
Liquidity (X4)	−0.063	0.030	−.202	−2.133	.042

Note. $N = 32$. Dependent variable: adoption of derivative instruments. *B* = unstandardised coefficient; *SE* = standard error; β = standardised coefficient.

Taken alone, the coefficient implies that a one-unit increase in risk tolerance is associated with a 0.100-unit decrease in adoption, in line with the direction predicted by theory. The standardised coefficient of −0.097 is the smallest of the four predictors, about one-sixth of the standardised effect of public awareness framework (0.627). Because risk tolerance was not significant, it is omitted from the estimated model:

$$Y = 3.418 - 0.157X2 + 0.475X3 - 0.063X4$$

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5. Discussion

The direction of the relationship is consistent with theory and with earlier evidence. The negative correlation between risk tolerance and adoption ($r = -0.342$) agrees with Khan et al. (cited in Irungu, 2021), who found risk tolerance to be negatively related to derivative use among Pakistani firms. It also agrees with Murungi (cited in Hamza et al., 2023) and Hee and Song (cited in Chidaushe & Njaya, 2022), who found that risk-averse managers and firms hedge more. It fits the prediction of agency theory that managers with a high risk appetite avoid the visible cost of hedging, and the prediction of portfolio theory that a bank willing to bear more variance has less reason to buy protection against it.

The effect of risk tolerance does not survive once the other antecedents are controlled for. This differs from the studies of non-financial firms and insurers, where risk aversion was a significant driver of hedging. The results point to three likely explanations.

First, risk tolerance and contract complexity overlap. Risk tolerance was significantly correlated with complexity ($r = 0.356$), and several risk tolerance items describe the cost and difficulty of running a derivatives programme: costs exceeding benefits, the lack of reserves for derivative risk and the absence of specialised departments. When complexity enters the model, it absorbs much of the variation that risk tolerance shares with adoption. This suggests that Kenyan banks' reluctance to use derivatives reflects less a deliberate appetite for risk than a judgement that derivatives are too costly and complicated relative to their benefit. This interpretation is consistent with Al-Slehat et al. (cited in Osundwa & Abayo, 2022), who found that complexity rather than risk attitudes held back derivative use among Jordanian banks.

Second, the banks surveyed view derivatives themselves as risky. Respondents agreed that derivatives increase investment risk and generate high profit and loss volatility. Where managers see a hedge as a new source of risk rather than as a reduction of existing risk, a more cautious bank will not necessarily hedge more. Risk aversion can then push a bank away from derivatives as well as towards them, and the two effects partly cancel out. This helps explain why the net effect is small.

Third, the banking environment limits the room for managerial discretion. Kenyan banks are subject to CBK capital, liquidity and risk management requirements, and respondents reported strong capital positions. Where regulation sets the boundaries of risk taking, differences in managerial appetite matter less than in non-financial firms, whose hedging decisions are largely left to management. The strong effect of public awareness framework in the same model ($\beta = 0.475$) supports this view. What determines adoption is whether banks, their staff and their clients have the information, platforms and knowledge needed to use derivatives, not how much risk management is willing to bear.

These findings have two implications for theory. For agency theory, the incentive to avoid hedging appears to be weaker in a regulated banking setting than in non-financial firms. For portfolio theory, the results show that a bank's position on the efficient frontier depends on whether it can access and understand the instruments that would move it there, as well as on its risk preferences.

The findings should be read in light of the study's limitations. The census covered 32 banks, which limits the statistical power to detect a small effect; an effect of the size observed (Beta = −0.097) might become significant in a larger sample or a panel. The data were perceptions reported by a single respondent per bank, which may introduce common-method bias. Finally, the risk tolerance scale combines attitude items with items on exposure and capacity, and the scores were concentrated at the top of the scale.

6. Conclusion and Recommendations

6.1 Conclusion

This paper set out to evaluate the influence of risk tolerance on the adoption of derivative instruments by commercial banks in Kenya. Kenyan banks face substantial hedgeable risk, particularly foreign exchange and interest rate risk, yet report low use of derivatives, and they describe a risk posture in which the costs and risks of derivatives are seen as outweighing their benefits. Risk tolerance was negatively and significantly correlated with adoption, but its effect was not significant once contract complexity, public awareness framework and liquidity were controlled for ($\beta = -0.100$, $p = 0.264$), and the null hypothesis H01 was not rejected. The study concludes that risk tolerance is not, on its own, a major determinant of derivative adoption among Kenyan commercial banks. Low uptake reflects the perceived cost, complexity and information barriers attached to derivatives more than managerial appetite for risk.

6.2 Recommendations

Bank boards and risk committees should set explicit hedging policies that state which exposures must be hedged, to what extent and with which instruments, so that the decision does not depend on the risk appetite of individual managers. Branch and treasury managers should continuously monitor the risk profiles of the bank's investments and hedge material exposures, especially foreign exchange and interest rate risk.

Risk managers should adopt computer-based risk models that measure the bank's exposures accurately. This would show the actual cost of unhedged exposure and allow the costs and benefits of a derivatives programme to be compared objectively rather than by perception. Banks should also train staff in derivative valuation and risk management, which would change the view that derivatives are a source of risk rather than a tool for reducing it.

The Central Bank of Kenya and the Capital Markets Authority should lower the fixed cost of entry into derivative markets, for example through standardised contract documentation, shared trading and clearing infrastructure, and clear guidance on the capital and accounting treatment of hedges. They should also emphasise that commercial banks need to manage material risks with appropriate instruments, whatever their risk appetite or liquidity position.

6.3 Suggestions for Further Research

Future studies could use panel data on actual derivative positions from bank financial statements, rather than perceptions, to test whether risk tolerance has a small but real effect that a larger sample would detect. Researchers could also separate attitudinal risk tolerance from exposure and capacity measures, and test whether contract complexity mediates the effect of risk tolerance on adoption. Finally, studies could extend the analysis to other derivative classes, such as commodity derivatives for oil and coffee, or survey regulators such as the CBK and CMA.

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