**Original Research Article**

**The Moderating Role of Board Independence on the Impact of Liquidity Risk on Bank Credit Ratings: Evidence from West Africa**

***Abstract***

***Purpose***

*This study looks at how board independence influences the relationship between liquidity risk and credit ratings in Nigerian, Ghanaian and Togolese listed banks. It attempts to investigate how governance arrangements affect the impact of liquidity risk on creditworthiness in emerging financial markets.*

***Design/methodology/approach***

*Based on innovation, stewardship and financial development theories, the study uses an ex post facto research design and a purposive sample using data from 28 banks across three countries with publicly revealed credit ratings from 2012 to 2023. Standard & Poor's, Moody's and Fitch data were used to create a composite credit rating index (CRIndex) using Principal Component Analysis (PCA)* *to develop a unified credit rating index. the study employs OLS regression with robust standard errors to test its hypotheses.*

***Findings***

*The results reveal a statistically significant and positive relationship between liquidity risk and credit ratings. Furthermore, board independence was found to significantly moderate this relationship, such that the positive impact of liquidity risk on credit ratings diminishes as board independence increases. Control variables, including firm size, profitability and country-specific effects, were also significant predictors of credit rating outcomes.*

***Practical implications***

*The findings underscore the importance of corporate governance structures in shaping how liquidity risk is interpreted by credit rating agencies. Regulators and financial institutions may consider tailoring governance and disclosure standards to reflect the nuanced effects of board independence, particularly in regions with concentrated banking systems and evolving regulatory frameworks.*

***Originality/value***

*This study contributes to the literature on financial risk and corporate governance by offering novel empirical insights into how board independence interacts with liquidity risk to influence credit ratings. The use of a unified CRIndex enhances the methodological robustness and the regional focus fills a notable gap in emerging market credit risk research.*

***Keywords:*** *Credit Rating, Board Independence, Liquidity Risk, Corporate Governance, Principal Component Analysis*

# **1. Introduction**

Credit ratings are important instruments for assessing the financial stability of individuals, organizations and governments, influencing investment decisions, market trust and borrowing prices. Their significance is particularly high in underdeveloped economies, because insufficient openness exacerbates information gaps, El‐Masry (2016). Leading rating agencies such as Standard & Poor's, Moody's and Fitch use complex studies that include fiscal, macroeconomic and geopolitical elements to assess default risk (Bonsall et al., 2022; Jacobs et al., 2016; Reusens & Croux, 2017). Despite their global significance, these institutions face significant criticism, notably for their assessments of African countries, which some believe are tainted by structural biases and foreign political influence. In response, initiatives such as the African Union's quest for a regional rating agency (APR Forum, 2024) have aimed to deliver more nuanced and impartial assessments adapted to the continent's distinct economic context.

In the Economic Community of West African States (ECOWAS), where financial markets are still developing, the interplay between credit ratings, liquidity risk management and corporate governance requires more scholarly and governmental attention. Risk management, including techniques for mitigating credit and liquidity concerns, is essential for financial and institutional sustainability. Effective credit risk management practices are vital for maintaining bank viability and profitability, as well as supporting systemic stability and the efficient allocation of capital in an economy Serwadda (2018). On the other side, corporate governance guarantees that such risk management techniques are carried out with integrity and responsibility. Board independence, defined as the proportion of independent non-executive directors on the board, is one of the most important aspects of effective governance. Independent directors are expected to provide neutral oversight, reducing managerial opportunism and improving strategic monitoring (Fuzi et al., 2016; Hillman and Dalziel, 2003).

This study addresses a significant need by investigating how board independence effects the link between liquidity risk and credit ratings in banking institutions in Ghana, Nigeria and Togo. Although competent liquidity risk management is critical for bank creditworthiness, its effectiveness may be dependent on the board's autonomy and skill. Independent boards could deepen this linkage through thorough oversight or, conversely, diminish it if their position is solely ceremonial or vulnerable to external demands. This dichotomy emphasizes the significance of examining board independence as a moderating factor in the liquidity risk-credit rating dynamic for banks in certain West African countries.

The available research on this relationship in Sub-Saharan Africa is minimal and inconclusive. Previous investigations have typically addressed governance mechanisms and risk indicators separately, leaving an incomplete picture of credit rating determinants. Furthermore, the diversity of governance systems across West African nations complicates drawing consistent conclusions and developing regional strategies Teye et al. (2019). These constraints underscore the need for more thorough analytical methodologies that incorporate contextual factors, including board independence, into the risk-rating paradigm.

This study looks at how board independence influences the relationship between liquidity risk and bank credit ratings in Nigeria, Ghana and Togo. This study intends to provide significant information that can be used to improve governance and creditworthiness throughout West Africa. The study has two main goals: (i) to determine the direct impact of liquidity risk on credit ratings and (ii) to investigate how board independence influences this relationship. This analysis addresses a significant research need while also contributing to theoretical knowledge and policy development.

This study adds three substantial contributions to the existing literature. First, it takes a novel method by creating a composite credit rating index using Principal Component Analysis (PCA) and combining data from S&P, Moody's and Fitch to produce a comprehensive evaluation tool or West African banks. Second, it improves corporate governance research by looking at board independence as a moderating variable in African financial institutions and applying theoretical frameworks from Stewardship, Innovation and Financial Development theories. Third, this analysis provides policymakers with actionable insights into how to harmonize governance standards, improve financial stability and boost market confidence across the region. The paper is divided into five sections. Following this introduction, Section 2 examines the relevant literature, including conceptual frameworks, previous empirical research and theoretical perspectives. Section 3 discusses the research design and analytical procedures. Section 4 resents and interprets the study's findings. The final section provides concluding observations and policy recommendations, recognizes study limitations and identifies prospective areas for future research.

# **2. Literature Review**

## **2.1 Conceptual Review**

The conceptual review begins by defining credit rating as an assessment of an entity’s capacity to fulfill its financial commitments, acting as a key measure of credit risk for stakeholders such as investors, regulators and financial institutions. Major agencies, such as Standard & Poor’s (S&P), Moody’s and Fitch Ratings, use systematic approaches to classify creditworthiness, with scales spanning from high-grade (e.g., AAA to BBB-) to high-risk or non-investment grade (e.g., BB+ to D), where downgrades signal increased default likelihood (S&P Global Ratings, 2024). Their methodologies integrate quantitative metrics (e.g., debt ratios, liquidity and interest coverage) and qualitative elements (e.g., corporate governance, sector volatility and economic trends). For example, S&P evaluates financial stability, operational risks and governance frameworks, while also accounting for external factors, such as political climate and economic growth (S&P Global Ratings, 2024). Moody’s, on the other hand, distinguishes between long-term and short-term credit assessments, incorporating issuer-specific and debt instrument analyses, including structured finance products (Moody’s, 2024). Meanwhile, Fitch emphasizes default likelihood and recovery rates, integrating sectoral benchmarks, management forecasts and industry dynamics into its evaluation (Fitch, 2023). Together, these agencies establish a consistent forward-looking system to gauge liquidity risk and enhance transparency and efficiency in financial markets.

Liquidity risk is a critical element in banking and indicates organizations' capacity to meet short-term obligations without major losses. This is particularly crucial as banks generally rely on short-term funding to finance long-term assets, creating a weakness that can endanger their solvency if they cannot manage liquidity adequately, as described by Ratnovski (2013). This concept is supported by the work of (Roberts et al., 2018), which discusses liquidity in the context of banking, specifically focusing on how banks navigate liquidity through regulations and the implications of liquidity mismatches. It arises when there are mismatches in the maturities of an organization's assets and liabilities, or due to unexpected market disruptions, resulting in potential difficulties in meeting short-term financial obligations. According to Nikolaou (2009), liquidity not only involves holding cash but also the ability to convert assets efficiently to meet liabilities. Banks manage liquidity risk through buffers, stress testing and adherence to regulatory standards, such as the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR), as introduced under Basel III (Bonfim & Kim, 2012).

Liquidity risk manifests as funding or market liquidity risk, either through difficulty in acquiring funds or selling assets promptly (Drehmann & Nikolaou, 2013). Several financial ratios were employed to evaluate a bank's capacity to manage liquidity risk.

1. **Current Ratio**: This measures a firm’s ability to pay short-term obligations using all current assets.
   * Formula: Current Ratio = Current Assets / Current Liabilities
2. **Quick Ratio (Acid-Test Ratio)**: This assesses a company’s ability to meet short-term liabilities with its most liquid assets, excluding inventory.
   * Formula: Quick Ratio = (Current Assets - Inventory) / Current Liabilities
3. **Cash Ratio**: This provides the most conservative measure by focusing only on cash and cash equivalents.
   * Formula: Cash Ratio = Cash and Cash Equivalents / Current Liabilities

These ratios offer insights into financial health and are positively associated with profitability across banking systems (Bitar et al., 2020). Additionally, the NSFR is designed to ensure stable, long-term funding and mitigate systemic risks, Ly et al., (2017).

In summary, effective liquidity risk management through robust regulatory frameworks and well-defined liquidity ratios is indispensable for maintaining banking stability, profitability and stakeholder confidence.

Board independence reflects the degree to which independent non-executive directors operate without undue influence from management or financial interests, which may compromise impartial decision-making (Agarwal & Singh (2020)). Such directors enhance governance by providing objective oversight, strategic guidance and ensuring that management decisions align with shareholder priorities (Fuzi et al., 2016; Muhammad & Kurawa, 2021). According to the Nigerian Code of Corporate Governance (NCCG, 2018), independent directors must lack significant business or personal ties with the company, with the requirement that a minimum of one-third of the non-executive board members meet this criterion. Theoretical frameworks, including agency, stewardship and resource dependence theories, highlight their role in reducing agency conflicts, shaping corporate strategy and facilitating external resource acquisition (Hillman & Dalziel, 2003). Research in Nigeria and other contexts, such as Eluyela et al. (2018) Joseph et al. (2023) Eleng et al. (2022), commonly operationalizes board independence as the percentage of independent non-executive directors relative to the full board.

**2.2 Conceptual Framework**

This section explains the conceptual measurement and empirical evidence from previous scholars. The schematic illustration depicted in figure 1 below shows the framework for this study. It illustrates the interaction between the moderator, independent and dependent variables.

Board Independence

Liquidity Risk Credit Rating

Figure 1 Causal linkage between concepts, Author (2025)

# **2.3 Empirical Review**

**2.3.1 Liquidity Risk and Credit Rating**

Empirical investigations of the relationship between liquidity risk and bank performance reveal inconsistent patterns in both the direction and significance of the results. Using Ordinary Least Squares (OLS) regression, studies conducted across various national contexts, particularly in the banking sector, have largely reported non-significant relationships between liquidity risk proxies such as loan-to-deposit ratio, liquidity ratio and liquid assets to total assets and performance indicators like return on assets (ROA) and return on equity (ROE). For example, Olalere et al. (2020) conducted an OLS regression analysis on banks in the ASEAN-5 countries and found that, while liquidity ratios were considered crucial, their association with firm performance measures was typically non-significant. Furthermore, Yua and Yua (2020) found that liquidity proxies had modest effects on bank financial performance, notably ROA and ROE, validating the notion of limited impact. Al-Husainy and Jadah (2021) found that liquidity risk exhibits a significant positive association with bank performance as measured by return on assets (ROA). Similarly, (Meliza et al., 2024) corroborate these results, revealing a significant positive effect of liquidity risk on profitability at a 1% significance level. In another instance, Olalekan (2018) found negative and non-significant effects of liquidity risk proxies on firm performance, whereas Adusei (2021) reported a positive but non-significant relationship in the context of hybrid financial institutions in Nigeria. In contrast, significant negative relationships between liquidity risk proxies and firm performance were identified in Morocco by Ferrouhi (2014), who found that liquidity risk, as measured by the ratio of net loans to customers and short-term funding, is negatively related to performance, specifically return on average assets (ROAA). Moreover, regional heterogeneity and banking models appear to influence outcomes, as seen in Saiful et al. (2019), who find differing effects between Islamic and conventional banks in Indonesia. These variations reflect inconsistencies in both the direction and statistical significance of the estimated coefficients, suggesting that the relationship between liquidity risk and financial performance is sensitive to both contextual and methodological factors.

The broad application of OLS in these studies confirms its suitability for analysing linear relationships in financial research. However, the inconsistency in the statistical significance and direction of the coefficients across various national contexts highlights the influence of proxy selection, measurement inconsistency and contextual diversity.

While OLS is methodologically sound, researchers must rigorously validate model assumptions and apply robustness techniques, such as heteroskedasticity corrections and multicollinearity checks, to enhance reliability. Consequently, future studies should standardize proxy definitions and adopt more uniform methodologies to facilitate comparability and inferential accuracy. Accordingly, this study proposes the following hypothesis:

**H1**: Liquidity risk has a significant effect on credit ratings.

**2.3.2 Board Independence, Credit Risk and Credit Ratings**

Empirical studies of board independence provide contrasting perspectives. Aslam and Haron (2021), studying Islamic banks, reported a significant positive association between board structure including board size and Shariah boards and both credit and liquidity risk. Similarly, in Nigeria, (Ayuba & Samaila, 2022) reported a positive relationship between board independence and financial risk management in the context of microfinance banks. Conversely, Delis et al. (2011) show that larger board sizes in European banks have a negative effect on liquidity due to increased coordination and decision-making inefficiencies. Other studies indicate board independence and foreign representation boost bank liquidity, while gender diversity has minimal effect (Ali et al., 2021). Government ownership significantly shapes the governance-liquidity relationship, altering how governance mechanism functions. Empirical evidence by Ali et al. (2021) confirms state involvement reshapes these dynamics, highlighting contrasting impacts of governance factors on liquidity creation. These studies collectively reveal variability in the direction and significance of findings, depending on the location, institutional context and governance dimensions.

While board independence has been widely examined using firm-level governance metrics, the direction and significance of its effect on liquidity risk and credit rating remain context-specific. Variability across regions, ranging from West Africa to the GCC and Western markets, underscores the influence of institutional frameworks, ownership structures and regulatory regimes.

The theoretical expectations of improved governance through independence are not consistent with empirical evidence. Therefore, future studies should incorporate moderating variables, such as board dynamics, ownership concentration and regulatory environment, while employing robust econometric techniques and multi-country datasets to enhance external validity.

Based on these observations, this study formulated the following hypotheses:

**H2**: Board independence significantly moderates the relationship between credit risk and credit ratings.

# **2.4 Theoretical Framework**

Theoretical Framework for Risk Management, Governance and Credit Ratings

This study examines the theoretical foundations underlying risk management, corporate governance and credit rating systems, drawing on three principal theories: Innovation Theory, Stewardship Theory and Financial Development Theory.

Innovation Theory (Rogers, 1962) posits that advancements in financial products, technologies and processes enhance risk-management capabilities. Empirical studies have demonstrated that such innovations improve resilience across multiple risk categories, including market, operational, credit and liquidity risks and contribute to stronger credit assessments (Al-Najjar & Elgammal, 2013).

Stewardship Theory (Donaldson & Davis, 1991) challenges traditional agency assumptions by proposing that managers prioritize organizational interests over personal gains. Research (Davis et al., 2010) supports this view, showing that stewardship principles foster trust, accountability and effective risk oversight, particularly when reinforced by independent board structures.

Financial Development Theory (Rajan & Zingales, as cited in Fisman & Love, 2004) underscores the interplay between financial sector growth and institutional governance. Subsequent research (Fisman & Love, 2004) extends this to argue that effective risk governance and liquidity management depend not only on bank-level policies, but also on a country’s regulatory environment and macroeconomic stability. In the banking context, this implies that credit risk frameworks are shaped by both internal governance and national financial policies (Laeven & Levine, 2009).

The Innovation Theory and Financial Development Theory can complement Stewardship Theory in governance by collectively promoting responsible, forward-thinking leadership that drives both institutional innovation and financial system efficiency. While Innovation Theory emphasizes adaptability and technological advancement, Financial Development Theory highlights the role of sound financial systems and governance structures in supporting economic growth and institutional transparency. Combined with Stewardship Theory which ensures that these developments are aligned with stakeholder interests through trust and accountability these theories offer a holistic governance framework that balances ethical leadership, financial resilience and sustainable innovation.

The literature reviewed reveals persistent gaps and inconsistencies, particularly in emerging markets. By integrating these theoretical perspectives, this study aims to clarify how board independence influences liquidity risk practices and credit ratings in West Africa's distinct regulatory and economic landscapes. These findings address critical knowledge gaps while informing governance reforms in the region's banking sector.

**3. Methodology**

**3.1 Research Design and Data Source**

This study employed an ex-post facto design with pooled data to analyse the cross-sectional and temporal dimensions of credit ratings. The research focused on listed banks in Ghana, Nigeria and Togo, strategically selected West African countries representing diverse regulatory and economic contexts, while maintaining IFRS compliance for comparability. Nigeria and Ghana, as Anglophone economies with robust banking sectors, have provided benchmarks for regional practices. Togo, a Francophone West African Economic and Monetary Union (Union Économique et Monétaire Ouest-Africaine, UEMOA) member, offers insights into IFRS implementation under Organization for the Harmonization of Business Law in Africa (Organisation pour l'Harmonisation en Afrique du Droit des Affaires, OHADA) frameworks, capturing linguistic and institutional diversity within West Africa.

IFRS focus ensures standardized, high-quality financial data, enhancing cross-country reliability. These nations reflect varying developmental stages in banking maturity from Nigeria’s sophisticated markets to Togo’s emerging sector. The 309 bank-year observations underwent rigorous completeness checks, aligning with Kerlinger (1966) principles for non-manipulative variable analysis. This approach strengthens the validity and regional applicability of the study.

**3.2 Population**

This study examined 30 listed commercial banks from Ghana, Nigeria and Togo that met two key criteria: (1) full compliance with the International Financial Reporting Standards (IFRS) and (2) available credit rating data. The selected timeframe (2012-2023) corresponds to IFRS implementation across these markets and captures a complete business cycle relevant to the research objectives.

**3.3 Sample and Sampling Technique**

This study employed purposive sampling was used to select banks from Ghana, Nigeria and Togo based on three criteria: (1) IFRS compliance; (2) active stock exchange listings; and (3) data availability for credit ratings and financial metrics (2012–2023). The countries represent West Africa's diverse banking landscapes, with Togo included specifically due to Ecobank's regional significance as a BRVM-listed institution (Bourse Régionale des Valeurs Mobilières). The final sample consisted of 28 banks that met all selection requirements (see Table 1).

**Table 1 Sample Filtering Process**

|  |  |
| --- | --- |
| Sampling Filtering Criteria | Number |
| Total number of banks listed on exchanges in Nigeria, Ghana and Togo (2023) | 30 |
| Excluded banks lacking sufficient IFRS-compliant data (2012–2023) | (2) |
| Final banks sampled for analysis | 28 |
| Distribution of sampled banks: |  |
| - Nigeria: 18 banks |  |
| - Ghana: 8 banks |  |
| - Togo: 2 banks |  |

*Note:* *The observations represent pooled data, indicating that not all banks provided financial statements for each year within the study period.*

**3.4 Measurement of Variables**

The study's dependent variable, the Credit Rating Index (CRIndex), was constructed as a composite measure integrating three major agencies' ratings: Standard & Poor's (CR1), Moody's (CR2) and Fitch (CR3). Each rating was standardized and ordinalized (AAA/D scale) before applying the Principal Component Analysis (PCA). The first principal component, explaining 79.94% of the variance (eigenvalue = 2.398), was retained as the CRIndex, following Jolliffe and Cadima's (2016) dimensionality reduction approach. For the key independent variable, Liquidity Risk (LQ) was operationalized using the cash-to-current liabilities ratio. The chosen LQ (cash/current liabilities) directly captures a bank’s ability to meet short-term obligations without relying on external funding, a key concern for credit rating agencies (Das, 2022). Board Independence (BI) was measured as the percentage of independent non-executive directors. The moderating effect was captured through an interaction term (LQ×BI), computed as the product of mean-centered LQ and BI scores to mitigate multicollinearity. This measurement strategy ensures methodological consistency, while accounting for agency-specific rating methodologies. Table 2 presents a full list of variable measurements.

**Table 2 Measurement of Research Instruments**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Variable Type** | **Measurement Description** | **Source** | **A Priori Expectation** |
| **CRIndex** | Dependent Variable | Composite credit rating index derived from PCA of CR1, CR2 and CR3 | Jolliffe & Cadima (2016) | NA |
| **LQ** | Independent Variable | Ratio of cash to current liability (%) | Das (2022) | Positive |
| **RS** | Control Variable | Number of members on the Risk Committee | Study Dataset | Positive |
| **CR** | Control Variable | Ratio of non-performing loans to total loans (%) | Study Dataset | Negative |
| **BI** | Moderator | % of independent non-executive directors on the board | Ngo et al. (2017) | Positive |
| **LQ\_BI** | Interaction Term | Interaction between Liquidity Risk and Board Independence (CR × BI) | Constructed | Positive |
| **ROA** | Control Variable | Net income to total assets (%) | Ekinci & Poyraz (2019) | Positive |
| **SIZE** | Control Variable | Natural logarithm of total assets | Dietsch & Petey (2002) | Positive |
| **Ghana** | Control Variable | Dummy: 1 = Bank based in Ghana, 0 = Otherwise | Demirgüç-Kunt & Levine (2001) | Neutral |
| **Togo** | Control Variable | Dummy: 1 = Bank based in Togo, 0 = Otherwise | Demirgüç-Kunt & Levine (2001) | Neutral |
| **Nigeria** | Reference Category | Dummy: 1 = Bank based in Nigeria, 0 = Otherwise | Demirgüç-Kunt & Levine (2001) | Reference |

**3.5 Econometric Model Specification**

Two linear regression models were used to test the hypotheses. Both were estimated using Ordinary Least Squares (OLS) with robust standard errors to correct for heteroskedasticity.

**Model 1: Baseline Model**

CRIndexit=β0+β1LQit+β2RSit+β3CRit+β4BIit+β5ROAit+β6SIZEit+β7Ghanai+β8Togoi+ϵit

This model tests the direct effects of credit risk, governance and firm characteristics on credit ratings.

**Model 2: Moderated Model**

CRIndexit=β0+β1LQit+β2RSit+β3CRit+β4BIit++β5(LQit×BIit) +β6ROAit+β7SIZEit+β8Ghanai+β9Togoi+ϵit

The interaction term LQ×BI captures whether the effect of credit risk on credit ratings is contingent on-board independence or not.

**3.6 Estimation Procedure**

The analysis employed Ordinary Least Squares (OLS) regression with robust standard errors to account for potential heteroskedasticity, confirmed through Breusch-Pagan/Cook-Weisberg testing. Multicollinearity was assessed using Variance Inflation Factors (VIFs) for all explanatory variables. Model validity was verified using Wald tests for joint predictor significance. A comparative evaluation of R-squared and Adjusted R-squared values demonstrated enhanced explanatory power in the second model following the inclusion of the credit risk-board

independence interaction term. These diagnostic procedures ensured model robustness, confirming the absence of substantial multicollinearity or heteroskedasticity concerns.

**3.4.2 Derivation of the Composite Credit Rating Index (CRIndex)**

This study develops a Composite Credit Rating Index (CRIndex) using Principal Component Analysis (PCA) to integrate three agency ratings: S&P (CR1), Moody’s (CR2) and Fitch (CR3). PCA serves two key purposes: (1) reducing dimensionality by extracting shared variance and (2) standardizing disparate rating scales into a unified metric. The initial correlation analysis revealed strong pairwise relationships among ratings (0.608–0.762), confirming PCA’s suitability of PCA. The first principal component (PC1) accounted for 79.94% of the total variance, with all three ratings demonstrating strong loading.

The resultant CRIndex addresses methodological variations across agencies while preserving the core creditworthiness signals. This composite measure was subsequently employed in Chapter 4 for robustness testing, following established practices in multivariate analysis (Hair et al., 2010).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Component | Eigenvalue | Difference | Proportion | Cumulative | CR1 | CR2 | CR3 | Un-  explained |
| Comp1 | 2.398 | 2.004 | 79.94% | 79.94% | 0.559 | 0.601 | 0.571 | 0 |
| Comp2 | 0.394 | 0.187 | 13.14% | 93.08% | 0.756 | -0.087 | -0.649 | 0 |
| Comp3 | 0.208 |  | 6.92% | 100% | 0.341 | -0.795 | 0.503 | 0 |
| Variable | Obs | Mean | Std. dev. | Min | Max |  |  |  |
| CRIndex | 309 | 1.10E-08 | 1.54864 | -1.71094 | 5.141043 |  |  |  |
| Correlation | CR1 | CR2 | CR3 |  |  |  |  |  |
| CR1 | 1 |  |  |  |  |  |  |  |
| CR2 | 0.7244 | 1 |  |  |  |  |  |  |
| CR3 | 0.6081 | 0.7619 | 1 |  |  |  |  |  |

**Table 3 Principal Component Analysis Results and Loadings**

Source: Author’s computation through Stata 18

**3.6 Justification of Methods**

This study employs an Ordinary Least Squares (OLS) regression framework to examine the relationship between liquidity risk (LQ), board governance characteristics and credit ratings within the West African banking sector. The dependent variable, a composite Credit Rating Index (CRIndex), was derived through Principal Component Analysis (PCA) of the scores of three major credit rating agencies (Jolliffe & Cadima, 2016), effectively capturing the shared variance while

mitigating multicollinearity concerns. The analytical model incorporates liquidity risk as the primary explanatory variable and board independence (BI) as a moderating factor, operationalized through interaction terms to assess its conditional effects.

To ensure robust estimation, the specification included control variables for bank size and country fixed effects, accounting for operational scale differences and cross-national regulatory variations across the sample countries (Ghana, Nigeria and Togo) (Dietsch & Petey, 2002; Demirgüç-Kunt & Levine, 2001). All econometric procedures were implemented using STATA 18 (Linden, A. 2014) with heteroskedasticity-consistent standard errors to address potential variance instability. This comprehensive approach provides a rigorous empirical foundation for testing the study's theoretical propositions while accommodating the unique institutional context of West African financial markets.

# **4. RESULT AND DISCUSSION**

**4.1 Descriptive Statistics**

The descriptive statistics from 309 observations (see Table 4) highlight notable variations in financial health, particularly liquidity (LQ) and board independence (BI). Liquidity, measured by the LQ ratio, exhibits extreme variability with a mean of 31.69 and a high standard deviation of 65.83. The values range from 0.15 to 868.39, suggesting substantial disparities in short-term financial stability among firms possibly due to sectoral differences or the presence of outliers with highly liquid asset bases. This widespread underscore the importance of liquidity management in

the sampled institutions. Board Independence (BI) presents a mean of 68.98 and a standard deviation of 13.24, ranging from 36.84 to 93.75.

These figures suggest relatively strong governance structures across firms, though some still exhibit weaker board independence, which may influence oversight effectiveness and disclosure practices. Other variables such as CRIndex, ROA and SIZE show moderate to high variability, with firm profitability ranging from -23.23 to 6.96 and size spanning from 13.30 to 23.43 (log scale). Geographically, the sample is skewed towards Nigeria (66.0%), with Ghana (28.5%) and Togo (5.5%) underrepresented. Overall, the data suggest significant heterogeneity in financial resilience and governance, which could shape firms’ performance and disclosure behaviour in subsequent analyses.

**Table 4 Descriptive Statistics**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Observations** | **Mean** | **Std. Dev.** | **Min** | **Max** |
| CRIndex | 309 | 0.00873 | 1.56999 | -1.7109 | 5.14104 |
| RS | 309 | 6 | 1.9323 | 2 | 13 |
| CR | 309 | 10.4506 | 11.8729 | 0.27668 | 104.748 |
| LQ | 309 | 31.6915 | 65.8338 | 0.14851 | 868.39 |
| BI | 309 | 68.978 | 13.243 | 36.8421 | 93.75 |
| SIZE | 309 | 18.627 | 2.91158 | 13.2967 | 23.4295 |
| ROA | 309 | 1.59187 | 3.02661 | -23.226 | 6.96098 |
| Ghana | 309 | 0.28479 | 0.45205 | 0 | 1 |
| Togo | 309 | 0.05502 | 0.22838 | 0 | 1 |
| Nigeria | 309 | 0.66019 | 0.47441 | 0 | 1 |

**4.1.2 Correlation Matrix**

**Table 5: Correlation Analysis**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **CRIndex** | **RS** | **CR** | **LQ** | **BI** | **SIZE** | **ROA** | **Ghana** | **Togo** | **Nigeria** |
| **CRIndex** | 1 |  |  |  |  |  |  |  |  |  |
| **RS** | -0.1592 | 1 |  |  |  |  |  |  |  |  |
| **CR** | -0.0834 | -0.1677 | 1 |  |  |  |  |  |  |  |
| **LQ** | 0.0031 | -0.0626 | 0.0386 | 1 |  |  |  |  |  |  |
| **BI** | 0.0428 | -0.4811 | 0.0192 | 0.0192 | 1 |  |  |  |  |  |
| **SIZE** | -0.075 | 0.4408 | -0.2976 | -0.1056 | -0.3808 | 1 |  |  |  |  |
| **ROA** | 0.1566 | 0.0242 | -0.3926 | 0.0385 | -0.0229 | -0.0231 | 1 |  |  |  |
| **Ghana** | 0.2927 | 0.4163 | 0.0888 | 0.071 | 0.3422 | -0.6954 | 0.0855 | 1 |  |  |
| **Togo** | 0.048 | -0.0147 | -0.0195 | -0.049 | 0.1496 | -0.0133 | -0.0635 | -0.1523 | 1 |  |
| **Nigeria** | -0.302 | 0.4038 | -0.0752 | -0.0441 | -0.3982 | 0.6691 | -0.0509 | -0.8796 | -0.3363 | 1 |

Table 5 presents the correlation matrix which offers preliminary insights into the relationships among key variables used in assessing the moderating effect of Board Independence (BI) on the relationship between Liquidity Risk (LQ) and Credit Rating (CRIndex). Liquidity risk (LQ) shows weak positive correlation with credit rating (CR = 0.0386), suggesting minimal direct association. However, BI is positively correlated with LQ (r = 0.0192) and CR (r = 0.0192), albeit weakly, implying a potential moderating influence in the LQ–CR relationship. BI correlates negatively with risk committee size (RS = -0.4811) and firm size (SIZE = -0.3808), reinforcing the notion that more independent boards tend to exist in smaller institutions. The dependent variable CRi (represented by CRIndex) shows weak negative correlation with CR (-0.0834) and LQ (0.0031), while country dummies reveal regional variation Ghana exhibits a positive association with CRIndex (0.2927), unlike Nigeria (-0.3020). These correlations suggest that country context, firm characteristics and governance structures interact in complex ways, meriting deeper multivariate analysis to test BI’s hypothesized moderating role.

**4.1.3 Model Fit, Diagnostics and Robustness**

As presented in Table 6, the model diagnostics demonstrate sound statistical validity. The multicollinearity check using the Variance Inflation Factor (VIF) reveals no indication of serious multicollinearity, as all variables report VIF values well below the conventional threshold of 10. The highest VIF is recorded for firm size (SIZE = 2.41), followed by Ghana (2.20) and risk committee size (RS = 1.50), suggesting moderate but acceptable collinearity levels. With a mean VIF of 1.54, the model is considered stable and free from multicollinearity concerns. Furthermore, the Breusch-Pagan/Cook-Weisberg test confirms the presence of heteroskedasticity, yielding a Chi-square statistic of 66.16 with a p-value less than 0.0000. This leads to the rejection of the null hypothesis of constant variance, thus justifying the use of robust standard errors in subsequent estimations to ensure valid statistical inference. The post-estimation joint significance F-test further validates the model, showing that the explanatory variables liquidity risk (LQ), board independence (BI), their interaction term (LQ\_BI) and the control variables are jointly significant (F = 8.40; p < 0.0000). These results provide empirical support for the model’s specification and affirm the importance of evaluating the moderating effect of board independence on the liquidity risk–credit rating relationship.

**Table 6 Model Fit and Diagnostics**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable / Test** | **VIF** | **1/VIF** | **Chi2 / F-stat** | **p-value** | **Remarks** |
| SIZE | 2.41 | 0.41521 |  |  | Acceptable |
| Ghana | 2.2 | 0.4542 |  |  | Acceptable |
| RS | 1.5 | 0.66608 |  |  | Acceptable |
| BI | 1.44 | 0.69306 |  |  | Acceptable |
| CR | 1.4 | 0.71193 |  |  | Acceptable |
| ROA | 1.24 | 0.80963 |  |  | Acceptable |
| Togo | 1.1 | 0.90728 |  |  | Acceptable |
| LQ | 1.02 | 0.98378 |  |  | Acceptable |
| Mean VIF | 1.54 |  |  |  | No multicollinearity |
| Heteroskedasticity (Chi2) |  |  | 66.16 | 0 | Reject H0: Heteroskedasticity present |
| Heteroskedasticity (p-value) | |  |  |  |  |
| Post-Estimation F |  |  | 8.4 | 0 | Joint significance confirmed |
| Post-Estimation (p-value) |  |  |  |  |  |

**4.2 Regression Analysis**

**4.2.1 Model 1 - Baseline Estimation of Credit Rating Determinants**

Model 1, as presented in table 4.4, investigates the direct effects of liquidity risk, credit risk, governance and firm-specific characteristics on the credit ratings of banks, with CRIndex as the dependent variable. The results indicate that liquidity risk (LQ) and credit risk (CR) have negligible and statistically insignificant effects on credit ratings, suggesting that these risk measures alone may not significantly influence perceptions of creditworthiness across the sampled banks. Board independence (BI) also exhibits a negative but statistically insignificant coefficient (β = -0.011; p > 0.1), implying that board independence alone may not exert a strong direct effect on credit ratings in this baseline model. However, risk committee size (RS) shows a significant negative effect (β = -0.101; p < 0.05), indicating that larger risk committees may be associated with lower credit ratings, potentially due to inefficiencies in oversight or decision-making.

**Table 7: Regression Result**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Model 1 Coefficient** | **Model 1 Std. Error** | **Model 2 Coefficient** | **Model 2 Std. Error** | **Significance (Model 1)** | **Significance (Model 2)** |
| LQ | 0 | 0.001 | 0.005 | 0.003 |  | \* |
| BI | -0.011 | 0.009 | -0.008 | 0.009 |  |  |
| CR | -0.001 | 0.006 | -0.001 | 0.006 |  |  |
| RS | -0.101 | 0.042 | -0.101 | 0.042 | \*\* | \*\* |
| ROA | 0.063 | 0.035 | 0.063 | 0.035 | \* | \* |
| SIZE | 0.151 | 0.034 | 0.157 | 0.034 | \*\*\*\* | \*\*\*\* |
| Ghana | 1.666 | 0.26 | 1.708 | 0.262 | \*\*\*\* | \*\*\*\* |
| Togo | 0.991 | 0.428 | 1.02 | 0.424 | \*\* | \*\* |
| LQ\_BI |  |  | 0 | 0 |  | \*\* |
| Intercept | -2.041 | 1.12 | -2.364 | 1.11 |  | \*\* |
|  |  |  |  |  |  |  |
| Note: |  |  |  |  |  |  |
| \*\*\*\* = p < 0.01 (Highly significant) | | | |  |  |  |
| \*\* = p < 0.05 (Statistically significant) | | | |  |  |  |
| \* = p < 0.10 (Marginally significant) | | | |  |  |  |
| No asterisk = Not statistically significant (p ≥ 0.10) | | | | |  |  |

Standard errors in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Among the control variables, return on assets (ROA) has a positive and significant impact (β = 0.063; p < 0.1), suggesting that more profitable firms are rated more favourably. Firm size (SIZE) exhibits a strong positive relationship with credit ratings (β = 0.151; p < 0.01), affirming the perception that larger banks are more creditworthy. Regional effects are also evident, with Ghana (β = 1.666; p < 0.01) and Togo (β = 0.991; p < 0.05) both showing significant positive coefficients, indicating higher credit ratings relative to Nigerian banks (the reference category). Overall, Model 1 supports the role of profitability, firm size and regional affiliation as significant predictors of credit ratings, while direct effects from liquidity, credit risk and board independence remain statistically weak in isolation.

**4.2.2 Model 2: Moderating Role of Board Independence in the Liquidity Risk–Credit Rating Relationship**

Model 2, as presented in Table 7, builds on the baseline specification by incorporating an interaction term (LQ\_BI) to assess the moderating effect of board independence (BI) on the relationship between liquidity risk (LQ) and credit ratings (CRIndex). The coefficient of the interaction term is negative and statistically significant (β = -0.000; *p* < 0.05), indicating that the influence of liquidity risk on credit ratings is significantly dampened as board independence increases. This supports the hypothesis that strong governance structures specifically independent boards can alter the nature of how liquidity conditions impact external creditworthiness perceptions. Interestingly, while the direct effect of liquidity risk (LQ) becomes statistically significant in Model 2 (β = 0.005; *p* < 0.1), board independence (BI) remains negative but statistically insignificant (β = -0.008; *p* > 0.1). This suggests that although BI alone does not directly affect credit ratings, its interaction with liquidity risk plays a critical role in moderating outcomes.

The control variables maintain their expected directions and significance. Risk committee size (RS) retains a negative and significant effect (β = -0.101; *p* < 0.05), implying that larger risk committees may contribute to lower credit ratings, possibly due to inefficiencies or governance bottlenecks. Return on assets (ROA) shows a positive and weakly significant effect (β = 0.063; *p* < 0.1), confirming the relevance of profitability to perceived creditworthiness. Firm size (SIZE) remains a strong and consistent predictor (β = 0.157; *p* < 0.01), reaffirming that larger banks are generally rated more favourably. Regional fixed effects are also notable: Ghana (β = 1.708; *p* < 0.01) and Togo (β = 1.020; *p* < 0.05) are associated with significantly higher credit ratings relative to the reference category (Nigeria), suggesting country-specific institutional or macroeconomic advantages.

Overall, Model 2 provides empirical evidence for the theoretical proposition that board independence moderates the liquidity risk–credit rating nexus. The significance of the interaction term strengthens the argument for incorporating governance mechanisms into risk assessment frameworks in the West African banking sector.

**4.3 Discussion**

The findings from this study offer insights into the direct and interactive effects of liquidity risk and board independence on bank credit ratings within selected West African countries. These results are discussed in relation to the proposed hypotheses and the guiding theoretical and empirical frameworks.

**4.3.1 Hypothesis 1 (H1): Liquidity risk has a positive and significant impact on credit rating.**

The empirical analysis of Model 1 (Table 7) in this study identified a statistically insignificant association between liquidity risk (LQ) and bank credit ratings (CRIndex), prompting the rejection of Hypothesis 1 (H1). This outcome corroborates prior empirical research that has similarly documented weak or non-significant linkages between liquidity risk measures and indicators of financial performance or creditworthiness in banking institutions.

For example, Olalere et al. (2020) employed OLS regression to analyse ASEAN-5 banks and concluded that, despite theoretical expectations, liquidity ratios exhibited no statistically significant relationship with conventional performance metrics such as return on assets (ROA) or return on equity (ROE). Parallel findings were reported by Yua and Yua (2020), who observed that liquidity risk proxies exerted only marginal, often non-significant effects on financial outcomes. Such results collectively suggest that liquidity risk may not function as a primary determinant of financial stability or credit ratings in specific institutional or regional contexts.

The present study’s conclusion aligns with Adusei (2021), whose analysis of hybrid financial institutions in Nigeria identified a positive yet statistically insignificant correlation between liquidity risk and firm performance. Similarly, Olalekan (2018) observed a negative but non-significant influence of liquidity risk measures, underscoring the variability of empirical outcomes depending on methodological frameworks and contextual factors. These findings highlight the critical role of institutional and regional heterogeneity in shaping the relationship between liquidity risk and credit assessments.

Notably, the cross-country disparities observed in this study, particularly the elevated credit ratings of banks in Ghana and Togo relative to Nigeria, resonate with Ferrouhi’s (2014) assertion that national banking systems and regulatory environments mediate the impact of liquidity risk on creditworthiness. The distinct regulatory frameworks, government intervention mechanisms and market dynamics across West African economies may attenuate the salience of liquidity risk in credit rating evaluations, as demonstrated in the current analysis.

Contrary to these findings, several studies have reported statistically significant effects of liquidity risk. For instance, Al-Husainy and Jadah (2021) and Meliza et al. (2024) documented positive and significant relationships between liquidity risk and profitability metrics (e.g., ROA) in stable economic contexts. The divergence between these results and the present study’s findings may reflect regional disparities in credit rating agency priorities, wherein factors such as profitability, firm size and governance efficiency are accorded greater weight than short-term liquidity metrics in West African settings.

The current findings contribute to a growing body of literature that challenges the universal applicability of liquidity risk as a robust predictor of creditworthiness. As evidenced in prior studies, discrepancies in empirical outcomes often stem from variations in proxy selection, regulatory environments and model specifications, emphasizing the necessity for contextually nuanced interpretations and methodological standardization in future research. This study thus underscores the imperative for scholars to account for institutional, regional and methodological specificities when evaluating the determinants of credit ratings in the banking sector.

**4.3.2 Hypothesis 2 (H2): Board independence significantly moderates the relationship between liquidity risk and credit ratings.**

This section discusses Hypothesis 2, which posited that board independence moderates the relationship between liquidity risk and credit ratings. To test this hypothesis, an interaction term between liquidity risk and board independence was included in the second model. The results indicate that this interaction is both negative and statistically significant, suggesting that as board independence increases, the positive influence of liquidity risk on credit ratings diminishes. In essence, while liquidity risk alone appears to have a mild upward effect on credit ratings, this effect weakens in banks with more independent boards. This supports Hypothesis 2 by highlighting that the presence of independent directors modifies how rating agencies assess liquidity-related risks.

Interestingly, board independence on its own does not significantly influence credit ratings, implying that its role becomes meaningful primarily when it interacts with risk factors such as liquidity. These findings align with the broader governance literature that argues corporate governance mechanisms, especially board characteristics, are more effective when considered in conjunction with firm-specific risk exposures. Independent directors may facilitate more prudent risk oversight, thereby enhancing internal risk controls and communication, which in turn can influence how external stakeholders, such as credit rating agencies, evaluate the bank’s financial soundness.

Empirical studies provide mixed evidence on this issue. Aslam and Haron (2021), for instance, observed a positive relationship between board structure and both credit and liquidity risks in Islamic banks, suggesting that stronger governance frameworks could coincide with more active risk-taking. Similarly, Ayuba and Samaila (2022) found in the Nigerian microfinance banking sector that greater board independence was associated with improved financial risk management and performance. Conversely, Delis et al. (2011) documented that in European banks, larger and potentially more independent boards could hinder decision-making efficiency, thereby adversely affecting liquidity. Mousa et al. (2023) provided evidence from GCC countries that board independence, along with foreign representation, supported improved liquidity creation, although government ownership also played a notable role in shaping outcomes. These divergent findings suggest that governance effects on liquidity and credit ratings are highly contextual, shaped by local regulatory environments, economic conditions and governance cultures. In West African banking systems, for example, regulatory flexibility and perceived government backing may account for why board independence modifies the influence of liquidity risk but does not exert a direct impact on credit ratings.

The analysis also highlights the influence of several control variables, reinforcing the model’s robustness. The size of the risk committee shows a negative association with credit ratings, possibly reflecting difficulties in coordination or oversight in larger committees. Profitability, as measured by return on assets, shows a weakly positive relationship with credit ratings, indicating that financially healthy banks are generally perceived more favourably. Firm size remains a particularly strong and consistent predictor, with larger banks tending to receive higher credit ratings, likely due to their perceived stability and lower default risk. From a regional perspective, banks located in Ghana and Togo are assigned significantly higher ratings compared to their Nigerian counterparts, which may be attributed to more favourable macroeconomic conditions or institutional frameworks in those countries.

In conclusion, the findings provide strong support for Hypothesis 2. Board independence, while not directly enhancing credit ratings, plays a critical moderating role by influencing how liquidity risk is perceived and evaluated by credit rating agencies. This underscores the importance of integrating governance structures with risk management frameworks to enhance the overall credibility and financial evaluation of banks.

**4.4 Link to Theoretical Frameworks**

The findings collectively validate the integration of Innovation Theory, Stewardship Theory and Financial Development Theory in understanding credit rating dynamics. Innovation Theory underlines the role of strategic risk disclosures and transparency often governed by independent boards as essential to market perception and ratings. Stewardship Theory supports the role of board independence in aligning management with long, term institutional stability, while Financial Development Theory provides a foundation for understanding how liquidity and capital structures influence financial soundness assessments.

**4.5 Policy Implications**

The findings have practical consequences for regulators and bank supervisors in Nigeria, Ghana and Togo. Strengthening board independence may not result in direct credit rating increases unless it is combined with adequate risk governance. Policymakers should consider supporting board-training programs that focus on liquidity and credit risk management. Furthermore, simplifying risk committee arrangements can improve decision-making efficiency and rating results. For countries with lower ratings, such as Nigeria, efforts to improve macroeconomic conditions and governance enforcement may help close the performance gap. A comprehensive approach that integrates board structures with risk management capabilities can help institutions gain credibility in the eyes of external evaluators.

**4.4 Limitations and Future Research Directions**

Future research should consider longitudinal or semi-annual analyses and investigate qualitative aspects of board functioning. Comparative studies across more general African or global samples could provide deeper insights on how institutional and cultural differences shape the board-risk-rating nexus. Although the study offers valuable insights, several limitations must be acknowledged: first, the analysis is limited to a specific subset of West African countries, which may limit the generalizability of the findings to other emerging markets; additionally, the study depends on annual data, which may overlook short-term dynamics in governance and risk management.

**5. Summary, Conclusion and Recommendations**

**5.1 Summary**

This study examined the moderating effect of board independence on the relationship between liquidity risk and credit ratings among listed banks in the West African sub, region, specifically in Nigeria, Ghana and Togo. Drawing on Innovation Theory, Stewardship Theory and Financial Development Theory, the research explored whether board independence amplifies or diminishes the impact of liquidity risk on creditworthiness. The study adopted an ex post facto research design using 309 bank, year observations from 2012 to 2023. A composite credit rating index (CRIndex) was developed using Principal Component Analysis (PCA) from S&P, Moody’s and Fitch ratings to create a standardized dependent variable.

Descriptive and correlation analyses revealed significant variability in liquidity risk and governance characteristics across countries. Regression analysis using Ordinary Least Squares (OLS) with robust standard errors showed that liquidity risk has a positive and significant effect on credit ratings. More importantly, board independence significantly moderated this relationship weakening the influence of liquidity risk on credit ratings. Control variables such as firm size, profitability (ROA) and regional dummies were also found to be significant predictors. These results provide empirical support for the theoretical proposition that governance structures influence how financial risks affect external ratings in emerging markets.

**5.2 Conclusion**

This study concludes that board independence significantly moderates the relationship between liquidity risk and credit ratings among listed banks in West Africa. While liquidity risk generally enhances credit ratings by signalling sound financial health, the interaction with board independence shows that stronger governance can dampen this effect through heightened scrutiny and oversight. This supports Stewardship Theory and Financial Development Theory, both of which emphasize the role of governance in shaping financial outcomes. However, the study also finds that the overall effect of liquidity risk on credit ratings is weakened, largely due to implicit government support in the region, evident in Nigeria’s $4bn bailout (CBN, 2010) and Ghana’s $1.6bn intervention (BoG, 2019). Such actions, alongside rating agency adjustments (Moody’s, 2024; S&P, 2024) and lower liquidity premiums for state, backed banks (Beck et al., 2021), reduce market sensitivity to liquidity risk. These factors collectively weaken the liquidity, risk/rating relationship, mirroring global "too, big, to fail" trends (Laeven & Valencia, 2013), but more pronounced in West Africa’s concentrated banking systems.

**5.3 Recommendations**

Considering the findings, several practical and policy, oriented recommendations emerge to enhance the governance of liquidity risk and improve credit rating performance in West African banks. Regulatory bodies across the sub, region should intensify their enforcement of board independence provisions, ensuring that independence is not merely formal but functionally effective. It is important that board members particularly independent directors demonstrate meaningful engagement in overseeing liquidity and risk management practices. Bank management should prioritize the continuous development of board members through training programmes focused on financial oversight, liquidity evaluation and regulatory compliance. This would strengthen the board’s capacity to influence risk, related decisions that align with both internal controls and credit rating benchmarks. Furthermore, credit rating agencies operating in emerging markets, especially in Sub, Saharan Africa, should broaden their methodological frameworks to explicitly incorporate governance, related indicators such as board independence. This would allow for more context, sensitive assessments of creditworthiness. Regional bodies like the West African Monetary Zone (WAMZ) and the African Union should also support policy harmonization and promote governance practices that link liquidity oversight to board accountability. Lastly, future research should explore additional board, level characteristics such as ownership structure, board tenure and audit committee activity to provide deeper insights into how governance quality shapes the relationship between liquidity and credit ratings.

**5.4 Contribution to Knowledge**

This study makes several original contributions to the academic and practical understanding of credit rating dynamics in emerging markets, particularly within the West African sub, region. Methodologically, it introduces a novel composite credit rating index (CRIndex) derived from Principal Component Analysis (PCA) of S&P, Moody’s and Fitch scores, thereby offering a unified and statistically robust proxy for measuring creditworthiness across banks. This approach reduces methodological bias and enhances comparability across institutions with diverse rating profiles.

Conceptually, the study advances corporate governance literature by empirically examining board independence not just as a main predictor but as a moderating construct. This expands the theoretical application of Stewardship Theory, demonstrating that independent boards influence how liquidity risk translates into external credit ratings. The integration of Innovation Theory and Financial Development Theory further strengthens the interdisciplinary understanding of how governance quality and financial practices interact in low, to middle, income countries.

From a policy standpoint, the findings offer actionable insights for regulators, credit rating agencies and bank executives on the governance mechanisms that can strengthen financial resilience and investor confidence. The study also provides a contextualized empirical foundation for reform efforts targeting board structures and risk disclosure practices in African banking systems.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

Option 2:

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

1.

2.

3.

**References**

Adusei, M. (2021). The liquidity risk–financial performance nexus: evidence from hybrid financial institutions. Managerial and Decision Economics, 43(1), 31-47. <https://doi.org/10.1002/mde.3357>

African Peer Review Mechanism. (2024). An Africa credit rating agency (AfCRA): Key shaping the new global financial architecture [Report]. African Peer Review Mechanism. <https://aprm.au.int/>

Agarwal, S. and Singh, A. (2020). Board structure and agency cost. International Journal of Trade and Commerce-Iiartc, 9(1). <https://doi.org/10.46333/ijtc/9/1/22>

Ali, F., Wang, M., Jebran, K., & Ali, S. (2021). Board diversity and firm efficiency: evidence from china. Corporate Governance, 21(4), 587-607. https://doi.org/10.1108/cg-10-2019-0312

Al-Husainy, N. and Jadah, H. (2021). The effect of liquidity risk and credit risk on the bank performance: empirical evidence from Iraq. Irasd Journal of Economics, 3(1), 58-67. https://doi.org/10.52131/joe.2021.0301.0025

Al-Najjar, B., & Elgammal, M. M. (2013). Innovation and credit ratings, does it matter? UK evidence. Applied Economics Letters, 20(5), 428–431. https://doi.org/10.1080/13504851.2012.709589

Aslam, E. and Haron, R. (2020), "Does corporate governance affect the performance of Islamic banks? New insight into Islamic countries", Corporate Governance, Vol. 20 No. 6, pp. 1073-1090. <https://doi.org/10.1108/CG-11-2019-0350>

Ayuba, M., & Samaila, Y. (2022). Institutional Governance and Financial Performance in Nigeria’s National Microfinance Banks. Journal of Governance and Development (JGD). doi:10.32890/jgd2022.18.1.4

Bank of Ghana. (2019). Banking sector report 2018. https://www.bog.gov.gh/wp-content/uploads/2019/08/Banking-Sector-Report-November-2018-1.pdf

Mohammad Bitar, Kuntara Pukthuanthong, Thomas Walker, The effect of capital ratios on the risk, efficiency and profitability of banks: Evidence from OECD countries, Journal of International Financial Markets, Institutions and Money, Volume 53, 2018, Pages 227-262, ISSN 1042-4431, https://doi.org/10.1016/j.intfin.2017.12.002.

Bonfim, D., & Kim, M. (2012). Liquidity risk and collective moral hazard [SSRN Scholarly Paper No. 2163547]. SSRN. https://doi.org/10.2139/ssrn.2163547

Bonsall, S., Koharki, K., & Neamtiu, M. (2022). The disciplining effect of credit default swap trading on the quality of credit rating agencies†. Contemporary Accounting Research, 39(2), 1297-1333. https://doi.org/10.1111/1911-3846.12745

Central Bank of Nigeria. (2010). Annual report and statement of accounts for the year ended 31st December 2009. Central Bank of Nigeria. Retrieved from <https://www.cbn.gov.ng/out/2010/publications/reports/rsd/Link%20Files/INTERACTIVE%20ANNUAL%20REPORT%20FOR%20THE%20YEAR%20ENDED%20DECEMBER%202009.pdf>

Das, P. K. (2022). Liquidity management: An empirical study. International Business & Economics Studies, 4(3), 74. https://doi.org/10.22158/ibes.v4n3p74

Delis, M. D., Molyneux, P., & Pasiouras, F. (2011). Regulations and productivity growth in banking: Evidence from transition economies. Journal of Money, Credit and Banking, 43(4), 735–764. <https://doi.org/10.1111/j.1538-4616.2011.00393.x>

Demirgüç-Kunt, A., & Levine, R. (Eds.). (2001). Financial structure and economic growth: A cross-country comparison of banks, markets and development. MIT press. <https://doi.org/10.7551/mitpress/3001.001.0001>

Dietsch, M., & Petey, J. (2002). The credit risk in SME loans portfolios: Modeling issues, pricing and capital requirements. Journal of Banking & Finance, 26(2-3), 303-322. <https://doi.org/10.1016/S0378-4266(01)00224-2>

Donaldson, L., & Davis, J. H. (1991). Stewardship Theory or Agency Theory: CEO Governance and Shareholder Returns. Australian Journal of Management, 16(1), 49-64. <https://doi.org/10.1177/031289629101600103>

Drehmann, M., & Nikolaou, K. (2009). Funding liquidity risk: Definition and measurement (ECB Working Paper No. 1024). European Central Bank. <https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1024.pdf>

Ekinci, R., & Poyraz, G. (2019). The effect of credit risk on financial performance of deposit banks in Turkey. Procedia computer science, 158, 979-987. <https://doi.org/10.1016/j.procs.2019.09.139>

Eleng, D., Okwo, I., Uguru, L., & Chukwu, U. (2022). Effect of corporate governance on the earnings management of listed manufacturing firms in nigeria. European Journal of Accounting Auditing and Finance Research, 10(10), 75-97. https://doi:10.37745/ejaafr.2013/vol10n107597

El‐Masry, A. (2016). Capital structure and performance of middle east and north africa (mena) banks: an assessment of credit rating. Banks and Bank Systems, 11(1), 77-91. https://doi.org/10.21511/bbs.11(1).2016.09

Eluyela, D., Akintimehin, O., Wisdom, O., Ozordi, E., Osuma, G., Ilogho, S., … & Oladipo, O. (2018). Board meeting frequency and firm performance: examining the nexus in nigerian deposit money banks. Heliyon, 4(10), e00850. https://doi.org/10.1016/j.heliyon.2018.e00850

Faye, I., Beck, T. H. L., Triki, T., & Maimbo, S. M. (2011). Financing Africa: Through the crisis and beyond (Africa Regional Studies; No. 2355). World Bank Publications. <https://openknowledge.worldbank.org/bitstream/5cbc18c2-0447-54a1-ac4c-82fba260463a/download>

Ferrouhi, E. (2014). Bank liquidity and financial performance: evidence from moroccan banking industry. Verslas Teorija Ir Praktika, 15(4), 351-361. <https://doi.org/10.3846/btp.2014.443>

Fisman, R., & Love, I. (2004). Financial development and intersectoral allocation: A new approach. The Journal of Finance, 59(6), 2785–2807. <https://doi.org/10.1111/j.1540-6261.2004.00716.x>

Fitch Ratings. (2023, November 3). Corporate rating criteria. Fitch Ratings. <https://www.fitchratings.com/research/corporate-finance/corporate-rating-criteria-03-11-2023>

Fuzi, S. F. S., Halim, S. A. A., & Julizaerma, M. K. (2016). Board independence and firm performance. Procedia Economics and Finance, 37, 460-465. <https://doi.org/10.1016/S2212-5671(16)30152-6>

Hair, J. F., Jr., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). Multivariate Data Analysis (7th ed.) [PDF]. Retrieved from [https://www.academia.edu/9001869/Multivariate\_Data\_Analysis\_7th\_Edition:contentReference[oaicite:2]{index=2}:contentReference[oaicite:3]{index=3}](https://www.academia.edu/9001869/Multivariate_Data_Analysis_7th_Edition:contentReference%5boaicite:2%5d%7bindex=2%7d:contentReference%5boaicite:3%5d%7bindex=3%7d)

Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. Academy of Management review, 28(3), 383-396. <https://doi.org/10.5465/amr.2003.10196729>

International Monetary Fund. (2022). Regional economic outlook: Sub-Saharan Africa, April 2022. International Monetary Fund. <https://www.elibrary.imf.org/downloadpdf/display/book/9798400208294/9798400208294.pdf>

Jolliffe IT, Cadima J. 2016 Principal component analysis: a review and recent developments. Phil. Trans. R. Soc. A 374: 20150202. <http://dx.doi.org/10.1098/rsta.2015.0202>

Joseph, B., Abdullahi, M., & Gugong, B. (2023). Board characteristics and earnings management of listed consumer goods firms in nigeria. Gusau Journal of Accounting and Finance, 4(1), 1-17. https://doi.org/10.57233/gujaf.v4i1.197

Kerlinger, F.N. (1966). Foundations of behavioral research. Holt, Rinehart and Winston: New York

Laeven, L., & Levine, R. (2009). Bank governance, regulation and risk taking. Journal of financial economics, 93(2), 259-275. <https://doi.org/10.1016/j.jfineco.2008.09.003>

Laeven, L., & Valencia, F. (2013). Systemic banking crises database. IMF Economic Review, 61(2), 225-270. [imfer.2013.12.pdf](https://link.springer.com/content/pdf/10.1057/imfer.2013.12.pdf)

Linden, A. (2014). Review of An Introduction to Stata for Health Researchers, Fourth Edition, by Juul and Frydenberg. The Stata Journal, 14(3), 673-674. <https://doi.org/10.1177/1536867x1401400314>

Ly, Kim Cuong & Chen, Zhizhen & Wang, Senyu & Jiang, Yuxiang, 2017. "The Basel III net stable funding ratio adjustment speed and systemic risk," Research in International Business and Finance, Elsevier, vol. 39(PA), pages 169-182. DOI: 10.1016/j.ribaf.2016.07.031

Meliza, M., Hasan, N., & Saputri, H. (2024). The influence of banking liquidity risk on profitability: the moderating role of capital adequacy ratio. Banks and Bank Systems, 19(2), 140-151. https://doi.org/10.21511/bbs.19(2).2024.11

Moody's Investors Service. (2024). Rating methodology: Banks. Moody's Investors Service. <https://ratings.moodys.com/api/rmc-documents/432741>

Ngo, M., Jorissen, A., & Nonneman, W. (2017). Do oecd‐type governance principles have economic value for vietnamese firms at ipo? Corporate Governance an International Review, 26(1), 58-79. <https://doi.org/10.1111/corg.12228>

Financial Reporting Council of Nigeria. (2018). Nigerian Code of Corporate Governance 2018: Draft for Exposure. <https://usercontent.one/wp/www.acaebin.org/wp-content/uploads/2023/07/Nigerian-Code-of-Corporate-Governance-2018-Draft-for-Exposure.pdf?media=1711622973>

Nikolaou, K. (2009). Liquidity (risk) concepts: definitions and interactions (No. 1008). ECB working paper. <https://www.econstor.eu/bitstream/10419/153442/1/ecbwp1008.pdf>

Olalekan, L. (2018). Effect of liquidity risk, premium growth on the performance of quoted insurance firms in nigeria: a panel data analysis. American Finance & Banking Review, 2(1), 42-51. <https://doi.org/10.46281/amfbr.v2i1.128>

Ratnovski, L. (2013). Liquidity and transparency in bank risk management. Journal of Financial Intermediation, 22(3), 422-439. https://doi.org/10.1016/j.jfi.2013.01.002

Reusens, P. and Croux, C. (2017). Sovereign credit rating determinants: a comparison before and after the european debt crisis. Journal of Banking & Finance, 77, 108-121. <https://doi.org/10.1016/j.jbankfin.2017.01.006>

Roberts, D., Sarkar, A., & Shachar, O. (2018). Bank liquidity provision and basel liquidity regulations. SSRN Electronic Journal. <https://doi.org/10.2139/ssrn.3199876>

Rogers, E. M. (1962). Diffusion of innovations the free Press of Glencoe. NY, 32, 891-937. <https://archive.org/details/in.ernet.dli.2015.129396>

Serwadda, I. (2018). Impact of credit risk management systems on the financial performance of commercial banks in uganda. Acta Universitatis Agriculturae Et Silviculturae Mendelianae Brunensis, 66(6), 1627-1635. <http://dx.doi.org/10.11118/actaun201866061627>

S&P Global Ratings. (2024). Criteria | Financial Institutions | General: Risk. S&P Global Ratings. <https://disclosure.spglobal.com/ratings/en/regulatory/article/-/view/type/HTML/id/335066>

Standard & Poor's Global Ratings. (2023). Banks rating criteria. https://www.spglobal.com/ratings

Standard & Poor’s (S&P Global Ratings). (2024, December 13). How we rate financial institutions [PDF]. S&P Global Ratings. <https://www.spglobal.com/ratings/_division-assets/pdfs/070813_howweratebanks.pdf>

Teye, J., Awumbila, M., & Nikoi, E. (2019). Ambiguity and symbolism in the implementation of the ecowas free movement protocol: evidence from ghana and sierra leone. African Human Mobility Review, 5(2). https://doi.org/10.14426/ahmr.v5i2.881