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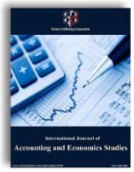

How Do Board Structure and Risk Management Interact to Influence Derivative Recognition Under IFRS-9 among African Banks?

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Abstract

This study examines the interaction between board structure and risk management in shaping derivative recognition under IFRS 9 within African banks. Drawing on panel data from 73 banks across multiple jurisdictions between 2012 and 2023, the analysis employs fixed effects regression with Driscoll–Kraay standard errors to control for cross-sectional dependence and heteroskedasticity. Board attributes are evaluated as determinants of derivative asset, liability, and net derivative asset ratio, while risk management serves as a moderating variable reflecting institutional capital adequacy and prudential control strength. The results indicate that larger and more independent boards enhance compliance with IFRS 9 derivative recognition standards, but their effects become more conservative in banks with stronger risk governance frameworks. Gender diversity fosters prudence in liability classification, and board diligence influences net derivative positions primarily when reinforced by structured risk oversight. The study provides empirical evidence for aligning IFRS 9 implementation with Basel IV reforms and underscores the need for capacity building, regulatory harmonisation, and risk-governance alignment to strengthen financial transparency and stability across African banking systems.

Keywords: *African Banks; Board Structure; Derivative Recognition; IFRS 9; Risk Management .*

1. Introduction

Derivative recognition under IFRS 9 lies at the nexus of accounting measurement, market discipline, and prudential regulation. Banks deploy derivatives to hedge exposures to credit, interest rate, and currency risks, yet the extent to which these instruments enhance transparency or introduce opacity depends on the quality of recognition and disclosure (Hairston & Brooks, 2018; Baule, 2021). IFRS 9 replaced the incurred-loss approach with a forward-looking Expected Credit Loss (ECL) framework, introduced classification based on business models, and broadened hedge accounting requirements. Although these reforms improved relevance and comparability, they also imposed greater demands on governance oversight and technical competence, particularly in emerging markets where institutional structures remain underdeveloped (Dong & Oberson, 2020; Breed et al., 2023; Juszczyk et al., 2023).

Within African banking systems, the implementation of IFRS 9 presents distinct challenges. Macroeconomic volatility, weak regulatory enforcement, and limited technical expertise contribute to inconsistencies in the recognition of derivatives (Yakubu & Bunyaminu, 2021; Thamae et al., 2023). While global standards have demonstrably improved financial reporting quality, their effects remain uneven across developing economies, where institutional fragility often shapes regulatory outcomes more than formal compliance (Lin et al., 2019; Cheikh & Rejeb, 2020; Alruwaili et al., 2023). In such contexts, derivative recognition is determined not solely by accounting rules but also by governance capacity, managerial incentives, and the robustness of internal risk frameworks.

Board structure plays a pivotal role in shaping recognition practices under IFRS 9. Attributes such as board size, independence, gender diversity, and diligence influence the board's capacity to scrutinize valuation models, assess hedge documentation, and enforce disclosure discipline (Disli et al., 2022; Alves, 2023; Umar et al., 2024). Audit and risk committees are especially critical in reviewing fair value estimates and moderating managerial discretion (Serra et al., 2021; Oyewo, 2021). However, when boards are politically influenced or lack technical proficiency, oversight failures increase, raising the risk of misclassification and eroding investor confidence (Boshnak, 2021; Masindi & Singh, 2022).

Risk management structures intersect with governance mechanisms rather than operating in isolation. Effective internal controls, integrated credit and liquidity risk systems, and periodic stress testing enhance the integrity of derivative recognition by aligning accounting treatments with underlying economic exposures (Bhat et al., 2021; Eyalsalman et al., 2024). Conversely, even well-constituted boards may fail

to ensure consistent recognition if they are not supported by robust institutional risk architecture (Ahmed et al., 2023; Umar et al., 2024). The forward-looking requirements of IFRS 9, therefore, necessitate cohesion between governance oversight and risk management capability (Zampella & Ferri, 2023; Zhou, 2023).

Despite growing literature on IFRS adoption and corporate governance, three gaps remain. First, most studies prioritize loan impairment and financial comparability, with limited attention to derivative recognition, one of the most technically demanding components of IFRS 9 (Gubareva, 2021; Brito & Júdice, 2021). Second, governance is often examined in isolation, overlooking evidence that recognition outcomes depend on the interaction between board structures and institutional risk systems (Ahmed et al., 2023; Umar et al., 2024). Third, African banking environments are underrepresented in empirical studies, despite offering unique insights into governance behaviour under regulatory uncertainty and macro-financial shocks (Fisseha, 2023; Thamae et al., 2023).

This study addresses these gaps by examining how board structure and risk management capacity interact to influence derivative recognition under IFRS 9 in African banks. Derivative recognition is operationalised using derivative asset intensity, derivative liability intensity, and net derivative asset ratio (Breed et al., 2023; Lin et al., 2019). Board structure comprises board size, independence, gender diversity, and diligence (Disli et al., 2022; Alves, 2023), while risk management is conceptualised as a moderating mechanism that determines whether governance intent translates into consistent disclosure outcomes (Bhat et al., 2021; Eyalsalman et al., 2024).

By adopting this analytical lens, the study advances understanding of the governance–risk interface in financial reporting. It explores whether governance effectiveness is conditional upon the presence of institutional risk systems, particularly in jurisdictions characterised by regulatory diversity, macroeconomic pressure, and institutional vulnerability (Ongalo & Wanjare, 2022; Kund & Rugilo, 2023; Ltaief & Moalla, 2023). This approach contributes to debates on compliance, transparency, and prudential oversight under IFRS 9.

The remainder of the article is structured as follows: Section 2 reviews relevant literature and develops hypotheses; Section 3 outlines the methodology; Section 4 presents results and analysis; and Section 5 concludes with policy implications and recommendations for future research.

2. Literature Review and Hypotheses Development

This study explains the relevant variables, the underpinning theories, and hypothesized statements from the review of the respective papers.

2.1. Conceptual review

The conceptual review explores the foundational constructs of board structure, risk management and derivative recognition under IFRS 9, with a focus on how with a focus of how these elements converge within African banking systems.

2.1.1. Derivative recognition

Derivative recognition has become a defining test of financial reporting credibility since IFRS 9 restructured how financial instruments are classified and measured. While the standard sought to improve transparency by aligning accounting treatment with economic substance, its implementation has revealed deep variation across jurisdictions. Technical research shows that IFRS 9's forward-looking orientation, especially the Expected Credit Loss (ECL) model, has enhanced relevance but also magnified the complexity of valuation and hedge documentation (Dong & Oberson, 2020; Breed et al., 2023; Juszczyk et al., 2023). For banks in emerging markets, these requirements stretch governance capacity and expose weaknesses in internal control systems that mediate compliance quality (Adewale & Oluwaseun, 2022; Ahmed et al., 2023).

Conceptually, recognition involves three interdependent stages: classification, measurement, and disclosure. Breed et al. (2023) note that derivatives must be designated as assets or liabilities and valued either through profit or loss (FVPL) or other comprehensive income (FVOCI), depending on risk strategy. Yet, Brito and Júdice (2021) and Zampella and Ferri (2023) show that these technical choices carry strategic implications: they reveal management's commitment to integrity or, conversely, its capacity for earnings manipulation. Empirical evidence from emerging-market banks confirms that recognition quality depends less on the accounting rule itself than on the strength of oversight and risk culture guiding its application (Ahmed et al., 2023; Umar et al., 2024). Even where disclosures appear compliant, weak governance can obscure real exposures (Oyewo, 2021).

Accordingly, this study defines derivative recognition as the degree to which African banks identify, classify, measure, and disclose derivative instruments under IFRS 9 in a transparent and prudentially sound manner. Following Lin et al. (2019) and Breed et al. (2023), it is proxied by derivative-asset intensity, derivative-liability intensity, and the net-derivative-asset ratio. These indicators capture both the scale of derivative activity and the credibility of related disclosures. The construct is treated as a governance-sensitive outcome shaped by board structure and conditioned by institutional risk-management systems, an interaction that ultimately determines how faithfully IFRS 9 principles translate into financial stability and market discipline across African banking institutions (Zhou, 2023; Umar et al., 2024).

2.1.2. Board structure

Board structure functions as a strategic governance mechanism that defines how effectively banks moderate managerial discretion, safeguard stakeholder interests, and uphold transparency under complex standards such as IFRS 9. It represents the institutional framework through which judgment, expertise, and accountability are channeled into financial reporting. As Boshnak (2021) argues, the architecture of the board directly shapes the credibility of disclosures in technically demanding areas such as derivative recognition, where valuation and hedge-accounting decisions require both technical competence and ethical oversight. In this sense, the structure of the board is not an administrative formality but a determinant of reporting discipline.

The influence of board size on financial reporting is conceptually dual. On one hand, larger boards may enhance deliberative capacity by integrating broader professional expertise, thereby strengthening scrutiny of complex IFRS 9 judgments. Umar et al. (2024) note that banks with adequately sized boards are better positioned to interrogate derivative classifications and measurement assumptions, reducing the likelihood of opportunistic reporting. Yet, as Masindi and Singh (2022) caution, an expanded board can also weaken governance coherence when coordination becomes inefficient, and accountability is diluted. The implication is that size matters less in absolute terms than in how effectively diversity is translated into informed and timely decision-making.

Board independence provides the normative foundation for credible oversight. Independent directors are expected to restrain managerial opportunism and promote objective compliance with recognition and valuation requirements. By reducing information asymmetry, they help ensure that derivative reporting reflects underlying risk exposures rather than managerial bias. However, Mnif and Znazen (2020)

observe that in many developing markets, independence often exists in form rather than in substance. Concentrated ownership and political affiliations can undermine directors' autonomy, limiting their ability to challenge management decisions and weakening the assurance of transparent IFRS 9 disclosures. Independence, therefore, delivers governance value only where institutional integrity sustains it.

Gender diversity extends this conversation beyond control to perspective. Alves (2023) finds that gender-diverse boards foster conservatism and caution in financial reporting, qualities essential to prudent derivative recognition. Similarly, Sultana et al. (2024) highlight that female directors tend to promote ethical sensitivity and sustainability awareness in board deliberations. These traits can mitigate excessive risk-taking and encourage compliance-oriented behaviour. Yet diversity's effectiveness depends on substance over symbolism: when women hold peripheral roles, its impact on disclosure quality diminishes. True inclusiveness, therefore, lies in empowered participation rather than mere representation.

Board diligence translates governance principles into operational reality. Diligent boards, those that engage regularly, review documentation thoroughly, and question management assumptions, are more likely to identify inconsistencies in fair value models and hedge documentation (Alruwaili et al., 2023). Oyetade et al. (2021) argue, however, that diligence without technical depth risks becoming ceremonial, creating an illusion of oversight without actual control. This underscores that the effectiveness of diligence lies not in meeting frequency but in the intellectual rigour of engagement.

Taken together, board structure is conceptualised in this study as a composite governance construct that conditions the integrity of derivative recognition under IFRS 9. Its influence is neither automatic nor uniform but contingent on the interaction between governance vigilance and institutional capacity. The study therefore positions board structure as the foundation upon which risk management systems operate, recognising that only through this synergy can African banks achieve transparent, accurate, and prudentially sound derivative reporting.

2.1.3. Risk management

Risk management remains a cornerstone of modern banking, enabling institutions to identify, assess, and control exposures that threaten financial stability and the credibility of financial reporting. Bhat et al. (2021) argue that effective risk management extends beyond regulatory compliance to encompass forward-looking mechanisms that ensure prudential discipline and adaptive resilience. Within the IFRS 9 framework, its relevance has intensified due to the standard's emphasis on predictive modelling, expected credit loss assessment, and the documentation of exposure dynamics, particularly in the treatment of derivative instruments. Adewale and Oluwaseun (2022) further highlight that the alignment of risk control processes with IFRS 9 requirements enhances reporting reliability by linking recognition practices to genuine financial exposures rather than procedural conformity.

Conceptually, risk management integrates credit, market, liquidity, and operational dimensions that collectively influence how derivatives are utilised and recognised in financial statements. Breed et al. (2023) maintain that effective systems ensure recognition reflects legitimate hedging relationships rather than speculative positioning, thereby enhancing the informational value of financial reports. Similarly, Dong and Oberson (2020) contend that IFRS 9 compels institutions to align accounting outcomes with economic reality through consistent valuation and documentation. Eyalsalman et al. (2024) note that structured internal controls and active risk committees limit excessive risk-taking by embedding analytical discipline in managerial decisions, while Zhou (2023) emphasises that continuous model validation, stress testing, and forward-looking scenario analyses are critical to sustaining credible recognition outcomes.

The absence of such systems can render even well-designed governance frameworks ineffective. Juszczyk et al. (2023) report that boards lacking technical expertise often fail to interpret exposure indicators or enforce compliance in IFRS 9 derivative reporting. In contrast, Ahmed et al. (2023) find that banks with strong risk management frameworks support more effective board oversight by providing accurate, data-driven insights into valuation assumptions and hedge documentation. This interaction, termed the governance–risk nexus by Umar et al. (2024), illustrates how governance quality and risk management capability reinforce one another in improving disclosure reliability and curbing managerial discretion. Evidence from emerging markets corroborates this synergy, indicating that banks with robust risk control structures demonstrate lower earnings volatility and stronger market confidence (Eyalsalman et al., 2024; Li & Chen, 2022).

In this study, risk management is conceptualised as the institutional capability of African banks to design, implement, and sustain control mechanisms that align derivative recognition with IFRS 9 provisions. It is operationalised through indicators of capital adequacy, interest rate risk control, and the effectiveness of internal monitoring systems (Munangi & Sibindi, 2020; Yakubu & Bunyaminu, 2021). Treated as a moderating construct, risk management functions as the conduit through which governance attributes, board size, independence, diversity, and diligence translate into verifiable reporting outcomes. Ultimately, it operationalises governance intent, ensuring that derivative recognition remains both technically sound and prudentially disciplined within African banking systems.

2.2. Theoretical review

The study reviews the Agency Theory and the Resource Dependence Theory. This aims to identify the relevant theory that underpins the current study.

2.2.1. Agency theory

Agency theory, originally articulated by Jensen and Meckling (1976) in their seminal exposition on the theory of the firm, posits that the separation of ownership and control gives rise to an agency relationship in which managers operate as agents on behalf of shareholders, the principals. Because agents are typically self-interested and risk-averse, their actions may not always align with the interests of the principals. This divergence generates agency costs manifested through opportunistic conduct such as earnings manipulation, excessive risk exposure, and inadequate disclosure (Hairston & Brooks, 2018). The theory, therefore, underscores the need for effective governance mechanisms to discipline managerial behaviour and protect shareholder value.

Within this framework, agency theory provides an analytical lens for understanding how corporate governance structures, particularly the board of directors and risk management systems, mitigate opportunism in the recognition of derivatives under IFRS 9. Derivative instruments require extensive judgment in valuation and classification, offering scope for managerial discretion and potential misrepresentation of financial performance. Board attributes serve as monitoring mechanisms that reduce information asymmetry and enhance compliance with complex reporting standards (Li & Chen, 2022; Alves, 2023). Similarly, risk management functions as an internal control process that reinforces board oversight and ensures that derivative recognition reflects both shareholder interests and prudential expectations (Adewale & Oluwaseun, 2022; Ahmed et al., 2023).

Empirical evidence supports the explanatory strength of agency theory in studies of governance and financial reporting. Ishaya et al. (2025) show that board independence strengthens firm value by limiting conflicts of interest, while Oyewo (2021) finds that sound risk

management reduces opportunistic reporting behaviour in the banking sector. In the same vein, Muhammad et al. (2024) report that gender-diverse boards discourage earnings manipulation, consistent with agency theory's emphasis on effective monitoring.

Despite its widespread adoption, agency theory has faced criticism for its narrow concentration on shareholder primacy and its portrayal of managers as purely self-serving actors. Scholars such as Freeman et al. (2010) and Kasbar et al. (2022) argue that the model neglects broader stakeholder interests and underestimates ethical or social motivations that may guide managerial conduct. Velte (2022) further cautions that excessive reliance on monitoring can impose compliance costs without proportionate gains in governance efficiency.

Nevertheless, agency theory remains a powerful explanatory framework for this study, offering insight into how governance mechanisms and risk systems interact to shape financial reporting behaviour. In the context of African banking, where regulatory enforcement is uneven and governance institutions are evolving, the theory helps clarify the dynamics through which board structure and risk management combine to ensure faithful derivative recognition under IFRS 9.

2.2.2. Resource dependence theory

Resource Dependence Theory (RDT), introduced by Pfeffer and Salancik (1978) in The External Control of Organizations, posits that firms are not self-sustaining entities but rely on external resources, such as capital, expertise, and legitimacy, for survival and growth. Because these critical resources are often controlled by external actors, organizations must cultivate linkages and governance mechanisms that minimize uncertainty, secure access to inputs, and manage environmental interdependencies (Guerreiro et al., 2020). Within this framework, boards of directors are viewed not solely as instruments of control but as providers of essential resources, offering strategic advice, external connections, and reputational legitimacy that enhance organizational effectiveness (Alkurdi et al., 2021).

In the context of this study, RDT explains how board structure contributes to the integrity of derivative recognition under IFRS 9. Larger boards and independent directors broaden the range of technical expertise available to address complex recognition and valuation issues inherent in financial instruments (Li & Chen, 2022). Gender diversity enriches deliberation and introduces balanced risk perspectives, while diligence ensures sustained engagement with regulatory and disclosure demands (Alves, 2023; Muhammad et al., 2024). Moreover, well-designed risk management systems embody the adaptive principle of RDT by aligning institutional practices with external pressures, particularly those emanating from regulatory bodies and investor expectations for transparent reporting under IFRS 9 (Adewale & Oluwaseun, 2022).

Empirical evidence reinforces the applicability of RDT in governance and reporting research. Disli et al. (2022) demonstrate that board characteristics significantly enhance sustainability performance in emerging markets, reflecting the board's capacity to secure knowledge and legitimacy. Similarly, Hammond et al. (2022) observe that diligent boards and transparent disclosure practices strengthen investor confidence, validating RDT's assertion that effective governance operates as a conduit for both resources and legitimacy.

Nevertheless, the theory has been critiqued for overemphasizing the resource-provision role of boards while underplaying their monitoring responsibilities, which is better explained by agency theory (Kasbar et al., 2022). Other scholars contend that in highly regulated sectors such as banking, external constraints from supervisory authorities may restrict the board's ability to directly acquire or control resources (Boshnak, 2021). Despite these limitations, RDT complements agency theory by expanding the analytical focus from oversight to capability, highlighting how governance structures and risk management processes enable organizations to respond adaptively to environmental and regulatory pressures.

In the African banking context, where volatility and institutional uncertainty are persistent, RDT provides a valuable framework for understanding how board diversity, expertise, and diligence strengthen derivative recognition under IFRS 9. By emphasizing the board's dual role in securing external legitimacy and ensuring internal adaptation, the theory underscores the strategic importance of governance–risk alignment in sustaining credible financial reporting.

2.3. Empirical review

This section reviews a prior study adopting the method of examining similar articles that have been written, and is based on the diverse and mixed assertions of the authors.

2.3.1. Board size and derivative recognition

Empirical literature presents strong but nuanced evidence that board size materially influences how banks recognise and disclose derivative instruments under IFRS 9. Larger boards are often associated with improved monitoring capacity, enhanced access to expertise, and stronger committee structures that support accurate classification and valuation decisions. Li and Chen (2022) demonstrate that banks with broader boards achieve greater compliance with IFRS 9's recognition requirements, attributing this to a wider pool of technical and financial competencies. Serra et al. (2021) similarly find that well-constituted boards facilitate active risk committee engagement, thereby improving disclosure quality and reducing valuation errors in derivative reporting. Complementing these insights, Alruwaili et al. (2023) note that board expansion correlates with better oversight of complex financial instruments, particularly where directors possess relevant accounting and risk management expertise.

In African and other emerging market contexts, evidence supports a comparable trend, though with contextual qualifications. Oluwagbade et al. (2024) report that banks with moderately larger boards demonstrate stronger internal governance coordination, which enhances transparency in IFRS 9 implementation. Ahmed et al. (2023) further observe that expanded board capacity improves the alignment between governance oversight and risk management systems, resulting in more accurate derivative recognition. Breed et al. (2023) and Zampella and Ferri (2023) also argue that deeper board structures facilitate the forward-looking analyses required by IFRS 9, supporting reliable fair value estimation and reducing recognition asymmetry. Collectively, these studies suggest that board size contributes to more credible financial reporting when combined with functional governance systems and adequate institutional resources.

However, several studies reveal the limits of this relationship. Boshnak (2021) and Masindi and Singh (2022) caution that excessive board expansion can create coordination inefficiencies, dilute accountability, and weaken decision-making speed. In such circumstances, larger boards may become symbolic rather than functional, particularly in settings characterised by regulatory capture or political appointments (Hasan et al., 2022; Casciello et al., 2024). Disli et al. (2022) similarly note that beyond an optimal threshold, board size ceases to add oversight value and may instead heighten collective inertia. These findings imply that the effectiveness of board size is contingent upon institutional integrity, director competence, and the strength of complementary governance mechanisms that ensure effective deliberation rather than bureaucratic expansion.

H_o1: Board size has a significant effect on derivative recognition under IFRS 9 among African banks.

2.3.2. Board independence and derivative recognition

Board independence occupies a distinctive role in corporate governance because it represents the institutional mechanism through which managerial influence over financial reporting is restrained. Independent directors act as external monitors, not participants, and their autonomy enables them to question management's accounting choices, especially in valuation-heavy areas such as derivative recognition under IFRS 9. Li and Chen (2022) find that independent oversight in Chinese banks strengthens the objectivity of fair-value decisions, reflecting a greater resistance to earnings manipulation. Similarly, Serra et al. (2021) show that non-executive directors enhance disclosure credibility by demanding clarity over hedge documentation and classification, transforming what would otherwise be procedural compliance into substantive transparency.

Evidence from emerging and transitional markets, however, reveals that independence is effective only when embedded within supportive institutional environments. Adewale and Oluwaseun (2022) and Ahmed et al. (2023) both note that independence improves reporting integrity only when it coincides with strong risk management systems and access to reliable data. In African contexts, where ownership concentration and political interference are common, independence often operates within narrower boundaries. Studies such as Ishaya et al. (2025) and Oluwagbade et al. (2024) demonstrate that independent boards can enhance firm value and compliance quality, yet their monitoring strength is easily weakened when directors lack technical expertise or when governance cultures prioritise loyalty over objectivity.

Counterevidence underscores these vulnerabilities. Boshnak (2021) observes that in the Gulf region, directors labeled "independent" often rely on management for information, limiting their capacity to interrogate derivative estimates. Hasan et al. (2022) and Disli et al. (2022) make a similar point that independence in form, without financial literacy or institutional backing, tends to be ceremonial. These findings suggest that independence is not an absolute safeguard but a conditional attribute whose value depends on the professional competence of directors and the credibility of enforcement regimes.

Taken together, the literature implies that independence enhances derivative recognition quality not merely by separating directors from management but by ensuring that such separation is supported by expertise, transparency, and enforceable accountability. Where those conditions are absent, independence risks becoming a label rather than a lever of governance integrity.

H_o2: Board independence has a significant effect on derivative recognition under IFRS 9 among African banks.

2.3.3. Board gender diversity and derivative recognition

Gender diversity has increasingly emerged as a structural determinant of governance quality and financial reporting credibility under IFRS 9. The inclusion of women on corporate boards contributes not only to ethical sensitivity but also to broader cognitive diversity, which strengthens oversight of complex financial instruments. Serra et al. (2021) show that Portuguese firms with balanced gender representation record fewer derivative classification errors and greater transparency in financial disclosures. Extending this view, Alves (2023) and Löw et al. (2022) find that female directors encourage prudence, long-term thinking, and risk aversion, qualities that promote conservative yet accurate derivative recognition. Recent empirical insights from Moodley et al. (2025) reinforce this relationship, revealing that gender-inclusive boards in South African banks improve macroprudential responsiveness by mitigating excessive risk exposures associated with derivative valuation volatility.

In cross-regional analyses, Taylor et al. (2021) demonstrate that gender-diverse boards enhance IFRS 9 compliance through more balanced decision-making and scrutiny of fair-value assumptions. Botha et al. (2025) similarly emphasise that diversity enriches deliberation on complex accounting judgments such as significant increase in credit risk (SICR) assessments, which share conceptual overlap with derivative valuation. European and Middle Eastern studies (Casciello et al., 2024; Disli et al., 2022) also corroborate that gender-diverse boards elevate institutional accountability by integrating ethical reasoning into financial policy oversight.

Within the African context, findings reveal both promise and constraints. Agyei-Mensah (2023) reports that gender diversity enhances compliance in Ghanaian banks through strengthened accountability mechanisms, though limited expertise in IFRS 9 reduces consistency in derivative reporting. Akinadewo et al. (2024) observe that gender-diverse boards in Nigerian banks are proactive in forensic oversight, improving reporting transparency even outside direct IFRS 9 applications. Complementary evidence from Umar et al. (2024) highlights that women's participation in audit and risk committees supports stronger oversight of derivative disclosures and expected credit loss modelling. Shubita et al. (2025) extend these findings by demonstrating that diversity within senior decision-making bodies moderates capital allocation risks linked to IFRS 9 compliance, implying that inclusive governance structures improve prudential soundness.

Nonetheless, the literature cautions that gender diversity's influence is neither uniform nor automatic. Taylor et al. (2021) and Löw et al. (2022) argue that the benefits of inclusion depend on the technical competence of female directors and the institutional environment that supports their voice in board deliberations. In jurisdictions with weak enforcement or tokenistic appointments, diversity may improve optics without enhancing reporting substance. Thus, as Alruwaili et al. (2023) suggest, gender inclusion yields measurable reporting advantages only when embedded within broader governance and risk management frameworks that value expertise and accountability.

Overall, gender diversity enhances derivative recognition quality under IFRS 9 by strengthening oversight, prudence, and ethical discipline. Yet its true efficacy remains context-dependent, contingent upon institutional maturity, regulatory enforcement, and the substantive participation of women in financial decision-making.

H_o3: Board gender diversity has a significant effect on derivative recognition under IFRS 9 among African banks.

2.3.4. Board diligence and derivative recognition

Board diligence represents a dynamic dimension of governance effectiveness, reflecting not only meeting frequency but also the depth of engagement, quality of deliberation, and sustained oversight of management actions. Within IFRS 9 contexts, diligence determines whether complex valuation and recognition decisions, especially for derivative instruments, are approached with technical rigour or reduced to procedural formality. Ishaya et al. (2025) note that active boards improve disclosure credibility by continuously interrogating derivative valuations, limiting classification bias, and fair-value inconsistencies. Similarly, Umar et al. (2024) find that diligent boards across African banks exhibit superior compliance with IFRS 9 provisions, largely due to stronger audit committee coordination and systematic risk oversight (Breed et al., 2023; Kiyai et al., 2024).

Recent studies strengthen this position. Aljughaiman et al. (2023) show that in Saudi Arabia, frequent and technically informed meetings among independent directors enhance the precision of derivative reporting by improving information flow between risk and audit committees. Botha et al. (2025) add that diligence facilitates early identification of model risk in IFRS 9 applications, particularly in significant increase in credit risk (SICR) assessments that share methodological parallels with derivative valuation. Similarly, Shubita et al. (2025)

demonstrate that diligent governance engagement supports prudent capital allocation under expected credit loss regimes, reinforcing overall financial stability (Alruwaili et al., 2023; Ahmed et al., 2023).

Regional evidence also affirms this interaction between diligence and reporting credibility. Oluwagbade et al. (2024) compare Nigerian and Ghanaian deposit money banks and observe that boards with higher meeting regularity and structured oversight demonstrate stronger governance outcomes, though the marginal benefit depends on directors' financial expertise. Akinadewo et al. (2024) further emphasise that diligence amplifies the effect of other governance attributes by fostering proactive forensic monitoring that deters misrepresentation in financial statements (Disli et al., 2022; Adewale & Oluwaseun, 2022).

However, diligence alone is not sufficient. Boshnak (2021) warns that frequent meetings without substantive follow-up may create a symbolic form of compliance rather than meaningful oversight. Hasan et al. (2022) similarly argue that in regulatory environments with weak enforcement, diligence risks degenerate into ritual rather than reform, imposing administrative costs without measurable improvement in IFRS 9 adherence. Moodley et al. (2025) reinforce this concern by showing that governance activity yields tangible outcomes only when supported by data-driven risk management systems capable of translating board deliberation into operational accuracy (Dong & Oberson, 2020; Casciello et al., 2024).

Overall, the literature converges on the view that board diligence enhances derivative recognition under IFRS 9 by intensifying monitoring, improving informational transparency, and ensuring continuous scrutiny of valuation judgments. Yet its effectiveness depends critically on the technical competence of board members, the institutional environment that supports informed participation, and the degree of integration between governance and risk management functions.

H_o4: Board diligence has a significant effect on derivative recognition under IFRS 9 among African banks.

2.3.5. Risk management, board structure, and derivative recognition

The interaction between risk management and board structure has become central to explaining the quality of derivative recognition under IFRS 9. Because derivatives are highly sensitive to managerial discretion, inadequate oversight of market, credit, and operational exposures can result in misclassification or understatement of risk positions. Empirical research consistently shows that governance mechanisms are most effective when supported by robust risk management systems that translate board intent into measurable control outcomes. Adewale and Oluwaseun (2022) find that Nigerian deposit money banks with integrated governance, risk frameworks produce higher-quality IFRS 9 disclosures, while Ahmed et al. (2023) demonstrate that structured risk oversight curtails opportunistic derivative reporting in emerging markets (Breed et al., 2023; Alruwaili et al., 2023).

Cross-jurisdictional evidence reinforces this synergy between board structure and risk governance. Umar et al. (2024) report that African banks combining independent, technically proficient boards with active risk committees achieve stronger compliance in derivative recognition and expected credit loss estimation. Ishaya et al. (2025) similarly observe that independence, when coupled with systematic risk assessment, improves reporting precision and reduces classification bias. In East Africa, Kiyai et al. (2024) reveal that risk management moderates the relationship between IFRS 9 implementation and credit risk mitigation, confirming that board oversight alone cannot ensure compliance without embedded control systems. Globally, Jiang and Ye (2024) and Botha et al. (2025) show that risk-aware boards achieve more consistent hedge accounting adjustments and macroprudential stability, while Shubita et al. (2025) link strong risk governance to improved capital allocation under IFRS 9's expected credit loss framework.

Despite this convergence, certain conceptual and empirical gaps remain. Serra et al. (2021) and Alves (2023) highlight that board diversity enhances derivative disclosure quality, yet fail to model the moderating role of risk management, thereby limiting the explanatory power of their analyses. Akinadewo et al. (2024) also document how proactive boards promote transparency through forensic practices, but do not test how structured risk systems reinforce these effects. Moodley et al. (2025) argue that this omission is particularly significant in African banking environments characterised by volatile macroeconomic conditions, data asymmetry, and uneven regulatory enforcement, factors that can distort the governance–performance nexus.

Taken together, the literature affirms that derivative recognition under IFRS 9 cannot be understood through board structure in isolation. The integration of risk management enhances governance functionality by aligning oversight with operational prudence, improving the reliability of fair-value measurement, and ensuring compliance within increasingly complex financial systems.

H_o5: Risk management significantly moderates the relationship between board structure and derivative recognition under IFRS 9 among African banks.

2.3.6. Summary of articles

To provide an integrated perspective on the reviewed studies, Table 1 consolidates contrasting empirical findings on board structure and risk management in relation to derivative recognition under IFRS 9. It captures the range of results across different governance dimensions alongside the moderating influence of risk management. This synthesis highlights both supportive and divergent evidence across jurisdictions and time periods.

Table 1: Summary of Contrasting Empirical Findings on Board Structure, Risk Management, and Derivative Recognition under IFRS 9

Author(s) & Year	Key Finding	Direction of Effect	Implication for IFRS 9 Derivative Recognition
Mnif & Znazen (2020)	Governance quality improved IFRS 7–9 compliance, where independence was substantive.	Positive	Strong oversight enhanced the transparency of derivative recognition
Dong & Oberson (2020)	Expected Credit Loss reforms increased capital sensitivity and disclosure discipline.	Positive	Forward-looking models strengthened recognition reliability
Munangi & Sibindi (2020)	Poor risk controls reduced performance and weakened reporting reliability	Negative	Weak frameworks undermined derivative transparency
Hasan et al. (2022)	Ownership concentration limited the impact on disclosure quality	Negative	Structural independence alone is insufficient for IFRS 9 credibility
Li & Chen (2022)	Broader boards and strong oversight enhanced IFRS 9 derivative compliance	Positive	Strengthened monitoring reduced classification errors
Masindi & Singh (2022)	Optimal board size improved decision speed; oversized boards hindered control	Mixed	Balanced structures promote consistent IFRS 9 execution
Kasbar et al. (2022)	Agency conflicts weaken the link between governance and performance	Negative	Conflicted boards compromise recognition accuracy
Alruwaili et al. (2023)	Active audit committees improved derivative reporting reliability	Positive	Frequent oversight reduced valuation misstatements

Ltaief & Moalla (2023)	Re-classification improved firm value when governance was effective	Positive	Governance alignment supported prudent recognition
Agyei-Mensah (2023)	Gender diversity improved accountability, but was constrained by training gaps	Mixed	Institutional capacity mediates diversity outcomes
Ahmed et al. (2023)	Strong frameworks limited earnings manipulation in derivative activities	Positive	Structured controls enhanced recognition credibility
Breed et al. (2023)	Macro-prudential integration improved expected-loss accuracy	Positive	Forward-looking assessment strengthened IFRS 9 disclosure
Casciello et al. (2024)	Contextual enforcement shaped capital-management behaviour	Mixed	Regulatory consistency critical for IFRS 9 reliability
Serra et al. (2021)*	Balanced, non-executive boards improved derivative disclosure	Positive	Diversity broadened the risk-assessment perspective
Oluwagbade et al. (2024)	Nigerian boards meeting more often achieved stronger oversight	Positive	Diligence enhanced reporting credibility
Adewale & Oluwaseun (2022)	Effective risk systems strengthened–board-reporting link	Positive	Integration improved IFRS 9 derivative recognition
Umar et al. (2024)	Independent, diligent boards improved derivative disclosure transparency	Positive	Governance effectiveness supported accurate recognition
Akinadewo et al. (2024)	Diverse, proactive boards advanced transparency via forensic mechanisms	Positive	Enhanced accountability under complex standards
Sultana et al. (2024)	Diversity correlated with ethical judgment and sustainability orientation	Positive	Promoted conservative and transparent recognition
Ishaya et al. (2025)	Frequent engagement and risk oversight improved recognition accuracy	Positive	Joint governance–risk intensity enhanced IFRS 9 compliance
Shubita et al. (2025)	Strong risk culture improved transparency and ECL accuracy	Positive	Reinforced link between governance and recognition reliability
Moodley et al. (2025)	Weak control environments eroded governance benefits	Negative	Ineffective systems diluted the IFRS 9 moderating role
Botha et al. (2025)	Redefined impairment classification strengthened prudence	Positive	Improved alignment of derivative and credit risk reporting
Akdh & Hasen (2025)	The ECL model explained profit variability under volatile conditions	Positive	Supported accurate provisioning for derivative exposures

Source: Researchers' Compilation (2025).
Note. Studies from 2020–2025 summarise empirical evidence on governance and risk management effects on IFRS 9 derivative recognition.

As shown in Table 1, the weight of evidence indicates that governance quality and risk management capacity jointly determine the credibility of derivative recognition under IFRS 9. Positive effects are strongest in contexts with strong regulatory enforcement and informed board engagement, whereas negative or mixed results often reflect institutional fragility, ownership concentration, or superficial compliance practices.

2.4. Conceptual framework

The conceptual framework, presented in Figure 1, integrates the theoretical foundations of Agency Theory and Resource Dependence Theory to explain how board structural mechanisms influence derivative recognition under IFRS 9. The framework assumes that effective board structures, comprising board size, independence, gender diversity, and diligence, enhance transparency and prudence in derivative recognition. However, this relationship is moderated by the robustness of a bank's risk-management system. Inflation rate and GDP growth are included as control variables to account for macroeconomic effects on reporting behaviour.

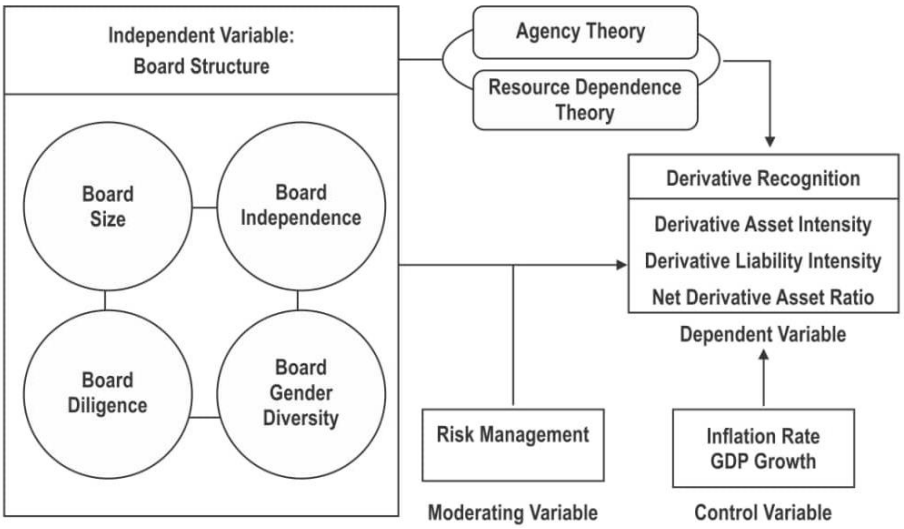

Fig. 1: Conceptual Framework and Theoretical Underpinning.

Source: Researchers' Conceptualisation (2025).

Figure 1 conceptualises the study's argument that the effect of board structure on derivative recognition is conditional rather than uniform. While diverse and independent boards are expected to enhance transparency, their influence becomes meaningful only where risk-management systems translate governance oversight into disciplined reporting. This interaction captures the prudence channel through which board effectiveness depends on institutional risk controls. Grounded in Agency and Resource-Dependence theories, the framework contends that

derivative recognition quality in African banks emerges from the dynamic alignment of board attributes, risk-management strength, and macroeconomic context.

3. Methodology

This study adopted an ex-post facto research design, examining the period 2012–2023 using retrospective data drawn from the annual reports and audited financial statements of listed banks across African stock exchanges that consistently apply IFRS. A census sampling approach was employed, resulting in a sample of seventy-three banks that satisfied the inclusion criteria. Data were obtained from financial statements, corporate governance reports, and regulatory filings, which were cross-verified for accuracy and completeness.

Derivative recognition, the dependent variable, was proxied by three indicators: derivative asset intensity, derivative liability intensity, and net derivative asset ratio. The independent variables comprised board size, board independence, gender diversity, and board diligence, while risk management was introduced as a moderating variable. Macroeconomic indicators like the inflation rate and gross domestic product (GDP) were incorporated as control variables to account for external economic influences.

Data analysis combined descriptive statistics, correlation analysis, and panel regression techniques. Both Fixed Effects and Random Effects models were estimated, with the Hausman specification test determining the preferred model. To address potential econometric violations, Driscoll–Kraay robust standard errors were applied to correct for heteroskedasticity, autocorrelation, and cross-sectional dependence. Additional diagnostic procedures, including the Variance Inflation Factor (VIF), Wooldridge, and White tests, were conducted to confirm model adequacy and ensure the validity of statistical inferences.

3.1. Model specification

This study adapts its model from Umar et al. (2024), who examined the effect of audit committee attributes on bank performance and IFRS 9 compliance in African banks using panel regression. Their model was specified as:

$$FRQ_{it} = \beta_0 + \beta_1 ACS_{it} + \beta_2 ACI_{it} + \beta_3 ACE_{it} + \beta_4 FS_{it} + \beta_5 LEV_{it} + \epsilon_i$$

Where FRQ represents financial reporting quality, ACS denotes audit committee size, ACI independence, ACE expertise, and FS and LEV Are firm size and leverage as controls.

Building on this framework, the present study extends the model to derivative recognition under IFRS 9, replacing audit committee attributes with broader board structure variables (board size, independence, gender diversity, and diligence) and introducing risk management as a moderating variable. The adapted models are expressed as follows:

Model 1: Derivative Asset Intensity (DRIV)

$$DRIV = \beta_0 + \beta_1 BS_i + \beta_2 BI_i + \beta_3 BGD_i + \beta_4 BD_i + \beta_5 INF_i + \beta_6 GDP_i + \epsilon_i \quad (1)$$

Model 2: Derivative Liabilities Intensity (DRIL)

$$DRIL = \beta_0 + \beta_1 BS_i + \beta_2 BI_i + \beta_3 BGD_i + \beta_4 BD_i + \beta_5 INF_i + \beta_6 GDP_i + \epsilon_i \quad (2)$$

Model 3: Net Derivative Asset Ratio (NDRV)

$$NDRV = \beta_0 + \beta_1 BS_i + \beta_2 BI_i + \beta_3 BGD_i + \beta_4 BD_i + \beta_5 INF_i + \beta_6 GDP_i + \epsilon_i \quad (3)$$

Where:
DRIV: Derivative Asset Intensity
DRIL: Derivative Liabilities Intensity
NDRV: Net Derivative Asset Ratio
BS: Board Size
BI: Board Independence
BD: Board Diligence
BGD: Board Gender Diversity
INF_i : Represents the inflation rate as a control variable.
GDP_i : Represents the GDP growth rate as a control variable.
β_0: Intercept term.
$\beta_1, \beta_2, \beta_3 \ldots\ldots \beta_4$: Coefficients for the independent variables.
$\varepsilon_{i,t}$: Error term.
The a-priori expectation is $\beta_1, \beta_2, \beta_3 \ldots\ldots \beta_4 > 0$. This implies that the explanatory variables and the dependent variable should have a positive and significant impact.

Table 2: Description and Measurement of Variables

	Variables	Role	Measurement	Sources
1a	Board Size	Independent	Total number of directors on the board.	(Ishaya et al., 2025)
1b	Board Size	Independent	Total number of directors on the board.	(Ishaya et al., 2025)
1c	Board Diligence	Independent	Number of meetings held by the board during the year.	Umar et al. (2024)
1d	Board Gender Diversity	Independent	Proportion of female directors on the board.	Sultana et al. (2024)
2a	Derivative Asset Intensity	Dependent	Ratio of derivative assets to total assets.	Kund & Rugilo (2023)
2b	Derivative Liabilities Intensity	Dependent	Ratio of derivative liabilities to total assets.	Ryan & Seitz (2020)
2c	Net Derivative Asset Ratio	Dependent	Difference between derivative assets and liabilities as a proportion of total assets.	Serra et al. (2021)
3	Risk Management	Moderating	Capital Adequacy Risk (Ratio of total equity to total assets).	Yakubu and Bunyaminu (2021)

4a	Inflation Rate	Control	Annual Percentage Change in Consumer Price Index (CPI)	Andriantomanga et al. (2023)
4b	GDP Growth Rate	Control	Annual Percentage Change in Real Gross Domestic Product (GDP)	Adam et al. (2020)

Source: Researchers' Compilation (2025).
Note: Variables represent governance, financial, and macroeconomic dimensions used in the model examining the moderating effect of risk management on the relationship between board structure and derivative recognition under IFRS 9.

4. Data Analysis and Presentation of Results

This section presents the findings of the study, beginning with the descriptive statistics and diagnostic tests to establish the suitability of the dataset for panel regression analysis.

4.1 Descriptive statistics

Table 3 presents the descriptive statistics for the study variables based on 696 bank-year observations. The mean value of derivative asset intensity (DRIV) is 2.23, with a maximum of 306.76, indicating that while most African banks maintain modest derivative holdings, a few institutions exhibit exceptionally large exposures. The high standard deviation and extreme kurtosis reveal a dispersed distribution, reflecting significant heterogeneity in derivative utilisation across banks. Derivative liability intensity (DRIL) records a lower mean of 1.48, suggesting that asset-linked derivatives are more prevalent than liability-based contracts. The net derivative asset ratio (NDRV), with a mean of 0.84, further supports the observation that most banks sustain relatively low net exposures, although extreme values highlight the presence of outliers with substantial trading activity.

Board characteristics display moderate variation. The average board size (BS) is 11 members, consistent with common regulatory prescriptions across African jurisdictions. Board independence (BI) averages 76%, signalling broad compliance with governance codes, while board gender diversity (BGD) averages 20.7%, reflecting gradual but limited inclusion of female directors. Board diligence (BD), measured by meeting frequency, shows an average of 6.2 meetings per year, with a positively skewed distribution indicating that a few boards convene significantly more often than others.

Risk management (RM) demonstrates high variability, as evidenced by its skewed distribution, suggesting uneven adoption of formal risk governance structures among African banks. In terms of macroeconomic conditions, inflation (INF) exhibits a wide range and a mean of 17.03%, consistent with episodes of economic volatility across the continent. GDP growth (GDP) remains comparatively stable, averaging 3.18%, in line with modest and steady regional economic performance.

Overall, the descriptive statistics reveal pronounced diversity in both governance practices and derivative exposure across African banks, underscoring the suitability of panel regression analysis to capture cross-sectional and temporal variations in these relationships.

Table 3: Descriptive Statistics

Variable	Obs	Mean Std.	Dev.	Min	Max	Skewness	Kurtosis
DRIV	696	2.226527	13.47738	0	306.762	17.98338	386.5343
DRIL	696	1.482429	4.028248	0	29.82537	4.480942	24.78044
NDRV	696	.8405444	12.70915	-5.838398	306.762	21.48813	497.4837
BS	696	11.44257	3.416419	5	26	1.029756	4.625732
BI	696	76.12266	12.87874	0	100	-.896962	4.268487
BGD	696	20.69509	10.98694	0	50	.1844988	2.818403
BD	696	6.223047	3.382592	0	33	2.969317	16.21255
RM	696	7.43e-12	1.017124	-.2543571	19.25019	18.53355	345.201
INF	696	17.02681	55.98415	-2.47	521.2	7.230378	58.19816
GDP	696	3.183534	3.202994	-11.9	11.3	-.4972188	5.155485

Source: Researchers' Computation (2025).
Note: Table 3 presents summary statistics for all variables used in the regression model. DRIV = Derivative Asset Intensity; DRIL = Derivative Liability Intensity; NDRV = Net Derivative Ratio; BS = Board Size; BI = Board Independence; BGD = Board Gender Diversity; BD = Board Diligence; RM = Risk Management; INF = Inflation Rate; GDP = GDP Growth Rate. Skewness and kurtosis values indicate the degree of deviation from normal distribution across variables.

4.2. Test for multicollinearity

Table 4 reports the Variance Inflation Factor (VIF) and Tolerance values used to assess the presence of multicollinearity among the explanatory variables across the three model specifications (DRIV, DRIL, and NDRV). The VIF values range from 1.01 to 1.14, well below the conventional threshold of 10, while tolerance values range between 0.88 and 0.98, substantially above the acceptable minimum of 0.10. These results confirm that no significant multicollinearity exists among the explanatory variables, namely board size (BS), board independence (BI), board gender diversity (BGD), board diligence (BD), risk management (RM), and the macroeconomic controls (GDP and INF).

The low VIF and high tolerance values indicate that each variable contributes uniquely to the regression models without inflating the variance of coefficient estimates. This statistical condition ensures the stability and reliability of parameter estimates, an essential prerequisite for robust inference in governance and financial reporting studies, where board attributes often exhibit some degree of intercorrelation. The absence of multicollinearity therefore reinforces the validity of the estimated effects of board structure and risk management on derivative recognition under IFRS 9.

Table 4: Variance Inflation Factor Results for Multicollinearity Test

Variable	DRIV Model		DRIL Model		NDRV Model	
	VIF	Tolerance Factor	VIF	Tolerance Factor	VIF	Tolerance Factor
GDP	1.14	0.880903	1.14	0.880903	1.14	0.880903
INF	1.10	0.909398	1.10	0.909398	1.10	0.909398
BS	1.08	0.923251	1.08	0.923251	1.08	0.923251
BGD	1.05	0.952348	1.05	0.952348	1.05	0.952348
BI	1.02	0.982218	1.02	0.982218	1.02	0.982218

BD	1.02	0.982746	1.02	0.982746	1.02	0.982746
RM	1.01	0.987754	1.01	0.987754	1.01	0.987754

Source: Researchers' Computation (2025)
Note: All VIF values are below 10, and tolerance values exceed 0.10, indicating the absence of serious multicollinearity among independent variables.

4.3. Diagnostic tests

A series of diagnostic tests in Table 5 were performed to ensure the reliability and validity of the panel regression estimates, and the results confirmed the need for corrective estimation procedures. The Wooldridge test for serial correlation detected first-order autocorrelation across all models. Specifically, the DRIV model recorded $F(1,57) = 6.014$ ($p = 0.0173$), the DRIL model $F(1,57) = 7.320$ ($p = 0.0090$), and the NDRV model $F(1,57) = 5.235$ ($p = 0.0259$), all below the 5% significance level. These outcomes indicate that the residuals are temporally correlated, warranting robust standard error adjustment.

The White test for heteroskedasticity also revealed non-constant variance of residuals. The DRIV model reported $\chi^2 = 70.50$ ($p = 0.0003$), the DRIL model $\chi^2 = 50.29$ ($p = 0.0454$), and the NDRV model $\chi^2 = 100.50$ ($p = 0.0000$), each significant at the 5% level. These findings confirm the presence of heteroskedasticity, thereby justifying the use of Driscoll–Kraay robust standard errors to correct for both serial correlation and heteroskedasticity across panels.

To address potential endogeneity, the Durbin–Wu–Hausman test was conducted. The test statistics, $\chi^2 = 1.63$ ($p = 0.2010$) for DRIV, $\chi^2 = 0.71$ ($p = 0.3973$) for DRIL, and $\chi^2 = 1.95$ ($p = 0.1625$) for NDRV, all exceed the 10% significance threshold, confirming the exogeneity of explanatory variables and suggesting that simultaneity or omitted variable bias is unlikely to affect the estimates.

Finally, model selection was determined using the Hausman specification test, which consistently favoured the Fixed Effects estimator over Random Effects. The DRIV model yielded $\chi^2(5) = 63.16$ ($p = 0.0000$), the DRIL model $\chi^2(5) = 43.31$ ($p = 0.0000$), and the NDRV model $\chi^2(5) = 30.71$ ($p = 0.0001$). These results confirm that unobserved bank-specific effects are correlated with the regressors, validating the adoption of the Fixed Effects model with Driscoll–Kraay robust corrections for the subsequent analysis.

Table 5: Summary of Diagnostic Test Results

Test	DRIV Model	DRIL Model	NDRV Model	Inference
Wooldridge Test (Serial Correlation)	F(1,57) = 6.014** p = 0.0173	F(1,57) = 7.320*** p = 0.0090	F(1,57) = 5.235** p = 0.0259	Serial correlation present
White Test (Heteroskedasticity)	χ^2 = 70.50*** p = 0.0003	χ^2 = 50.29** p = 0.0454	χ^2 = 100.50*** p = 0.0000	Heteroskedasticity present
Durbin–Wu–Hausman (Endogeneity)	χ^2 = 1.63 p = 0.2010	χ^2 = 0.71 p = 0.3973	χ^2 = 1.95 p = 0.1625	No endogeneity detected
Hausman Test (FE vs RE)	$\chi^2(5)$ = 63.16*** p = 0.0000	$\chi^2(5)$ = 43.31*** p = 0.0000	$\chi^2(5)$ = 30.71*** p = 0.0001	Fixed Effects preferred

Source: Researchers' Computation (2025)
Note: The Wooldridge and White tests indicate serial correlation and heteroskedasticity, justifying the use of Driscoll–Kraay robust standard errors. The Durbin–Wu–Hausman test confirms the absence of endogeneity, while the Hausman test supports the fixed-effects estimator. ***p < 0.01, *p < 0.05.

4.4. Regression results – individual effects of board structure on derivative recognition

This section, as shown in Table 6, presents the regression results on how board structure influences derivative recognition under IFRS 9 across African banks, before introducing the moderating role of risk management. Derivative recognition was evaluated across three dimensions: derivative asset intensity (DRIV), derivative liability intensity (DRIL), and net derivative asset ratio (NDRV). The models were estimated using Fixed Effects with Driscoll–Kraay robust standard errors to correct for the serial correlation and heteroskedasticity confirmed in earlier diagnostics.

In the derivative asset model, board structure shows a clear influence on recognition outcomes. Board size exhibits a positive and statistically significant effect ($\beta = 0.3044$, $p < 0.05$), indicating that larger boards are associated with greater capacity to oversee complex processes such as derivative valuation, hedge documentation, and disclosure under IFRS 9. Board independence has a marginal positive influence ($\beta = 0.2035$, $p = 0.062$), suggesting that non-executive directors enhance transparency through closer monitoring of management reporting. By contrast, board diligence and gender diversity are statistically insignificant, implying that meeting frequency and female representation alone do not materially affect asset-side recognition. Inflation, used as a macroeconomic control, has a strong negative effect ($\beta = –0.0031$, $p < 0.01$), revealing that periods of high price instability reduce derivative activity. The overall model is statistically significant ($F(6, 632) = 11.47$, $p < 0.001$), confirming explanatory adequacy.

In the derivative liability model, the governance effects appear more conservative. Board size remains positively significant ($\beta = 0.2569$, $p < 0.05$), indicating that larger boards also facilitate liability recognition, possibly due to improved technical oversight and enhanced compliance review. Board gender diversity, however, displays a negative and significant coefficient ($\beta = –0.0657$, $p < 0.05$), suggesting that gender-diverse boards tend toward prudence in acknowledging derivative obligations, thereby moderating exposure to financial risk. Neither board independence nor diligence is significant in this specification. Inflation again shows a negative and significant relationship ($\beta = –0.0032$, $p < 0.01$), consistent with lower derivative engagement during inflationary volatility. The model demonstrates strong explanatory power ($F(6, 632) = 9.36$, $p < 0.001$).

For the net derivative asset ratio model, both board independence ($\beta = 0.2629$, $p < 0.01$) and board diligence ($\beta = 0.1801$, $p < 0.05$) emerge as significant predictors. These results indicate that the strategic balance between derivative assets and liabilities is shaped more by director oversight and engagement than by structural attributes such as size or gender composition, which remain insignificant. Inflation again exerts a consistent constraining effect ($\beta = –0.0021$, $p < 0.01$), underscoring the macroeconomic sensitivity of derivative recognition under IFRS 9. The overall model remains statistically robust ($F(7, 631) = 12.34$, $p < 0.001$).

Table 6: Driscoll-Kraay Regression Results – Individual Effects of Board Structure on Derivative Recognition

Variable	DRIV (Coef.)	DRIL (Coef.)	NDRV (Coef.)
Board Size (BS)	0.3044** (0.1414)	0.2569** (0.1274)	0.0814 (0.1307)
Board Independence (BI)	0.2035* (0.1088)	–0.0038 (0.0981)	0.2629*** (0.1006)
Board Diligence (BD)	0.0409 (0.0845)	–0.0782 (0.0761)	0.1801** (0.0781)
Board Gender Diversity (BGD)	–0.0371 (0.0287)	–0.0657** (0.0258)	–0.0001 (0.0265)
GDP Growth (GDP)	–0.0457** (0.0215)	–0.0266 (0.0194)	–0.0220 (0.0199)

Inflation (INF)	–0.0031*** (0.0005)	–0.0032*** (0.0004)	–0.0021*** (0.0004)
Constant	–1.1878 (0.7363)	0.3144 (0.6637)	–1.7899*** (0.6807)
Model F-Stat	F(6,632) = 11.47*	F(6,632) = 9.36*	F(7,631) = 12.34*
Prob > F / Chi²	0.0000	0.0000	0.0000

Source: Researchers' Computation (2025).

Note: Results are estimated using a fixed-effects model with Driscoll–Kraay standard errors to correct for heteroskedasticity, autocorrelation, and cross-sectional dependence. Values in parentheses are robust standard errors. Statistical significance denoted as *** p < 0.01, ** p < 0.05, * p < 0.10. Findings indicate that board size, independence, and diligence significantly improve derivative recognition, while gender diversity and macroeconomic variables exhibit mixed effects.

4.5. Moderating effect of risk management on the effect of board structure and derivative recognition

This section, as reported in Table 7, introduces risk management as a conditioning variable to determine whether the influence of board structure on derivative recognition under IFRS 9 depends on the strength of internal risk oversight in African banks. The results provide compelling evidence that the governance effect is conditional rather than linear, varying significantly with the robustness of institutional risk frameworks.

In the derivative asset intensity model, the interaction terms reveal a selective reinforcement of governance mechanisms. Although board size previously exhibited a positive direct effect, its interaction with risk management turns negative (β = −17.61; t = −1.94; p = 0.052). This suggests that larger boards, when integrated into structured risk systems, adopt more cautious derivative strategies rather than aggressive asset accumulation. By contrast, the interaction between board independence and risk management is strongly positive (β = 14.45; t = 2.97; p = 0.003), demonstrating that independent directors enhance compliance with IFRS 9 when their oversight is supported by formal risk governance. A similar reinforcing effect emerges for board diligence (β = 14.82; t = 2.12; p = 0.034), indicating that frequent board engagement improves derivative asset oversight only when coupled with robust risk assessment processes. Gender diversity remains insignificant (β = 6.17; t = 0.98; p = 0.329), implying that representation alone does not alter risk-sensitive recognition behaviour.

A more conservative pattern appears in the derivative liability intensity model. The interaction between board size and risk management is negative and significant (β = −5.30; t = −1.99; p = 0.048), reinforcing the notion that effective risk frameworks restrain excessive liability exposure even where governance structures might otherwise encourage derivative participation. The interaction between board independence and risk management weakens to marginal significance (β = −7.15; t = −1.63; p = 0.091), suggesting a shift from assertive oversight to prudential restraint. Board diligence retains significance (β = 10.02; t = 2.05; p = 0.038), implying that active boards use risk mechanisms to ensure that derivative liabilities are recognised and disclosed appropriately under IFRS 9. Gender diversity remains weakly associated (β = 4.02; t = 1.29; p = 0.097), confirming that demographic composition exerts limited influence once risk systems are operational.

In the net derivative asset ratio model, risk management reconfigures the balance between asset and liability engagements. The interaction between board size and risk management remains negative (β = −12.20; t = −1.92; p = 0.059), supporting the view that larger boards become more conservative in managing overall derivative exposure under strong risk governance. The interaction involving board independence is only marginal (β = −7.34; t = −1.92; p = 0.094), suggesting that independence primarily shapes asset-side recognition rather than net positioning. Notably, gender diversity assumes statistical significance (β = 2.17; t = 3.90; p < 0.001), indicating that gender-balanced boards, when combined with robust risk oversight, contribute to balanced derivative engagement and improved balance-sheet stability. In contrast, board diligence loses significance, suggesting that frequent meetings alone have a limited effect when broader risk governance systems dominate decision-making.

Collectively, these results confirm that the influence of board structure on IFRS 9 derivative recognition is context-dependent and conditioned by the quality of risk management. Risk management emerges not as a passive compliance mechanism but as an active regulatory channel that directs board influence toward prudence, transparency, and discipline. Independent and diligent boards appear to thrive in risk-governed environments, while larger boards become structurally constrained from pursuing speculative derivative exposure.

Table 7: Moderating Effect of Risk Management on Board Structure and Derivative Recognition

Variables	DRIV	DRIL	NDRV
BS	−1.3309 (0.6018)**	−0.5276 (0.2094)**	−0.8291 (0.2122)***
RM	1057.5770 (443.1112)**	443.8435 (253.5932)*	615.7789 (320.0795)**
BS × RM	−17.6130 (9.0642)*	−5.3021 (2.6833)**	−12.2053 (6.3426)*
BI	1.0256 (0.3867)***	−0.5310 (0.3823)	−0.4957 (0.2131)**
BI × RM	14.4543 (4.8705)***	−7.1530 (4.2140)*	−7.3463 (4.3676)*
BD	0.5408 (0.3089)*	0.4240 (0.3931)*	0.1656 (0.5333)
BD × RM	14.8239 (6.9921)**	10.0263 (4.8765)**	4.7724 (5.5351)
BGD	0.1700 (0.2452)	0.0980 (0.0398)**	0.0733 (0.0385)*
BGD × RM	6.1711 (6.3220)	4.0206 (3.0950)*	2.1726 (0.5571)***
INF	−0.0263 (0.0113)**	−0.0219 (0.0071)***	−0.0046 (0.0021)*
GDP	−0.1030 (0.1151)	−0.0566 (0.0255)**	−0.0221 (0.0249)
Constant	88.4763 (41.4976)**	43.4514 (28.5688)*	45.0853 (29.6762)*

Source: Researchers' Computation (2025).

Note: Results are estimated using the fixed-effects model with Driscoll–Kraay standard errors to correct for heteroskedasticity, autocorrelation, and cross-sectional dependence. Values in parentheses are robust standard errors. Statistical significance denoted as *** p < 0.01, ** p < 0.05, * p < 0.10. The significant interaction terms (Board Structure × Risk Management) confirm that risk management moderates the relationship between board mechanisms and derivative recognition, amplifying or attenuating governance effects depending on risk-control strength.

4.6. Discussion of findings

The findings reveal that the influence of board structure on derivative recognition under IFRS 9 reflects a complex interaction between governance architecture, institutional risk capacity, and emerging prudential reforms. Across African banks, the alignment of derivative reporting with IFRS 9's fair-value principles is increasingly determined by how board oversight integrates with Basel IV-oriented capital and risk standards. Board size demonstrated a significant positive association with derivative recognition, implying that broader expertise enhances comprehension of valuation models, hedge documentation, and expected-credit-loss (ECL) assessments. These results affirm the arguments of Akinadewo et al. (2024) and Oluwagbade et al. (2024) that larger boards support technical depth and cross-committee coordination. Yet, once risk management entered the model, the direction reversed, and larger boards became more conservative, curbing speculative derivative activity to preserve regulatory capital. Casciello et al. (2024) and Akdh and Hasen (2025) note that prudential tightening

under Basel IV encourages capital preservation over expansionary trading, a dynamic echoed in this moderation. Consequently, board size acts as a contingent governance mechanism that is productive in flexible regulatory contexts but risk-averse under stricter prudential supervision (Masindi and Singh, 2022; Botha et al., 2025).

Board independence emerged as a consistently strong determinant of credible derivative recognition. Independent directors curtailed managerial discretion, improved fair-value transparency, and aligned disclosures with IFRS 9's predictive risk framework. Ishaya et al. (2025) and Adewale and Oluwaseun (2022) confirm that independence facilitates board scepticism toward earnings manipulation, while Umar et al. (2024) demonstrate that independent audit committees strengthen accountability in valuation governance. The present results show that independence achieves its greatest effect when nested within structured risk frameworks that mirror Basel IV's internal-capital-adequacy approach. This integration enhances the board's technical understanding of credit-risk models and capital buffers. However, the weaker significance observed in liability recognition resonates with Moodley et al. (2025) and Ahmed et al. (2023), who caution that independence alone cannot counterbalance deep-seated institutional conservatism or information asymmetry in emerging markets. True independence must therefore extend beyond formal separation from management to include analytical competence in stress-testing and forward-looking credit assessment.

Gender diversity produced an equally nuanced effect, reflecting the evolving role of inclusive governance in financial oversight. In the unmoderated model, diversity negatively affected derivative liabilities, signifying cautious leverage and heightened ethical conservatism. Under moderated conditions, however, gender diversity exhibited a strong positive association with net-derivative positions, suggesting that inclusivity enhances balanced risk engagement when supported by formal risk systems. These findings are consistent with Sultana et al. (2024) and Agyei-Mensah (2023), who reported that gender-balanced boards reinforce accountability and compliance with sustainability-aligned reporting standards. The pattern also resonates with current African regulatory directives that connect Basel IV adoption to gender-equitable governance benchmarks and capacity-building initiatives (Thamae et al., 2023). As Alves (2023) and Disli et al. (2022) observe, gender inclusion not only diversifies board deliberation but also moderates financial risk-taking through collective reasoning. Hence, diversity operates as a strategic enhancer of prudential behaviour when embedded within robust institutional frameworks that link representation with competence.

Board diligence contributed selectively but significantly, shaping the strategic aspects of IFRS 9 compliance more than the mechanical aspects of recognition. The study found that frequent, well-structured meetings improve derivative reporting only when complemented by effective risk-management systems. This observation corroborates Alruwaili et al. (2023) and Ishaya et al. (2025), who linked active oversight to improved data validation and internal-audit reliability. Diligence further interacts with independence to strengthen analytical interrogation of management assumptions, as Akinadewo et al. (2024) note in their study of forensic practices in Nigerian banks. However, its loss of significance in the aggregate model mirrors Boshnak (2021) and Hasan et al. (2022), who argued that meeting frequency without technical substance may create procedural compliance without substantive impact. Within Basel IV's evolving governance ecosystem, where boards are expected to engage in stress-testing, macro-prudential review, and ECL back-testing, diligence must evolve from attendance to analytical literacy.

The moderating role of risk management proved decisive in redefining governance outcomes. Rather than functioning as a passive compliance layer, risk management actively mediated how board mechanisms influenced derivative recognition. Strong risk frameworks amplified the effects of independence, diligence, and diversity, while tempering the influence of size. This pattern aligns with Ahmed et al. (2023), Shubita et al. (2025), and Botha et al. (2025), who showed that integrated risk governance enhances IFRS 9's predictive accuracy and strengthens capital adequacy through early-warning credit indicators. Conversely, inadequate data infrastructures and weak supervisory alignment, as noted by Moodley et al. (2025) and Oyetade et al. (2021), continue to constrain this synergy across many Sub-Saharan systems. The results here suggest that embedding IFRS 9 recognition within Basel IV's multi-tiered risk architecture, encompassing credit, liquidity, and operational-risk functions, is critical for maintaining reporting reliability. When risk oversight is institutionalised, derivative accounting becomes less discretionary and more reflective of economic substance.

Taken together, the findings reconceptualise derivative recognition as an outcome of governance–risk symbiosis, rather than of board composition alone. They demonstrate that African banks' movement toward Basel IV compliance is gradually transforming governance into a risk-intelligence function, where board characteristics and prudential systems operate as joint determinants of financial transparency. The study reinforces emerging views by Casciello et al. (2024), Akdh and Hasen (2025), and Zhou (2023) that integrated oversight fosters a forward-looking prudential culture capable of balancing profitability with systemic resilience. For policymakers, this evidence implies that improving financial stability requires more than expanding board membership; it demands aligning governance competencies with macro-prudential risk expectations. Regulators such as the Central Bank of Nigeria and the South African Reserve Bank could leverage these insights to design targeted training, quantitative governance scorecards, and inter-bank data platforms for ECL calibration. Ultimately, the study highlights that under the joint discipline of IFRS 9 and Basel IV, African banking reform has entered a new phase where effective governance is inseparable from predictive risk intelligence, defining the next frontier of financial accountability on the continent.

5. Conclusion and Recommendations

This study examined the nexus between board structure and derivative recognition under IFRS 9, with risk management serving as a moderating variable. The findings show that derivative recognition among African banks is shaped not merely by the presence of sound governance attributes but by how these attributes operate within structured risk management systems. Board size and independence enhance compliance and oversight integrity, gender diversity promotes prudence and ethical balance, and board diligence reinforces strategic supervision. Yet, these governance dimensions are fully effective only when embedded within institutions that maintain disciplined and data-driven risk frameworks. Risk management thus emerges as the central governance mechanism, moderating board behaviour and aligning decision-making with prudential standards. Credible IFRS 9 implementations, therefore depend on the integration of governance architecture and institutional risk systems rather than on board structure in isolation.

From these findings, several practical recommendations are advanced. Bank boards should prioritise the appointment of directors with demonstrable financial literacy and technical proficiency in IFRS 9, particularly in audit, compliance, and risk committees. Expanding board size without complementary expertise does not guarantee effective oversight. Risk management committees should institutionalise derivative exposure monitoring and ensure that stress-testing and scenario analysis are completed prior to approving derivative positions, ensuring alignment with Basel IV capital and liquidity thresholds. Regulators such as central banks, financial reporting councils, and stock exchange commissions should adopt integrated reporting templates that require disclosure of how governance structures interact with internal risk frameworks under IFRS 9. This would promote transparency, comparability, and accountability. In addition, audit committees and external auditors should request granular justification for derivative classification, hedge designation, and exposure offsets, rather than

relying solely on formal compliance documentation. Finally, professional and academic institutions should establish mandatory governance capacity programmes for directors, auditors, and senior managers on IFRS 9, Basel IV, and risk quantification practices. This would ensure that governance decision-making rests on both ethical judgment and technical competence.

Future research could expand the scope of this study in several directions.

Firstly, qualitative case studies should explore how internal board politics, executive–non-executive relations, and ownership concentration influence IFRS 9 compliance behaviour and risk disclosure practices. This would provide insight into the subtle institutional dynamics that shape derivative recognition beyond formal governance metrics. Secondly, comparative cross-regional analyses involving African, Middle Eastern, and Asian banking systems would be valuable for assessing how differing regulatory intensities, cultural norms, and stages of Basel IV adoption affect the governance–risk–reporting nexus. Such studies could uncover contextual determinants of financial integrity that quantitative models alone may overlook. Thirdly, longitudinal research could examine the trajectory of IFRS 9 implementation over time, tracking how successive regulatory reforms, especially Basel IV's emphasis on capital buffers and risk data aggregation, alter the behaviour of boards and risk committees in managing derivative portfolios. Fourthly, future scholars could apply mixed-method approaches, combining econometric modelling with semi-structured interviews or content analysis of annual reports, to bridge the quantitative–qualitative divide and better capture managerial perception and behavioural incentives. Fifthly, there is potential for thematic exploration of ESG–IFRS 9 integration, particularly how environmental and social risk disclosures are incorporated into derivative valuation and hedge accounting. This would align accounting research with emerging global sustainability disclosure frameworks. Finally, network-based and cross-country regulatory studies could examine how central banks, professional institutes, and supranational entities such as the African Development Bank (AfDB) and the Financial Stability Board (FSB) shape governance culture and IFRS 9 compliance through coordinated policy diffusion. This would provide a multi-level understanding of how institutional ecosystems, rather than isolated firms, sustain financial transparency and systemic stability.

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