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Determinants of bank credit ratings: evidence from Africa, the EU13, and Latin America/Caribbean

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Abstract

Purpose – This study examines the influence of corporate governance, firm-level characteristics, external factors and risk-taking on bank credit ratings in three distinct regions: Africa, the EU13 and Latin America/Caribbean.

Design/methodology/approach – This research analyzes a panel dataset comprising 752 banks from 95 countries from 2011 to 2020, using ordered logistic regression.

Findings – The results reveal that corporate governance factors, including board size, board age, and board gender diversity, significantly impact credit ratings. Firm-specific characteristics, including age, market discipline, and opacity, negatively correlate with credit ratings. External factors, particularly the presence of the Big Four audit firms and economic growth, positively influence credit ratings. Institutional quality negatively impacts credit ratings, while risk-taking shows a significant positive association.

Practical implications – This study encourages banks and policymakers to re-evaluate governance structures, risk management strategies, and region-specific approaches to credit assessment. A thorough understanding of credit rating determinants is essential for fostering a resilient and sustainable financial environment.

Originality/value – This study underscores the critical role of robust corporate governance, institutional quality, and audit oversight in shaping credit ratings within the global banking sector. It challenges the prevailing one-size-fits-all approach to credit-rating assessments and supports the Sustainable Development Goal (SDG) 8, Target 10, which aims to strengthen financial institutions. The findings also contribute to the ongoing discourse on credit ratings within the United Nations Economic Commission for Africa framework.

Keywords Credit rating, Risk-taking, Institutional quality, Corporate governance, Banks, Emerging markets, Logistic regression

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1. Introduction

Credit ratings, introduced by John Moody in 1909 (Sylla, 2002), have become an essential instrument for assessing financial soundness. Various stakeholders in the credit rating ecosystem – including investors, regulators, public media, suppliers, financial intermediaries,

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and customers – utilize these ratings to gauge corporate credit risk (Kuang and Qin, 2013). Credit ratings also function as a comprehensive mechanism for assessing bank risk governance (Otero-González *et al.*, 2022). Their significance has led institutions such as the International Monetary Fund (IMF) and the Basel Committee on Banking Supervision to advocate for their utilization in determining capital requirements for bank lending activities (Monfort and Mulder, 2000). Firms have been incentivized to achieve higher credit ratings because these ratings serve as a critical barometer of a bank's stability, influencing borrowing costs, access to capital, and overall investment attractiveness (Hong *et al.*, 2023).

Credit rating announcements elicit both negative and positive market reactions (Sori *et al.*, 2019; Agoraki *et al.*, 2021; Eastman and Xu, 2021), affecting risk-taking behavior, patterns of economic growth, measures to strengthen institutional quality, and the promotion of sound corporate governance. Credit ratings also serve as proxies for the quality of corporate governance (Lin *et al.*, 2018), with firms exhibiting better corporate governance benefiting from higher credit ratings than those with weak corporate governance (Ashbaugh-Skaife *et al.*, 2006). Firms also manage risk-taking to restore, maintain, or achieve favorable credit ratings (Hong *et al.*, 2023). Moreover, the level of institutional quality within a country significantly influences the long-term viability and sustainability of banks operating there (Nguyen and Dang, 2023). Sound institutional quality fosters economic efficiency and facilitates financial liberalization, benefiting both banks and credit rating agencies (Uddin *et al.*, 2020).

The far-reaching implications of credit ratings have sparked continuous scientific inquiry. Despite extensive research on the determinants of bank credit ratings, empirical studies remain fragmented, with critical areas underexplored. Previous studies predominantly focus on single-region analyses, underscoring the need for global, cross-country, and cross-geographic comparative studies (Ubarhande and Chandani, 2021; Addae *et al.*, 2023). Additionally, many studies have employed linear regression models that inadequately address the ordinal nature of credit ratings (Lundqvist and Vilhelmsson, 2018; Hong *et al.*, 2023; Koerniadi, 2023). Notably, there is an absence of research that simultaneously integrates corporate governance, risk-taking, and institutional quality in a cross-regional framework encompassing diverse economies such as those in Africa, the EU13, and Latin America/Caribbean.

This study aims to address these gaps by examining how corporate governance, risk-taking behaviors, and institutional quality impact bank credit ratings across three distinct regions: Africa, the EU13, and Latin America/Caribbean.

The objectives of this research are twofold: first, to elucidate the specific variables that significantly influence credit ratings within each region, and second, to discern cross-regional variations in the impact of these variables on credit ratings.

An ordered logistic regression model was employed to analyze a robust dataset comprising 752 banks across 95 countries from 2011 to 2020. This approach appropriately accounts for the ordinal nature of credit ratings and reflects the diversity of banking environments, thereby enabling comparative analysis across three distinct economic and institutional regions. The dataset spans key economic events, including the Eurozone debt crisis and the implementation of Basel III regulations, offering a unique opportunity to assess the stability and adaptability of financial institutions in fluctuating economic climates.

The findings of this study indicate that corporate governance, institutional quality, and risk-taking significantly affect credit ratings; however, their impact varies across regions. The varied contextual results underscore the complexity of credit rating dynamics and challenge the "one-size-fits-all" credit rating paradigm. The results further show that corporate governance mechanisms exert a statistically significant positive effect on credit ratings. Additionally, external factors, such as the presence of Big Four auditing firms and the level of economic growth, were found to affect credit ratings positively. Besides, risk-taking displays a significant positive association with credit ratings. However, the quality of institutional frameworks tends to negatively impact credit ratings in regions characterized by less mature financial markets.

This study makes several contributions to the existing literature. First, it provides a comprehensive examination of the determinants of credit rating across three unique regions – Africa, the EU13 and Latin America/Caribbean – each representing diverse economic and institutional contexts. Second, it enhances methodological rigor by employing an ordered logistic regression to examine the relationship between credit ratings and various financial and corporate governance factors, offering a more suitable alternative to the linear regression models predominantly used in previous studies. This approach is particularly well-suited for handling the ordinal nature of credit rating data. Third, the findings contribute to the broader discourse on financial stability and policy, supporting the Sustainable Development Goal (SDG) 8, Target 10, which aims to strengthen financial institutions and aligns with the United Nations (UN) Economic Commission for Africa's ongoing discussions on credit ratings. Finally, this comparative analysis deepens the understanding of regional differences in credit rating determinants and challenges the assumption that uniform criteria can be universally applied across diverse regions and contexts. Scholars have increasingly critiqued the "one-size-fits-all" approach for overlooking the unique economic, institutional, and governance conditions that influence creditworthiness in different regions (e.g. La Porta *et al.*, 1999; Bhojraj and Sengupta, 2003). This study sheds light on the nuanced determinants of credit ratings across different contexts by incorporating region- and context-specific factors such as institutional quality, governance practices, and firm-level characteristics.

The remainder of this article is structured as follows: Section 2 discusses the literature on the interplay between credit ratings, risk-taking, corporate governance, and institutional quality. Section 3 presents the data and methodologies employed. Section 4 discusses the results, while Section 5 concludes the study with managerial and policy implications.

2. Literature discussion

This section provides a comprehensive overview of the theoretical frameworks and empirical studies pertinent to the determinants of bank credit ratings. By synthesizing prior research, we highlight existing gaps and articulate the unique contributions of this study.

2.1 Agency theory and information asymmetry theory

Bank credit ratings can be analyzed through the theoretical lenses of agency theory and information asymmetry theory. Agency theory, introduced by Jensen and Meckling (1976), addresses the agency problem that arises from conflicts of interest between principals (shareholders) and agents (managers). Managers may engage in excessive risk-taking to maximize their personal benefits, potentially at the expense of shareholders (Lee *et al.*, 2021). Beasley *et al.* (2015) emphasize the critical role of robust governance structures, particularly board oversight, in mitigating such risks. Within this framework, credit rating agencies serve as intermediaries that assess a bank's creditworthiness, thereby assisting stakeholders in monitoring managerial decisions and reducing agency costs.

Complementary to agency theory, information asymmetry theory underscores the unequal distribution of information among stakeholders. In the banking sector, this asymmetry can exacerbate issues such as moral hazard and adverse selection (Trung, 2022; Kopyrina and Stepanova, 2023; Yang and Hu, 2023). Credit rating agencies play a pivotal role in mitigating information asymmetry by providing transparent evaluations of banks' financial health (Borhan and Ahmad, 2018). Transparency signals strong governance, which credit rating agencies tend to reward with favorable ratings (Hao and Li, 2021). Empirical evidence from Hao and Li (2021) demonstrates that enhanced firm visibility decreases the likelihood of speculative-grade credit ratings. Collectively, these theoretical frameworks provide a comprehensive foundation for analyzing the influence of governance, transparency, and managerial behavior on credit ratings.

2.2 Empirical literature

Credit ratings serve as the most widely used barometer for risk assessment. Banks have an incentive to maintain or upgrade their credit ratings because of the negative consequences associated with unfavorable credit ratings (Lee *et al.*, 2021; Hong *et al.*, 2023). Credit ratings assess both business and financial risk (Papadimitri *et al.*, 2020), and their evaluations are primarily based on three pillars: financial data, corporate governance, and macroeconomic environments (Abuhommous, 2023). Evidence from Asia-Pacific economies highlights the importance of bank capital and credit risk in liquidity creation, demonstrating that bank capital influences credit risk, especially among small banks (Le and Pham, 2021). Credit ratings are influenced factors such as corporate governance (Bhattacharya and Sharma, 2019; Papadimitri *et al.*, 2020; Manello *et al.*, 2023), institutional quality (Bodea and Hicks, 2018; Uddin *et al.*, 2020), and risk-taking behavior (Parnes, 2022; Koerniadi, 2023). The importance of risk mitigation is well documented in the banking industry; for instance, differences in capitalization between Western and Islamic banks have been shown to lead to excessive risk-taking behavior, altering the risk-capital-efficiency interconnection (Louati *et al.*, 2016). A table that summarizes credit rating determinants studies across multiple contexts is available upon request from the authors.

The corporate governance literature suggests that the quality of a firm's corporate governance affects its credit ratings (Papadimitri *et al.*, 2020). According to Ashbaugh-Skaife *et al.* (2006), corporate governance provides independent mechanisms for controlling agency costs. Bhattacharya and Sharma (2019) documented a positive relationship between corporate governance scores and credit ratings, while Ali *et al.* (2018) showed that well-governed firms exhibit lower default risk. Regarding board characteristics, Ashbaugh-Skaife *et al.* (2006) provide evidence that board expertise is positively related to higher credit ratings. Similarly, Papadimitri *et al.* (2020) find that firms with key board members holding advanced degrees achieve higher credit ratings, as higher educational levels contribute to more effective decision-making. Regarding board size, larger boards are associated with higher credit ratings (Aman and Nguyen, 2013). Despite persistent gender gaps in leadership positions (Aristei and Gallo, 2022; Cervin and Rudman, 2022), studies have shown that board gender diversity positively influences credit ratings (Cervin and Rudman, 2022; Mili and Alaali, 2023). Furthermore, credit rating agencies consider the ratio of women on boards relative to independent directors when evaluating firms (Bhattacharya and Sharma, 2019), with research suggesting that a 30% female board representation strongly correlates with higher credit ratings (Manello *et al.*, 2023). Regarding board age, older board members are associated with higher credit ratings due to their enhanced monitoring capabilities (Grassa, 2016). However, regional disparities exist; for example, in Africa, board gender diversity has shown a counterintuitive negative association with credit ratings attributed to cultural and systemic biases (Willows and Van Der Linde, 2016). Additionally, Mezzi (2018) demonstrates that board size and independence enhance governance structures in Islamic banks in MENA and Southeast Asia, enhancing their creditworthiness. Given these insights, one question arises: Which specific corporate governance mechanisms, such as board size, board age, or board gender diversity, exhibit a stronger influence on credit ratings across different geographic regions?

Institutional quality is another crucial factor in achieving better credit ratings. Credit rating agencies consider the level of institutional quality and regulatory environment in their evaluations. Empirical evidence reinforces the association between strong institutional quality and credit ratings (Bodea and Hicks, 2018; Kandil, 2009; Uddin *et al.*, 2020). Additionally, exogenous aspects such as political stability and periods of crisis affect bank stability (Aliyu *et al.*, 2024). However, the strength of this relationship varies across regions. For instance, Kandil (2009) emphasizes the positive influence of institutional quality on credit ratings in developed markets, while Huang *et al.* (2019) report a negative relationship in less mature markets. These mixed findings suggest that the effectiveness of institutional frameworks depends on regional economic conditions and governance structures. Hasan *et al.* (2023) document a negative association between institutional quality and credit ratings in

Bangladeshi banks, attributing this to structural inefficiencies and systemic challenges. These findings emphasize the crucial role of effective legal, regulatory, and governance institutions in determining and improving credit ratings across regions. Hence, one question arises: How does institutional quality influence credit ratings across diverse geographic regions?

Risk-taking behavior, as emphasized by agency theory, plays a crucial role in shaping credit ratings. Kuang and Qin (2013) argue that firms concerned about their credit ratings tend to moderate their risk appetites. Parnes (2022) found that firms tend to increase their risk-taking behavior as credit ratings improve, whereas those with lower credit ratings exhibit more conservative financial strategies. Koerniadi (2023) found that firms downgraded to BBB- do not increase risk-taking behavior, but those relegated to junk stock status (below BBB-) exhibit substantial increases in risk-taking. Hong *et al*. (2023) further highlight the role of credit rating downgrades in curbing excessive risk-taking, especially in emerging markets. In regions such as Latin America, risk-taking behavior is more strongly associated with credit ratings, reflecting differing market dynamics. Louati *et al.* (2016) provide evidence that differences in capitalization between Western and Islamic banks significantly influence risk-taking behaviors, affecting their credit ratings. This raises an important question: To what extent does risk-taking behavior affect credit ratings across diverse geographic regions?

3. Empirical implementation: data, models, and methodology

This study employs data from three primary sources: the World Bank's Global Governance Indicators, the World Bank's World Development Indicators, and the BankFocus database.

The sample for this study comprises bank-level data and credit ratings of all banks listed in the BankFocus database that operate in Africa, the EU13, and Latin America and the Caribbean. In line with prior studies, the sample includes only universal banks to ensure homogeneity (Basty *et al.*, 2023). Illiquid banks were also excluded to address potential reliability issues associated with financial stability measures (Ali *et al.*, 2023). Moreover, banks were retained in the sample only if they had complete data for all the study variables across the sample period. Finally, a thorough review was conducted to identify and eliminate outliers and inconsistencies. Following these screening criteria, the final sample consists of a cross-country panel dataset comprising 752 banks from 95 countries, covering the period from 2011 to 2020.

The selected sample period (2011–2020) is particularly justified given several significant global financial events and regulatory reforms that directly influenced bank ratings. This period allows for an assessment of how banks reacted to the aftermath of the 2008 global financial crisis and the Eurozone debt crisis of 2010. It also covers the impact of Basel III regulatory reforms implemented in 2010, which aimed to improve the outlook for bank ratings.

To answer our research questions, and given the ordinal nature of credit ratings, this study employs an ordered logistic regression model, which is appropriate for handling categorical dependent variables, consistent with prior studies (Kang *et al.*, 2022; Abid *et al.*, 2018; Papadimitri *et al.*, 2020; Benjamin *et al.*, 2022; Manello *et al.*, 2023). The ordered logistic regression model was chosen over alternative approaches due to the ordinal nature of credit ratings, where the categories have a meaningful ranking. Still, the distances between them are not equal. Unlike linear regression, which assumes a continuous dependent variable, or multinomial logistic regression, which does not account for ordinal structure, the ordered logistic regression model is better suited to the study's data structure.

We followed the works of Öğüt *et al.* (2012) and Moalla and Baili (2019) to specify our ordered logistic regression model in equation (1):

$$logit(P(CR_{it} < j)) = \beta_0 + \beta_1 zscore_{it} + \beta_2 Gov_{it} + \beta_3 InsQ_{it} + \beta_4 macro_{it} + \beta_4 firm_{it} + \varepsilon i_{it} \quad (1)$$

where *CR* represents the ordinal dependent variable (credit ratings), j denotes the credit ratings categories, $\beta_1, \beta_2 \ldots\ldots\ldots \beta_4$ represent the independent variables. *zscore* denotes risk-taking, *Gov* denotes corporate governance variables, *InsQ* refers to institutional quality, *macro* denotes macroeconomic variables, *firm* represents firm-specific characteristics. The error term is denoted by εi, with i and t representing for bank and time subscripts, respectively.

To estimate the z-score for each bank in each year, equation (2) was employed, in line with the literature:

$$\text{Zscore} = (\text{ROA} + \text{EA}) / \sigma(\text{ROA}) \tag{2}$$

where ROA denotes return on assets, EA is the ratio of equity to assets, and σ(ROA) is the standard deviation of return on assets.

Table 1 provides a detailed summary of all variables, including their definitions, sources, and references. The dependent variable, Credit rating, is measured using Moody's ratings, which were classified on a numerical scale in accordance with Krystyniak and Staneva (2023). The ratings range from Aa1 (highest) to CaaC (lowest). A numerical scale from 1 to 16 was applied, corresponding to the credit rating categories, as shown in Table 1, to facilitate the regression analysis.

Institutional quality is measured using the World Governance Indicators (WGI) dataset, which includes dimensions such as the rule of law, regulatory quality, and government effectiveness. A composite score is derived to represent overall institutional quality, scaled from −2.5 to +2.5, where higher scores indicate stronger institutional frameworks. Corporate governance variables were extracted from the BankFocus database following the methodology adopted by Gulamhussen and Santa (2015).

Financial and non-financial control variables were incorporated into the model, drawing from existing literature (Moalla and Baili, 2019). Financial variables are crucial in the banking industry since banks are required to adhere to prudential regulations established by legislative bodies and central banks to ensure liquidity and solvency while fostering public confidence in the banking system. Non-financial variables, particularly corporate governance, play a significant role in influencing credit ratings by enhancing financial transparency (Moalla and Baili, 2019).

4. Results

Table 2 presents the descriptive statistics of the variables used in this study. Banks across the three regions exhibit similar risk-taking behaviors regarding mean, standard deviation, and minimum and maximum values. In terms of institutional quality, Africa records the lowest mean value (−0.517), followed by Latin America/Caribbean (−0.198), while the EU 13 demonstrates the highest mean value (0.593). On average, Moody's credit ratings are relatively high across all three regions, with Africa having the highest mean rating (9.422), followed by the EU 13 (8.954) and Latin America/Caribbean (8.665). These findings suggest that, on average, banks in these regions possess a moderately good level of creditworthiness. The rating range is wide, from 1 to 16, indicating a considerable diversity in credit quality.

The mean values for board size (bsize), board gender diversity (bgen), and board age (bage) are relatively consistent across regions, suggesting that these corporate governance characteristics have similar average values in all three regions. The presence of Big Four audit firms is relatively consistent in the EU 13 and Latin America/Caribbean, with mean values of 0.726 and 0.613, respectively. In Africa, the mean is lower at 0.53, indicating a lower prevalence of Big Four audit firms in the region.

As recommended by Belsley *et al.* (1980), a Variance Inflation Factor (VIF) analysis was conducted to assess potential multicollinearity among key variables across the three distinct geographical regions: Africa, the EU13, and Latin America/Caribbean. VIF values below 2.5 indicate low multicollinearity (Belsley *et al.*, 1980; Hines *et al.*, 2015). The VIF analysis reveals that, on average, multicollinearity among the variables in the examined regions is below the critical threshold (1.265 for Africa, 1.700 for the EU13, and 1.551 for the Latin

Table 1. Variables description, definition, source of data, and references

Variable	Notation	Specification	Source	Reference
Dependent variable				
Credit_rating	CR	Moody's rating mapped to numerical codes such that higher numbers indicate higher rating quality, where CaaC = 1, Aa1 = 16	Bank_Focus	Kuang and Qin (2013), Koerniadi (2023)
Independent variables				
Risk-taking	zscore	Z = (ROA + EA) / σ(ROA), where ROA is the return on assets, EA is the ratio of equity to assets, and σ(ROA) is the standard deviation of return on assets	Bank_Focus	Otero-González *et al.* (2022), Baxter *et al.* (2013)
Institutional_Quality	InstQ	Average score for six dimensions (Control of Corruption, Government Effectiveness, Voice and Accountability, Political Stability, Regulatory Quality, and Rule of Law)	WGI	Uddin *et al.* (2020)
Corporate governance attributes	Gov			
Board_Size	bsize	Log of the number of board members	Bank_Focus	Yermack (1996)
Board_Gender	bgen	Proportion of women on the board	Bank_Focus	Arioglu (2021)
Board_Age	bage	Log of age of the directors	Bank_Focus	Arioglu (2021)
Board_Independent	bind	Proportion of independent board members	Bank_Focus	Chen and Lin (2016)
Foreign_Board	bforeign	Proportion of foreign directors on the board	Bank_Focus	Grassa (2016)
External and macroeconomic variables	macro			
Big4audit_firms	big4	1 = Bank is audited by one of the big four audit firms (i.e. PricewaterhouseCoopers, Deloitte and Touche, Ernst and Young, or KPMG), or 0 otherwise	Bank_Focus	Bailey *et al.* (2018)
GDP_growth	gdp	Log of GDP (constant 2015 US$)	WDI	Haq *et al.* (2019)
Firm characteristics	firm			
Firm_age	log_age	Log of firm years since incorporation	Bank_Focus	Baxter *et al.* (2013)
Opacity	opacity	Intangible assets / book value of assets	Bank_Focus	Bohnert *et al.* (2019)
Market_Discipline	mkt_disc	Interest expense / total deposits	Bank_Focus	Haq *et al.* (2019)
Non-performing_loans	npl	Impaired loans / gross loans	Bank_Focus	Alaoui Mdaghri (2022)
Return_on_Assets	roa	Net income divided by total assets	Bank_Focus	Otero-González *et al.* (2022)
Return_on_Equity	roe	Net income divided by equity	Bank_Focus	Otero-González *et al.* (2022)

Note(s): WGI=Worldwide Governance Indicators; WDI= World Development Indicators
Source(s): Authors' own work

Table 2. Descriptive statistics

	Africa				EU 13				Latin America/Caribbean			
N	2,530				1,240				3,750			
Variable	Mean	Std. D	Min	Max	Mean	Std.D	Min	Max	Mean	Std.D	Min	Max
CR	9.422	3	1	16	8.954	2.934	1	15	8.665	2.936	1	16
zscore	12.526	10.415	−30.492	161.998	14.653	15.205	−2.59	139.293	12.249	12.393	−6.761	161.292
InstQ	−0.517	0.537	−1.667	0.876	0.593	0.306	0.084	1.291	−0.198	0.572	−1.845	1.21
bsize	1.325	0.263	0	1.863	1.052	0.516	0	1.982	0.902	0.453	0	1.778
bgen	0.152	0.119	0	1	0.152	0.138	0	0.526	0.105	0.127	0	1
bage	1.78	0.06	1.491	1.949	1.746	0.042	1.643	1.86	1.794	0.052	1.595	1.959
bind	0.168	0.211	0	0.875	0.019	0.091	0	0.682	0.003	0.03	0	0.471
bforeign	0.175	0.212	0	1	0.154	0.201	0	0.933	0.081	0.166	0	0.947
big4	0.53	0.499	0	1	0.726	0.446	0	1	0.613	0.487	0	1
gdp	24.872	1.487	19.392	26.956	25.119	1.051	22.87	27.072	25.85	1.571	21.361	28.256
log_age	1.544	0.296	0.301	2.26	1.469	0.245	0.778	2.193	1.519	0.329	0	2.326
opacity	0.009	0.038	−0.028	0.557	0.004	0.006	0	0.054	0.008	0.022	−0.057	0.417
mkt_disc	0.125	0.783	1	19.147	0.042	0.242	0.001	3.656	0.093	0.369	0	13.295
npl	0.267	2.599	0	67.388	0.125	0.112	0.003	0.994	0.17	6.928	0	375
roa	0.024	0.036	−0.31	0.471	0.006	0.017	−0.137	0.081	0.021	0.046	−1.314	0.663
roe	0.134	0.231	−5.74	4.929	0.041	0.629	−6.628	18.552	0.12	0.191	−3.483	5.799

Note(s): CR = credit_rating; zscore = risk_taking; bsize = board_size; bgen = board_gender; bage = board_age; InstQ = institutional_quality; big4 = big4audit_firms; gdp = GDP_growth; log_age = firm_age; opacity = firm_opacity; mkt_disc = market_discipline; npl = non_performing_loans; roa = return_on_assets; roe = return_on_equity; bind = board independent; bforeign = foreign_board

Source(s): Authors' own work

America/Caribbean). This suggests that the selected variables can be included in the regression models without a significant risk of inflating standard errors or generating unstable coefficient estimates. The results of the VIF analysis confirm the robustness of the regression models and support the validity of the research outcomes. We also performed a correlation matrix to ascertain the validity of our findings. The correlations among the independent variables did not exhibit any serious concern regarding multicollinearity. Tables showing these results are available upon request from the authors.

The results of the ordered logistic regression analysis are presented in Panel A of Table 3. The key findings are as follows.

Regarding bank credit rating determinants, corporate governance factors, such as board size, board gender diversity, and board age, have statistically significant effects on credit ratings. However, board independence and foreign board membership are not statistically significant. Reflecting the operational environment of the banking sector, the study shows that institutional quality has a significant negative effect on credit ratings in regions characterized by less mature financial markets. Finally, the empirical findings suggest that credit ratings are sensitive to risk-taking behavior, as measured by the Z-score.

The comparative analysis reveals regional differences in the impact of the variables on credit ratings. In Africa, corporate governance factors exert a stronger positive influence on credit ratings compared to the other regions. In the EU13, institutional quality is more prominent in determining credit ratings. In Latin America and the Caribbean, risk-taking behavior exhibits a more pronounced positive effect on credit ratings.

The goodness of fit of the model was assessed using several metrics, including the coefficient of determination (R^2), the Chi-square test, the Akaike information criterion (AIC), and the Bayesian information criterion (BIC). A higher R^2 value indicates a better model fit, while the chi-squared values indicate that the overall model is statistically significant in predicting credit ratings in all three regions.

To enhance the robustness of our results, we conducted several checks. First, the approaches of Bodea and Hicks (2018) and Koerniadi (2023) were followed to compare the results using different estimation methods – Ordered Logistic Regression (OLR) regression and Ordinary Least Squares (OLS) – reported in Panel B of Table 3. The findings were consistent, indicating that they are robust to different estimation techniques. Second, we adopted classification and clustering techniques to validate the robustness of the results (Cameron *et al.*, 2011; Chen and Lin, 2016). Three cross-geographical regions were selected as subsamples. Furthermore, we followed the approach used by Bodea and Hicks (2018) and Yermack (1996) and included additional control variables. In Panel C of Table 3, we included non-performing loans, return on assets, return on equity, non-executive directors, and foreign directors as additional control variables to check the robustness of the results. The specifications, data sources, and related literature on additional control variables are listed in Table 1. To address the potential endogeneity between credit rating (CR) and risk-taking (zscore), we employ an instrumental variable (IV) approach. We use zscore_lag1 and zscore_lag2 as instruments for zscore, as these variables are strongly correlated with zscore but are predetermined and unlikely to be influenced by current-period shocks. For the IV approach, we followed a two-stage procedure: (1) the first stage regresses zscore on the instruments and other exogenous variables, yielding fitted values; and (2) the second stage regresses CR on the fitted values of zscore and the exogenous variables. The first-stage regression produces a highly significant F-statistic ($p < 0.001$), confirming instrument relevance. The results of the second stage indicate that zscore has a significant positive impact on CR. These results are available from the authors upon request. The comparative findings show that the pattern of results remained stable in terms of coefficient signs and magnitudes and statistical significance, providing further support for the robustness of the findings.

The results support the hypothesis that corporate governance, institutional quality, and risk-taking behavior significantly impact bank credit ratings. The findings underscore the importance of robust governance structures and effective risk management in enhancing credit

Table 3. Regression results and robustness checks

Variables	Panel A: Ordered logistic regression (OLR)			Robustness checks Panel B: Linear regression			Panel C: Additional control variables (OLR)		
	Africa CR	EU13 CR	Latin America / Caribbean CR	Africa CR	EU13 CR	Latin America / Caribbean CR	Africa CR	EU13 CR	Latin America / Caribbean CR
zscore	−0.007 (0.174)	0.017*** (0.007)	0.024*** (0.000)	0.005 (0.520)	0.032*** (0.000)	0.035*** (0.000)	−0.018*** (0.007)	0.017** (0.013)	0.016** (0.024)
bsize	0.747*** (0.007)	−0.581*** (0.006)	−1.084*** (0.000)	0.327 (0.364)	−0.720*** (0.000)	−1.039*** (0.000)	0.242 (0.455)	−0.157 (0.532)	−1.144*** (0.000)
bgen	−1.232** (0.024)	1.664*** (0.005)	6.315*** (0.000)	−1.472* (0.065)	1.004* (0.094)	6.400*** (0.000)	−2.140*** (0.002)	0.932 (0.135)	6.301*** (0.000)
bage	5.602*** (0.000)	−10.14*** (0.000)	−2.124 (0.121)	8.048*** (0.000)	−8.451*** (0.000)	−0.391 (0.790)	7.944*** (0.000)	−8.065*** (0.000)	−2.588* (0.062)
InsQ	−0.462*** (0.000)	−0.656** (0.033)	−0.231 (0.153)	−0.434*** (0.003)	−1.104*** (0.000)	−0.172 (0.352)	−0.276** (0.013)	−1.183*** (0.001)	−0.113 (0.497)
big4	0.389*** (0.001)	2.083*** (0.000)	−0.374** (0.014)	0.606*** (0.000)	2.220*** (0.000)	−0.282* (0.091)	0.363*** (0.004)	2.339*** (0.000)	−0.347** (0.027)
gdp	0.058 (0.107)	0.289** (0.010)	0.026 (0.652)	0.000*** (0.000)	0.000*** (0.000)	0.000* (0.072)	0.172*** (0.000)	0.395*** (0.004)	0.015 (0.815)
log_age	−0.652*** (0.000)	−0.828*** (0.007)	0.143 (0.571)	−1.038*** (0.000)	−0.401 (0.138)	−0.300 (0.322)	−0.412** (0.040)	−0.925*** (0.005)	0.169 (0.522)
opacity	−43.249*** (0.000)	−71.075*** (0.000)	−45.37*** (0.000)	−57.353*** (0.000)	−72.552*** (0.000)	−58.588*** (0.000)	−56.828*** (0.000)	−79.589*** (0.000)	−46.379*** (0.000)
mkt_disc	−0.398 (0.156)	−17.954*** (0.001)	−0.736*** (0.000)	−0.534*** (0.002)	−23.451*** (0.002)	−1.059*** (0.000)	−1.607*** (0.000)	−11.507** (0.042)	−0.605*** (0.001)
npl							−0.095*** (0.003)	−0.164 (0.840)	−4.986** (0.013)
roa							21.297*** (0.000)	18.992*** (0.002)	5.775 (0.423)

(*continued*)

Table 3. Continued

Variables	Panel A: Ordered logistic regression (OLR) Africa CR	EU13 CR	Latin America / Caribbean CR	Robustness checks Panel B: Linear regression Africa CR	EU13 CR	Latin America / Caribbean CR	Panel C: Additional control variables (OLR) Africa CR	EU13 CR	Latin America / Caribbean CR
roe							−0.054 (0.908)	−0.129 (0.592)	1.872 (0.174)
bind							1.310*** (0.000)	−0.811 (0.366)	−0.918 (0.598)
bforeign							0.956*** 0.007	−1.972*** (0.000)	−0.599 (0.109)
Constant				−4.671 (0.216)	25.120*** (0.000)	9.720*** (0.000)			
Observations	1,300	607	734	1,300	607	734	1,083	574	717
Pseudo_r-squared	0.025	0.113	0.061				0.054	0.124	0.069
R^2				0.124	0.363	0.247			
Chi-square	152.862	299.660	195.867				269.313	313.434	215.831
Prob > chi2	0.000	0.000	0.000				0.000	0.000	0.000
Akaike_crit (AIC)	5968.480	2398.610	3050.675	6108.099	2625.996	3188.966	4793.573	2271.516	2952.740
Bayesian_crit (BIC)	6087.393	2500.006	3151.842	6159.800	2670.081	3234.951	4933.223	2393.390	3076.267

Note(s): CR = credit_rating; zscore = risk-taking; bsize = board_size; bgen = board_gender; bage = board_age; InstQ = institutional_quality; big4 = big4audit_firms; gdp = GDP growth; log_age = firm_age; opacity = firm_opacity; mkt_disc = market_discipline; npl = non-performing_loans; roa = return_on_assets; roe = return_on_equity; bind = board independent; bforeign = foreign_board

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Source(s): Authors' own work

ratings. The negative effect of institutional quality in less mature financial markets suggests that improvements in regulatory frameworks could enhance credit ratings in these regions.

5. Discussion and implications

The positive relationship between z-scores and credit ratings in the EU13 and Latin America/Caribbean regions is in line with Elliott *et al.* (2014), suggesting that z-scores provide valuable incremental information for credit ratings. Our findings echo the conclusions of Kuang and Qin (2013), who argue that credit ratings are informative about issuers' overall credit risk. In the banking context, credit rating agencies perceive banks that engage in riskier activities as posing greater risk. This recognition underscores the relevance of credit rating assessments in gauging institutional risk profiles.

The negative relationship between board size and credit ratings in the EU13 and Latin America/Caribbean regions can be attributed to the higher costs of maintaining larger boards in these regions. Larger boards incur substantial expenses related to board fees, which can strain profitability. Lower profitability, in turn, negatively impacts the financial metrics considered in credit rating assessments. This aligns with Yermack's (1996) findings, highlighting that smaller boards improve decision-making efficiency and reduce coordination problems, contributing to improved firm performance and valuation.

In contrast, the positive relationship between board size and credit ratings observed in Africa is consistent with the resource dependency hypothesis, which posits that larger boards provide firms with greater access to external resources, including capital and expertise. This advantage is particularly relevant in the African context, where governance structures often prioritize leveraging external networks and stakeholder relationships (e.g. Aman and Nguyen, 2013; Mili and Alaali, 2023). Moreover, the relatively lower cost of maintaining larger boards in Africa, due to more affordable board fees, implies that profitability is less adversely impacted. These factors suggest that larger boards in Africa are not only sustainable but may also enhance governance quality and creditworthiness.

Thus, the findings underscore the importance of contextual factors such as regional economic conditions, cost structures, and governance priorities in shaping the relationship between board size and credit ratings. While larger boards may impose a financial burden in regions with high board costs, they may serve as valuable resources in regions with lower governance costs, and resource access is a critical determinant of credit ratings.

Consistent with expectations in developed regions, our findings reveal a positive and significant relationship between board gender diversity and credit ratings in the EU13 and Latin America/Caribbean. However, we observe a counterintuitive and statistically significant negative relationship in Africa.

The positive association between board gender diversity and credit ratings in the EU13 and Latin America/Caribbean regions is consistent with Cervin and Rudman (2022), further supporting that banks with a strong credit rating tend to have greater board gender diversity. This finding also supports the theoretical perspective that diverse boards can improve corporate governance and, subsequently, credit ratings. This finding reflects the significant efforts made by banks in these regions to encourage and facilitate women's participation in board-level decision-making to enhance firm value and improve credit ratings. Our findings corroborate those of Mili and Alaali (2023), who report a positive correlation between the presence of female directors on a bank's board and its credit rating. Moreover, credit rating agencies tend to respond positively to the appointment of women on boards, as evidenced by Owusu and Zalata (2023).

Additionally, our findings reveal a counterintuitive negative relationship between board gender diversity and credit ratings in Africa. This result is consistent with the study of Willows and Van Der Linde (2016) in South Africa, which found a similar significant negative association. Several factors may explain why increased female board representation does not necessarily translate into improved credit ratings in Africa. Through the lens of the efficient market hypothesis, Africa's relatively less efficient markets may fail to accurately reflect the contributions of female board members to a bank's creditworthiness (Willows and Van Der Linde, 2016), potentially leading to undervaluation (Haslam *et al.*, 2010). Additionally, female board members in Africa may adopt an over-monitoring approach and exhibit lower levels of cooperation, which can be counterproductive in environments where corruption is prevalent (Adams and Ferreira, 2009). Another contributory factor is the archaic skepticism and stereotype about women's leadership capabilities and competencies that still persist in many African markets (Adams and Ferreira, 2009; Haslam *et al.*, 2010).

Regarding board age, older boards in Africa are associated with higher credit ratings, whereas in the EU13, older boards are linked to lower credit ratings. In Africa, where institutions are relatively less developed, experienced board members are perceived as enhancing stakeholder confidence and improving decision-making. Furthermore, it often takes several years for individuals to develop the expertise necessary for a bank board appointment, given that careers typically commence later in life. In contrast, in a rapidly evolving EU13 market, where governance practices are highly scrutinized, older boards are viewed by credit rating agencies as a potential risk factor. These agencies tend to favor dynamic boards that can swiftly adapt to market changes. Additionally, younger banks in the EU13 are often better structured and employ more effective management practices than their older counterparts (Grassa *et al.*, 2020). Our findings are consistent with those of Papadimitri *et al.* (2020), showing that older boards have a beneficial effect on credit ratings.

The observed negative relationship between institutional quality and credit ratings contradicts previous studies, such as Kandil (2009), which emphasize the role of strong institutions in enhancing credit ratings. However, our findings align with Huang *et al.* (2019), who demonstrate that improvements in institutional quality may lower sovereign ratings. This unexpected result may be explained by the relatively underdeveloped banking systems operating in Africa, the EU13, and Latin America/Caribbean. Credit rating agencies may perceive these regions unfavorably despite improvements in institutional quality, as economic conditions remain a primary determinant of credit ratings. These findings also contribute to the United Nations (UN) Economic Commission for Africa's ongoing discourse on credit ratings.

We document that engagement with Big Four auditing firms positively affects credit ratings, corroborating the findings of Lim and Mali (2021). The auditor expertise hypothesis suggests that the credibility and reliability associated with Big Four auditors can positively influence credit assessments because these firms are strongly motivated to limit reputational risks (Lim and Mali, 2021). However, Iatridis (2018) reports an adverse association between credit ratings and firms audited by one of the Big Four firms, indicating potential variability across different contexts.

GDP was found to be another statistically significant determinant of credit ratings, with a positive association observed across all regions. These results corroborate those of Mutize and Nkhalamba (2020), who argue that a strong economy fosters a stable investment climate, leading to better credit ratings. Similarly, Overes and van der Wel (2023) show the positive impact of GDP on credit ratings. By contrast, Hasan *et al.* (2023) document a negative association between GDP and credit ratings in Bangladeshi banks, suggesting that rapid economic growth may mask underlying structural weaknesses, such as non-performing loans and operational inefficiencies, negatively impacting credit ratings. Additionally, the relationship could reflect the inability of economic growth alone to resolve financial sector challenges, especially in developing economies where governance and transparency remain critical issues.

Our results reveal a negative relationship between firm age and credit ratings in Africa and the EU-13, implying that older firms tend to receive lower credit ratings than younger ones. This result contradicts the findings of Abuhommous (2023), who reports a positive association between firm age and credit ratings, arguing that older firms tend to benefit from a more favorable outlook. While prior studies might have inferred a positive trajectory for older firms, our data imply a potential divergence from this anticipated trend. Our results suggest that older firms may be perceived as less innovative or adaptable to market changes, potentially increasing their risk exposure. As firms age, their operational structures or strategies may become less efficient or adaptive. Our results are consistent with the findings of Norden and Weber (2004), who highlight similar challenges faced by aging firms.

5.1 Theoretical implications

This study sheds light on the pivotal role of corporate governance in influencing credit ratings. Our findings document the growing acknowledgment of sound corporate governance as a major driver of improved credit ratings. We establish a positive relationship between board gender diversity and credit ratings, as well as the influence of board age. Moreover, our findings add to the ongoing theoretical discourse on corporate governance and its impact on credit rating.

The regional variations observed in our findings emphasize the importance of region-specific considerations in financial theory. For example, the significance and direction of board size, board age, board gender, and the presence of Big Four audit firms differ across the three regions examined. Our comparative study also stirs up a discourse that challenges the one-size-fits-all credit rating paradigm, advocating for a more context-specific perspective.

The ordered logistic regression model provides a more nuanced view of these determinants, accommodating the intrinsically ordered nature of credit rating categories. This methodological approach allows a more precise depiction of the relationships between variables.

Overall, the findings highlight the complexity and diversity of factors associated with credit ratings, indicating that financial, corporate governance, and economic factors collectively shape creditworthiness. These insights add depth to the theoretical underpinnings of credit rating analysis by emphasizing the interplay between corporate governance and regional economic conditions, alongside financial metrics.

Agency theory posits that conflicts of interest arise between agents and principals, leading to agency costs that can negatively impact firm performance (Jensen and Meckling, 1976) and, ultimately, credit ratings. This study extends the application of agency theory by demonstrating how corporate governance mechanisms, such as board structure, gender diversity, and external auditing, can either mitigate or exacerbate agency costs in different regional contexts.

The findings of this study indicate that smaller board sizes in the EU13 and Latin America/Caribbean regions are associated with higher credit ratings. This supports the agency theory perspective that smaller boards reduce coordination inefficiencies and enhance decision-making, thereby mitigating agency conflicts. Conversely, the positive relationship between larger boards and credit ratings in Africa aligns more closely with the resource dependence theory (Pfeffer and Salancik, 1978), which suggests that larger boards provide valuable resources and expertise that compensate for weak institutional structures. This finding challenges the traditional agency theory assertion that larger boards inherently increase agency costs.

The positive association between board gender diversity and credit ratings in the EU13 and Latin America/Caribbean regions reinforces the agency theory argument that diverse boards enhance oversight, reduce managerial opportunism, and improve the quality of decision-making. However, the negative relationship observed in Africa suggests that diversity initiatives alone may not be sufficient to mitigate agency conflicts if broader market inefficiencies persist. This finding underscores the limitations of agency theory in environments characterized by weaker institutional frameworks.

The study supports the agency theory assertion that independent external audits serve as an effective monitoring mechanism to mitigate agency conflicts and improve transparency. Banks audited by Big Four accounting firms tend to achieve higher credit ratings, demonstrating the role of external assurance in enhancing investor confidence and reducing informational asymmetries.

Information asymmetry theory posits that an imbalance of information between a firm and its stakeholders leads to suboptimal decisions and mispricing of risk. This study provides valuable insights into how various corporate governance and institutional factors influence the extent of information asymmetry and, consequently, credit ratings.

The findings reveal that higher market discipline in the EU13 and Latin America/Caribbean regions positively influences credit ratings. This supports the information asymmetry theory perspective that greater transparency reduces uncertainty and facilitates more accurate credit assessments. In contrast, opacity negatively affects credit ratings across all regions, highlighting the critical role of information disclosure in reducing asymmetry.

The unexpected negative relationship between institutional quality and credit ratings in Africa challenges conventional views, suggesting that improvements in institutional frameworks alone do not immediately alleviate information asymmetry. Similarly, in the EU13 and Latin America/Caribbean regions, gender-diverse boards serve as a signal of stronger corporate governance practices, contributing to reduced information asymmetry by fostering more transparent disclosures and improved stakeholder engagement.

5.2 Managerial implications

Maintaining sound risk-taking practices is crucial for banks operating in the EU13 and Latin America/Caribbean regions, as such behavior is positively related to higher credit ratings. The findings suggest that smaller board sizes are associated with higher credit ratings in these regions. To boost credit ratings, banks should consider optimizing their board composition to enhance their creditworthiness. Banks with older boards in Africa and the EU13 tend to achieve higher credit ratings, suggesting that institutions should strategically engage and retain experienced board members.

In terms of board gender diversity, the findings of this study underscore the strategic importance of board gender diversity in influencing credit ratings, particularly in more developed regions such as the EU13 and Latin America/Caribbean, where diversity is positively associated with improved creditworthiness. Therefore, banks should actively promote gender-diverse leadership to enhance governance credibility and greater stakeholder confidence in the eyes of credit rating agencies and external stakeholders. In Africa, where an inverse correlation between gender diversity and credit ratings is evident, banks should embrace policies and practices that encourage inclusion while addressing overarching structural and cultural obstacles that may impede the effective contributions of diverse board members.

The significant negative impact of institutional quality on credit ratings in Africa highlights the need for consistent efforts to improve institutional frameworks and create a more business-friendly environment. This could potentially mitigate the adverse effects of weak institutional quality on credit rating. Additionally, banks audited by Big Four accounting firms tend to receive higher credit ratings. Therefore, engaging the services of these accounting firms for financial reporting and auditing could enhance a bank’s credibility and financial standing.

Finally, there is a positive relationship between economic growth (measured by GDP) and credit ratings across all regions. Banks should capitalize on expanding economies to increase their credit profiles and strengthen their financial position.

Several recommendations can be proposed for banks to tailor credit assessments to the specific characteristics of each region. In the EU13 region, banks could consider reducing board size to enhance decision-making efficiency and coordination, as smaller boards are associated with higher credit ratings. Additionally, banks should strengthen transparency by enhancing disclosure policies to provide investors with accurate and timely information. Furthermore, they could leverage the region’s stable economic conditions to expand operations and improve financial performance.

In Africa, it is advisable for banks to collaborate with regulators to strengthen institutional frameworks and reduce regulatory uncertainty. Partnering with Big Four audit firms could also enhance financial credibility and transparency. Moreover, appointing experienced board members, addressing gender stereotypes and biases by implementing programs to support female representation at the board level, and providing continuous professional development for board members would add significant value. These measures would enhance stakeholder confidence and contribute to improved governance.

Corporate transparency could be improved in the Latin America/Caribbean region by implementing disclosure standards that meet investor expectations and regulatory requirements. Additionally, collaborating with policymakers to align growth strategies with national economic priorities would allow banks to capitalize on economic growth opportunities. Finally, to adapt to changing economic conditions, it is recommended that banks regularly assess their credit portfolios and implement robust risk management frameworks that balance growth opportunities with prudent risk exposure.

5.3 Policy implications

This study provides several policy implications. Regulatory authorities in these regions should actively promote and enforce financial stability and robust risk governance practices to enhance credit ratings and reduce financing costs. Policies should encourage banks to maintain leaner board structures, as this has positively affected credit ratings.

To foster a more inclusive corporate governance landscape, policymakers should implement gender diversity legislation. Not only may this improve credit ratings, but it could also improve the overall corporate governance quality. It is imperative for policymakers to actively promote boards with a mix of experienced and younger members. This balance can facilitate sound decision-making and adaptability in an evolving financial landscape.

Strengthening institutional quality should remain a top priority for regulatory agencies, as it plays a pivotal role in fostering a conducive credit environment. Efforts should be directed toward enhancing governance structures, legal frameworks, and regulatory oversight to support financial stability and attract investments. Moreover, regulators and banks should prioritize audit quality by facilitating access to Big Four accounting firms, particularly for small and newly established banks. Such initiatives could enhance financial transparency and improve overall credit quality. Finally, policymakers should focus on economic development strategies to boost GDP, as a stronger economy can contribute to better credit ratings and overall financial stability. A stable macroeconomic environment can provide banks with a favorable operating context, enabling them to enhance their creditworthiness and resilience.

Several region-specific recommendations can also be proposed for regulators to strengthen financial oversight and governance. In the EU13 region, regulators should encourage good governance practices by developing policies that support smaller, more efficient board structures without compromising oversight. Additionally, strengthening systemic risk monitoring and promoting early warning mechanisms would help prevent financial instability and enhance risk oversight.

In Africa, improving institutional quality is imperative. Regulators should strengthen regulatory frameworks to promote transparency and combat corruption, enhance capacity-building efforts to ensure regulatory enforcement aligns with international standards and implement stricter compliance guidelines to improve the accuracy of financial reporting.

For the Latin America/Caribbean region, it is advisable to enforce stronger monitoring mechanisms to prevent excessive risk-taking behavior. Regulators should also strengthen enforcement actions against financial misconduct to maintain investor trust and implement regulatory reforms to reduce opacity in financial operations. These measures would enhance risk governance and promote greater transparency in the financial sector.

6. Conclusion

Banks' credit ratings serve as a critical indicator of their financial soundness. This study sheds light on the unique dynamics and multifaceted factors influencing credit ratings across three distinct regions: Africa, the EU13, and Latin America and the Caribbean.

In the EU13 region, we identified several key determinants that play a pivotal role in shaping credit ratings. These include risk-taking, board size, board gender diversity, institutional quality, the presence of Big Four audit firms, opacity, market discipline, and economic growth.

In the African context, credit ratings are significantly influenced by institutional quality, the presence of Big Four auditing firms, board age, board gender diversity, firm age, opacity, and economic growth. These findings emphasize the relevance of strong institutions, a stable internal and external environment, and effective corporate governance practices in shaping credit ratings in Africa.

In the Latin America and the Caribbean region, our findings reveal that factors such as risk-taking, board size, board gender diversity, the presence of Big Four auditing firms, market discipline, and opacity significantly influence credit ratings.

In conclusion, this study underscores the crucial role of a region's unique economic, legal, and governance landscape in shaping credit ratings within the evolving global financial system. A thorough understanding of these region-specific factors is crucial for a comprehensive assessment of banks' creditworthiness.

Future studies could adopt alternative theoretical frameworks, such as institutional theory or resource dependence theory, to further explore the dynamics influencing credit ratings. Given the significance of institutional differences across regions highlighted in this study, future research could apply an institutional theory perspective to examine how unique regulatory, economic, and cultural environments shape governance practices and influence credit ratings.

Similarly, resource dependence theory could be employed to investigate how larger and smaller boards provide firms with critical external resources, networks, and legitimacy, particularly in environments with weak institutional support. Such an approach could offer valuable insights into how corporate governance structures interact with external dependencies to influence financial outcomes.

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