The Impact of Internal Governance Mechanisms on Operational Risk: The Algerian Banking Sector

CHAREF Aicha [1], AZZAOUI Khaled [2]

[1] PhD Student, Higher School of Commerce, Laboratory of Applied Studies in Commercial Sciences and Management Sciences, (Algeria), a_charef@esc-alger.dz

[2] Professor, Higher School of Commerce, Laboratory of Applied Studies in Commercial Sciences and Management Sciences, (Algeria), kh_azzaoui@esc-alger.dz

Received on: 20/03/2025 Accepted on: 25/06/2025 Published on: 30/06/2025

Abstract :

This research examines seven hypotheses regarding the impact of internal governance mechanisms on operational risk in the banking sector. The study is based on a sample of 14 Algerian commercial banks over 10 years (2010-2019). It utilizes panel data econometrics to examine the correlation among diverse governance factors, such as board characteristics, capital concentration, and operational risk. The results demonstrate that board independence, CEO duality, meeting frequency, and the presence of a risk committee substantially influence operational risk within the banking industry.

Keywords : governance, operational risk, panel data.

JEL Classification Codes : G34, G32, C23

Introduction :

For many different reasons, banking governance is important in emerging nations—especially Algeria. First, the financial system is structurally weak primarily due to a lack of diversification (Aboura & Mohamed, 2017). Given that banks form as its pillar, the system stays weak. Since banks serve as its central pillar, the system remains vulnerable. Additionally, the financial market is not as developed as in other countries, mainly due to a limited financial culture (Bouzar, 2010).

Researchers (Shleifer & Vishny, 1997) and (La Porta et al., 2000) have approached governance from a narrow lens, focusing on shareholder protection and value maximization, often at the expense of other stakeholders. The (OCDE, 1999) defines corporate governance

Corresponding author.

as a comprehensive system that includes the relationships among management, the board of directors, shareholders, and various stakeholders.

Undeniably, Inadequate banking governance compromises financial stability and economic efficacy, as evidenced by the 2008 financial crisis (N. BERGER et al., 2005). Theoretical frameworks, such as agency, facilitate the analysis of stakeholder interactions, therefore informing banks' strategic and managerial decisions and impacting risk management and long-term stability (Belaid et al., 2017).

The agency problem in financial organizations is caused by inadequate capital owner-manager differentiation, which conflicts with shareholders and executives (Berle & Means, 1932). Consequently, improving banking governance via efficient procedures is essential to align stakeholders' interests and foster appropriate governance of financial institutions (Belaid et al., 2017). These mechanisms also serve as a fundamental lever to anticipate and mitigate banking risks, mainly operational risk (Lobez, 2010). This represents a significant threat to banks due to the higher information asymmetry compared to non-financial firms (R. Barth et al., 2004).

This paper investigates how internal governance systems affect operational risk—a crucial but underappreciated problem, especially in the Algerian banking industry. Research on this subject is partly lacking due to the restricted availability of data and difficulties in precisely evaluating these hazards. As such, this research aims to answer the following query: **To what extent do internal governance mechanisms contribute to reducing operational risk in the Algerian banking sector?**

The study relies on a two-pronged approach : a literature review that examines the influence of internal governance mechanisms on operational risk, mobilizing the main theoretical frameworks and existing practical studies, and an empirical analysis to compare these theoretical approaches with the reality of the Algerian banking sector to assess their applicability and actual impact on operational risk.

I. theoretical framework and hypotheses

1. The impact of internal governance mechanisms on operational risk :

One of the most dangerous elements confronting financial institutions nowadays is operational risk, which calls for firm management to find and reduce. With the banking sector's technical advancement and economic liberalization, these risks have intensified due

to the increased complexity of systems and the challenges posed by evolving financial markets (Aboura & Mohamed, 2017)& (Benaroch & Fink, 2021).

Per the Basel Committee, operational risk is the risk of loss due to flawed processes, human error, system failures, or external events(Basel Committee on Banking Supervision, 2011).

Academics underline the need for operational losses and the significant impact of corporate governance systems on operational risk control. According to (Ellul, 2015)risk management has to be a strategic lever supported by good governance to guarantee the viability of financial institutions. Related research (Stulz, 2008) emphasized the pivotal function of the board of directors as a fundamental component of governance, especially in establishing and overseeing risk tolerance. (Nsaibi et al., 2020)A positive link was found between governance mechanisms (such as board size and director independence) and operational losses.

The financial literature has not fully resolved the relationship between governance mechanisms and operational risk. To contribute to the debate, we examined the impact of internal governance mechanisms (e.g., board size, director independence, duality, Frequency, ownership concentration, debt level, and risk committee) impact on banking operational risk.

1.1. Board directors :

In research on corporate governance, the size of the board is an important topic ,especially concerning its impact on operational risk. Still, the interaction between these two components is complicated and open to contradicting empirical data. On the one hand, studies like those of (Smaili et al., 2009) and (Chernobai et al., 2011) highlight that larger boards may increase operational risk due to difficulties in coordinating members and high communication costs.

On the other hand, research like that of (Wang et al., 2013)shows a negative correlation between board size and the occurrence of operational incidents. These studies suggest that larger boards enhance supervision mechanisms with their diversity of skills and enriched informational resources.

Finally, studies by (de Andres & Vallelado, 2008)show that the size of a board determines a delicate trade-off between the efficiency of a smaller board, which promotes ideal coordination, and the advantages of a larger board, which enables diverse expertise and solves the challenging needs of financial institutions.

We suggest the following theory to improve empirical research on Algeria's banking industry:

H1: Board size positively affects the level of operational risk in financial institutions.

1.2. Board Independence

In the banking sector, governance relies on mechanisms aimed at reducing risks and ensuring the sustainability of financial institutions. The resource dependency theory, developed by Pfeffer and Salancik , sheds light on this dynamic by emphasizing that banks, as open organizations, depend on their environment to access essential resources, such as capital, skills, or stakeholder trust (Hillman & Dalziel, 2003).

In this view, board independence helps to enable proactive management of external resource dependency and monitoring of choices, hence improving resilience and the growth of banks in a complex and unpredictable environment(Adja, 2022).

Academic research on how board independence affects operational risk is still conflicting. Some researchers argue that increasing the proportion of independent directors improves corporate governance and reduces operational risk. For example(Pathan, 2009).

Director independence, according to (Fama & Jensen, 1983) reduces managerial opportunism and advances openness in decision-making, lowering the likelihood of dishonest behavior and poor performance standards. Moreover,(Beasley, 1996)& (DECHOW et al., 1996) confirm this theory by proving that adding outside directors lowers the financial fraud risk.

Conversely, another area of the studies emphasizes fewer clear effects. Director independence may lead to more sensible strategic decisions, perhaps forsaking responsiveness or innovation, therefore reducing some operational risks (Elshandidy et al., 2013).

According to a review of the present research, the empirical results are conflicting, and independent directors' theoretical impact on banks' operational risk is questionable. In this perspective, our study aims to enrich this debate by testing the following hypothesis:

H2: The percentage of independent board members negatively affects operational risk in financial institutions.

1.3. Duality of the CEO-Chairman Roles

Another internal mechanism pertains to the configuration of management and control roles, which may uncover operational efficiency concerns and provide insights into them. Two primary theoretical perspectives pertain to this issue. Many proposals suggest separating

the CEO and Chairman of the Board roles (Fama & Jensen, 1983) to reduce conflicts of interest and prevent excessive power concentration. Conversely, some studies contend that job duality promotes coordination and fosters a coherent strategic vision, strengthening leadership.(Aderomou, 2020).

Academic research has shown tremendous interest in the duality—that is, the blend of chairman and CEO duties. Agency theory advises the division of duties to guarantee efficient supervision and prevent conflicts of interest(Moris, 2014). In contrast, stewardship theory underlines the advantages of centralized leadership, which may lower coordination costs and increase organizational efficiency(Aderomou, 2020).

Empirically, results are mixed. Studies show that duality is associated with poor governance and increased risks, particularly in the banking sector (Simpson & Gleason, 1999), where it is seen as a risk factor. However, other research suggests that a dual structure may reduce the risk of failure, especially when the leader is more reluctant to take risks (Grove et al., 2011). Duality is also linked to financial transparency issues, with studies suggesting that companies where the CEO holds both roles are more likely to manipulate financial information (Dechow et al., 1996).Thus, the following hypothesis is tested:

H3: Duality has a positive effect on the level of operational risk in financial institutions.

1.4. Meeting Frequency

Effective governance requires the board to fill information gaps and delegate decision-making. By communicating and sharing authority, boards can improve collaboration and accountability. Additionally, board meeting frequency affects operational outcomes like productivity, profitability, and team dynamics. Research supports the idea that active board engagement drives organizational success(de Andres & Vallelado, 2008); (BAYSINGER & BUTLER, 1985); (Vafeas, 1999).

The frequency of board meetings is a critical factor often overlooked in economic frameworks and government laws. This disparity might affect company management mainly due to the different approaches applied in different circumstances. As such, the frequency of meetings should be changed to match the board of directors specifications (BAYSINGER & BUTLER, 1985).

More engaged boards, shown by meeting frequency, have been statistically connected to better operational performance. (Hemrit, 2018) observes that a less active board may reduce the frequency and quality of discussions on operational risks, which weakens organizational

vigilance and the company's ability to respond to these challenges. Similarly, (Greco, 2011)suggests that increased board activity would reduce agency conflicts and risks associated with poor governance. Thus, we formulate our hypothesis as follows:

H4: Meeting frequency hurts operational risk.

1.5. Ownership Concentration

In banking governance, ownership concentration refers to capital distribution among shareholders. This internal mechanism ensures effective managerial control and regulates risk-taking. Most shareholders with significant capital can take disciplinary action against managers (Fernández, & Arrondo, 2005).

These actions aim to align the interests of executives with those of shareholders while limiting opportunistic or excessively risky behaviors (Hamdi et al., 2018).However, ownership concentration can also exacerbate agency conflicts of type II between majority and minority shareholders (La Porta et al., 2002).

Studies on the impact of ownership concentration on banking risk-taking show mixed results. Some research indicates that ownership concentration is associated with higher risk, explained by majority shareholders' incentives to adopt riskier strategies to maximize their profitability (Haw et al., 2010), (Jr. Caprio et al., 2003).

Conversely(Marco & Robles, 2005) and (Iannotta et al., 2007) consider that high ownership concentration mitigates agency problems, as majority shareholders have increased power to influence strategic decisions and limit the opportunistic behaviors of executives.

This research aims to enrich the debate by focusing on the Algerian banking sector. To this end, we state the following hypothesis:

H5: Ownership concentration negatively impacts operational risk.

1.6. Debt Level

Banks have a financial structure heavily based on debt, which results in a much higher leverage ratio than non-financial firms(TALHAOUI, 2024). According to agency theory developed by (C. Jensen & H. Meckling, 1976), leverage is seen as a corporate governance tool due to its impact on executives' financial discipline and its close relationship with economic stability and the regulation of banks (N. BERGER et al., 2005).

Debt imposes financial constraints on the company, forcing managers to maintain certain performance levels to ensure interest payments. This can serve as a control mechanism limiting opportunistic management.

(Wolff & I. Papanikolaou, 2010)study revealed that excessive and poorly managed debt was a key factor in the 2007-2008 financial crisis. Often opaquely, banks highly relied on leverage, which made them more susceptible to economic shocks. (Renaudin, 2012)further emphasizes how too much debt restrictsbanks' capacity to absorb operational risk-related losses. Therefore, we test the following hypothesis:

H6: Debt negatively impacts operational risk.

1.7. Risk Management Committee Presence

Optimization management committees are essential governance tools that improve internal control systems, organizational flaws, and organizational control. Tight risk identification and proactive risk management boost financial performance while limiting managers' opportunism.

This mechanism thus promotes more transparent, responsible corporate governance in line with sound governance principles (Abubakar et al., 2024).

The literature on risk management committees and operational risk highlights the importance of adopting a systematic and structured approach to organizational risk management. (Agustin & Utama, 2024) and (Edogbanya & Kamardin, 2015) have shown that a risk management committee helps improve financial performance, particularly in non-financial companies. (Subramaniam et al., 2009) discuss the role of the risk management committee as a fundamental element supporting governance and overseeing strategies, policies, and processes related to risk management within an organization.

The literature emphasizes how important governance systems like risk management committees are in controlling operational risk in companies' organizations, forming decision-making and guaranteeing ongoing monitoring. Our theory so is as follows:

H7 : A risk management committee negatively impacts operational risk in the banking sector.

II. The empirical section:

1. RESEARCH METHODOLOGY :

Our study's sample consists of 14 Algerian banks [1] (6 public banks and 8 private banks) **from January 1, 2010, to December 31, 2019** (10 years), representing 70% of the Algerian

[1] The studied banks are: BNA, BADR, BDL, BEA, CPA, and CNEP (public banks); NATXIS, BNP PARIBAS, SGA, ABC, AGB, Trust Bank, Franca Bank, and Housing Bank (private banks).

market share. Financial data were extracted from balance sheets and income statements, while governance information was gathered from the management reports of the studied banks.

This research evaluates operational risk utilizing the Basic Indicator Approach (BIA) as proposed by the Basel II Committee. This selection is substantiated by several factors about the practicality, robustness, and adaptability of this approach within the banking industry[2].

The variables, along with their measurement methods and academic references justifying these choices, can be summarized as follows:

TABLE 01: Dependent variable

Variable	Notation	Measure	Empirical references
Operational Risk	OPR	ln (15%×Average Net Banking Income over 3 years)	(Lavreniuk et al., 2024)&(ALLAM et al., 2022)

Source : Prepared by the author

TABLE 02: Independent variable

Variable	Notation	Measure	Empirical references
Size of board directors	Sizebrd	Number of Boards of Directors	(Simpson & Gleason, 1999)
Board Independence	Indep	$\frac{external\ board\ members}{total\ number\ of\ board\ directors}$	(de Andres & Vallelado, 2008)
Meeting Frequency	Meet	The number of meetings held during the financial year	(de Andres & Vallelado, 2008)
Ownership structure	Owns	The largest shareholder's share of a bank	(Jr. Caprio et al., 2003)
Duality	Dual	1 if the Chairman of the Board (PCA) is also the CEO, 0 otherwise.	(Simpson & Gleason, 1999)
Risk Committee	Rcomm	Binary variable that is 1 if the bank has a Risk Management Committee and 0 otherwise.	(Agustin & Utama, 2024)
Leverage level	Lev	$\frac{Loans}{Total\ assets}$	(Dechow et al., 1996)

Source : Prepared by the author

[2] According to numerous sector manager interviews, the Basic Indicator Approach was the most popular in the Algerian banking industry due to its cost-effectiveness and ease of implementation.

2. Descriptive statistics:

The descriptive statistics provided include the following values for each variable:

TABLE 03: Correlation matrix

Variable	Obs	Mean	Std. Dev.	Min	Max
Opr	140	21.22481	1.216353	18.4805	23.5902
Sizebrd	140	6.992857	1.471535	5	11
Indep	140	.0726951	.1262656	0	.4
Meet	140	6.485714	1.727833	2	11
Owns	140	.5714286	.4966486	0	1
Lev	140	.6599325	.1044798	.333667	.840885

Source : Generated by the author using Stata

TABLE 04:Binary variable

Variable	Indicator variable	Frequency	Percent
Duality	0 (Chairman of the Board ≠ CEO)	83	59.29%
	1 (Chairman of the Board = CEO)	57	40.71%
Risk Committee	0 (No risk committee)	60	42.86%
	1 (Risk committee present)	80	57.14%

Source : Generated by the author using Stata

The results show very significant variation among the sample banks. Algerian banks have small boards of directors (ranging from 5 to 11 members) and varying percentages of independent directors (max 40%), compared to American banks, which influences governance(Simpson & Gleason, 1999). Regarding the duality of the Chairman and CEO responsibilities, 40.71% of banks combine their posts, while 59.29% keep them apart. Besides, 57.14% of banks have a risk management committee. The results highlight different governance and risk management approaches, which suggests the need for a closer study of the processes causing these differences.

3. The examination of correlations :

We use Pearson correlation and Variance Inflation Factor analysis to eliminate multicollinearity, which can skew panel data regression estimates and reduce result validity.

These tests detect explanatory variable collinearity and issues that may affect coefficient interpretation.

- **Pearson Correlation Test :**

TABLE 05:Correlation matrix

	Opr	Sizebrd	Indep	Dual	Meet	Owns	Rcomm	Lev
Opr	**1.0000**							
Sizebrd	**0.4476**	**1.0000**						
Indep	**-0.6869**	**-0.4170**	**1.0000**					
Dual	**0.7398**	**0.2618**	**-0.4788**	**1.0000**				
Meet	**0.2241**	**-0.0665**	**0.1163**	**0.3995**	**1.0000**			
Owns	**0.8228**	**0.6258**	**-0.6672**	**0.7177**	**0.1018**	**1.0000**		
Rcomm	**-0.0000**	**0.0942**	**-0.0521**	**-0.1637**	**0.0599**	**0.1250**	**1.0000**	
Lev	**0.3140**	**0.2407**	**-0.3804**	**0.1448**	**0.1774**	**0.2716**	**0.1153**	**1.0000**

Source: Generated by the author using Stata

- **VIF test:**

TABLE 06:Vif test

Variable	VIF	1/VIF
Owns	**5.09**	**0.196293**
Dual	**3.87**	**0.258355**
Indep	**2.26**	**0.442528**
Sizebrd	**1.91**	**0.524198**
Meet	**1.68**	**0.593555**
Lev	**1.32**	**0.756293**
Rcomm	**1.29**	**0.777407**
Mean VIF	**2.49**	

Source : Generated by the author using Stata

Pearson correlation and VIF tests show no multicollinearity. Owns have moderate multicollinearity within acceptable limits. According to(Gujarati, 2003) , r>0.8 in the Pearson

test indicates a problem. (de Bourmont, 2012) also states that a Variance Inflation Factor (VIF) above 10 indicates multicollinearity.

Ownership structure affects board composition and corporate governance. Board independence decreases when ownership is highly concentrated because majority shareholders control director appointments (Barako & Tower, 2007).This situation emphasizes CEO-chairman duality, strengthening executive authority (Vural & Simoes, 2023).

To maintain control, strong shareholders prefer smaller boards (Stepanova & Ivantsova, 2012).Therefore, these interactions explain the correlation between ownership structure, board independence, executive duality, and board size.

- **Econometric model :**

In this paper, we use panel data-based econometrics. This analytical choice lets us study bank heterogeneity simultaneously due to the data's individual and temporal aspects. Our balanced panel model makes all bank observations available throughout the research period.

We will use panel model regression to examine Algerian Banks' operational risk between 2010 and 2019 due to internal governance systems:

$$OPR_\{it\} = \beta_0 + \beta_1 SIZEBRD_{\{it\}} + \beta_2 INDEP_{\{it\}} + \beta_3 DUAL_{\{it\}} + \beta_4 MEET_{\{it\}} + \beta_5 OWNS_{\{it\}} + \beta_6 RCOMM_{\{it\}} + \beta_7 LEV_{\{it\}} + \varepsilon_{\{it\}}$$

i: Represents the individual dimension, corresponding to the number of banks in the sample (1,2, 3…,14).

t: the temporal dimension, representing the study years (t=2010,..,2019).

$\boldsymbol{\beta_0}$: Constant term.

$(\boldsymbol{\beta_1} \dots, \boldsymbol{\beta_k})$: Coefficients of the explanatory variables.

$\boldsymbol{\varepsilon_{\{it\}}}$: Error term.

4. Econometric Tests :

To validate our approach, we proceeded through several steps :

- **Homogeneity test :**

This test allowed us to assess the existence of individual effects by determining whether each bank has specific characteristics influencing operational risk.

TABLE 07:f-test for the first model

Statistic	P-value
F (13,121) =14.31	0.0000

Source : Generated by the author using Stata

The p-value of the F-statistic, which is 0.0000, is significantly lower than 5%. Therefore, we reject the null hypothesis of homogeneity, confirming the presence of significant individual effects in our model.

- **Hausman test :**

Once the individual effect was confirmed, this test was applied to determine the optimal econometric model between the fixed effects model and the random effects model.

TABLE 08: Hausman test

Statistic	P-value
Chi2(5) =9.72	0.0835

Source: Generated by the author using Stata

The Hausman test in the table above shows variability in our analysis model's effects with a p-value below 10%. This implies biased random effects model estimators. Since individual effects and explanatory variables are correlated, the fixed effects model is preferred.

- **Heteroscedasticity test :**

Heteroscedasticity tests are crucial to confirm if the variance of mistakes is constant, both at the intra-individual level that is, across time for the same individual and the inter-individual level between many people or groups. By spotting and fixing any possible heteroscedasticity, this test guarantees the accuracy of the estimations.

TABLE 09: Heteroscedasticity test

Econometric Tests	Statistic	P-value
Breusch-Pagan test (Intra-individus)	Chi2(1) =0.61	0.4358
Wald test (interindividus)	F (7 ,132) =63.52	0.0000

Source : Generated by the author using Stata

The results of these tests clearly indicate the presence of a problem of heteroscedasticity (P-value<5%) both within and between individuals in our model.

- **Autocorrelation test:**

The Wooldridge test for autocorrelation is specifically used in the context of panel data to check for autocorrelation in the residuals. The results of this test are presented as follows:

TABLE 10:Wooldridge test

Statistic	**P-value**
F (1,13) =32.065	0.0001

Source : Generated by the author using Stata

These test results clearly show that autocorrelation is present in the residuals, with a p-value below 5%.

Because of intra-group correlation, heteroscedasticity, and autocorrelation, panel data in this work could skew standard linear regression. PCSEs—correlated panels corrected standard errors—were used to handle these problems. This approach adapts standard errors for autocorrelation, error variance, and group correlation. PCSEs enhance coefficient estimates, so ensuring the accuracy and dependability of statistical tests and confidence intervals.

III. Results and discussion :

This section presents the results of the regressions conducted to analyze the impact of internal governance mechanisms on operational risk in the Algerian banking sector. The results of our model are detailed, focusing on the variables' significance and the models' overall fit.

TABLE 11: The PCSE results

Independant variable	**Dependant variable : Opr**	
	Regression panels corrected standard errors (PCSE)	
	Coef	**P>z**
Sizebrd	-0.0237314	0.497
Indep	-2.636359 **	0.000
Dual	0.4626096**	0.011
Meet	0.0874891*	0.007
Owns	1.244478 **	0.000
Rcomm	-0.1371203 **	0.025
Lev	0.4197391	0.415
Cons	19.91686 **	0.000

*** p<0.05; ** p<0.01; R-squared= 0.7711**

Wald chi2(7) 3579.53; Prob > chi2=0.0000; N=140

Source : Generated by the author using Stata

The analysis of the regression findings in the summary tables indicates that the Wald Chi2 test for the overall significance of model is highly significant at the 1% level (Prob > chi2 = 0.0000). This signifies a strong alignment of the models with the data and an adequate explanatory capacity.

Concerning the importance of explanatory factors, five of the seven variables INDEP, DUAL, OWNS, MEET and RCOMM considerably influence operational risk. Conversely, SIZEBRD, and LEV exhibit no statistically significant effect. The results may be encapsulated as follows:

- ✓ According to the study, operational risk (0.497) is somewhat unaffected by board size. More members can improve control and add varied knowledge, but it can also complicate decisions and reduce efficiency (B. Adams & Mehran, 2012)
- ✓ The presence of independent directors significantly reduces operational risk (-2.636, p=0.000), confirming (Pathan, 2009)finding that independent directors improve monitoring and limit opportunistic behavior.
- ✓ CEO duality increases operational risk (+0.462, p=0.011), aligning with (Fama & Jensen, 1983), who argued that power concentration weakens supervision.
- ✓ The frequency of board meetings slightly raises operational risk (+0.087, p=0.007), supporting (Vafeas, 1999), who suggested frequent meetings may signal internal issues.
- ✓ Executive ownership increases the operational risk (+1.244, p=0.000), as CEOs with financial stakes may take more significant risks for higher returns (Haw et al., 2010); (Jr. Caprio et al., 2003)
- ✓ The presence of a risk committee reduces operational risk (-0.137, p=0.025), highlighting its effectiveness in mitigating banking risks.
- ✓ Financial leverage does not significantly affect operational risk (+0.419, p=0.415), suggesting prudent debt management among the sampled banks.

Conclusion :

This study explores how internal governance affects operational risk in Algerian banks using PCSE regressions. The results show that specific governance mechanisms are key in

shaping risk exposure. Independent directors and risk committees help reduce operational risk, while CEO duality, frequent board meetings, and concentrated ownership tend to increase it.

The results imply that financial incentives and centralized control might inspire risky behavior. Conversely, board size and financial leverage have little bearing on each other, meaning that merely enlarging the board or changing the financial structure of a bank is insufficient to improve risk control. A more deliberate legislative approach is therefore required. Improving board independence, enhancing risk management techniques, and changing governance policies that support careless decision-making would help to create a more stable banking environment. Future studies should investigate different governance structures and outside elements affecting risk in the banking sector.

Bibliography List :

1. Aboura, A., & Mohamed, D. C. (2017). Le système bancaire algérien : Evolution historique, libéralisation du secteur et défis de modernisation. مجلة الاقتصاد وادارة الاعمال, 1(2), 1-18. https://asjp.cerist.dz/en/article/81886
2. Abubakar, A., Bashar, Y. I., Nur Nashreen, Z., & Siti Fatimah, M. K. (2024, janvier). Board attributes, risk management and financial performance : Insights from Iraq. Annals of Management and Organization Research 5(2):115-126. 10.35912/amor.v5i2.1810
3. Aderomou, B. R. (2020). L' Influence dynamique de la séparation des fonctions de Président du Conseil d'Administration et de Dirigeant sur la performance des entreprises. Journal of Academic Finance 11(1). https://doi.org/10.5281/zenodo.4817607
4. Adja, H. (2022). Analyse des Relations entre le Conseil d'Administration, la Structure du Capital et la Performance Financière. ECOLE SUPERIEURE DE COMMERCE.
5. Agustin, I. D., & Utama, C. A. (2024, janvier). The Influence Of Risk Management Committee And Family Ownership With Company Performance In Indonesia : Busy Directors As Moderating Variable. EKOMBIS REVIEW Jurnal Ilmiah Ekonomi Dan Bisnis 12(1). 10.37676/ekombis.v12i1.5158
6. ALLAM, I., ACHIBANE, M., & KRAMI, R. (2022). Impact of operational risk management on the performance of Moroccan credit institutions | International Journal of Accounting, Finance, Auditing, Management and Economics. International Journal of Accounting, Finance, Auditing, Management and Economics, 3(4-1), 284-301. https://doi.org/10.5281/zenodo.6611936
7. B. Adams, R., & Mehran, H. (2012). Bank board structure and performance : Evidence for large bank holding companies. Journal of Financial Intermediation, 21(2), 243-267. https://doi.org/10.1016/j.jfi.2011.09.002
8. Barako, D. G., & Tower, G. (2007). CORPORATE GOVERNANCE AND BANK PERFORMANCE : DOES OWNERSHIP MATTER? EVIDENCE FROM THE KENYAN

BANKING SECTOR. Corporate Ownership & Control / Volume 4, Issue 2, Winter 2006-2007. https://doi.org/10.22495/cocv4i2p13

9. Basel Committee on Banking Supervision (Éd.). (2011). Principles for the sound management of operational risk. Bank for Internat. Settlements. https://www.bis.org/publ/bcbs195.pdf
10. BAYSINGER, B. D., & BUTLER, H. N. (1985). Corporate Governance and the Board of Directors : Performance Effects of Changes in Board Composition. The Journal of Law, Economics, and Organization, 1(1), 101-124. https://doi.org/10.1093/oxfordjournals.jleo.a036883
11. Beasley, M. S. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. Accounting review, 443-465. https://www.jstor.org/stable/248566
12. Belaid, F., Boussaada, R., & Belguith, H. (2017). Bank-firm relationship and credit risk : An analysis on Tunisian firms. Research in International Business and Finance, 42, 532-543. https://doi.org/10.1016/j.ribaf.2017.04.011
13. Benaroch, M., & Fink, L. (2021). No Rose without a thorn : Board IT competence and market reactions to operational IT failures. Information & Management, 58(8), 103546. https://doi.org/10.1016/j.im.2021.103546
14. Berle, A. A., & Means, G. (1932). The Modern Corporation and Private Property. Transaction Publishers.
15. Bouzar, C. (2010). LES CONTRAINTES DE DEVELOPPEMENT DU MARCHE FINANCIER ALGERIEN. REVUE CAMPUS, 18, Article 18. https://revue.ummto.dz/index.php/campus/article/view/176
16. C. Jensen, M., & H. Meckling, W. (1976). Theory of the firm : Managerial behavior, agency costs and ownership structure (Vol. 3). North-Holland.
17. Chernobai, A., Philippe, J., & and Fan, Y. (2011, décembre). The Determinants of Operational Risk in U.S. Financial Institutions. Journal of Financial and Quantitative Analysis 46(6). 10.2139/ssrn.1360266
18. de Andres, P., & Vallelado, E. (2008). Corporate governance in banking : The role of the board of directors. Journal of Banking & Finance, 32(12), 2570-2580. https://doi.org/10.1016/j.jbankfin.2008.05.008
19. de Bourmont, M. (2012). La résolution d'un problème de multicolinéarité au sein des études portant sur les déterminants d'une publication volontaire d'informations : Proposition d'un algorithme de décision simplifié basé sur les indicateurs de Belsley, Kuh et Welsch (1980). Comptabilités et innovation. https://hal.science/hal-00691156v1
20. DECHOW, P. M., G. SLOAN, R., & P. SWEENEY, A. (1996). Causes and Consequences of Earnings Manipulation : An Analysis of Firms Subject to Enforcement Actions by the SEC*—DECHOW - 1996—Contemporary Accounting Research—Wiley Online Library. Contemporary Accounting Research: Volume 13, Issue 1. https://doi.org/10.1111/j.1911-3846.1996.tb00489.x

21. Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1996). Causes and Consequences of Earnings Manipulation : An Analysis of Firms Subject to Enforcement Actions by the SEC. Contemporary Accounting Research, 13(1), 1-36. https://doi.org/10.1111/j.1911-3846.1996.tb00489.x
22. Edogbanya, A., & Kamardin, H. (2015, mai). The Relationship between Audit and Risk Management Committees on Financial Performance of Non-financial Companies in Nigeria : A Conceptual Review. Mediterranean Journal of Social Sciences 6(3). 10.5901/mjss.2015.v6n3p206
23. Ellul, A. (2015). The Role of Risk Management in Corporate Governance. Ehe Annual Review of FinancialEconomics,Volume7,. https://doi.org/10.1146/annurev-financial-111414-125820
24. Elshandidy, T., Fraser, I., & Hussainey, K. (2013). Aggregated, voluntary, and mandatory risk disclosure incentives : Evidence from UK FTSE all-share companies. International Review of Financial Analysis, 30(C), 320-333. https://doi.org/10.1016/j.irfa.2013.07.010
25. Fama, E. F., & Jensen, M. C. (1983). Separation of Ownership and Control. Journal of Law and Economics, 26(2,), 301-325. http://www.jstor.org/stable/725104
26. Fernández, C., & Arrondo, R. (2005, octobre 25). Alternative Internal Controls as Substitutes of the Board of Directors. Corporate Governance: An International Review: Volume 13, Issue 6. https://doi.org/10.1111/j.1467-8683.2005.00476.x
27. Greco, G. (2011, mars). Determinants of board and audit committee meeting frequency : Evidence from Italian companies. Managerial Auditing Journal 26(March):208-229. http://dx.doi.org/10.1108/02686901111113172
28. Grove, H., Patelli, L., Victoravich, L., & Xu, T. (2011, septembre). Corporate Governance and Performance in the Wake of the Financial Crisis : Evidence from US Commercial Banks. Corporate Governance An International Review 19(5). http://dx.doi.org/10.1111/j.1467-8683.2011.00882.x
29. Gujarati, D. N. (2003). Basic econometrics (4. ed). McGraw Hill.
30. Hamdi, B., Mejri, T., & Haloua, S. (2018). Gestion des résultats, seuils comptables et gouvernance d'entreprise : Le cas des sociétés françaises. Finance Contrôle Stratégie, 21-3, Article 21-3. https://doi.org/10.4000/fcs.2838
31. Haw, I.-M., S.M. Ho, S., Hu, B., & Wu, D. (2010). Concentrated control, institutions, and banking sector : An international study. Journal of Banking & Finance, 34(3), 485-497. https://doi.org/10.1016/j.jbankfin.2009.08.013
32. Hemrit, W. (2018, octobre). Risk reporting appraisal in post-revolutionary Tunisia. Journal of Financial Reporting and Accounting 16(4):522-542. http://dx.doi.org/10.1108/JFRA-05-2016-0040
33. Hillman, A. J., & Dalziel, T. (2003). Boards of Directors and Firm Performance : Integrating Agency and Resource Dependence Perspectives. The Academy of Management Review, 28(3), 383-396. https://doi.org/10.2307/30040728

34. Iannotta, G., Nocera, G., & Sironi, A. (2007). Ownership Structure, Risk and Performance in the European Banking Industry. Journal of Banking & Finance 31(7):2127-2149. http://dx.doi.org/10.1016/j.jbankfin.2006.07.013
35. Jr. Caprio, G., Laeven, L., & Levine, R. (2003). Governance and Bank Valuation. Journal of Financial Intermediation 16(4):584-617. http://dx.doi.org/10.1016/j.jfi.2006.10.003
36. La Porta, R., Lopez-De-Silanes, F., & Shleifer, A. (2002). Corporate Ownership Around the World—Porta—1999—The Journal of Finance—Wiley Online Library. Journal of Financial Economics Volume 58, Issues 1–2, 2000, Pages 3-27. https://doi.org/10.1016/S0304-405X(00)00065-9
37. La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor protection and corporate governance—ScienceDirect. Journal of Financial Economics Volume 58, Issues 1–2, 2000, Pages 3-27. https://doi.org/10.1016/S0304-405X(00)00065-9
38. Lavreniuk, V., Prymostka, L., Sokolovska, N., & Prymostka, A. (2024). THE COMPARATIVE ANALYSIS OF METHODS FOR ASSESSING THE IMPACT OF OPERATIONAL RISK ON BANKS' CAPITAL. Socio-Economic Relations in the Digital Society, 1(51), 46-58. https://doi.org/10.55643/ser.1.51.2024.545
39. Lobez, F. (2010). Too big to fail : Gouvernance et régulation des banques. Revue d'économie financière pp. 187-199. https://doi.org/10.3406/ecofi.2010.5830
40. Marco, T. garcia, & Robles, M. D. (2005). Risk tasking behaviour and ownership in the banking industry : The Spanish evidence. Journal of Economics and Business Volume 60, Issue 4, July–August 2008, Pages 332-354.
41. Moris, K. (2014). Le rôle de la gouvernance d'entreprise dans les stratégies de diversification des entreprises : Revues de la littérature et perspectives. Finance Contrôle Stratégie, 17-4, Article 17-4. https://doi.org/10.4000/fcs.1546
42. N. BERGER, A., A. ESPINOSA-VEGA, M., FRAME, W. S., & H. MILLER, N. (2005, novembre 10). Debt Maturity, Risk, and Asymmetric Information. The Journal of Finance: Volume 60, Issue 6 Pages: 2575-3031. https://doi.org/10.1111/j.1540-6261.2005.00820.x
43. Nsaibi, M., Abidi, I., & Rajhi, M. T. (2020). CORPORATE GOVERNANCE AND OPERATIONAL RISK : EMPIRICAL EVIDENCE. International Journal of Economics and Financial Issues, 107-115. https://doi.org/10.32479/ijefi.9861
44. OCDE. (1999). Principes de gouvernement d'entreprise de l'OCDE.
45. Pathan, S. (2009). Strong Boards, CEO Power and Bank Risk-taking | Request PDF. Journal of Banking & Finance 33(7):1340-1350. https://doi.org/10.1016/j.jbankfin.2009.02.001
46. R. Barth, J., Jr. Caprio, G., & Levine, R. (2004). Bank Regulation and Supervision : What Works Best? Journal of Financial Intermediation 13(2):205-248. http://dx.doi.org/10.1016/j.jfi.2003.06.002
47. Renaudin, A. (2012). Modèle de capital économique pour le risque opérationnel bancaire : Estimation, diversification [Actuaire]. l'Université de Lyon.

48. Shleifer, A., & Vishny, R. W. (1997). A Survey of Corporate Governance. The Journal of Finance, 52(2), 737-783. https://doi.org/10.1111/j.1540-6261.1997.tb04820.x
49. Simpson, W. G., & Gleason, A. E. (1999). Board structure, ownership, and financial distress in banking firms. International Review of Economics & Finance, 8(3), 281-292. https://doi.org/10.1016/S1059-0560(99)00026-X
50. Smaili, N., Réal, L., & Hervé, S. (2009, mai). La publication d'une information financière non conforme à la loi et aux normes : Déterminants et conséquences. Comptabilité - Contrôle - Audit 15(1). http://dx.doi.org/10.3917/cca.151.0159
51. Stepanova, A., & Ivantsova, O. (2012). Role of Corporate Governance in Banking Sector : Evidence from All Over the World. Journal of Corporate Finance Research / Корпоративные Финансы | ISSN: 2073-0438, 6(4), Article 4. https://doi.org/10.17323/j.jcfr.2073-0438.6.4.2012.80-86
52. Stulz, R. M. (2008). Risk Management Failures : What Are They and When Do They Happen? Journal of Applied Corporate Finance: Volume 20, Issue 4 Pages: 2-109. https://doi.org/10.1111/j.1745-6622.2008.00202.x
53. Subramaniam, N., McManus, L., & Zhang, J. (2009, avril). Corporate governance, firm characteristics and risk management committee formation in Australian companies. Managerial Auditing Journal 24(May):316-339. http://dx.doi.org/10.1108/02686900910948170
54. TALHAOUI, F. (2024). LES DÉTERMINANTS de la BONNE GOUVERNANCE des banques EN ALGÉRIE. ECOLE SUPERIEURE DE COMMERCE.
55. Vafeas, N. (1999). Board meeting frequency and firm performance. Journal of Financial Economics, 53(1), 113-142. https://doi.org/10.1016/S0304-405X(99)00018-5
56. Vural, G., & Simoes, B. (2023). The nonlinear effects of ownership concentration and board structure on bank performance. Panoeconomicus, 70(1), 101-126. https://doi.org/10.2298/PAN190404002V
57. Wang, T.-S., Lin, Y.-M., & Chao, C.-F. (2013). Board independence, executive compensation and restatement. Applied Financial Economics, 23(11), 963-975. https://doi.org/10.1080/09603107.2013.786160
58. Wolff, C., & I. Papanikolaou, N. (2010). Leverage and Risk in US Commercial Banking in the Light of the Current Financial Crisis. Journal of Financial Stability 14:1-2. http://dx.doi.org/10.2139/ssrn.1570505