Financial risk management and investment decision-making: A Comparative study of commercial banks and non-bank financial institutions in Zambia

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https://doi.org/10.51867/ajernet.7.2.83

ABSTRACT

This study examined how financial risk management influences investment decision-making and institutional performance among commercial banks and non-bank financial institutions (NBFIs) in Zambia. The study was motivated by limited comparative evidence on whether the maturity of enterprise risk management (ERM) frameworks differs between banks and NBFIs and whether those differences affect investment discipline and performance outcomes. The study was anchored in Enterprise Risk Management theory, which emphasises a firm-wide approach aligned with strategy and governance. An explanatory sequential mixed-methods research design was adopted. The target population comprised 15 commercial banks and 250 non-bank financial institutions registered in Zambia, while the sample comprised risk management, investment, finance, compliance and portfolio-related professionals working in selected commercial banks and NBFIs, including pension, insurance, microfinance and asset-management institutions. A stratified sampling approach was used to secure comparable representation across commercial banks and NBFI subsectors, while purposive selection targeted respondents with direct knowledge of risk governance, risk reporting, investment analysis and portfolio monitoring. Quantitative data were collected through structured questionnaires from 422 valid respondents, consisting of 210 bank respondents and 212 NBFI respondents, and qualitative evidence was obtained from practitioner interviews and open-ended questionnaire responses. Quantitative data were analysed using descriptive statistics, independent-samples t-tests, analysis of variance, correlation and regression analysis, while qualitative evidence was analysed thematically. The findings showed that commercial banks had higher ERM maturity, broader risk-tool adoption, stronger risk-appetite alignment and stronger performance outcomes than NBFIs. ERM maturity significantly predicted investment decision quality, and both ERM maturity and investment decision quality significantly predicted performance outcomes. Regulation supported performance where institutions translated supervisory expectations into internal governance discipline. The study concludes that financial risk management should be treated as a strategic capability that strengthens investment discipline, resilience and sustainable performance rather than as a narrow compliance activity. The study recommends that NBFIs strengthen proportionate ERM frameworks, risk dashboards, stress testing, risk-appetite alignment and post-investment portfolio monitoring, while regulators should support capability-based supervision across banking and non-bank financial sectors.

Keywords: Commercial Banks, Enterprise Risk Management, Financial Risk Management, Investment Decision-Making, Non-Bank Financial Institutions, Zambia

I. INTRODUCTION

Financial institutions play a central role in economic growth by mobilising savings, allocating capital, providing payment services and facilitating financial intermediation (Howells & Bain, 2007). In performing these functions, commercial banks and NBFIs are exposed to credit, market, liquidity, operational and strategic risks that can affect profitability, institutional resilience and the protection of depositors, policyholders, pension members and investors (Bessis, 2015; Van Greuning & Brajovic Bratanovic, 2009). Financial risk management has therefore evolved from a narrow control activity into a strategic governance process concerned with identifying, measuring, monitoring and controlling risks in ways that support long-term institutional sustainability (Bromiley et al., 2015).

The Zambian financial sector consists of commercial banks and diverse NBFIs, including pension funds, insurers, microfinance institutions, development finance institutions and capital-market actors. Although commercial banks remain central to formal financial intermediation, NBFIs increasingly contribute to long-term savings, insurance protection, microcredit, asset management and capital-market development. This broader financial structure makes comparative risk governance important because banks and NBFIs differ in liability structure, liquidity needs, investment horizons, regulatory expectations and client-protection responsibilities. More recently, Zambia has experienced a financial stability assessment that reinforced the presence of vulnerabilities (concentration risk, maturity mismatches, dollarisation, inflationary pressure and macroeconomic uncertainty), which further call for effective risk governance and structured investment decision-making (Bank of Zambia, 2024).

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To this end, the analysis compares financial risk management practices and investment decision-making between commercial banks and NBFIs in Zambia. It investigates differences in ERM maturity between banks and NBFIs, whether stronger ERM leads to higher-quality investment decision-making, and whether these practices are associated with better institutional performance. These questions are important because previous studies show that integrated risk governance enhances resource allocation, risk-adjusted performance and organisational resilience (Baxter et al., 2013; Quon et al., 2012; Gonzalez et al., 2020), yet comparative African evidence on banks and NBFIs remains limited. Therefore, the overall objective of this study was to assess how financial risk management frameworks influence investment decision-making and performance outcomes in commercial banks and non-bank financial institutions in Zambia.

1.1 Statement of the Problem

Previous studies have established that risk management can influence financial performance, particularly in commercial banking settings. Banking studies have shown a strong relationship between credit risk management, capital adequacy, corporate governance, regulatory oversight and improved bank performance and stability (Ogboi & Unuafe, 2013; Simpasa, 2013; Van Greuning & Brajovic Bratanovic, 2009). International empirical studies on ERM have also suggested that corporate governance of risk can enhance firm value, resource allocation and performance (Baxter et al., 2013; Bromiley et al., 2015; Quon et al., 2012). Most available evidence is either institution-specific, focused on a single risk type such as credit risk, or based on developed-market contexts. Knowledge remains scant on how ERM maturity differs between commercial banks and heterogeneous NBFIs in emerging African financial systems.

This creates a practical and scholarly problem. Commercial banks and NBFIs do not face identical risks, liability structures or regulatory demands, yet weak risk governance in either group can lead to misaligned investment strategies, poor portfolio monitoring, avoidable losses and reduced institutional resilience. In Zambia, the NBFI sector includes institutions with long-term obligations, such as pension funds and insurers, as well as institutions with shorter-term credit and liquidity exposures, such as microfinance providers. Treating these institutions as if they have uniform risk profiles obscures important differences in risk governance capacity and investment discipline. The specific research gap addressed by this study is the lack of integrated empirical evidence on how ERM maturity compares between commercial banks and NBFIs in Zambia and how that maturity affects investment decision-making and performance outcomes. Without this comparative evidence, boards, managers and regulators have a limited basis for strengthening risk capabilities, aligning investment decisions with risk appetite and designing proportionate supervision that reflects institutional realities.

1.2 Research Objectives

i. To assess and compare the financial risk management frameworks, including governance, policies, tools and reporting, used by selected commercial banks and NBFIs in Zambia.
ii. To examine how the quality of risk management practices influences investment decision-making, including asset allocation, instrument selection and portfolio monitoring, in commercial banks and NBFIs.
iii. To evaluate the relationship between risk management effectiveness, investment decision outcomes and selected performance indicators, including the role of regulatory and supervisory requirements.

1.3 Research Questions

i. What similarities and differences exist in financial risk management frameworks between commercial banks and NBFIs in Zambia?
ii. How do risk management practices influence investment decision-making in commercial banks and NBFIs?
iii. What relationship exists between risk management effectiveness and institutional performance outcomes, and how do regulatory and supervisory requirements shape this relationship across banks and NBFIs?

1.4 Research Hypotheses

Ho_1: Commercial banks have more mature and integrated ERM frameworks than NBFIs in Zambia.
Ho_2: Higher ERM maturity is positively associated with stronger alignment of investment decisions to institutional risk appetite.
Ho_3: Institutions with more effective risk management exhibit better risk-adjusted performance than institutions with weaker risk management.

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II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Enterprise Risk Management Theory

Enterprise Risk Management theory provides the primary theoretical foundation of the study. ERM views risk governance as an integrated, organisation-wide process through which institutions identify, assess, manage and monitor risks relative to strategy, risk appetite and governance arrangements (Bromiley et al., 2015). Unlike fragmented or silo-based risk management, ERM requires board oversight, risk policies, reporting systems, escalation mechanisms, analytical tools and a risk-aware culture. This theory is appropriate because the study compares the maturity of risk governance systems across commercial banks and NBFIs rather than examining isolated risk categories only. In this study, ERM maturity is treated as the main independent variable. It reflects the extent to which an institution has embedded governance structures, formal policies, risk appetite statements, risk tools, risk reporting and board-level review into routine decision-making. ERM theory suggests that mature risk systems should improve decision quality because they provide clearer information, define acceptable risk boundaries and encourage management to evaluate risk-return trade-offs before committing capital (Meulbroek, 2002; Pagach & Warr, 2011).

2.1.2 Modern Portfolio Theory and Asset-Liability Management

Modern Portfolio Theory and asset-liability management also inform the study. Modern Portfolio Theory explains investment decision-making as a systematic process of balancing expected return against risk through diversification and portfolio construction (Markowitz, 1952; Sharpe, 1964). Asset-liability management extends this logic by emphasising that financial institutions should invest assets in ways that match the timing, liquidity and risk profile of their liabilities (Redington, 1952). These theories are important in a comparative bank-NBFI study because commercial banks, pension funds, insurers, microfinance institutions and asset managers do not hold identical liabilities or investment mandates. Banks must manage liquidity, capital adequacy, depositor confidence and maturity transformation, while pension and insurance institutions must protect long-term solvency and benefit obligations. The theories, therefore, support the study's argument that investment quality depends on how well risk appetite, portfolio analytics, liability structure and regulatory requirements are translated into asset allocation, instrument selection and portfolio monitoring.

2.2 Empirical Review

2.2.1 Risk Management Frameworks in Commercial Banks and NBFIs

Empirical studies on financial risk management have historically focused more on commercial banks than on NBFIs. Bank risk management literature emphasises credit risk, market risk, liquidity risk, operational risk, capital adequacy, internal controls and prudential supervision (Bessis, 2015; Van Greuning & Brajovic Bratanovic, 2009). This focus comes from the fact that banks are systemically important; they are highly leveraged, engage in maturity transformation and rely on depositor confidence. However, many papers also remain focused on banking or specific risk categories (Ogboi & Unuafe, 2013; Simpasa, 2013), while studies in African contexts demonstrate the relevance of risk management and governance to performance and stability.

The need for risk frameworks specific to the business models of NBFIs is crucial. Insurance companies face underwriting, reserving, market and solvency risks; pension funds face long-term investment, demographic and asset-liability risks; microfinance institutions face credit, operational and liquidity risks; and asset managers face market, fiduciary and client-mandate risks. The literature therefore recommends a tailored approach rather than a one-size-fits-all template for all institutions (Cummins & Weiss, 2014; Gupta, 2011).

2.2.2 Risk Management and Investment Decision-Making

Prior studies suggest that risk management improves investment decision-making when it provides reliable information for evaluating risk-return trade-offs, liquidity needs, concentration exposures and downside scenarios. Froot and Stein (1998) argue that risk management, capital budgeting and capital structure are interconnected in financial institutions because capital allocation decisions depend on risk capacity. Similarly, Meulbroek (2002) argues that integrated risk management supports senior management decisions by linking risk measurement to strategy and capital allocation. These perspectives show that risk management is not merely a defensive control but a decision-support capability.

Empirical evidence also indicates that the use of risk dashboards, limits, stress testing, scenario analysis and quantitative metrics improves the discipline of investment approval and monitoring. Institutions that rely on formal risk appetite statements and portfolio analytics have more capacity to avoid needless concentration, liquidity mismatches and investments inconsistent with the mandate. For Zambia, this has particular significance as financial institutions operate in a macroeconomic environment where interest rate movements, exchange rate risk, liquidity conditions and credit concentration materially affect investment performance (Bank of Zambia, 2024).

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2.2.3 Risk Management, Regulation and Performance Outcomes

The association of integrated risk governance with performance is supported by a growing body of ERM research. Quon et al. (2012) examined ERM and firm performance and reported that ERM information did not consistently predict business performance during the period examined, thereby showing that ERM effects may depend on implementation quality and context. Baxter et al. (2013) found that ERM programme quality was value-relevant, particularly during periods of financial stress, while Gonzalez et al. (2020) found that ERM was associated with both risk and performance outcomes among Spanish listed firms. Although these studies point to the performance relevance of ERM, most were not conducted within African financial systems and offer limited direct comparison between commercial banks and NBFIs.

Risk governance and performance are also closely centred on regulation. Institutional discipline can be reinforced by risk-based supervision, disclosure requirements, capital or solvency rules and reporting obligations when these requirements are paired with relevant internal implementation capacity (Barth et al., 2013; Cihak et al., 2012). The regulatory literature, however, also cautions that compliance may become mechanical if institutions do not have the people, systems and analytical tools to convert rules into effective risk management (Caprio & Honohan, 2001; Cihak et al., 2012). This study therefore evaluates not only the presence of regulation but also how regulatory expectations interact with ERM maturity and investment quality to explain performance outcomes.

Table 1 summarises the key theoretical and empirical studies that informed the study and highlights the gaps addressed by the current research.

Table 1

Summary of related literature

Author(s)	Year	Focus	Key finding	Limitation
Bromiley et al.	2015	ERM theory and research directions	ERM is an integrated governance capability linking risk, strategy and performance.	Broad theoretical review; limited African evidence.
Van Greuning and Brajovic Bratanovic	2009	Banking risk governance	Bank stability depends on governance, risk measurement, internal controls and supervision.	Focused mainly on banking institutions.
Ogboi and Unuafe	2013	Credit risk management in Nigerian banks	Credit risk management and capital adequacy were linked to bank performance.	Credit-risk focus; did not compare NBFIs.
Baxter et al.	2013	ERM programme quality	Higher ERM quality was value-relevant and useful during financial stress.	Developed-market focus.
Quon et al.	2012	ERM and firm performance	ERM information did not consistently predict business performance, indicating that ERM effects depend on context and implementation quality.	Limited evidence from African financial institutions.
Gonzalez et al.	2020	ERM, risk and performance outcomes	ERM was associated with risk and performance outcomes.	Non-African and non-financial firm context.
Barth et al.	2013	Regulation and bank risk-taking	Regulation can support stability, but must be designed carefully.	Bank-centred regulatory evidence.
Bank of Zambia	2024	Financial stability context in Zambia	Concentration, maturity mismatch and macroeconomic vulnerabilities remain relevant to risk governance.	Sector-level report rather than institution-level empirical analysis.

III. METHODOLOGY

3.1 Research Design

The study adopted a pragmatic research philosophy because the research problem required both quantitative measurement and qualitative explanation. Pragmatism allows the researcher to combine deductive testing of relationships among variables with inductive interpretation of practitioner experience (Creswell, 2014; Saunders et al., 2019). An explanatory sequential mixed-methods design was used. Quantitative data were first collected and analysed to compare banks and NBFIs and to test relationships among ERM maturity, investment decision quality, regulatory variables and performance. Qualitative evidence was then used to explain the statistical patterns and provide institutional meaning to the findings. This design was appropriate because the study sought both measurable comparison and practical explanation of how risk governance affects investment decisions in real financial institutions (Creswell, 2014).

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3.2 Study Area

The study was conducted in Zambia, with data collection mainly coordinated from Lusaka because many financial institutions, investment committees, head offices and regulatory bodies are located there. The study focused on the financial services sector and included commercial banks and NBFI subsectors such as pensions, insurance, microfinance and asset management. The Zambian context was appropriate because the financial sector contains both banking and non-bank institutions with different risk exposures, regulatory obligations and investment mandates.

3.3 Target Population

The target population comprised professionals working in selected commercial banks and NBFIs in Zambia whose roles related to risk management, investment management, finance, compliance, portfolio monitoring, treasury, credit risk, internal control or senior management oversight. These respondents were targeted because they were expected to have direct knowledge of risk governance structures, reporting practices, investment decision inputs, regulatory compliance and performance-related risk outcomes.

3.4 Sampling Techniques and Sample Size

The study used stratified and purposive sampling. Stratification was applied at the institutional level to ensure that commercial banks and NBFIs were both represented and that the NBFI category reflected its internal diversity across pensions, insurance, microfinance, asset management and other non-bank institutions. Purposive selection was then used to identify respondents whose work responsibilities gave them relevant knowledge of risk management and investment decision-making. This combination was appropriate because the study required both comparability across institution classes and knowledgeable respondents within those classes (Saunders et al., 2019). The final quantitative sample consisted of 422 valid responses: 210 from commercial banks and 212 from NBFIs. The NBFI responses included pension, insurance, microfinance, asset-management and other NBFI respondents. The near-equal split between banks and NBFIs supported meaningful comparison and reduced the risk that the results would be driven by one institutional category.

3.5 Data Collection Tools and Procedure

Data were collected using a structured questionnaire, semi-structured practitioner interviews and open-ended questionnaire responses. The questionnaire captured respondent profile information and measured ERM maturity, risk tool adoption, risk appetite alignment, investment decision quality, regulatory requirement extent, enforcement strictness and performance outcomes. The qualitative component explored board oversight, risk reporting routines, risk appetite use, stress testing, data systems, investment committee practice, regulatory pressure and institutional capacity. The instruments were reviewed for relevance and clarity before full data collection. Pilot feedback and expert review were used to refine wording and improve alignment between the research objectives, variables and questionnaire items. Quantitative responses were collected from eligible staff in selected institutions, and qualitative evidence was gathered from practitioners with experience in risk and investment decision processes.

3.6 Reliability and Validity

Reliability and validity were strengthened through triangulation of quantitative and qualitative data, expert review of instruments, pilot testing, consistent measurement of constructs and systematic data analysis procedures. The mixed-methods design improved credibility because statistical patterns were interpreted alongside practitioner explanations, allowing the study to assess not only whether differences existed but also how those differences operated in institutional practice (Creswell, 2014; Merriam & Tisdell, 2015).

3.7 Data Analysis

Quantitative data analysis followed the study objectives. Descriptive statistics were used to profile respondents and summarise institutional characteristics. Independent-samples t-tests compared commercial banks and NBFIs. Analysis of variance examined subsectoral differences across banks, pensions, insurance, asset management, microfinance and other NBFIs. Correlation and regression analysis assessed relationships among ERM maturity, investment decision quality, regulation and performance.

ERM maturity, investment decision quality and performance were treated as composite scores scaled from 0 to 100. ERM maturity measured the embeddedness of governance structures, risk policies, board review, analytical tools and risk reporting. Investment decision quality measured the use of risk appetite, quantitative and qualitative analysis, asset allocation discipline, instrument selection and portfolio monitoring. Performance was treated as a composite outcome because banks and NBFIs do not rely on identical indicators; banks emphasise profitability, stability and risk-adjusted performance, while NBFIs also consider investment yield, solvency, expense ratios and resilience. Qualitative evidence was analysed thematically. Interview and open-ended responses were coded around themes such as board oversight, enterprise-wide integration, risk appetite use, data systems, stress testing, investment discipline, regulation

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and institutional capacity. The qualitative findings were used to explain the quantitative results and strengthen interpretive validity (Clarke & Braun, 2017; Merriam & Tisdell, 2015).

3.8 Ethical Considerations

The study observed research ethics by obtaining informed participation, explaining the academic purpose of the study and treating responses confidentially. Respondents were not required to disclose institutionally sensitive information beyond the scope of the research instruments. Data were reported in aggregated form to avoid identifying individual respondents or institutions. The study also followed academic integrity requirements by acknowledging sources and presenting findings derived from the data collected.

IV. FINDINGS & DISCUSSION

4.1 Response Profile and Sample Structure

Table 2 presents the response profile by institution class, respondent role, experience and NBFI subsector to show the composition of the valid sample before the comparative findings are reported.

Table 2

Respondent profile by institution class, role and experience

Category	n	%
Class: Bank	210	49.8
Class: NBFI	212	50.2
Role: Risk	241	57.1
Role: Investment	181	42.9
Experience: <2 years	35	8.3
Experience: 2-5 years	125	29.6
Experience: 6-10 years	158	37.4
Experience: >10 years	104	24.6
Sector: Pension	44	10.4
Sector: Insurance	56	13.3
Sector: Microfinance	70	16.6
Sector: Asset Management	28	6.6
Sector: Other NBFI	14	3.3

Table 2 shows that the sample was almost evenly divided between commercial banks (49.8%) and NBFIs (50.2%). This balance supports the comparative purpose of the study. The respondents were also concentrated in risk and investment roles, which increased the relevance of the data because these officers are directly involved in governance systems, portfolio processes, risk reporting and investment analysis. The distribution across NBFI subsectors also allowed the study to recognise heterogeneity within the non-bank segment rather than treating all NBFIs as identical.

4.1.1 Comparison of Financial Risk Management Frameworks

The first objective assessed and compared the financial risk management frameworks used by selected commercial banks and NBFIs. The results show that commercial banks reported higher ERM maturity, broader use of risk tools, stronger alignment with risk appetite and stronger regulatory engagement than NBFIs. This finding supports Hypothesis 1 and is consistent with banking risk management literature, which indicates that banks tend to have more formalised and integrated risk systems because of leverage, liquidity exposure, depositor protection and prudential supervision requirements (Bessis, 2015; Van Greuning & Brajovic Bratanovic, 2009). The comparative descriptive results and t-tests are presented in Table 3.

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Table 3

Comparative descriptive statistics and t-tests for banks and NBFIs

Variable	Banks (n=210)	NBFIs (n=212)	t	p	Cohen d
ERM maturity score	86.28 ± 8.60	69.48 ± 12.86	15.79	<0.001	1.53
Investment decision quality	83.29 ± 9.50	67.80 ± 14.02	13.30	<0.001	1.29
Performance outcome score	73.80 ± 8.15	61.20 ± 11.26	13.18	<0.001	1.28
Risk tool breadth	4.10 ± 1.24	2.36 ± 1.49	13.09	<0.001	1.27
Risk appetite alignment	3.99 ± 0.75	2.88 ± 1.03	12.68	<0.001	1.23
Regulatory requirement extent	4.37 ± 0.65	3.62 ± 0.77	10.86	<0.001	1.06
Enforcement strictness	4.19 ± 0.70	3.49 ± 0.92	8.79	<0.001	0.86

Note: ERM, investment quality and performance are composite scores scaled from 0 to 100.

As shown in Table 3, the difference in ERM maturity between banks (M = 86.28) and NBFIs (M = 69.48) was statistically significant ($t = 15.79$, $p < 0.001$) and substantively large (Cohen d = 1.53). Banks also scored higher on investment decision quality, performance outcomes, risk tool breadth, risk appetite alignment, regulatory requirement extent and enforcement strictness. The magnitude of these differences indicates that the bank advantage was not limited to a single indicator but reflected a broader governance and analytical capability gap. The sectoral pattern is further summarised in Table 4.

Table 4

Sectoral means for ERM, investment quality and performance

Sector	n	ERM mean	Investment mean	Performance mean
Bank	210	86.28	83.29	73.80
Pension	44	76.60	71.07	65.87
Insurance	56	75.44	73.90	66.63
Asset management	28	68.78	69.28	59.63
Microfinance	70	61.95	61.63	56.21
Other NBFI	14	62.28	60.95	52.96
ANOVA (F; p)	-	77.77; <0.001	47.79; <0.001	52.20; <0.001

Table 4 shows that the difference between banks and NBFIs was also visible across subsectors. Banks had the highest ERM, investment quality and performance means. Pensions and insurance firms occupied a middle position, while microfinance and smaller NBFIs recorded lower average scores. This pattern indicates that the NBFI sector is internally heterogeneous and should not be treated as a single uniform group. It also supports the argument that risk systems should be tailored to business model, liability structure and investment horizon (Cummins & Weiss, 2014; Redington, 1952).

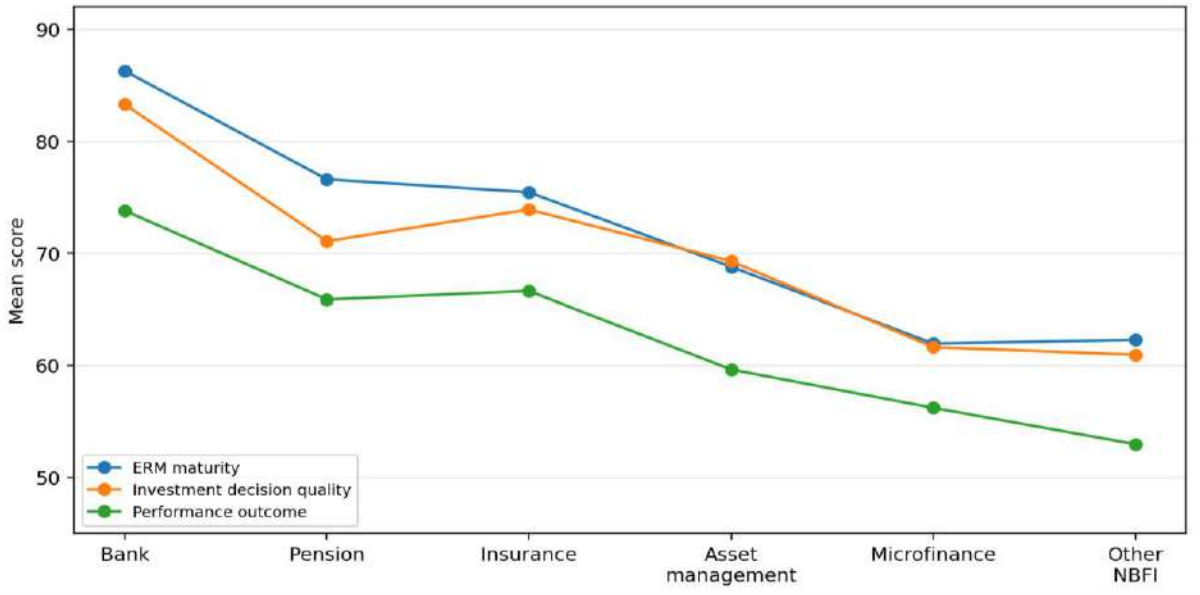

Figure 1

Sectoral means for ERM Maturity, Investment Decision Quality and Performance

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Figure 1 reinforces the same pattern visually. The ERM, investment quality and performance lines generally move together, suggesting that institutions with stronger risk governance also tend to report better investment decision quality and stronger performance. We find this co-movement consistent with ERM literature establishing linkages between integrated risk governance and improved resource allocation, lower instability and better performance outcomes (Baxter et al., 2013; Bromiley et al., 2015; Quon et al., 2012). Qualitative data explained the quantitative differences. Respondents from the banks described enterprise-wide frameworks, dashboards, quarterly board risk packs and formal escalation processes. Some NBFI respondents described frameworks that remained in development or were primarily focused on monitoring credit, compliance, or investments relative to regulatory limits. This suggests that the bank advantage correlated with institutionalised governance routines rather than merely cumulative scores on a survey scale.

4.1.2 Influence of Risk Management on Investment Decision-Making

The second objective examined how risk management practices influence investment decision-making. The findings show that stronger ERM maturity improved investment decision quality by shaping the information used in investment analysis, clarifying risk appetite, strengthening portfolio monitoring and requiring investment decisions to be assessed against liquidity, solvency and risk-return considerations. This supports Hypothesis 2 and is consistent with portfolio theory and integrated capital-allocation theory (Froot & Stein, 1998; Markowitz, 1952). The adoption of risk tools and decision inputs is presented in Table 5.

Table 5

Adoption of risk tools and investment decision inputs by institution class

Group	Indicator	Banks	NBFIs
Risk tools	Risk dashboards	86.2%	52.4%
Risk tools	Risk limits/metrics	89.0%	64.6%
Risk tools	Stress testing	84.8%	40.6%
Risk tools	Value-at-Risk modelling	50.5%	19.3%
Risk tools	Scenario analysis	68.6%	45.8%
Risk tools	Probabilistic loss estimation	31.4%	13.2%
Decision inputs	Quantitative metrics	94.8%	61.8%
Decision inputs	Qualitative assessments	74.3%	75.9%
Decision inputs	Financial statement analysis	94.3%	78.3%
Decision inputs	Macroeconomic forecasts	91.0%	77.8%
Decision inputs	Competitor benchmarking	61.4%	48.1%

Table 5 shows that the largest gaps were in dashboards, stress testing, Value-at-Risk modelling and quantitative metrics. Stress testing was reported by 84.8% of bank respondents compared with 40.6% of NBFI respondents, while Value-at-Risk modelling was reported by 50.5% of banks compared with 19.3% of NBFIs. These differences indicate that banks were more likely to translate risk governance into quantitative inputs for investment decisions. The research also revealed a strong discrepancy in risk appetite alignment. A larger share of bank respondents reported that investment decisions were aligned or closely aligned with institutional risk appetite compared with non-bank financial institution (NBFI) respondents. This finding aligns with ERM theory, as risk appetite serves as the conduit (whereby board-level governance is implemented in management decisions and investment committees) (Bromiley et al., 2015; Meulbroek, 2002).

Qualitative evidence showed how risk management influenced investment decisions in practice. Bank respondents linked asset allocation to liquidity needs, balance-sheet structure and capital constraints. Pension and insurance respondents emphasised solvency, duration matching and benefit obligations. Microfinance respondents focused more heavily on credit exposure, collections and liquidity. These accounts are consistent with asset-liability management theory, which requires investments to be evaluated against the timing, liquidity and risk profile of liabilities (Redington, 1952).

4.1.3 Risk Management, Regulation and Performance Outcomes

The third objective assessed the association between risk management effectiveness, investment decision outcomes and performance, with consideration for regulatory and supervisory requirements. The results provide evidence that ERM maturity and investment decision quality were both strong predictors of performance outcomes. This reinforces H3 and is largely consistent with ERM studies that document associations between risk governance and performance (Baxter et al., 2013; Gonzalez et al., 2020; Quon et al., 2012). The regression results are shown in Table 6.

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Table 6

Regression models predicting investment decision quality and performance

Predictor	Model 1: Investment B	p	Model 2: Performance B	p
Constant	18.585	<0.001	5.979	0.018
ERM maturity	0.720	<0.001	0.356	<0.001
Bank class (=1)	3.845	0.001	-0.339	0.675
Regulatory extent	0.031	0.962	2.048	<0.001
Enforcement strictness	-0.878	0.119	0.084	0.823
Years in role	0.136	0.223	-0.125	0.096
Investment role (=1)	2.900	0.001	0.266	0.667
Investment quality	-	-	0.347	<0.001
Model fit (R^2)	0.596	-	0.729	-

In Model 1, ERM maturity was the strongest predictor of investment decision quality (B = 0.720, p < 0.001), as shown in Table 6. This means that stronger ERM systems predicted better investment decision-making over and above the effects of institution type and regulatory variables. In Model 2, ERM maturity (B = 0.356, p < 0.001) and investment decision quality (B = 0.347, p < 0.001) both significantly predicted performance outcomes. These variables explained a substantial amount of variation in performance (R^2 = 0.729). An important finding is that bank class was not significant in the performance model once ERM maturity and investment decision quality were included. This suggests that institutional label alone does not explain performance; rather, the performance advantage is linked to risk governance capability and disciplined investment decision-making. This is relevant for NBFIs because it implies that capability-building can narrow performance gaps even where business models differ.

Regulatory extent had a positive and significant association with performance, while enforcement strictness was not significant in the full performance model. This suggests that regulation contributes to performance when it creates discipline, transparency and common expectations that institutions can operationalise. However, strict enforcement alone may not improve outcomes unless institutions have the internal systems, staff capacity and governance structures needed to convert requirements into effective practice. This finding is consistent with regulatory literature that supports risk-based supervision while warning against mechanical compliance (Barth et al., 2013; Cihak et al., 2012; Caprio & Honohan, 2001).

4.2 Integrated Discussion of Quantitative and Qualitative Evidence

The quantitative and qualitative findings converged on a common explanation: risk management maturity matters because it shapes decision information, investment approval discipline and performance stability. Quantitative results demonstrated significant differences between banks and NBFIs and significant predictive relationships among ERM maturity, investment quality and performance. Qualitative evidence explained these patterns through board review routines, dashboard use, risk appetite application, data infrastructure and investment committee discipline. The joint display is presented in Table 7.

Table 7

Joint display integrating quantitative findings and qualitative evidence

Theme	Evidence from the study	Integrated interpretation
ERM integration gap	Banks scored 86.28 on ERM maturity compared with 69.48 for NBFIs. Bank respondents described enterprise-wide frameworks and regular board review; smaller NBFIs described developing or credit-focused systems.	The bank advantage reflected integrated dashboards, escalation lines and board routines, while many NBFIs were still maturing enterprise-wide risk aggregation.
Risk-informed investment discipline	ERM significantly predicted investment decision quality. Respondents linked asset allocation to liquidity, balance-sheet structure, solvency and portfolio balance.	Risk management influenced investment decisions by providing practical filters before major portfolio shifts were approved.
Regulation as discipline and constraint	Regulatory extent significantly predicted performance, while enforcement strictness was not significant in the full model.	Regulation supported performance where internal systems and staff capacity allowed institutions to convert supervisory requirements into action.
Performance stability through governance	Both ERM maturity and investment quality predicted performance. Respondents stated that mature ERM produced steadier performance and reduced avoidable losses.	Strong governance improved not only returns but also stability, early warning and correction of weak exposures.

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Overall, the findings confirm the three hypotheses and support the conceptual framework. The study contributes to ERM theory by showing that ERM is relevant in an emerging African financial system and by demonstrating that its practical effects depend on institutional type, liability structure, regulatory capacity and analytical capability. It also contributes to practice by showing that the strongest institutions did not simply avoid risk; they assessed whether risk was consistent with liquidity needs, solvency requirements, risk appetite and expected return.

4.3 Practical and Policy Implications

The findings imply that NBFIs require deliberate ERM capability-building, but not through mechanical imitation of commercial banks. Because NBFIs differ in liability structures, investment mandates and risk profiles, proportionate frameworks should strengthen board oversight, risk appetite statements, risk dashboards, stress testing, scenario analysis and post-investment portfolio review in ways appropriate to each subsector. The findings also imply that investment committees should not assess investments mainly on expected yield or short-term liquidity preference. The strongest institutions in the sample assessed investments against risk appetite, scenario outcomes, cash-flow needs, liability structure, concentration risk and regulatory exposures. This reinforces the importance of integrating investment governance with risk governance.

For regulators, the positive relationship between regulatory extent and performance suggests that supervision can reinforce discipline and formalise good practice. However, regulation is more likely to improve outcomes when it is proportionate, risk-based and supported by institutional capacity. Supervisory expectations should therefore be accompanied by guidance, capacity-building and monitoring of whether requirements are being used substantively rather than ceremonially.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The study concludes that commercial banks in Zambia generally have more developed, coherent and institutionalised financial risk management frameworks than NBFIs. This advantage was reflected in higher ERM maturity scores, broader use of risk tools, stronger board-level review, better risk appetite alignment and stronger performance outcomes. However, the NBFI sector should not be generalised as a single category because pensions and insurance institutions performed better than microfinance and smaller NBFIs on several indicators. The study also concludes that risk management quality significantly influences investment decision-making. Institutions with stronger ERM frameworks were more likely to align investment decisions with formal risk appetite, use quantitative and qualitative analytical inputs, apply stress and scenario analysis, and monitor portfolios systematically after investment approval. Financial risk management therefore operates as a decision-enabling capability rather than merely a compliance mechanism.

Finally, the study establishes a positive relationship between ERM maturity, investment decision quality and institutional performance. Regulation contributes positively where it strengthens internal discipline and where institutions have sufficient capability to implement supervisory expectations. Financial risk management in Zambia's financial sector should therefore be understood as a strategic competence for safeguarding capital, strengthening investment discipline and supporting long-term institutional sustainability.

5.2 Recommendations

NBFIs should formalise and integrate their risk management frameworks into day-to-day operations through stronger board responsibility, clear risk appetite statements, risk dashboards, stress testing, scenario analysis and post-investment portfolio review. This recommendation is especially important for microfinance and smaller NBFI segments where risk oversight remains more fragmented and often focused mainly on credit or compliance. The aim should not be to copy banks mechanically, but to build proportionate risk systems that reflect each subsector's liability profile, investment mandate and client-protection obligations.

Commercial banks should use their relatively stronger ERM position as a platform for continuous improvement. They should further strengthen forward-looking analytics, model validation, concentration-risk monitoring, climate and macroeconomic stress testing, and the alignment of risk reporting with strategic investment planning. Their current advantage should therefore be treated as a basis for deeper governance and analytical sophistication rather than as evidence that existing systems are complete. Regulators should continue to apply a proportionate and capability-based supervisory approach. NBFIs are not small banks, and their liability structures, investment mandates and risk exposures differ substantially from deposit-taking institutions. At the same time, regulators should issue clear guidance on ERM governance, risk reporting, stress testing, investment oversight and board accountability while supporting institutions to build the people, systems and analytical capacity needed to implement such requirements meaningfully.

Boards and senior management teams should treat risk governance and investment governance as complementary rather than separate functions. Risk appetite should be a living decision document used in investment

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committees and management reports. Major investment proposals should be assessed against integrated risk indicators, portfolio performance, liquidity conditions, concentration measures, stress-test results and regulatory exposures before approval and during post-investment monitoring. Professional bodies, training institutions and sector associations should provide practical capacity-building programmes in ERM, asset-liability management, stress testing, portfolio risk analysis, investment policy formulation, model validation and board-level interpretation of risk information. Such training is particularly important for NBFIs and smaller institutions that have limited specialist capability but manage funds that affect policyholders, pension members, borrowers and investors.

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Funding Declaration

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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