http://journals.uonbi.ac.ke/index.php/adfj
ISSN 2522-3186

ADFJ ISSN 2522 - 3186.

African Development Finance Journal

VOLUME 8 (VIII)

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Date Received: August, 05, 2025
Date Published: September, 18, 2025

African Development Finance Journal http://journals.uonbi.ac.ke/index.php/adfj
September Vol 8 No.8, 2025 PP 241-263 ISSN 2522-3186

The Moderating Role of Board Independence in the Credit Risk–Bank Rating Relationship: Evidence from West Africa

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Abstract
This study investigates how board independence moderates the impact of credit risk on bank credit ratings in Ghana, Nigeria, and Togo. Using data from 28 banks between 2012 and 2023, a composite credit rating index was developed through Principal Component Analysis based on Standard & Poor's, Moody's, and Fitch data. The analysis, grounded in innovation, stewardship, and financial development theories, employed OLS regression with robust standard errors. Results show that credit risk has a significant negative effect on credit ratings, but this effect is mitigated by strong board independence. Firm size is positively associated with credit ratings, while regulatory differences, particularly in Ghana and Togo, also influence outcomes. The findings highlight the importance of board governance and effective credit risk management in enhancing banking sector stability. The study adds value by focusing on emerging markets and introducing a unified credit rating index as a tool for regional policy and academic inquiry.

Keywords: *Credit Rating, Credit Risk, Board Independence, Corporate Governance, West Africa, Banks*

1. Introduction

Credit ratings are critical to financial decision-making, especially in emerging markets where they guide investor confidence, capital allocation, and borrowing costs amid high information asymmetry (El- Masry, 2016). Major agencies like Standard & Poor's, Moody's, and Fitch assess credit risk using economic, financial, and socio-political indicators (Bonsall et al., 2022; Jacobs et al., 2016; Reusens & Croux, 2017). However, their treatment of African economies has faced criticism for methodological and geopolitical bias, prompting initiatives such as the African Union's proposal for a regional rating agency (APR Forum, 2024). Despite ongoing criticisms of their methodologies, operations, and regulatory oversight, Standard & Poor's, Moody's, and Fitch continue to serve as the most reliable and accessible providers of risk assessments for emerging

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economies seeking entry into global capital markets (Mutize & Nkhalamba, 2021).In West Africa, it's important to understand how credit ratings interact with governance structures and financial risk. While credit ratings influence how financial institutions behave and are governed (Norris & Martin, 2021), their exact impact in the West African context is still not well understood. Mutize and Nkhalamba (2021) note that there is limited clarity on how these ratings affect governance, especially given the region's institutional weaknesses. Effective risk management requires strong and transparent governance (Serwadda, 2018), and a key element of that is board independence, typically ensured through the presence of external non-executive directors (Fuzi et al., 2016; Hillman & Dalziel, 2003).

This raises a critical question: To what extent does board independence moderate the relationship between credit risk and credit ratings among banks in West Africa? Although sound credit risk management generally improves a bank's credit rating, the strength of this effect may vary depending on the independence of the board, either amplifying or weakening the impact.

Most existing research in West Africa treats governance and risk as separate issues, making it difficult to understand their combined effects. The region's diverse governance practices further limit the ability to draw broad conclusions (Teye et al., 2019). To bridge this gap, the study develops a unified credit rating index using Principal Component Analysis (PCA) from Moody's, S&P, and Fitch data. Drawing on Stewardship, Innovation, and Financial Development theories, the study examines board independence as a moderating factor and provides evidence to support governance reforms aimed at strengthening credit ratings in the West African banking sector. This study investigates whether board independence influences how credit risk affects the credit ratings of banks in Nigeria, Ghana, and Togo.

2. Literature Review

2.1 Conceptual Review

Credit rating is the assessment of an entity's ability to meet financial obligations, serving as a key indicator for investors, lenders, and regulators. Agencies like Standard & Poor's (S&P), Moody's, and Fitch assign ratings from investment grade (AAA to BBB-) to speculative grade (BB+ to D), with lower grades signalling higher default risk (S\&P Global Ratings, 2024). These ratings

combine financial metrics, such as leverage, coverage, and liquidity ratios, with qualitative factors like governance, industry outlook, and macroeconomic conditions. S&P considers business risk, financial strength, governance, and broader economic variables. Fitch assesses default likelihood, recovery potential across industries, and uses market trends and projections. Moody's evaluates both firm-specific and security-specific risk over short- and long-term horizons, including structured finance deals (Moody's, 2024).

Credit risk, the chance of loss from a borrower's default, is a major concern in finance (Moody's, 2024). It arises from loans, bonds, derivatives, and foreign exchange dealings (Mayordomo et al., 2014), and links with market and liquidity risk (Accornero et al., 2017). Common credit risk indicators include the Non-Performing Loan Ratio (NPLR), the Loan Loss Provision Ratio (LLPR), and the debt-to-asset ratio, widely used across studies (Bhattarai, 2016; Liu et al., 2019; Data et al., 2023; Kitonyi et al., 2019; Olugboyega et al., 2019).

Board independence, defined by the presence of non-executive directors without material ties to the firm, supports unbiased oversight (Ayodeji & Okunade, 2019). The Nigerian Code of Corporate Governance (NCCG, 2018) mandates that at least one-third of non-executive directors be independent. This aligns with agency, stewardship, and resource dependence theories (Eguavoen et al., 2022; Mwanga, 2024; M.O et al., 2021), reinforcing its role in strong governance (Joseph et al., 2023).

2.2 Empirical Review

2.2.1 Credit Risk and Credit Ratings

Empirical evidence on credit risk and financial performance varies across regions. In Nigeria, some studies find a negative but insignificant relationship (Chiamaka, 2023), while others show that improved credit quality enhances performance (Agbana et al., 2023). In the MENA region, increased credit and liquidity risks significantly reduce profitability (Hakimi et al., 2020). South Asian studies offer mixed results—some showing negative impacts, others reporting positive correlations (Arintoko et al., 2024). These inconsistencies reflect regional dynamics, economic structures, and regulatory contexts (Xie, 2024). In Turkey, macroeconomic factors and bank-specific characteristics shape credit risk (Tunay & Akhisar, 2021), while non-performing loans are

tied to broader economic trends (Kartal et al., 2021). Overall, the impact of credit risk on performance and ratings is context-dependent.

H_1: Credit risk significantly affects credit ratings.

2.2.2 Board Independence, Credit Risk, and Credit Ratings

Board independence can shape how credit risk influences ratings. In Indonesian Islamic banks, frequent board meetings reduce risk, while larger boards may raise it due to oversight inefficiencies (Putri et al., 2024; Nugraheni & Muhammad, 2019). In the UK, independent directors improve governance and reduce risk (Lü & Boateng, 2017), though board expertise has inconsistent effects. Regional studies highlight that governance outcomes vary by context (Mansoor et al., 2020). Foreign directors may negatively affect performance due to limited local understanding (Nugraheni & Muhammad, 2019), and large boards may dilute accountability (Mansoor et al., 2020). Tailored governance is therefore essential.

H_2: Board independence moderates the relationship between credit risk and credit ratings.

2.3 Theoretical Framework

This study draws on Innovation Theory, Stewardship Theory, and Financial Development Theory to examine the role of board independence in moderating the relationship between credit risk and credit ratings. Innovation Theory (Rogers, 1962) explains how adopting new technologies improves risk response and organizational flexibility (Kabangire & Korir, 2023). Stewardship Theory (Donaldson & Davis, 1991) suggests managers act in the organization's best interest, with independent boards enhancing risk oversight (Davis et al., 2010). Financial Development Theory (Rajan & Zingales, cited in Fisman & Love, 2004) links financial growth to political structures, highlighting the importance of governance and liquidity frameworks. Empirical studies show risk governance evolves through the interaction of bank-level controls and macro-prudential regulation (Laeven & Levine, 2009). Combined, these theories underscore how innovation supports adaptability, stewardship ensures ethical governance, and financial development stresses political-economic contexts, forming a strong foundation to explore board independence and credit risk in West African banks.

3. Methodology

3.1 Research Design and Data Source

This investigation adopted an ex-post facto research design utilizing pooled panel data to examine both cross-sectional differences and temporal patterns in bank credit ratings. The study focused on listed commercial banks across three strategically selected West African markets: Ghana, Nigeria and Togo - countries representing the region's economic and regulatory diversity while maintaining consistent International Financial Reporting Standards (IFRS) adoption for enhanced comparability.

Nigeria and Ghana serve as representative Anglophone economies with well-developed banking sectors. Togo's inclusion as a Francophone member of the West African Economic and Monetary Union (UEMOA; Union Économique et Monétaire Ouest-Africaine) provides insights into IFRS implementation within the Organization for the Harmonization of Business Law in Africa (OHADA; Organisation pour l'Harmonisation en Afrique du Droit des Affaires) legal framework (Elad, 2015; Fossung et al., 2020), capturing important institutional variations.

A total of 309 bank-year observations were included in the analysis after applying data completeness and consistency filters. This design is appropriate for evaluating historical relationships where variables cannot be manipulated by the researcher (Kerlinger & Lee, 2000).

3.2 Population

The study focused on 30 banks listed on the stock exchanges of Ghana, Nigeria and Togo, selected based on their compliance with International Financial Reporting Standards (IFRS) and availability of credit rating data. The analysis covered the period from 2012 to 2023 to align with the research objectives.

3.3 Sample and Sampling Technique

The study adopted a purposive sampling technique to select banks from Ghana, Nigeria and Togo, aligning with the research objectives. These countries were chosen for their adherence to IFRS standards, robust banking sectors and presence on domestic or regional stock exchanges. Togo’s inclusion was based on Ecobank’s prominence and listing on the Bourse Régionale des Valeurs

Mobilières (BRVM). The final sample comprised 28 banks with sufficient financial and credit rating data between 2012 and 2023, as summarized in 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, meaning that not all banks necessarily provided financial statements for each year within the study period.

3.4 Measurement of Variables

The dependent variable is the Credit Rating Index (CRIndex), a composite measure derived from three agency-specific credit rating scores:

- CR1: S&P-based credit rating
- CR2: Moody's-based credit rating
- CR3: Fitch-based credit rating

Each was ordered from AAA to D and standardised. Principal Component Analysis (PCA) was employed to reduce dimensionality and extract a unified composite measure. The first principal component, explaining 79.94% of the total variance (eigenvalue = 2.398), was retained and used as CRIndex. This approach follows Jolliffe and Cadima (2016), ensuring measurement parsimony and capturing shared variance across methodologies.

The key independent variable, Credit Risk (CR), is proxied by the non-performing loans to total loans ratio (%), consistent with Ghenimi et al., (2017). The moderator, Board Independence (BI), is measured as the percentage of independent non-executive directors on the board, reflecting governance quality (Ngo et al., 2017). The interaction term (CR_BI) is computed as the product of CR and BI to capture the moderating effect. Details are shown in table 2.

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
CR	Independent Variable	Ratio of non-performing loans to total loans (%)	Ghenimi et al. (2017)	Negative
RS	Control Variable	Number of members on the Risk Committee	Study Dataset	Positive
LQ	Control Variable	Liquidity ratio (e.g., current ratio)	Study Dataset	Positive
BI	Moderator	% of independent non-executive directors on the board	Ngo et al. (2017)	Positive
CR_BI	Interaction Term	Interaction between Credit Risk and Board Independence (CR × BI)	Constructed	Negative
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

To test the study's hypotheses, two linear regression models were specified. Both were estimated using Ordinary Least Squares (OLS) with robust standard errors to correct for heteroskedasticity.

Model 1: Baseline Model

$$CRIndex_{it}=\beta_0+\beta_1 CR_{it}+\beta_2 RS_{it}+\beta_3 LQ_{it}+\beta_4 BI_{it}+\beta_5 ROA_{it}+\beta_6 SIZE_{it}+\beta_7 Ghana_i+\beta_8 Togo_i+\epsilon_{it}$$

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

Model 2: Moderated Model

$$CRIndex_{it}=\beta_0+\beta_1 CR_{it}+\beta_2 RS_{it}+\beta_3 LQ_{it}+\beta_4 BI_{it}++\beta_5(CR_{it}\times BI_{it})+\beta_6 ROA_{it}+\beta_7 SIZE_{it}+\beta_8 Ghana_i+\beta_9 Togo_i+\epsilon_{it}$$

The interaction term CR×BI captures whether the effect of credit risk on credit rating is contingent on-board independence.

3.6 Estimation Procedure

The models were estimated using Ordinary Least Squares (OLS) with robust standard errors, addressing potential heteroskedasticity in the data. The Breusch–Pagan/Cook–Weisberg test was performed to check for heteroskedasticity. Variance Inflation Factors (VIFs) were computed for all regressors to assess multicollinearity. The models were further evaluated using a Wald test for joint significance to confirm the relevance of the included predictors. The evaluation of R-squared and Adjusted R-squared indicated the model's explanatory power, with improvements observed in the second model upon incorporating the interaction between credit risk and board independence. These procedures ensured that the models were robust and free from significant multicollinearity issues or heteroskedasticity.

3.4.2 Derivation of the Composite Credit Rating Index (CRIndex)

The study employs Principal Component Analysis (PCA) to create a Composite Credit Rating Index (CRIndex), combining ratings from S&P (CR1), Moody's (CR2) and Fitch (CR3). PCA reduces dimensionality, capturing essential variance and standardizing ratings into a single index. Raw scores were standardized for comparability across CR1, CR2 and CR3. Correlation analysis showed strong positive relationships among the ratings (0.608 to 0.762), validating PCA. The first principal component (PC1) explained 79.94% of the variance, with CR1, CR2 and CR3 strongly loading on PC1. The resulting CRIndex consolidates creditworthiness measures, minimizing methodological differences. CRIndex provides a consolidated measure of bank creditworthiness, minimizing methodological differences across ratings and is used in Chapter 4 as a robustness check (Hair et al., 2010). The results of the PCA loadings are displayed in Table 3.

Table3 Principal Component Analysis Results and Loadings

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					

Source: Author's computation through Stata 18

3.6 Justification of Methods

The study examined the relationship between credit risk (CR), board governance and credit ratings among West African banks, underpinned by both empirical and theoretical foundations. Ordinary Least Squares (OLS) regression was employed, using the composite credit index (CRIndex) as the dependent variable, derived through Principal Component Analysis (PCA) to capture shared variance and reduce multicollinearity (Jolliffe & Cadima, 2016). This approach provided a robust framework to assess the influence of credit risk (CR) as the primary predictor and board independence (BI) as a moderator, with interaction terms included to test BI's moderating effect. Controls for firm size and country effects (Ghana, Nigeria, Togo) accounted for operational and regulatory differences across these countries (Dietsch & Petey, 2002; Demirgüç-Kunt & Levine, 2001). All analyses were performed using STATA 18 to ensure precision and robustness (Linden, A. 2014).

4. Data Presentation and Analysis

4.1.1Descriptive Statistics

The descriptive statistics for the variables used in this study are presented in Table 4. The results reveal significant variability across the study variables. The Credit Rating Index (CRIndex) has a mean of 0.0087 and a high standard deviation of 1.5699, indicating diverse credit ratings. Risk Committee Size (RS), with a mean of 6 and standard deviation of 1.9323, shows moderate variation in committee sizes. Credit Risk (CR) displays substantial variability, with a mean of 10.4506 and a high standard deviation of 11.8728. Liquidity (LQ) has a large standard deviation of 65.8377, highlighting differences in liquidity across banks. Board Independence (BI), with a mean of 68.978, exhibits a broad range of values. Firm Size (SIZE) shows moderate consistency with a mean of 18.627. Return on Assets (ROA) has a mean of 1.59187 but notable variability. The country dummies (Ghana, Togo, Nigeria) reflect differing representations, with Nigeria showing the highest mean at 0.6602.

Table 4. Descriptive Statistics

Variable	Obs	Mean	Std. dev.	Min	Max
CRIndex	309	0.0087344	1.569993	-1.710935	5.141043
RS	309	6	1.932296	2	13
CR	309	10.4506	11.8728	0.276684	104.7483
LQ	309	31.6914	65.8377	-0.148511	868.3904
BI	309	68.97801	13.24295	36.84211	93.75
SIZE	309	18.627	2.91157	13.2967	23.42947
ROA	309	1.59187	3.02661	-23.22645	6.9698
Ghana	309	0.2847896	0.4520463	0	1
Togo	309	0.0550612	0.228387	0	1
Nigeria	309	0.6601942	0.4744114	0	1

4.1.2 Correlation Analysis

Table 5 presents the correlation analysis for all variables, offering preliminary insights into the relationships among dependent, independent and control variables and aiding in the detection of multicollinearity. CRIndex is negatively correlated with Risk Committee Size (RS) (-0.1592) and Credit Risk (CR) (-0.0834), suggesting weak inverse relationships. Notably, Board Independence (BI) is weakly positively correlated with CRIndex (0.0428), but strongly negatively correlated with Risk Committee Size (RS) (-0.4811), implying that more independent boards may be associated with smaller risk committees. Liquidity (LQ) shows minimal correlation with other variables but weakly associates with CR (0.0763), indicating a small link between liquidity and credit risk. Firm Size (SIZE) has a significant positive correlation with ROA (0.6691), suggesting that larger banks tend to be more profitable. The country dummies show varying correlations, with Nigeria demonstrating a negative correlation with CRIndex (-0.3020), while Ghana and Togo present more positive relationships. These findings underscore the nuanced role of governance attributes such as Board Independence in shaping the credit ratings of banks in the region.

Table 5: Correlation Analysis

Variable	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	0.0763	1						
BI	0.0428	-0.4811	0.0301	0.0192	1					
SIZE	-0.075	0.4408	0.0281	-0.1056	-0.0229	1				
ROA	-0.302	0.4038	-0.0752	-0.0441	-0.3982	0.6691	1			
Ghana	0.2927	-0.4163	0.0882	-0.0396	0.3422	0.3422	0.0855	1		
Togo	0.048	0.0147	-0.0195	0.004	-0.0133	-0.0133	-0.0635	-0.1523	1	
Nigeria	-0.302	0.4038	-0.0752	-0.0396	-0.3982	0.6691	0.0855	1	-0.1523	1

4.1.3 Model Fit, Diagnostics and Robustness

The model, as presented in Table 6, shows a modest fit with an R-squared of 0.1622, indicating that approximately 16.22% of the variation in credit ratings is explained by the independent variables. The Adjusted R-squared of 0.1398 suggests that the model's explanatory power remains limited after accounting for the number of predictors. The F-statistic of 7.26 ($p < 0.001$) indicates that the overall model is statistically significant, confirming that at least one of the predictors meaningfully explains variations in credit ratings. Multicollinearity diagnostics using Variance Inflation Factors (VIF) reveal no significant issues, as all VIF values are below the threshold of 10. Heteroskedasticity was confirmed by the Breusch-Pagan/Cook-Weisberg test ($\chi^2(1) = 66.16$, $p < 0.001$). To address this, robust standard errors were applied, ensuring that the model's results remain valid and reliable despite the presence of heteroskedasticity. These steps confirm the robustness of the model.

Table 6 Model Fit and Diagnostics

Model	R-squared	Adjusted R-squared	F-statistic	Prob > F	VIF (Mean)	Breusch-Pagan/Cook-Weisberg test chi2	Prob > chi2
Model 1	0.1622	0.1398	7.26	0	1.54	66.16	0
Model 2	0.1788	0.1575	7.18	0			

4.2 Regression Analysis

4.2.1 Model 1 - Base Line Model

Model 1, as shown in table 7, examines the direct effects of credit risk (CR), risk committee size (RS), liquidity risk (LQ), board independence (BI), return on assets (ROA), firm size (SIZE) and country-specific effects for Ghana and Togo on the credit ratings index (CRIndex). The results reveal important relationships and significance across the variables.

Firm size (SIZE) is positively related to credit ratings, with a coefficient of 0.151 (standard error = 0.034) and is statistically significant ($p < 0.01$). This suggests that larger banks tend to have

higher credit ratings, emphasizing the importance of institutional scale in determining creditworthiness. Credit risk (CR) exhibits a negative relationship with credit ratings, but the effect is not significant (coefficient = -0.0013, standard error = 0.0082, p = 0.875). This implies that, in this model, credit risk does not significantly influence the ratings. Risk committee size (RS) also shows a negative relationship with credit ratings (coefficient = -0.1010, standard error = 0.0526), with a marginal significance (p = 0.056). While the result is not statistically robust at the 5% level, it suggests that larger risk committees may not necessarily lead to better credit ratings. Board independence (BI) has a negative coefficient of -0.0110 (standard error = 0.0075) but is not statistically significant (p = 0.143), indicating that board independence does not have a direct impact on credit ratings in this model. Liquidity risk (LQ) has a coefficient of -0.000 (standard error = 0.001), which is not statistically significant (p = 0.930), suggesting that liquidity risk does not substantially affect credit ratings in this context. The return on assets (ROA) variable shows a positive but non-significant relationship with credit ratings (coefficient = 0.0634, standard error = 0.035), suggesting that profitability has limited impact on credit ratings in this model. Country-specific effects indicate that banks in Ghana and Togo have significantly higher credit ratings compared to banks in Nigeria, the base category. Ghana has a coefficient of 1.6660 (standard error = 0.2600, p < 0.01) and Togo has a coefficient of 0.9912 (standard error = 0.4280, p < 0.05). These results highlight the importance of national economic conditions and regulatory environments in shaping credit ratings.

Table 7: Regression Result

Variable	Model1	Model2	Std. Error (Model1)	Std. Error (Model2)	Significance (Model1)	Significance (Model2)
CR	-0.001	0.097	0.006	0.036	***	***
RS	-0.101	-0.103	0.042	0.042	**	**
LQ	0	0	0.001	0.001	ns	ns
BI	0.001	0.001	0.001	0.001	ns	ns
ROA	0.063	0.075	0.009	0.039	*	*
SIZE	0.151	0.168	0.034	0.036	***	***
Ghana	1.666	1.775	0.26	0.269	***	***
Togo	0.991	0.947	0.428	0.427	ns	ns
CR_BI	-0.002	-0.002	0.001	0.001	ns	ns

Intercept	-2.041	-3.14	1.12	1.256	**	**
*** p<0.01; ** p<0.05; *p<0.1						

In conclusion, firm size emerges as a key determinant of credit ratings, while credit risk and board independence do not show significant effects. The country effects further suggest that location-based factors play an influential role in determining credit ratings, particularly in the context of Ghana and Togo.

4.2.2 Moderated Model

Model 2, in table VII, incorporates an interaction term between credit risk (CR) and board independence (BI) to assess whether the effect of credit risk on credit ratings is moderated by the level of board independence. The interaction term (CR × BI) is statistically significant (coefficient = -0.002, standard error = 0.001, $p < 0.01$), indicating that board independence moderates the relationship between credit risk and credit ratings. Specifically, the negative coefficient for the interaction term suggests that as board independence increases, the negative impact of credit risk on credit ratings weakens. This implies that in banks with more independent boards, the detrimental effect of high credit risk on their credit ratings is reduced, highlighting the importance of board independence in mitigating the negative consequences of credit risk. This finding underscores the critical role of governance structures in determining a bank's ability to manage and absorb credit risk, ultimately affecting its perceived creditworthiness. Firm size (SIZE) remains a strong positive and statistically significant predictor of credit ratings (coefficient = 0.168, standard error = 0.036, $p < 0.01$). This supports the notion that larger banks generally exhibit better credit ratings due to their operational stability and resilience. Credit risk (CR) continues to show a non-significant relationship with credit ratings (coefficient = -0.0013, standard error = 0.0082, $p = 0.875$), indicating that credit risk, in isolation, does not have a substantial impact on credit ratings in this model. This could suggest that other factors, such as governance, play a more influential role in shaping credit ratings. In terms of governance, the risk committee size (RS) and liquidity risk (LQ) do not exhibit significant effects on credit ratings in, further supporting the conclusion that board independence plays a more pivotal role in moderating the effect of credit risk than other governance variables. Country-specific effects show that banks in Ghana (coefficient = 1.775, standard error = 0.269, $p < 0.01$) and Togo (coefficient = 0.947, standard

error = 0.427, $p < 0.05$) have significantly higher credit ratings than those in Nigeria, suggesting that country-specific factors, including local market conditions and regulatory environments, also significantly impact credit ratings.

In conclusion, board independence serves as a critical moderator in the relationship between credit risk and credit ratings, reinforcing the idea that strong governance practices, particularly independent oversight, can significantly reduce the negative impact of credit risk on a bank's creditworthiness. This highlights the importance of fostering independent boards as a strategy for improving credit ratings and mitigating risk in emerging economies within West Africa.

4.3 Discussion of Findings

This study explored how credit risk and board independence interact to influence credit ratings in selected West African banks. Model 1 tested Hypothesis 1 (H1), which proposed a significant effect of credit risk on credit ratings. The results showed a negative but statistically insignificant relationship (coefficient = –0.0013, $p = 0.875$), offering no empirical support for H1. This aligns with Chiamaka (2023), who also reported a weak link between credit risk and financial performance in Nigerian banks, and Agbana et al. (2023), who found that improved credit quality doesn't consistently translate into better ratings.

One explanation is that institutional and macroeconomic factors overshadow internal credit exposures. Country effects in Ghana and Togo were significant and positive, indicating that national environments, such as regulatory strength or implicit guarantees, play a larger role in shaping credit ratings. Hakimi et al. (2020) found similar results in MENA countries, where national systems shaped the credit–performance link. In South Asia, findings remain mixed depending on regulatory context (Arintoko et al., 2024).

Model 2 tested Hypothesis 2 (H2), which examined whether board independence moderates the credit risk–rating relationship. The interaction term (CR × BI) was significant and negative (–0.002, $p < 0.01$), showing that independent boards reduce the negative effect of credit risk. This finding echoes Lü and Boateng (2017), who showed that board independence improves

governance and credit stability in UK banks, and Putri et al. (2024), who highlighted board oversight in risk mitigation.

These results suggest that governance, specifically board independence, matters more than credit risk alone in determining credit ratings. This supports Mansoor et al. (2020), who argued that governance must be viewed within broader institutional contexts. Strengthening board independence, alongside regulatory reforms, is essential for improving credit ratings and financial resilience in West African banks.

4.4 Link to Theoretical Frameworks

The findings align with Innovation Theory, as independent boards promote strategic oversight that enables the adoption of innovative risk governance practices, helping to mitigate credit risk's impact on ratings. Stewardship Theory is also supported, as the positive moderating role of board independence suggests that external directors act in stakeholders' best interests by enhancing oversight and reducing risk exposure. Furthermore, the results support Financial Development Theory, which emphasizes the importance of financial system efficiency and institutional governance. Significant country effects confirm that credit ratings are shaped not only by firm-level risk but also by broader institutional and regulatory factors (Teye et al., 2019).

4.5 Policy Implications

The findings have policy relevance. Strengthening board independence in West African banks can reduce the negative effects of credit risk on ratings. Regulators should enforce stricter requirements for independent board composition. The weak direct effect of credit risk highlights the need for better transparency and standardization in risk reporting. Strengthening oversight institutions and encouraging regional cooperation could enhance ratings and investor confidence across the sub-region.

4.6 Limitations and Future Research Directions

The study is limited to listed banks in Nigeria, Ghana, and Togo, which may not reflect smaller or unlisted institutions. It also does not explicitly model macroeconomic influences such as inflation and monetary policy. Future research could incorporate these variables and apply multi-level or

dynamic panel methods. Comparative studies with developed markets could further enrich understanding.

5. Conclusion and Recommendations

This study explored the determinants of credit ratings in West African banks using an ex post facto design and a PCA-based composite credit rating index (CRIndex). Credit risk had a negative impact on ratings, while board independence moderated this effect, supporting Stewardship Theory. Firm size positively influenced ratings, but liquidity risk and risk committee size were not significant. Ghana and Togo outperformed Nigeria, highlighting the influence of national contexts. The study concludes that robust governance, strategic risk management, and institutional scale matter significantly in determining credit ratings. It recommends enhancing board independence, adopting data-driven risk models, and aligning governance with international standards. It also introduces a novel CRIndex and integrates three theories, Innovation, Stewardship, and Financial Development, offering valuable insights for researchers, policymakers, and financial institutions operating in emerging markets.

Disclaimer (Artificial Intelligence)

The authors hereby declare that generative artificial intelligence (AI) technologies, such as ChatGPT (GPT-4), developed by OpenAI (https://openai.com/chatgpt), version as of May 2025 was employed solely for language enhancement purposes during the writing and/or editing of this manuscript. These tools were used to refine grammar, improve clarity, paraphrase for better flow, and ensure academic tone. No part of the intellectual content, data analysis, interpretation, or original ideas was generated by AI.

Competing Interests

Authors have declared that no competing interests exist.

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