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Article

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ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

Board risk committee composition and risk-taking of deposit money banks in Nigeria

Ismaila Yusuf^{1*}, Idris Ahmed Aliyu² and Mamdouh Abdulaziz Saleh Al-Faryan³

Abstract: Risk oversight by bank boards has become complex due to the evolving nature of risk and thus the need for risk committees to effectively and adequately monitor bank risktaking. The risk taking capability of a financial institution is largely a function of its risk management committee composition. While studies have examined the effect of risk committee dynamics on several organisational variables, few studies examined the relationship between risk committee composition and the risktaking behaviours of banks. However, these few studies are limited to examining the effect of the existence of a standalone risk committee. Hence, the main purpose of this study is to examine the effect of banks' board risk committee composition on the risktaking behaviour of deposit money banks in Nigeria. The study used a sample of twelve deposit money banks listed on the Nigerian Exchange Group (NGX) from 2009 to 2020. Data were analysed using DriscollKraay's Robust Standard Errors for Panel Regressions with Cross-Sectional Dependence (SCC) model to address heteroskedasticity and cross-sectional dependence. The results showed that risk committee independence and financial expertise reduce risk-taking. It, therefore, showed that the independence and financial expertise of the risk committee provide the needed competency and independence to effectively monitor risk-taking. The study, therefore, recommends, among others, the review of the composition of the board risk committee to reflect independence and expertise. The study differs from other studies by examining risk committee composition rather than its existence.

Subjects: Economics; Finance; Business, Management and Accounting

Keywords: risk committee; risk committee Independence; risk committee expertise; gender diversity; deposit money banks; committee composition

1. Introduction

The risk taking capability of a financial institution is largely a function of its risk management committee composition. In this context, Sun and Liu (2014) have argued that to make the best use of the value of equity holding, shareholders might have incentives to embolden the executive to engage in excessive risk-taking activities. These tendencies have made boards pay more attention to the risk governance capabilities of their firms. Risk governance entails the board and executive providing oversights over the organisation's risk-taking and risk-management activities (Barma & Burt, 2019). It includes, among others, risk assessment, risk communication and consideration of the risks relating to the legal, institutional, social and economic activities of firms (Hermans et al., 2012).

Risk governance facilitates bank boards' understanding of their risk dynamics and how best to design strategies, formulate policies, perform oversight, and design response and monitoring structures looking at the bank's risk-return trade-off about capital allocated (Ard & Berg, 2010). In recent times, bank boards have become pressured to take firm-wide risk oversight as a very important fiduciary duty because of the evolving complex nature of risk oversight (Macey & O'Hara, 2016). The establishment of a risk committee has been argued to be an effective way for the board to ensure adequate monitoring of risk. It helps the board to evaluate the roles of the directors in identifying, assessing and managing risk (Beasley et al., 2009). This is because the risk committee serves as the major interface between the bank and the regulators on issues related to risk governance and provides feedback to the Chief Risk Officer as well as the Board.

The risk committee's role of risk oversight evolved after the failure of the audit committee, which was traditionally saddled with this responsibility. This evolution was largely triggered by the global financial crises of 2007–2009, which brought to the fore the inability of the audit committee to sufficiently assess risk-taking as bank operations become more complex. This is because risk monitoring now requires more than non-accounting risk metrics (Stulz et al., 2021). The risk committee has, therefore, been identified as an important and integral component of enterprise risk management, especially in banks. It helps in improving the culture of monitoring and reporting risk as well as becoming a resource base for board-level ERM responsibilities (Aebi et al., 2011). It is more able to pay attention to measures and monitoring of risk than the board because of its specialised knowledge (Stulz et al., 2021). Their importance has, therefore, provoked the interest of researchers in examining their monitoring roles and how they affect different organisational outcomes.

Several studies have examined the effect of board or board-level committees' characteristics on firm outcomes. Kalbuana et al. (2022) examined board size, gender diversity and political connection on financial distress in Indonesia. On the other hand, Debrah et al. (2022) studied the effect of board size on credit risk in Ghanaian banks. Studies have examined the effect of risk committee dynamics on the performance of firms. For instance, Kallamu (2015) investigated how risk management committee attributes of independence and experience influence the firm performance of listed Malaysian finance companies. Yusuf et al. (2022) examined the effect of CEO pay and CEO power on risk-taking in Nigerian deposit money banks. Meirene and Karyani (2017) examined risk committee size and meetings on performance in Indonesia and Malaysia. Similarly, Elamer and Benyazid (2018) investigated the effect of risk committee existence, size, independence and frequency of meetings on financial performance in the UK. Malik et al. (2020) also acknowledge the impact of board-level risk committees on the performance of UK firms. Other studies have examined risk committee attributes on risk disclosures; notably, Al-Hadi et al. (2016) with evidence from financial firms in Gulf Cooperation Council countries. Additionally, Jia et al. (2019) examined the effect of risk management committee size, independence, number of meetings and members' human capital on risk management disclosures. In a related study, Nahar et al. (2020) investigated the effect of the size of the risk committee and the existence of a stand-alone risk committee on risk disclosures.

Similarly, studies have also examined the relationship between risk committee composition and the risk-taking behaviours of banks. For example, Galletta et al. (2021) examined the influence of risk committee size on liquidity risk, while Natasya Irfani Ampri and Anitawati Hermawan (2018) examined the effect of risk committee members' experience, age and gender diversity on bank risk-taking behaviour. There are very few studies examining the effect of risk committees on risk-taking, and the majority of these studies are limited to the effect of the existence of a standalone risk committee (Bhuiyan et al., 2021; Jia & Bradbury, 2021). Abid et al. (2021) examined risk committee characteristics, but their study was limited to existence, size and meetings. There is a dearth of literature that has examined the composition of risk committees on risk-taking. Scholars have, therefore, suggested the need to re-examine risk governance variables in a different context to better understand the risk governance and risk-taking relationship (Srivastav & Hagendorff, 2016). The dearth in the literature

can be linked to the fact that risk committee existence is still voluntary in some jurisdictions. This study, therefore, bridges the gap in the literature by examining the impact of risk committee composition on the risk-taking behaviour of banks in Nigeria, where risk committee existence is required by the CBN Corporate Governance Code.

The CBN (2014) requires all banks and discount houses to have a committee responsible for risk oversight. Thus, the main objective of this paper is to examine the effect of risk committee composition on risk-taking behaviour by using a sample of twelve deposit money banks listed on the Nigerian Exchange Group (NGX) for the period 2009 to 2020. The remaining parts of the paper are divided into four main sections: sections two, three, four and five. Section two reviews the conceptual literature and develops hypotheses for the study. Section three presents the research methodology, while section four presents the data and discusses the findings. The conclusion, the implication of the study and recommendations are presented in section five.

2. Literature review

The following provides a conceptual view of the study variables.

2.1. Bank risk-taking behaviour

Choices made by banks that have an impact on the volatility of their profits are referred to as risk-taking (Nicolò, G. De, Dell’Ariccia, G., Laeven, L. & Valencia, F, 2010). Banks take risks through lending and other counterparty transactions and charge the borrowers’ interests while taking the risk of not being able to recover their money. Therefore, bank risk-taking refers to banks’ actions that make them vulnerable to risks, with conventional banks taking it up while Islamic banks share such risk.

Bank risk-taking behaviour reflects how a bank’s assets and liabilities are managed, usually based on the composition of its assets and liabilities, as shown on its statement of financial position. Thus, a bank preferring more loans to other asset forms can be said to have a tendency for risky behaviour when compared to another that prefers investing in government bonds. A bank can be said to have lower risk-taking behaviour when it prefers taking fixed deposits with relatively low risk than calls and savings (Pricillia, 2015). Banks that prefer to allocate their assets towards achieving the highest possible return per risk while adequately compensating depositors and investors can be said to be prudential (risk-averse) in their risk-taking behaviour. In contrast, some banks allocate their assets in a similar manner; however, by shifting the additional risk to depositors and without adequate compensation due to information asymmetry, such risk-taking behaviour can be considered risky or gambling (Barth et al., 2008).

2.2. Board risk committee attributes

The activities of the board are usually carried out by smaller specialised groups in the form of committees. They are believed to have a direct impact on the decisions of the board and help the board in the effective discharge of their duties (John et al., 2016). BCBS (2015) recommends the establishment of a board risk committee that should advise the board on its risk oversight. It further recommended that the committee be separate from the audit committee and be chaired by an independent director with a majority of independent directors as members who should also be experienced in risk management. However, these recommendations are advisory, leaving regulators from different jurisdictions with the discretion to adopt what suits their environment most.

In the Nigerian banking industry, the CBN requires that banks have at least a committee responsible for risk oversight. The committee may, however, not be distinct from the audit committee and must be headed by a non-executive director (CBN, 2014). In practice, most banks have a separate committee that is responsible for risk oversight and is distinct from the audit committee. In some banks, the committee is responsible for both credit and risk management, while in others, the credit and risk management committees are separated.

The composition of the risk committee has been argued to have an impact on the organisational outcome. For instance, managers' behaviour can be monitored by risk committees to reduce moral hazard and adverse selection (Aebi et al., 2011). However, the ability of the risk committee to monitor the risk behaviour of the board and management can be limited where they are not independent. An independent risk committee comprises more outside directors than inside directors. It is argued that outside directors are more likely to be more efficient in their decisions than inside directors because outside directors are not influenced by their career progression (Elamer & Benyazid, 2018). The diversity of the risk committee has also drawn attention. Diversity has been examined from the perspectives of expertise, age, education and gender.

According to Wolfe (2019), a board with most members having a proven track record in the industry and related experiences can be said to be competent. Members of the risk committee with experience in banking or non-bank financial institutions or who work in a finance-related role are said to have financial expertise (Minton et al., 2014). Since the risk committee is technically responsible for the risk decisions of the board, the competency of the members is critical in carrying out their monitoring and oversight functions. Females with financial expertise have been argued to be more effective and are found to be more diligent and accountable when in committees (Adams & Ferreira, 2009; Jia, 2019).

2.3. Theoretical perspectives and hypotheses development

The intricacy of modern corporations and the need for those corporations to ensure efficient resource allocation (Fama, 1980; Fama & Jensen, 1983), had created the need for principal-agent relationships. Agency theorists have argued that in modern corporations, conflicts of interest arise because of the division that exists between managers and owners (Pratt & Zeckhauser, 1985). Drawing from this perspective, Jensen and Meckling (1976) argued that the governance of a firm is based on the conflicts of interest arising from the agency relationship between the principal (shareholders) and agents (managers). This form of incentive-based conflict is usually viewed as agency risk. Because of this agency risk, managers tend to be more interested in the stability of their company, due to job security and their future income. This makes the management to be more risk-averse, and reluctant to invest in higher-risk investments. On the contrary, shareholders might want their company to take bigger risks, to get a sufficiently high return. Moreover, shareholders get protection via diversification because they invest in different companies.

Fama and Jensen (1983) emphasized the need for effective decision-control systems to lessen agency conflicts. In corporate organisations, decisions are made at many stages. Traditionally, the lower management level is involved in the initiation and implementation stages. While the shareholders through the board committees perform the function of ratification and monitoring.

Scholars have established that risk committee composition empowers firms to perform effectively and reduce agency risks (Moore & Brauneis, 2008, April-May; Sun & Liu, 2013). According to Deloitte (2011), a risk committee is a supportive tool for organisations that have complex structures, high agency costs, and high leverage.

2.3.1. Risk committee independence and risk-taking behaviour

Agency theory is centred on the contractual relationship between a firm's shareholders and managers, describing such a relationship as that of a principal and an agent (Kalbuana et al., 2022). It emphasises the separation between owners of business organisations and their managers. Agency theory argues that separating ownership and control can result in conflicts of interest between owners and managers. Thus, there is the need to align the interests of owners with those of shareholders through adequate monitoring and remuneration (Akram & Abrar Ul Haq, 2022). This is because the board serves as a representative of the shareholder and is believed to have the capacity to monitor and constrain managerial power, thus reducing agency-related problems (Kyei et al., 2022; van Essen et al., 2015). Jensen and Meckling (1976) have argued that

a more independent board, albeit a risk committee, is most likely to experience fewer agency-related conflicts and thus monitor more effectively. However, Adams and Ferreira (2007) cautioned that having more non-executive directors could be detrimental, as it could lead to having more members without adequate experience. Kallamu (2015), in a study of listed finance companies in Malaysia, found that risk committee independence positively affects market valuation but negatively affects accounting returns. Similarly, Elamer and Benyazid (2018) found a negative relationship between risk committee independence and financial performance utilising data from UK-listed financial institutions. On the other hand, Jia et al. (2019) found no significant relationship between risk committee independence and the quality of risk disclosure. However, in a study conducted by Nguyen (2021) examining the effect of audit committee independence and risk-taking behaviour amongst Islamic and conventional banks, committee independence was found to be more effective in risk reduction in conventional banks than in Islamic banks. Therefore, audit committees that sometimes also serve as a committee with oversight over risk-taking could constrain banks from taking excessive risks. Based on the following, the study hypothesised the following:

Hypothesis 1: *Risk committee independence has a negative effect on the risk-taking behaviour of deposit money banks in Nigeria.*

2.3.2. Gender diversity of risk committee and risk-taking behaviour

Resource dependence theory explains how organisational behaviour is influenced by the resources available. Applying the theory to a board emphasises the role the board plays in using its resources to give counsel to the organisation (Harjoto et al., 2018). The theory, therefore, argues that a gender-diverse board will lead to different resources that would be beneficial to the firm, which would increase monitoring (Hillman et al., 2002). Jia (2019) also argued that uncertainty relating to the continued existence of a firm can be resourced with the injection of such crucial and valuable resources on the board. The dynamism in the business environment has more than ever before exposed the importance of individuals from varied and diverse backgrounds in the management and operations of businesses (Terjesen et al., 2009). Thus, it is strategic to have a board or board-level committee with heterogeneous characteristics to save the board and organisation from group thinking and unbalanced decisions. Thus, diversity in the form of gender or experience or even both is very important.

Gender diversity on boards and board-level committees has received more attention than before, with some jurisdictions legislating on the inclusion of females on boards. It is believed that female board members serve as a connection to underrepresented female stakeholders and influence the direction of the firm in risk-taking, as females are believed to be more risk-averse (Adams & Ferreira, 2009; Ali, 2017; Kirsch, 2018; Loukil & Yousfi, 2016). Females are believed by nature to be better at monitoring and thus will bring these attributes to bear on board or board-level committees (Poletti-Hughes & Briano-Turrent, 2019). Kyei et al. (2022) argued that the risk-averse nature of females will influence the male members of the board towards making the right risk-taking decision. Loukil and Yousfi (2016) found that although women are more risk-averse than men, a board with a female gender-diversified board has a greater propensity to take a risk. However, Bhat et al. (2019) found relation-oriented diversity, which includes age and gender, to have a significant negative relationship with risk-taking across both state and non-state-owned enterprises. Similarly, the result from the study conducted by Jia (2019) suggests that excessive risk-taking by firms can be monitored and reduced when women are more on the risk management committee. Based on the foregoing, we hypothesised the following:

Hypothesis 2: *Gender diversity in risk committees has a negative and significant impact on risk-taking behaviour in deposit money banks in Nigeria.*

2.3.3. *The financial expertise of risk committee and risk-taking behaviour*

To reduce agency costs arising from the separation of owner and manager, the owner must incur monitoring costs to better observe the agent's actions and prevent conflicts of interest (Zalata et al., 2018). Thus, having experienced board members constitutes these monitoring costs. The competency of members of the board is believed to have a significant influence on decision-making. It is argued that a competent board should have most of its members possess a track record of industry experience needed to create value and drive the company (Wolfe, 2019). Bank board members' competency has been measured as having banking experience (Fernandes & Fich, 2009) or having bank or non-bank financial institution experience, including someone who has worked in a finance-related role in any institution (Minton et al., 2014). The cognitive backgrounds of board members are expected to influence their interpersonal behaviours making it difficult for group conformity, which is important in making rational and comprehensive decisions (Kim & Rasheed, 2013; Li & Hambrick, 2005).

In a cross-country study involving Islamic and conventional banks, Nguyen (2021) found that the financial expertise of the risk committee has a negative effect on a bank's risk-taking behaviour. Harjoto et al. (2018) also found that the task-oriented diversity attributes of expertise help in effective oversight compared to boards that are homogeneous and thus more able to reduce risk-taking. Utilising data from the USA and Germany, Younas et al. (2019) used the financial expertise of members of the audit committee to measure the effectiveness of the committee and found that an effective audit committee reduces risk-taking. Based on the above, we therefore hypothesised the following:

Hypothesis 3. *The financial expertise of the risk committee has a significant negative effect on the risk-taking behaviour of deposit money banks in Nigeria.*

2.3.4. *Female with the financial expertise of risk committee and risk-taking behaviour*

Considering both agency theory and resource dependence theory better explains the effectiveness of gender-based expertise and director effectiveness (Abbasi et al., 2020). This is because the expertise possessed by a director gives them a monitoring capacity, while their gender diversity provides beneficial resources. According to Sapienza et al. (2009), females with financial industry experience tend to take more risks than those working in other industries. Other studies have argued that females in a male-dominated industry tend to behave more like their male counterparts in risk-taking (Adams & Funk, 2012; Deaves et al., 2009). However, Jia (2019) found that more financially experienced women on the risk committee increase the effectiveness of the committee in reducing financial distress. Adams and Ferreira (2009) also argued that women put more effort and work more diligently in committees as well as demand more accountability.

However, Kanter (1977) cautioned that having a small proportion of females on committees could result in tokenism, and thus, the impact of females in decision-making might not be felt. Based on the foregoing, the study hypothesised the following:

Hypothesis 4. *Females with financial expertise on risk committees have a significant negative effect on the risk-taking behaviour of deposit money banks in Nigeria.*

3. Research methodology

3.1. Data

The data for the study were obtained from a total of twelve (12) banks listed on the Nigerian Exchange Group (NGX) that existed during the period of the study from 2009 to 2020. Thus, there

are 144 observations. The data were hand collected from the annual reports and accounts of the banks for the period.

3.2. Empirical model

A panel regression model was specified to analyse the research questions. The model examines the relationship between proxies of risk committee composition and bank risk-taking.

$$ORISK_{it} = \beta_0 + RCIND_{it}\beta_1 + RCEXP_{it}\beta_2 + RCGEN_{it}\beta_3 + RCEXG_{it}\beta_4 + INTSP_{it}\beta_5 + TODT_{it}\beta_6 + \varepsilon_{it} \quad (1)$$

where

ORISK_{it} = Overall Risk for i bank for t period

RCIND_{it} = Risk Committee Independence for i bank for t period

RCEXP_{it} = Risk Committee Financial Expertise for i bank for t period

RCGEN_{it} = Risk Committee Gender Diversity for i bank for t period

RCEXG_{it} = Risk Committee Gender Diversity and Financial Expertise for i bank for t period

INTSP_{it} = Interest Rate Spread for i bank for t period

TODT_{it} = Liquidity for i bank for t period

The dependent variable risk-taking is proxied by overall risk-taking. Overall risk-taking is an accounting information-based measure of risk-taking. It is measured as a ratio of total risk-weighted assets to total assets. This ratio is a measure of a bank's entire risk and is also used by regulators to measure bank risk (Luu, 2015). Previous studies have used the same proxy and measurement for bank risk-taking (Chen & Lin, 2016; DeVita & Luo, 2018; Luu, 2015; Zhong, 2017; Zhou et al., 2017).

The study adopted four independent variables to proxy risk committee composition. Risk committee independence (RCIND), Risk Committee Financial Expertise (RCEXP), Risk Committee Gender Diversity (RCGEN) and Risk Committee Gender Diversity and Financial Expertise (RCEXG). RCIND is measured as the proportion of non-executive directors on the risk committee to total members on the risk committee, in line with (Elamer & Benyazid, 2018; Jia, 2019). RCEXP is measured as the proportion of directors with financial expertise on the risk committee to the total members on the risk committee, in line with (Nguyen, 2021; Younas et al., 2019). In line with Bhat et al. (2019) and Jia (2019), the gender diversity of the risk committee (RCGEN) is measured as the proportion of female directors on the risk committee to the total members on the risk committee. Similarly, female with financial expertise on the risk committee (RCEXG) is measured by the proportion of female with financial expertise on the risk committee to the total members of the risk committee.

The study controls for some variables affecting risk-taking as established from previous literature. Risk-taking by banks has been found to be influenced by their liquidity position; that is, the more liquid a bank is, the more risk it is likely to take. In line with Dong et al. (2017), liquidity (TODT) is measured by the ratio of total loans to total deposits. Interest rate spread (INTSP) is also found to influence bank risk-taking since the spread represents the gain obtainable for intermediation. Thus, in line with Demirgüç-Kunt and Huizinga (1999) and Haruna (2013) and measured by the difference between interest received divided by loans and interest paid divided by deposits

4. Results and discussion

The data obtained are presented below in both univariate and multivariate analyses. The descriptive statistics of the dependent, independent and control variables are presented in Table 1 below.

4.1. Descriptive statistics

Table 1 presents the summary of statistics from the data obtained from deposit money banks listed on the Nigerian Exchange Group for the period 2009 to 2020.

The dependent variable Overall risk (orisk) from the table shows a minimum of 26.94% and a maximum of 98.07%, indicating that the ratio of risk-weighted assets to total assets during the period ranged from as low as approximately 30% to as high as 98%. On average, 63% of the banks' assets are risk-weighted. The median indicates the symmetrical nature of the data, while the standard deviation suggests similarity among the banks in risk-taking.

Risk committee independence (rcind), risk committee expertise (rcexp), risk committee gender diversity (rcgen) and risk committee gender diversity and expertise (rcexg) were found to have a minimum of 17%, 27%, 0% and 0%, respectively, while they record a maximum of 100%, 100%, 60% and 45%, respectively. This indicates that some banks' risk committees do not have female representation on risk committees, let alone females with financial expertise. However, there are records of banks having all members of the risk committee as independent directors and all members having financial expertise. On average, the risk committee is independent and with financial expertise having recorded 63% and 74%, respectively. In contrast, the banks cannot be said to be gender diverse or said to have a diverse risk committee with financial expertise with an average of 18% and 9.5% for diversity and diversity with financial expertise. The median of all the independent variables is found to be closer to the mean, therefore indicating the symmetrical nature of the data. The standard deviations indicate a lesser spread in the data, which is indicative of similarity among the banks.

Control variables of interest spread (instp) and liquidity (totd) showed that on average, the banks record an interest spread of 15% and liquidity of 71%. However, records during the period showed that liquidity reached 140% and dropped to as low as 8%. Interest spread was recorded at its lowest -1% and its highest 347%. *Instp* and *totd*, however, showed a spread in the data, indicating differences among the banks.

4.2. Correlation analysis

Table 2 presents the relationship between each of the independent and control variables and the dependent variables. On the other hand, it presents the relationships among the independent and control variables.

Table 1. Descriptive Statistics						
Variables	Obs	Mean	Median	Std. Dev	Min.	Max
Orisk	144	0.62951	0.63370	0.13984	0.2694	0.9807
Rcind	144	0.63329	0.57141	0.17728	0.1667	1
Rcexp	144	0.74446	0.77778	0.17355	0.2667	1
Rcgen	144	0.18224	0.14290	0.16337	0	0.6000
Rcexg	144	0.09570	0.08330	0.10831	0	0.4545
Intsp	144	0.15277	0.12380	0.28477	-0.0139	3.4731
totd	144	0.71581	0.69630	0.20405	0.08170	1.41220

Orisk is overall risk-taking, rcind is risk committee independence, rcexp is risk committee expertise, rcgen is risk committee gender diversity, rcexg is risk committee gender diversity and expertise, instp is interest rate spread, and totd is liquidity.

Table 2. Correlation matrix

	orisk	rcind	Rcexp	rcgen	rcexg	instp	totd
Orisk	1.000						
Rcind	-0.1222	1.000					
Rcexp	-0.0458	-0.1848**	1.000				
Rcgen	-0.3129***	0.1704**	-0.3511***	1.000			
Rcexg	-0.3580***	0.0614	-0.1144	0.7740***	1.000		
Instp	0.0997	0.0730	-0.1543*	0.2515***	0.1126	1.000	
Totd	0.4476***	-0.0029	0.0790	-0.4823***	-0.3773***	0.3802***	1.000

***, **, * represent significance at 1%, 5 and 10%, respectively. Orisk is overall risk-taking, rcind is risk committee independence, rcexp is risk committee expertise, rcgen is risk committee gender diversity, rcexg is risk committee gender diversity and expertise, instp is interest rate spread, and totd is liquidity.

From Table 2, all the independent variables are negatively related to the dependent variables. The relationship between the dependent and control variables showed that both control variables are positively related to the dependent variable. Among the independent and control variables, positive and significant relationships, negative and significant relationships, positive and insignificant relationships and negative and insignificant relationships were found. However, none of the independent and control variables has a strong correlation between them. This indicates the lack of possible multicollinearity between independent variables. However, a further test of multicollinearity would be undertaken to reconfirm the above.

4.3. Regression analysis

Table 3 presents the results from the regression analysis carried out. The table shows the results of the regression analysis based on ordinary least squares (OLS), fixed effects (FE), random effects (RE) and Driscoll-Kraay’s robust standard errors for panel regressions with cross-sectional dependence (SCC).

Variance inflation factors (VIFs) greater than 10 indicate a strong correlation (multicollinearity) and should be of concern (Al-Faryan & Alokla, 2023). However, the mean values of all of our independent variables and the VIFs are less than 10, which shows that there is no multicollinearity. The highest VIF was 3.54, while the mean VIF was found to be 1.88. The Modified Wald test for GroupWise heteroskedasticity showed the presence of GroupWise heteroskedasticity with $\text{prob} > \chi^2 = 0.000$. Pesaran’s test of cross-sectional independence was found to be significant ($\text{pr} = 0.0030$), indicating the presence of cross-sectional dependence. In the presence of heteroskedasticity and cross-sectional dependence, Hoechle (2007) recommends Driscoll-Kraay robust standard errors for panel regressions with cross-sectional dependence. Driscoll-Kraay’s robust standard errors for panel regressions with cross-sectional dependence was found to be the most suited model to fit the regression.

From Table 3, *rcind* has a negative and significant relationship with *orisk*, indicating that risk committee independence reduces risk-taking. Similarly, *rcexp* has a significant negative relationship with *orisk*, which indicates that risk-taking decreases as risk committee expertise increases. However, *rcgen* and *rcexg* were not significantly related to *orisk*.

To reduce omitted variable bias, liquidity and interest rate spread were introduced as control variables. The variables were introduced because they have been found to influence risk-taking in deposit money banks. The variables showed a significant positive effect on risk-taking, thus confirming their inclusion in the model. The control variables of *totd* and *instp* were found to have a positive and significant relationship with *orisk*.

Table 3. Regression results

Variables	OLS	FE	RE	SCC
Rcind	-0.11627** (-2.07) 0.056167	-0.31732*** (-4.98) 0.06376	-0.62394*** (-4.36) 0.06055	-0.11627** (-2.25) 0.05165
Rcexp	-0.06956 (-1.11) 0.06248	0.19935** (2.55) 0.07819	-0.15748** (-2.18) 0.07233	-0.06956** (-2.40) 0.02900
Rcgen	0.00659 (0.06) 0.11108	-0.10340 (-0.92) 0.11216	-0.07404 (-0.68) 0.10955	0.00659 (0.05) 0.12459
Rcexg	-0.27484* (-1.88) 0.14747	0.00099 (0.01) 0.15872	-0.0812 (-0.53) 0.15235	-0.27484 (-1.12) 0.24491
Totd	0.33862*** (5.89) 0.05749	0.24428*** (4.52) 0.05344	0.26839*** (5.09) 0.05272	0.33862*** (4.61) 0.07342
Instp	0.15074*** (4.04) 0.37295	0.12299*** (3.65) 0.03368	0.12987*** (3.88) 0.03346	0.15074*** (7.93) 0.01900
Cons	0.51462*** (6.19) 0.08307	0.80398*** (8.47) 0.09493	0.72311*** (7.90) 0.09153	0.51462*** (8.04) 0.06402
Nos of Obs	144	144	144	144
F Statistics	12.16	11.48	68.99	150.48
Prob>F	0.0000	0.0000	0.0000	0.0000
R-Squared	0.3475	0.2378	0.2868	0.3475
VIF	Max VIF 3.54 Mean VIF1.88			
Hetero	Prob > chi2 = 0.000			
Cross Sect. Dep	Pr = 0.0030			

***, **, * represent significance at 1%, 5% and 10%, respectively. The t values are in brackets. Orisk is overall risk-taking, rcind is Risk committee independence, rcexp is risk committee expertise, rcgen is risk committee gender diversity, rcexg is risk committee gender diversity and expertise, instp is Interest rate spread, totd is liquidity, cons is Constant, VIF is Variance Inflation Factors, Hetero is heteroskedasticity, Cross Sect. Dep is cross-sectional dependence.

4.4. Discussion of results

The results from Table 3 show that Risk Committee Independence has a significant negative effect on risk-taking in deposit money banks in Nigeria, thus supporting Hypothesis 1. This indicates that the more independent a risk committee is, the more likely it is to reduce risk-taking in deposit money banks. This can be related to the fact that most executive directors who are insiders might have an interest in some risk-taking decisions that might not be in the interest of banks. The non-executive directors who are external to the management of the bank would serve as a check in such risk-taking decisions. The result is also in line with the finding of Bhuiyan et al. (2021) that an independent stand-alone risk committee is less prone to excess risk-taking activities. It is also in line with Nguyen (2021), who argued that the independence of audit committees in conventional banks helps in effective risk reduction. The result also conforms with agency theory, which argues that board or committee independence reduces agency conflicts and ensures more effective monitoring (Jensen & Meckling, 1976).

Similarly, risk committee financial expertise was found to have a negative and significant effect on the risk-taking of deposit money banks in Nigeria, thus supporting Hypothesis 3. The result, therefore, indicates that more financial expertise of the risk committee leads to less risk-taking. Thus, a risk committee with more members with financial expertise tends to reduce risk-taking in deposit money banks. It can be deduced from the result that a risk committee with more financial expertise is more competent to advise the board on the risk-taking decision. A more competent

risk committee is more likely to act more efficiently and effectively in the discharge of its duties. The result is in line with Younas et al. (2019), who confirms that the financial expertise of the audit committee is effective in reducing risk-taking. It is also in line with the study by Nguyen (2021), who found that the financial expertise of the risk committee reduces risk-taking. It can therefore be argued that risk committees with more financial experts are more competent and are more likely to make rational and comprehensive risk-taking decisions. Thus, the danger of group conformity is limited (Kim & Rasheed, 2013; Li & Hambrick, 2005).

However, the results of risk committee gender diversity and risk committee gender diversity with financial expertise showed no significant effect on risk-taking, thereby rejecting Hypotheses 2 and 4. This indicates that more female members on the risk committee and more females with financial expertise on the risk committee do not have a significant effect on risk-taking. The relationship is negative, as it relates to gender diversity and financial expertise. The result found support in Loukil and Yousfi (2016), who argued that a female diversified board takes more risk but contradicts Bhat et al. (2019) and Jia (2019).

5. Conclusion

The study examined the effect of risk committee composition on risk-taking in deposit money banks in Nigeria. Risk committee strategic importance cannot be overemphasised in Nigerian deposit money banks. They are saddled with the responsibility of risk assessments and recommendations to the board. The empirical results from this study provide evidence to show that the independence of risk committees plays a significant role in risk reduction. This can be explained by the fact that their independence will isolate them from the influence of executive directors who might have a direct or indirect interest in risk-taking decisions. The results also provide evidence to conclude that the financial expertise of risk committee reduces risk-taking. This is because the responsibility of risk assessments and recommendations is technical and should be handled by those who have the competency. Thus, the financial expertise of the risk committee portrays the board as competent and will therefore reduce excessive risk-taking in deposit money banks. This is because they are more likely to understand the bank risk and advise the board accordingly.

The implications of these findings on the Nigerian banking system affect both policy and practice. From the policy perspective, reduction in excessive risk-taking in banks can be curbed by improving the composition of the risk committee. Thus, the regulators in the industry should review guidelines on the composition of the risk committee. The guidelines should mandate the independence and financial expertise composition of the risk committee. This is important as the committee is a very important strategic and technical committee in risk-taking decisions in banks and their independence and financial expertise are paramount. The practical implication, on the other hand, shows that a competent and independent risk committee would be more likely to effectively monitor and control risk-taking in deposit money banks.

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