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Big vs. Small Insurers; Does Size Matter? Moderating Effects of Firm Size on Liquidity Risk and Credit Risk on the Profitability of Insurance Firms in Kenya

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Abstract

The insurance sector represents a major component of the broader non-bank financial system and plays a pivotal role in supporting economic activity across both developing and advanced economies. In the Kenyan context, declining profitability has been a prominent challenge, contributing to the financial distress and eventual collapse of at least nine insurance companies over the past decade. This study sought to evaluate whether firm size moderates the relationship between liquidity risk & Credit risk and the profitability of insurance firms operating in Kenya. The conceptual foundation of the research drew on several theoretical perspectives, including Modern Portfolio Theory, Agency Theory and Institutional Theory. A positivist philosophical stance and an explanatory research design guided the methodological approach. The study covered all 55 licensed insurance firms listed by the Insurance Regulatory Authority (IRA) as at 31 December 2022. Secondary data were obtained from audited financial statements available through the IRA and the Association of Kenya Insurers (AKI) digital repositories for the period 2014–2022, supplemented by additional information from the Central Bank of Kenya and the Kenya National Bureau of Statistics. Data analysis employed descriptive statistics, panel regression techniques, and Pearson's product–moment correlation to assess the relationships among the study variables. Firm size was found not to be a significant moderator in this study, since it did not significantly change the decision rule in the model, indicating that the effects of liquidity and credit risks on ROE and ROA were consistent across insurance firms regardless of their asset scale.

Key words: *Credit risk, Liquidity Risk, Profitability, Firm Size, Kenya*

1. Introduction

The insurance sector plays a critical role in supporting economic development by offering mechanisms that mitigate risk, protect households and businesses from financial shocks, and enhance the overall stability of financial systems. As observed by Tasdemir and Alsu (2024), insurance products and services reduce the economic costs associated with uncertainty by safeguarding individual and commercial assets and promoting financial resilience. This stabilizing role contributes to economic growth through several channels, including improved resource allocation, enhanced investment confidence, and reduced vulnerability to unforeseen disruptions. Empirical evidence by Cristea, Marcu, and Cârstina (2014) further reinforces the sector's macroeconomic importance by demonstrating a causal link between insurance market deepening—captured through insurance penetration—and economic growth, measured by GDP per capita. The Chartered Insurance Institute (2018) underscores that the core purpose of insurance and risk management lies in transferring the risk of financial loss from individuals or firms to an insurer through a contractual policy, thereby reducing exposure to adverse events and their associated economic consequences.

Within the global landscape, emerging markets have become the primary drivers of insurance sector expansion, accounting for approximately 80% of recent growth, according to the Association of Kenya Insurers (2021). Despite this strong global performance, insurance penetration across Africa remains among the lowest worldwide, indicating substantial room for development. In Kenya, the insurance industry is recognized as a vital component of the financial services sector, with the Insurance Regulatory Authority (IRA) mandated to promote industry growth and enhance the financial soundness of insurers. The IRA's Strategic Plan for 2018–2022 reflects this mandate and is aligned with key national development agendas—including Kenya Vision 2030, the Big Four Agenda, and the Third Medium-Term Plan (MTP III)—as well as the Financial Services Sector Plan (2018–2022), the Sustainable Development Goals, and globally accepted regulatory and supervisory standards. Collectively, these initiatives highlight the strategic importance of a robust and well-regulated insurance sector to Kenya's economic aspirations.

Liquidity risk represents a critical dimension of financial stability within the insurance sector. The Insurance Regulatory Authority (2017) characterizes liquidity risk as the possibility that an insurer may be unable to meet its financial obligations as they mature. Similarly, the Geneva Association (2023) describes liquidity risk as the inability of an institution to access adequate

cash or liquid assets to settle short-term commitments. Within insurance operations, liquidity demands arise from policy-related cash outflows—such as claims, maturities, surrenders, and operating expenses—which must be met promptly to sustain policyholder confidence. As highlighted by Kamau and Njeru (2016), insurers may incur substantial losses when they are compelled to dispose of assets at below-market prices to meet these obligations, even when they remain technically solvent. Brand (2018) and Sonjai (2008) further observe that inadequate liquidity often results in costly outcomes, including fire-sale losses, elevated borrowing costs, or the imposition of contractual penalties.

Liquidity risk is shaped by both the asset and liability structures of insurance firms. From the asset side, illiquid investment portfolios may be difficult to convert into cash without value erosion, while from the liability side, sudden or unexpectedly large policyholder claims can generate immediate liquidity pressures. Gasper and Sousa (2010) note that liquidity risk has direct implications for solvency, making it a core factor influencing the financial soundness and sustainability of insurers. Mwangi and Murigu (2015) underscore that liquidity reflects the extent to which cash or near-cash assets are available to meet obligations falling due within a twelve-month horizon. Complementing this view, Adam and Buckle (2013) explain that for insurers, maintaining adequate liquidity entails meeting policyholder obligations without resorting to forced asset disposals or excessive reliance on underwriting and investment income. Consistent with this, the Insurance Regulatory Authority (2013) stresses the importance of ensuring that insurers are able to reliably generate or access sufficient cash to settle maturing liabilities, particularly in relation to claims and policyholder benefits.

1.2 Credit Risk

The Insurance Regulatory Authority (2017) characterizes credit risk as the potential for financial loss arising when counterparty does not fulfill its contractual commitments or fails to honour them within the required timeframe. Moliterni (2024) and Brand (2018) similarly explain credit risk as the possibility that an issuer or counterparty may default on its obligations, thereby exposing the firm to financial loss. Kiptoo, Kariuki, and Ocharo (2021) add that when parties delay or fail to meet their contractual responsibilities, receivables may become non-performing, consequently heightening a firm's exposure to credit risk. For insurance companies, inadequate mechanisms for collecting outstanding premiums or other receivables can therefore increase vulnerability to financial strain.

According to Akotey and Abor (2013), insurers navigate two major dimensions of credit risk. The first involves the likelihood that reinsurers may be unable to settle claims, particularly following widespread catastrophic events that generate large, clustered losses. The second relates to the prospect that borrowers of insurers' investment funds may default due to adverse macroeconomic conditions or insolvency, thereby affecting the insurer's financial standing. Despite the growing recognition of credit risk within policy and regulatory discussions, Apanga, Appiah, and Arthur (2016) observe that empirical research on the topic remains limited, especially in developing economies. In particular, scholarly evidence on credit risk management practices within sub-Saharan Africa is still sparse, indicating a need for further investigation in this area.

1.3 Profitability

Profitability serves as a central indicator of organisational performance within the financial sector, reflecting both the firm's operational efficiency and its capacity to generate value for stakeholders. As noted by Tiplady (2024) and Walters and Helman (2023), profitability captures the earnings derived from a company's trading or operating activities and reveals how effectively its assets are deployed in the generation of income. Tulsian (2014) similarly views profitability as the ability of an investment to produce returns, highlighting its importance as a measure of financial success. Ehiogu and Nnamocha (2018) together with Malik (2011) emphasize that profitability represents the surplus remaining after all production and operating costs have been met, serving as a key gauge of managerial competence and organisational efficiency.

Drawing from the work of Dorofti and Jakubik (2015) and Nguyen and Nguyen (2020), profitability remains one of the fundamental objectives of corporate financial management, typically assessed in relation to equity, asset utilization, or sales performance. In this regard, profitability not only reflects a firm's current financial health but also provides a foundation for evaluating future prospects and long-term sustainability. Within the insurance context, sustaining adequate profitability is essential for maintaining solvency, fulfilling policyholder obligations, and enhancing shareholder wealth. Consequently, understanding the factors that influence profitability—such as financial risk exposures—forms a critical backdrop for examining the performance dynamics of insurance firms in Kenya.

1.3 Firm Size

According to Almashhadani and Almashhadani, (2022) and Fujianti and Satria (2020), firm size reflects the enormity of a company is in terms of its total assets, market equity capitalization or sales. Niresh and Velnampy (2014) and Surajit and Saxena (2009) contend that the size of a firm may be defined as the level of size and scope of production, including its variety and/or different services that be simultaneously delivered to clients by a firm. A firm's size, driven by economies of scale, is a principal component as pertains to establishing its profitability.

2. Statement of the Problem

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The Kenya insurance industry plays a primary role by virtue of its input towards the GDP of the country and forms an essential part of the financial services sector. Over the study period, 2014 – 2022, we observed a decline in the compound annual growth rate (CAGR) in ROE of -7.74% and an overall decrease of -47.5%, while ROA recorded a decline in the CAGR of -9.85% and an overall decrease of -56.36% over the period. Boosting profitability is a core function of a firm as it forms a sound basis through which business performance may be evaluated and future prospects may be analyzed (Nguyen and Nguyen, 2020). In this regard, the decline in profitability depicted threatens the Kenya insurance industry in entirety, besides its fundamental role within the financial services industry and its input towards the country's economic growth.

Empirical Literature on the relationship between firm size and profitability exhibited mixed results and exposed a number of gaps that the current study sought to address. Asola, Otieno and Onyango (2023), Ahmeti and Iseni (2022), Morara and Sibindi (2021), Wolde, Kolech and Dadi (2020), Gweyi (2018) and Maniagi (2018) exposed a methodological gap, while Siopi and Poufinas (2023), Ahmeti and Iseni (2022), Wolde, Kolech and Dadi (2020), Gweyi (2018), Maniagi (2018), Ortynski (2016), Wani and Dar (2015) and Malik (2011) revealed contextual gaps by carrying out their studies in different countries and different sectors.

3. Objective of the Study

The main objective of the study was to determine the moderating effects of firm size on liquidity risk and credit risk on the profitability of insurance firms in Kenya.

4. Literature Review

4.1 Theoretical Review

4.1.1 Modern Portfolio Theory

Modern Portfolio Theory (MPT), first advanced by Harry Markowitz in 1952, provides a structured framework for understanding how investors can balance risk and return to achieve optimal outcomes. Rather than examining each investment separately, the theory argues that rational investors assess how different assets interact within a broader portfolio. Markowitz (1952) demonstrated that by combining assets whose returns are not perfectly aligned, an investor can lower the total risk of the portfolio without necessarily diminishing expected returns. This diversification principle lies at the heart of MPT and has shaped investment practices across financial institutions globally.

For insurance companies, MPT offers valuable guidance for managing investment portfolios in conditions characterized by uncertainty. Insurers are required to invest premiums responsibly while maintaining adequate liquidity to settle claims. By applying MPT, these firms can design portfolios that reduce vulnerability to specific liquidity risk and credit risk. The theory provides a disciplined, analytical approach to risk management through diversification and quantitative modeling, helping insurers determine how best to allocate funds among various asset classes to achieve a suitable trade-off between expected returns and risk tolerance.

4.1.2 Agency Theory

Agency Theory was formally articulated by Jensen and Meckling in 1976, although earlier groundwork had been laid by Stephen Ross and Barry Mitnick in the early 1970s. The theory examines the relationship in which one party—the agent—is entrusted to make decisions on behalf of another—the principal. Within corporate finance and organizational governance, this framework is commonly used to interpret the interactions between managers and shareholders. A central premise of the theory is that agents and principals may not share identical interests, particularly when information is unevenly distributed and risk preferences differ. These conflicting incentives lead to what is termed the agency problem, where agents may act in ways that advance their own objectives rather than those of the principal.

When applied to financial risk (e.g. liquidity risk and credit risk), Agency Theory helps clarify how managers make choices concerning risk-taking and expected returns. Managers, serving as agents, may adopt cautious strategies to safeguard their positions or compensation packages, whereas shareholders typically prefer approaches that maximize returns, even when they involve increased risk. This tension is especially visible in insurance companies, where risk management practices directly influence profitability, capital buffers, and overall shareholder wealth. In this study, the theory provides a foundation for understanding how internal governance dynamics moderate the link between liquidity risk and credit risk with firm profitability. As such, Agency Theory offers an essential perspective for analyzing how managerial behavior and institutional controls shape financial performance within the insurance industry.

4.1.3 Extreme Value Theory

Institutional Theory developed through the seminal works of Philip Selznick (1957) and later through influential contributions by Meyer and Rowan (1977), with further refinement by scholars such as Scott (2001, 2007). This theoretical perspective argues that organizational actions are shaped not only by internal goals of efficiency or performance, but also by external pressures, societal norms, regulatory structures, and cultural expectations. Within this framework, institutions are understood as enduring systems of rules, routines, beliefs, and practices that guide how organizations behave and relate to their environments. In the insurance industry, Institutional Theory provides a useful lens for understanding how regulatory frameworks, professional standards, and broader social expectations influence firms' approaches to managing financial risk. Insurance companies operate within a tightly regulated and socially embedded environment, where norms around reporting practices, underwriting standards, and capital management are shaped by institutional expectations.

The theory thus offers a comprehensive foundation for examining how external norms, legal requirements, and societal pressures guide financial risk management decisions within insurance firms. It suggests that organizations respond not only to performance demands but also to the need for legitimacy and compliance with institutionalized expectations. In the context of this study, Institutional Theory helps explain the broader environmental forces that influence how financial risks are handled and how profitability objectives are pursued. As such, it forms an essential component of the theoretical framework used to analyze the relationship between liquidity risk and credit risk exposure and organizational performance.

4.2 Empirical Literature

4.2.1 Liquidity Risk and Profitability

Olalekan (2018), working with listed Nigerian insurers, used correlational design and discovered a similar negative relationship. However, the focus on listed firms excludes smaller or non-listed players, reducing the representativeness of the sample. The current study bridges these gaps by introducing firm size as a moderating variable and employing a broader sample reflective of the Kenyan insurance sector. Additionally, a more nuanced classification of liquidity risk was adopted to ensure alignment with the operational realities of the local context, thereby enhancing both conceptual and methodological robustness.

Other studies, such as Kaya (2015) in Turkey and Charumathi (2012) in India, also explored the liquidity-profitability nexus using the current ratio as a proxy for liquidity risk. Both researchers identified a negative and positive significant relationship, respectively. However, these studies shared common limitations—use of descriptive research designs and short observation periods. Furthermore, their models did not account for moderating or mediating variables that could influence the relationship. In contrast, the current study introduces firm size as a moderating factor and expands the analysis window to capture more robust trends. Additionally, by employing explanatory research design and integrating multiple proxies of financial risk—such as net liquid assets to total assets—the present study endeavors to uncover causal relationships specific to the Kenyan financial landscape. This methodological advancement positions the study to contribute uniquely and credibly to the broader discourse on liquidity management and financial sustainability in the insurance industry.

4.2.2 Credit Risk and Profitability

Mutua, Wamugo and Theuri (2023) and Onsongo, Muathe and Mwangi (2020) explored credit risk in insurance and listed companies respectively. Their studies revealed that credit risk negatively affected profitability, underlining how poor credit controls and underwriting standards can erode returns. Beyond Kenya, other regional studies such as those by Fali, Nyor & Mustapha (2020) and Sisay (2017) further emphasized the negative influence of credit risk on profitability, with both studies conducted in Nigeria and Ethiopia respectively.

4.2.3 Firm Size and Profitability

Ortynski (2016) analyzed the performance of Poland's non-life insurance companies using multiple panel regression across an 8-year period. Firm size was included among the predictors, and the study found it to be positively associated with both Return on Assets (ROA) and Return on Equity (ROE). However, the study was conducted in a high-income European setting where the insurance sector is more developed, regulated, and digitally integrated, which differs significantly from the Kenyan context. Likewise, Malik (2011) studied 35 listed insurance companies in Pakistan and also found that firm size had a positive and significant effect on ROA. Although useful, both studies lacked a moderating perspective and used indicators that may not adequately capture the nuances of firm-level operations in Kenya. The current study addresses these limitations by introducing firm size as a moderating variable rather than a simple independent factor.

In contrast, Wolde, Kolech and Dadi (2020) studied 17 Ethiopian insurance companies and reported a positive but insignificant effect of firm size on profitability. Their study used a descriptive design and incorporated macroeconomic variables such as GDP and exchange rates, yet failed to establish firm-level causal relationships. Similarly, Ahmeti and Iseni (2022) conducted a study on 65 insurance firms in Kosovo and also found a positive but statistically insignificant effect of firm size on both ROA and net profit margin. These findings highlight that while firm size may intuitively be expected to influence performance, its actual effect may be context-dependent and masked by other financial dynamics. Both studies used firm size as a direct independent variable and

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did not explore its potential moderating influence on the relationship between financial risks and performance, an angle that the present study uniquely investigates.

4.3 Conceptual Framework

The conceptual below framework depicts the relationships between the study variables, independent variables (liquidity risk, credit risk), moderating variable (firm size) and the dependent variable (profitability).

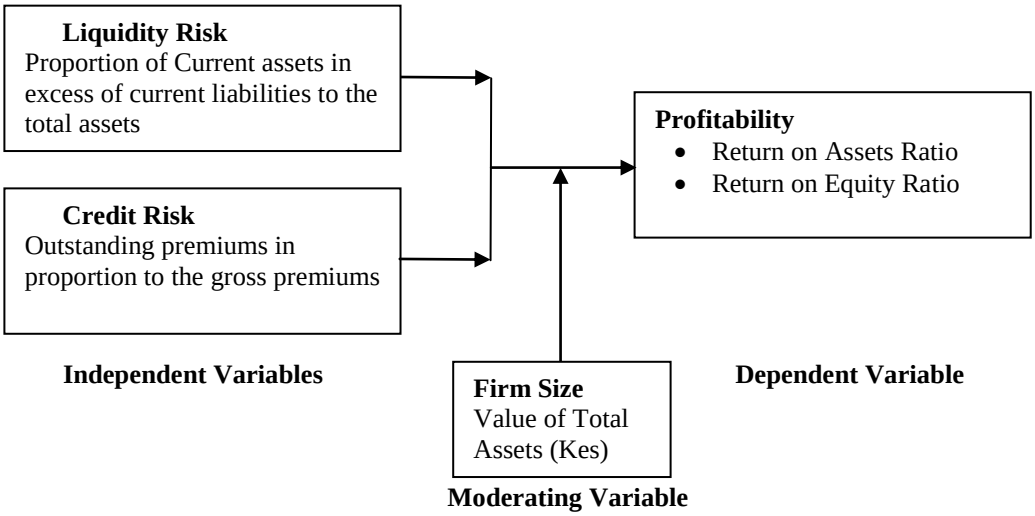

Figure 1: Conceptual Framework

5. Research Methodology

This study was anchored on the positivist paradigm, which assumes that the phenomena under investigation exist independently of the researcher and can be examined objectively. The nature of the inquiry, the analytical procedures employed, the study objectives, and the timeframe considered all aligned with the assumptions of positivism. As noted by Cazeaux (2017) and Zukauskas, Vveinhardt, and Andriukaitiene (2018), positivism maintains that events and their surrounding environment are external to the researcher and can therefore be studied without subjective influence.

In line with this philosophical stance, the study adopted an explanatory research design. According to Saunders *et al.*, (2009), explanatory research is used to uncover causal relationships among variables. This type of design emphasizes examining a situation or issue with the aim of clarifying how one set of variables influences or is influenced by another.

6. Research Findings and Discussion

6.1 Moderating Effect of Firm Size on Liquidity Risk and Credit Risk with Profitability

The study applied random effects regression with hierarchical moderation to assess whether firm size-measured by the natural logarithm of total assets-significantly moderates the relationship between financial risks and profitability (ROA and ROE) by incorporating interaction terms between firm size and each financial risk indicator, and evaluating their statistical significance.

6.1.1 Moderating Effect of Firm Size on Liquidity Risk and Credit Risk with ROE

Table 1: Moderating Effect of Firm Size on Liquidity Risk and Credit Risk with ROE

Variable	Coefficient	Std. Error	Z	P>|z|
Liquidity risk	0.4384	0.0718	6.1000	0.0000
Credit risk	-0.2387	0.1031	-2.3200	0.0210
Firm Size (Total Assets)	-0.0080	0.0090	-0.8900	0.3720
Liquidity risk* firm size	-0.0026	0.0102	-0.2600	0.7960
Credit risk* firm size	0.0001	0.0026	0.0300	0.9790
_cons	0.1928	0.0603	3.2000	0.0010

Source: Researcher (2025)

From the findings in Table 1, the following optimal model was developed:

$$ROE_{it} = 0.1928 + 0.4384LR_{it} - 0.2387CR_{it} + 0.0080FS_{it} - 0.0026\ (LR*FS) + 0.0001\ (CR*FS) + \varepsilon_{it}$$

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Where:

ROE_{it} = Return on Equity of Insurance firm i at time t.
LR_{it} = Liquidity Risk for Insurance firm i at time t.
CR_{it} = Credit Risk for Insurance firm i at time t.
FS_{it} = Foreign Exchange Risk for Insurance firm i at time t.
ε_{it} = the error term.

The analysis examined the moderating role of firm size on the relationship between liquidity risk and credit risk with Return on Equity (ROE). The findings in Table 1 showed that firm size does not significantly alter these relationships, as all interaction terms between firm size and the liquidity risk and credit risk indicators were statistically insignificant, given that their corresponding p-values exceeded the 0.05 threshold. The interaction coefficients for liquidity risk and firm size (B = -0.0026, p = 0.7960) and credit risk and firm size (B = 0.0001, p = 0.9790)-indicated no meaningful moderation effect leading to the non-rejection of the hypotheses, H_{01} and $H_{02.}$

6.1.2 Moderating Effect of Firm Size on Liquidity Risk and Credit Risk with ROA

Table 2: Moderating Effect of Firm Size on Liquidity Risk and Credit Risk with ROA

Variable	Coefficient	Std. Error	Z	P>|z|
Liquidity risk	0.4331	0.0874	4.9500	0.0000
Credit risk	-0.1276	0.1256	-1.0200	0.3100
Firm Size (Total Assets)	-0.0120	0.0110	-1.1000	0.2730
Liquidity risk* firm size	-0.0015	0.0124	-0.1200	0.9040
Credit risk* firm size	-0.0007	0.0032	-0.2100	0.8300
_cons	0.2487	0.0736	3.3800	0.0010

Source: Researcher (2025)

From the findings in Table 2, the following optimal model was developed:

$$\mathbf{ROA_{it} = 0.2487 - 0.4331LR_{it} - 0.1276CR_{it} - 0.0120FS_{it} - 0.0015\ (LR*FS) - 0.0007\ (CR*FS) + \varepsilon_{it}}$$

Where:
ROA_{it} = Return on Assets of Insurance firm i at time t.
LR_{it} = Liquidity Risk for Insurance firm i at time t.
CR_{it} = Credit Risk for Insurance firm i at time t.
FS_{it} = Foreign Exchange Risk for Insurance firm i at time t.
ε_{it} = the error term

The regression results in Table 2 indicate that firm size does not significantly moderate the relationship between liquidity risk and credit risk with Return on Assets (ROA) among insurance firms in Kenya, as evidenced by the insignificance of all interaction terms, Interaction effects of liquidity risk and firm size (B = -0.0015, p = 0.9040), credit risk and firm size (B = -0.0007, p = 0.8300), were statistically insignificant, along with the direct effect of firm size (B = -0.0120, p = 0.2730), leading to the non-rejection of the null hypothesis, H_{01} and $H_{02.}$These findings imply that the influence of liquidity risk and credit risk on profitability remains largely consistent across firms of different sizes, supporting similar conclusions drawn by Mwaurah (2019) and Maniagi (2018), but diverging from Gweyi (2018), who found firm size to be a significant moderator in the SACCO sector.

7. Conclusions and Recommendations

The conclusions of this study are based on comprehensive regression analyses conducted in line with the six objectives established at the outset. The primary aim was to determine whether firm size influences (i.e., moderates) the relationship between liquidity risk and credit risk with profitability. The empirical results revealed that firm size, proxied by the natural logarithm of total assets, did not significantly moderate any of the relationships between liquidity risk and credit risk indicators with profitability measures. Furthermore, the direct effect of firm size on ROA and ROE was also found to be statistically insignificant. These results therefore indicate that firm size does not amplify or diminish the influence of liquidity risk and credit risk on profitability. This finding implies that the ability to manage or absorb these risks does not automatically improve with scale, countering the common assumption that larger firms inherently possess greater resilience. Consequently, insurance companies of all sizes must adopt deliberate and well-structured liquidity risk and credit risk management approaches rather than depending on firm size as a safeguard.

In light of these findings, the study recommends that insurers in Kenya implement consistent and comprehensive liquidity risk and credit risk management practices irrespective of their scale. Both small and large firms should design and adopt risk

management systems that specifically address their exposure to liquidity and credit risks—rather than assuming that size alone provides protection. The study further advises insurance companies to maintain adequate capital buffers to withstand financial disruptions and reduce the negative impact of liquidity and credit risk on profitability. From a theoretical standpoint, the results call into question the assumptions of Risk-Return Trade-Off theory by showing that firm size does not alter the risk-profitability relationship among Kenyan insurers. Instead, the findings lend support to Contingency-Based theories of performance, suggesting that factors such as governance practices, the quality of risk management, and market dynamics exert a more significant influence than firm size in determining how liquidity and credit risk affect profitability.

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