



**Board activity and risk-taking. A study of commercial banks in Kenya**

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**Abstract**

Owing to the recent financial crises, the role of the board and board effectiveness in monitoring bank risk-taking has become necessary. The intensity of board activity is a crucial indicator of the board's effectiveness in monitoring managers' risk-taking behaviour. Therefore, using a sample of 36 commercial banks in Kenya and panel data for 2008 – 2018, the study sought to examine the relationship between board activity and risk-taking. Further, the study controlled for bank capitalization, bank age, and bank size. Findings show that board activity ( $\beta_2 = 0.008$ ,  $p = .000 < .05$ ) significantly and positively affects risk-taking, supporting the tenets of modern portfolio theory. Thus the study has managerial and policy implications.

**Key Words:** Board activity, risk-taking, bank capitalization, bank age, bank size

## **1. Introduction**

The concept of risk and return tradeoff is central to modern finance. According to Kerbel (1977), return is the percentage of financial growth for an asset over a year (or any period) calculated as income received plus capital profits (or less capital losses) adjusted for taxes and measured as a percentage of assets at the beginning of a financial year. On the other hand, risk denotes the possibility that an investment will yield less than expected return or an asset yielding a negative return (losses) or the extent to which the worst outcome anticipated falls below the expected return. Therefore, risk-taking is essential to all types of firms, which has received considerable attention among scholars, practitioners, and regulators, particularly in the banking sector, owing to the 2007-2008 financial crises that resulted in a global bank failure. Furthermore, studies have revealed that the susceptibility of the banking sector during the crisis was partly caused by a build-up of excessive risks by some banks before the crisis (Brunnermeier, 2009; DeYoung, Peng, & Yan, 2013). Also, the literature has argued that banks' failure can be caused by bad asset decisions, which results in excessive non-performing loans (Sinkey & Greenawalt, 1991). Thus, banks' risk-taking decision threatens their safety, soundness, effectiveness, and stability of the entire financial sector due to the spill-over effect (Srivastav, Armitage, & Hagendorff, 2014). Besides, Farag and Mallin (2017) and Laeven and Levine (2009) claim that bank's risk-taking behaviors affect a country's financial and economic fragility.

Corporate governance provides a framework upon which managerial decisions, such as risk-taking, are made for optimal firm outcomes. According to Kawai, (2004), corporate governance is "a set of inter-relationships between management in a company, company's board, shareholders and other relevant stakeholders." Sheehan (2019) asserts that corporate governance is a set of rules and processes that help ensure that firms are effectively run for the benefit of their stakeholders. Moreover, using the effective risk management framework in identifying, measuring, and controlling bank risk exposures, a study by Stulz (2015) found that corporate governance enables banks to pursue an 'optimal' level of risk, thus allowing managers to maximize shareholder value while also taking into account the impact of bank failures on other stakeholders. The corporate governance and risk-taking relationship have been a subject of extensive research, precisely, concerns over whether bank boards' characteristics (independence and financial expertise), ownership, and activity can effectively monitor and control bank risk-taking.

Board activity, measured by the board meetings' frequency, influences the board's effectiveness and performance (Vafeas, 1999), mainly when the board deliberates on the challenges facing a firm both internally and externally and making strategic risk-taking decisions (Barros et al., 2013). Hypothetically, the frequency of board meetings indicates the extent of a board's achievement and the quality of its monitoring in controlling managers' behaviours, such as risk-taking (Vafeas, 1999; Conger et al., 1998). Accordingly, by increasing the number of board meetings, it is expected that there will be higher managerial monitoring since the board members will have more opportunities to deliberate on corporate strategy and risks, which eventually affects a firm's performance (Zhu, & Westphal, 2021; Hunjra, et al., 2020). Battaglia and Gallo (2017) contend that board activity (board's meeting frequency) is an essential tool in monitoring managers' risk taking behaviours. Thus, the higher the frequency of board meetings, the more the board is actively involved in monitoring firm operations, hence less managerial discretion in risk taking. Similarly, a high number of board meetings enables the board to analyze risks thus increases or reduces firm's risk level based on the risk-return tradeoff (Younas, Klein Trabert & Zwergel, 2019). Board meetings is of significance importance in the field of corporate governance, hence abnormal board meeting may influence a firm's value (Vafeas, 1999). Owing to the complexity of a firm's operations, growth opportunities and risk profile, the frequency of board meetings may be high. Furthermore, corporate governance codes in many countries stipulates the minimum number of board meetings particularly for listed firms as an investors' protection safeguard. Conversely, increased board meeting frequency may not necessarily be helpful to shareholders. Vafeas (1999) argues that the board spends much of its time on routine tasks leaving no time for directors to exercise control over the management and consider strategic issues such as risk-taking. Also, Ting, Kweh, and Hoanh (2018) suggest board meetings and report presentations are often costly in terms of time, allowances, and other expenses, which might further constrain the firm. Theoretically, Jensen (1993) recommends that a firm's operating context be considered when determining board meeting frequency. As mentioned earlier, there seems to be an unclear link between the frequency of board meetings and risk-taking, which requires empirical investigation. Therefore, this study's hypothesis;

**H1. Board activity significantly and positively affect risk-taking.**

This paper is organized as follows. The following section explores the empirical literature on board activity and risk-taking. The next section discusses the research methodology and measurement of

variables. The fourth section presents the results and the discussion. The fifth section concludes. The final section discusses the study's limitations and makes suggestions for further research.

## **2. Literature Review**

Board activity and meetings are critical indicators for the effectiveness of the board of directors (Vafeas, 1999; Conger et al., 1998; Lipton & Lorsch, 1992). Even though the time devoted differs from one firm to another, Vafeas (1999) determines the different costs and benefits of board activity as measured by meetings. Several costs are associated with board meetings, including managerial time, travel expenses, and directors' meeting fees. At the same time, there are other benefits pertinent to the board meeting, such as more time for directors to confer, set strategy, and monitor management. Thus, devoting enough time is crucial to ensure that the benefits of regular board meetings outweigh its costs.

Regular board meetings are essential because they provide a means to cope with the difficult times experienced by firms. Vafeas (1999) and Ntim (2009) found that frequent board meeting results in good management and supervision quality and therefore positively influences the economic performance of firms. Mangena and Taurigana (2008) stated that board meetings could help managers understand the problems of their firms and produce quick solutions to solve emerging problems. Firms proficient in setting an appropriate frequency of board meetings can reduce related costs and experience increased economic efficiency (Vafeas, 1999).

Conger et al. (1998) study indicated that board meetings are essential in enhancing the board's effectiveness. The study also explored whether board meeting frequency in the previous year affects firm performance in the current financial year or not. Short- and long-term operational strategies for firms are often established during meetings. Board members require time to enforce their ideas during meetings and determine how this would bring results for the firm in the future (Vafeas, 1999).

However, there is continued emphasis on utilizing the time inside the board room (Conger et al., 1998) because optimizing board meetings is critical to deliberate on outstanding issues, leading to better monitoring and performance (Carcello et al., 2002). Moreover, Lipton and Lorsch (1992) opine that meetings' frequency and duration contribute to their success and enhance board oversight activities. Having the appropriate and adequate team represents board diligence in carrying out its activities, thereby accentuating its effectiveness.

An important proxy for measuring the intensity and effectiveness of corporate monitoring and disciplining is the frequency of board meetings (Jensen, 1993; Vefeev, 1999). On the other hand, De Andres and Vallelado (2008) suggest that meetings provide board members with the chance to come together to discuss and exchange ideas on how they wish to monitor managers and bank strategy. Hence, the more frequent the meetings, the closer the control over managers and the more relevant the board's advisory role. Furthermore, the complexity of the banking business and the importance of information both increase the relevance of the board advisory role, especially during stressed market conditions. To effectively perform its function, the board meetings frequency has to ensure a timely and thorough review of the bank strategy and risk profile and discuss any remedial action required. Again, given our focus on extreme market conditions, we expect that a higher number of meetings is necessary to guarantee prompt response of the board to market events and is expected to be associated with a lower level of the tail and systemic risk.

Younas, Klein, Trabert, and Zwergel (2019) sought to investigate the impact of board composition and further board characteristics on excessive corporate risk-taking of listed firms in Germany and the USA. Based on Thomson Reuters DataStream, the sample data consisted of 564 US firms and 57 German firms in the manufacturing, utility, and industrial sectors from 2004 to 2015. The study further applied the fixed effect and the random effect estimation method to establish the impact of corporate governance on risk-taking. Board meeting frequency was measured as the number of board meetings held per year, while risk-taking was calculated as the standard deviation of the daily stock returns. Findings indicate a significant and positive effect of board meeting frequency on risk-taking.

Eling and Marek (2014) conducted a study to establish the impact of factors related to corporate governance (compensation, monitoring, and ownership structure) on risk-taking in the U.K. and German insurance industries. The base sample used was an unbalanced panel of 307 firms from 1997 to 2010, with 185 observations from German and 122 from U.K. insurers. A total of 35 companies were included in the analysis. The financial risk was measured as the natural log of total investments / total shareholder equity, while board meeting frequency was the annual number of meetings held by the supervisory board. Findings show a positive and significant value for the effect of the board meeting frequency on insurance firm's risk-taking.

A study done by Abate and Zeleke (2014) intended to establish the impact of corporate governance mechanisms on risk management of Ethiopian commercial banks using a panel data set of 9 Ethiopian

banks from 2005 to 2011. Credit risk and liquidity risk were used to measure risk-taking, while the number of board meetings held per year was used to capture board meeting frequency. Findings show a significant and negative effect of board meeting frequency on risk-taking.

Ayadi and Boujèlbène (2012) carried out a study in thirty European commercial banks to find out the effect of the attributes of the board of directors and the remuneration of the leader in charge of risk-taking. Taking into account a study period of six years, 2004-2009, risk-taking was measured by Z score while the number of board meetings held annually captured the board meeting frequency variable. From the findings of this study, the relationship between board meeting frequency and insolvency risk was statistically significant and negative, indicating the effectiveness of board meeting frequency. The results further suggest that the relationship between the remuneration of the leader and insolvency risk and accumulating the functions of the CEO and the chairman and insolvency risk are both statistically significant and negative.

Elamer, AlHares, Ntim, and Benyazid (2018) did a study in the United Kingdom (U.K.) to investigate the effect of internal corporate governance mechanisms on insurance companies' risk-taking. In this study, panel data of all listed insurance companies for the period 2005-2015 were considered. The measurement used for risk-taking was Z score, while the number of board meetings held per year captured the board meetings frequency. The findings of this study showed a negative and significant effect of board meeting frequency on risk-taking, meaning that board meetings reduced risk-taking, pointing to the importance of the annual board meetings.

The study of Isa and Lee (2020) sought to explore how the Shariah committee in Islamic banks affects bank risk-taking behaviour and performance based on a panel of 15 Malaysian Islamic banks over the period 2007 to 2016. Board meeting frequency was measured as the board meeting held per year, while three measures were employed to capture risk-taking: Non-performing loan ratios, Z score, and portfolio risk. Findings indicate that board meeting frequency is unrelated to risk-taking. Besides, board meeting frequency was unrelated to the performance of the Islamic banks under consideration. The implication for this study points to the role of regulators to set standards regarding the number of board meetings and their role during these meetings to gain full benefits in terms of performance and shareholder value.

Chaudhary, (2020) carried out a study in India to understand the relationship of volatility with corporate governance and institutional investors simultaneously. All the non-financial firms forming

the part of the NSE-500 index were taken for the period ranging from 2011 to 2019. Board activity was measured as the average number of meetings attended in committees in which directors have a position in the firm and the average number of directorship in other firms by the firm's directors. On the other hand, firm risk-taking is measured as the annualized stock return volatility. Findings indicate that board activity has no significant effect on firm risk-taking.

### **3. Methodology**

#### **3.1. Target Population**

The target population consisted of all the registered commercial banks in Kenya between 2008 and 2018. As of 2018, Kenya had 42 registered commercial banks and one mortgage company considered as a bank. However, after applying the inclusion and exclusion criteria, only 36 banks qualified for further analysis. The inclusion and exclusion criteria were based on whether the bank was in full operation for the entire study period and if the data was available. The bank ought not to have undergone significant reorganizational changes that impair financial reporting.

#### **3.2. Measurement of Variables**

##### **3.2.1. The Dependent Variable**

Risk-taking was measured using default risk. Default risk is the primary factor considered in risk-taking by banks. Z-score is the measure commonly used in determining a bank's default risk (Erkens et al., 2012; Belratti & Stultz, 2012).

$$Z - score = \frac{ROA + E/A}{\sigma ROA}$$

where ROA and E/A are the return on asset and capital to asset ratio, respectively.  $\sigma(ROA)$  is the standard deviation of return on assets (rolling standard deviation –the present year and the past two years), calculated over the same time window (Laeven & Levine, 2009; Houston, Lin, Lin, & Ma, 2010). Further, the z-score is transformed into its natural logarithm owing to its skewed nature (Bley, Saad & Samet, 2019).

##### **3.2.2. Independent Variable**

Board activity (B.A.) is the study's explanatory variable, and it denotes the number of meetings the board of the respective banks under study held during the year. Thus, based on the empirical literature,

this variable will be measured as the natural logarithm of the number of the board meeting (Zhu, Ma & Tian; 2009; Mandala, Kaijage, Aduda, & Iraya, 2018).

### **3.2.3. Control Variable (Firm Size, Firm Age and Bank capitalization)**

This study controlled for several variables to isolate the effect of the explanatory variable on the outcome variable. Extant literature shows that firm size affects a firm's risk-taking (Ng, Chong, & Ismail, 2013), and the variable is measured as the natural log of total assets measures. Firm age controls for larger firms have more subdivisions and larger branch office networks that are more complex to manage (Eriki, 2015). Studies also show that older firms are more cautious than younger businesses because of their accumulated knowledge about the industry and the related risks (Li, & Tang, 2010). Firm age is measured by the natural log of the number of years a firm has been operating since registration by the respective regulatory authority (Laeven, Ratnovski, & Tong, 2014). Researchers argue that poorly capitalized banks tend to prefer riskier investments than a well-capitalized bank since poorly capitalized banks have little to lose by bankruptcy, so they maximize the option value of deposit insurance by gambling in riskier assets (Jeitschko & Jeung, 2005). Bank capitalization (B.C.) is calculated as the book equity-to-asset ratio as used in previous studies (Huang, de Haan, & Scholtens, 2020).

### **3.3. Model Specification**

The following equation describes the empirical model;

$$Z\ score = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 BA_{it} + \beta_4 BC_{it} + \varepsilon_i$$

Where:

$\beta_0$  is a constant

F.A. Firm age

F.S. Firm size

B.A. Board activity

B.C. Bank capitalization

#### 4. Findings and Discussion

**Table 1. Descriptive Statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
Z-score	396	0.835	0.360	-0.794	1.571
FA	396	3.425	0.504	1.946	4.635
FS	396	4.504	0.519	3.167	5.642
BC	396	0.155	0.053	-0.112	0.458
BA	396	5.576	1.812	2.000	9.000

The descriptive statistics for the research variables are presented in Table 1. From the table the mean z score is 1.922 (standard deviation = 0.359; Minimum=- 0.794; Maximum=1.571). Considering that a high value of Z score is an indicator of lower levels of risk. In comparison, a lower value indicates higher levels of risk. Therefore, it can be concluded that the selected banks take relatively lower risks. Further, the gap between the minimum value and the maximum value implies that the level of risk-taking varies considerably among banks, which is also a high standard deviation. The mean board activity is 5.576 (standard deviation =1.812; Minimum=2.000; Maximum=9.000). This is an indication that board members held approximately six meetings per year. Frequent board meetings contribute to effective internal control. Besides, it allows the board members to understand a firm better and evaluate decision-making regarding the firm's risk-taking. The mean bank capitalization is 0.155 (standard deviation = 0.053; Minimum= -0.112; Maximum= 0.458), meaning that the selected banks are generally low capitalized. The mean firm age, the natural logarithm of the number of years a firm has been operating since incorporation, is 3.425, taking 2008 and 2018 as the reference points (standard deviation = 0.504; Minimum= 1.946; Maximum= 4.635). This means that many banks have been in operation for over three decades (€<sup>3.425</sup>). Additionally, the average firm size is 10.513, taking 2008 and 2018 as the reference points (standard deviation = 1.326; Minimum = 21.507; Maximum = 27.156), implying that the selected banks are worth average Ksh. 30.489 billion (€<sup>24.141</sup>).

**Table 2. Results for Regression Analyses**

RT	Model 1 RE	Model 2 FE	Model 3 OLS
FA	0.037(0.000)**	0.459(0.000)**	0.303 (0.007)**
FS	0.372(0.000)**	0.455(0.000)**	0.032(0.000)**
BA	0.008(0.000)**	0.008(0.000)**	0.008 (0.000)**
BC	0.300(0.003)**	0.331(0.035)**	0.271(0.000)**
_cons	0.159(0.000)	0.211 (0.000)	0.126(0.000)**
Wald chi2(7)	454.72	214.0	161.09
Prob >chi2	0.000	0.000	0.000
No. Groups	36	36	36
Observations	396	396	396

**Notes:** RT denotes risk-taking; FA is firm age; FS is the firm size; BA is board activity; BC is the capital to asset ratio. The values in parentheses are standard errors of the Random effect, fixed effect, and overall regression using fixed effect.  
 \*\*\*p < 0.01, \*\*p < 0.05, \*p < 0.1

The study used panel data for the period 2008 – 2018. The results for the selected multiple regression models (fixed effect, random effect, and the ordinary least square regression) are presented in table 2. The three models show that the relationship between board activity and risk-taking among commercial banks in Kenya is significantly positive; therefore, the study’s hypothesis is accepted. These findings are similar to those of previous studies (Younas, Klein, Trabert, & Zwergel, 2019; Pathan, 2009). Conversely, they contradict those of (Alam, Abbas, & Hafeez, 2020; Ferreira, 2007; Brick and Chidambaran, 2007; Vafeas, 1999), which reported a negative association, and Chaudhary (2020), who found no significant effect. Therefore, the results of this study suggest that the more the board meetings, the higher the risk-taking, which highlights the agenda of board meetings. Though, the frequency of the board meetings may be high, the board's may not necessarily discuss risk-taking; thus, allowing managers to engage in behavior that might expose the firm to higher risks. In contrast, more board meetings accord the board sufficient time to holistically appraise business opportunities and the associated risks; which may lead the firm to take higher risks in an attempt to maximize firm’s value. This argument is grounded on the propositions of the modern portfolio theory; that the higher the risk the higher the returns.

For the control variables, the results indicate that firm age, firm size, and bank capitalization have a significant positive effect on risk-taking. Faced with organizational inertia, competition, and declining performance, older firms tend to seek new growth opportunities; therefore, managers are more likely to engage in risk-taking behaviors. Similarly, large firms have enormous resources; hence they are more likely to take more risks than smaller ones. Also, large firms invest more in R&D thus have higher propensities to take higher risks in an attempt of acquiring high and new technologies. The positive association between bank capitalization and risk-taking is supported by the "moral hazard" hypothesis, which claims that low capitalized banks assume higher risks and are characterized by higher NPLs than high capitalized banks.

## **5. Conclusion**

Studies attribute the recent global financial crisis to excessive risk-taking by banks and other financial institutions. Finance literature suggests that board effectiveness determines the extent to which a firm takes risks. The board's effectiveness is determined by board activities, and in particular the frequency of board meetings and the agenda. Though prior studies have demonstrated an important link between board meetings and bank risk-taking, extant literature shows mixed and inconclusive findings. Therefore, this study aimed to contribute to the debate by examining the impact of board activity on risk-taking from an emerging economy. Using a sample of 36 Kenyan banks and panel data for the 2008 – 2018 and multiple panel data regression models, the finding of the study show that board activity significantly and positively affects risk-taking. These findings can be interpreted from perspectives: board's agenda and whether risk-taking is an item for consideration during board meetings. First, without proper and effective board's oversight, managers are likely to engage in behaviours that expose the firm to excessive and uncalculated risks. Secondly, a high frequency of board meetings accords the board of directors enough time to review and assess the firm's risk profile. Proper assessment of risks and the expected risks may make the firm take higher risks expecting to maximize shareholders value. Therefore, this study concludes that board activity is an essential internal control mechanism that significantly affects risk taking. In addition, the extent that board activity leads to calculated risk taking and ultimately improved returns depends on the frequency of the meetings' and the agenda. The frequency of board meetings should improve the board's oversight role over managerial behaviours that exposes the firm to unreasonable risks. Again, the board should consider risk taking as one of their main agenda, and the existing business opportunities should be weighed against the expected returns;

since, higher risks are usually associated with higher returns. Thus, based on prior literature and theoretical propositions of the Modern Portfolio theory, this study concludes that board activity will enable a firm assume higher and calculated risks, which will maximize shareholders' wealth. For managerial and policy implication the study proposes a mandatory minimum number of board meetings and that the firm's risk profile should at all times be an item for deliberation.

#### **6. Limitations and Future Research Direction**

Despite the novelty of the findings, the study has several limitations. First, the study focused only on commercial banks, which are highly regulated thus have robust governance mechanisms; therefore, it may be difficult to generalize the findings in non-financial institutions, which calls for further research. Second, the study established the relationship between board activity on risk-taking; however, it would be essential to assess whether this relationship ultimately leads to increased return, which is a possible area for future research. Third, the study was conducted in a developing economy that is considered a weak legal and governance system; therefore, future researchers should consider corroborating these findings from emerging and developed economies.

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