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The Moderating Role of Board Governance on the Relationship Between Managerial Overconfidence and Corporate Risk: Evidence from Emerging Markets

Osama Wagdi [1]
Faculty of Management, Economics and Business Technology,
Egyptian Russian University (ERU),
Badr City, Egypt

Walid Abouzeid[2]
School of Business
Associate professor at International Academy for Media science and Engineering,
6th of October City, Egypt

Sharihan Mohamed Aly[3]
College of Management & Technology,
The Arab Academy for Science, Technology & Maritime Transport (AASTMT)
Smart village, Egypt

Abstract: The study investigated the effect of managerial overconfidence on corporation risks within the moderator role of board governance in Brazil, Egypt, India, Russia, Saudi Arabia, South Africa, and Turkey as emerging markets. The study sample consisted of 70 non-financial corporations during the period from 2013 to 2022. “Operational leverage," “Financial leverage," and “total leverage” were estimated as measurements of corporate risk. On the other hand, “the number of board members," "separation of the chairman of the board governance and the chief executive officer (CEO)," “the number of non-executive board members”, “the number of independent board members”, and “board meets” as measurements of board governance. Managerial overconfidence was the construct variable based on overinvestment in the corporation's total assets. According to cross-sectional data analysis, there is an increase in the adjusted R-squared of managerial overconfidence with all types of corporations' risk when adding board governance as the moderating variable. The study concluded that board governance as the moderating variable has contributed positively to explaining the corporation's risks within the managerial overconfidence of the CEO in emerging markets.

Keywords: *Corporation Risk, Board Governance, Managerial Overconfidence, Operational leverage, Financial Leverage.*

JEL Codes: *G30, D91, G32, M12*

[1] ORCID iD : 0000-0003-0451-9726
[2] ORCID iD :0000-0002-7621-7949
[3] ORCID iD :0000-0002-0865-2199

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Introduction

Risks are an essential and inevitable factor facing all corporations. They face various risks that affect their value and performance. There have been many models and theories that address corporate risks, but the greatest trend in financial thought has classified these risks into three main types: Operational risks, which are those risks stemming from operational fixed costs such as wages, salaries, rents, etc., in exchange for financial risks, which are those risks arising from fixed financial costs such as interest on loans and bank facilities, leasing financing obligations, operational financing, etc., and finally total risk resulted from the interaction of operational risks and financial risks for the corporation (Jarrow, 2008; Moosa, 2007).

From the above, it is clear that corporate risks result from the decisions taken by the executive management, whether related to the operational characteristics of the corporation in the sense of choosing the technological pattern used to provide its production mix, which is reflected in the structure of operational costs between fixed operating costs (like fixed versus variable operating costs), in addition to capital structure (determining the extent of reliance on debt funds to finance the corporation's activities and operations). This highlights the importance of senior management in determining the level of risk that characterises the corporation under its management. This is consistent with both Bertrand and Schoar (2003) and Elnahas et al. (2014). They pointed to the influence of senior management on the decisions of the corporation under its management.

While managerial overconfidence has received extensive attention from both professionals and academics, from administrative sciences in general and behavioral finance in particular, some believe that managerial overconfidence is one of the dark aspects of the CEO's personality because of the behavioral biases it entails. The characteristics that characterize this manager are arrogance and pride, which negatively affect the performance of the business corporation due to the personal interest of the manager himself taking precedence over the general interest of the corporation. (Ben-David et al., 2007; Duellman et al, 2015; Zaher 2019) Accordingly, traders in the stock markets seek to search for corporations that have organizational structures characterized by the practice of effective governance. To reduce the behavioral biases of senior administrative leaders, which are characterized as irrational administrative practices, through internal and external mechanisms.

Therefore, the study sought to answer two questions: What is the effect of managerial overconfidence on corporate risk? What is the moderating role of board governance in the relationship between managerial overconfidence and corporate risk? in emerging markets, these questions were answered through evidence of the business environment for Brazil, Egypt, India, Russia, Saudi Arabia, South Africa.

The current study is more extensive and in-depth than many previous studies, such as: Aabo et al. (2021); Ali and Tauni (2021); Baccar et al. (2013); Chang et al. (2015); Guluma (2021); Park and Kim (2009); and Purhanudin and Zakaria (2015). Unique contribution of this study is highlight the moderating role of the board governance as one of the internal governance mechanisms, as the board governance is one of the internal governance mechanisms, based on the supervisory authority of the board governance over both the “Internal Audit” and the “Audit Committee,” rather than the contractual capacity with the “External Auditor," in addition to the board governance's interaction with both the “ownership structure” and the “regulatory and supervisory bodies” in applying governance principles. The board's governance acts as a moderating variable between two variables: managerial overconfidence as the independent variable and corporate risk as the dependent variable in emerging markets.

The structure of the study included five sections, including the current section, which represents the introduction, which includes (2) “Theoretical Rooting and Literature Review" (3) “Study methodology” (4) “Data analysis and hypothesis tests” (5), and the last is “Results and recommendations.

Theoretical Rooting and Literature Review

This section of the study dealt with a review of the concepts related to the three variables in an attempt to understand the intellectual pillars governing them, rather than the relationships between those variables, in addition to analyzing the results of previous studies, especially experimental ones, whether in international or emerging financial markets, for the purpose of identifying research gaps to derive the study hypotheses.

Corporate risks

Financial thought classified the fixed costs incurred by corporations as one of the main sources of risk, as these costs are not related to the level of operational operations within the corporate, which makes them obligations that must be paid, whatever the economic circumstances surrounding the business corporate (especially with regard to the levels of demand in the market for its products). In addition to the rates of exploitation of available production capacities. This resulted in the emergence of three terms that express the risks of corporations in light of the nature of those costs, namely (operational leverage, financing leverage, and total leverage). These concepts can be summarized as follows (Sarkar, 2020):

Operational leverage:

The concept of "operational leverage" referred to the extent to which a business corporate relies on the use of operational fixed costs in its production processes. The degree of that leverage depends on the relative rate of fixed operational costs to the total costs of the production process. This leverage measures the degree of change in operating profit as a result of the change. In revenue.

When the corporate operated with a high degree of operational leverage, this means that the change in revenues will lead to a significant change in net operating income, or in other words that the change in net operating profit is greater than the change in revenues, and thus it can be said that the operational leverage degree measures the impact On the net operating profit arising from the change in the volume of revenues, and when the operational leverage degree is high, the impact on the net operating profit is large; Or in other words, there is a direct relationship between the degree of operational leverage on the one hand; And the level of operational risks on the other hand.

Financial Leverage

The concept of "financial leverage" meant what results from a business corporate's use of debt to finance its assets, resulting from the corporate bearing financial obligations (interest) towards creditors, which is reflected in the holders of ordinary shares, with regard to earnings per share (EPS), where the degree of leverage is measured. Financial calculations are calculated by dividing the rate of change in earnings available to common stockholders by the rate of change in net operating profit.

The financial leverage degree is considered a measure of the financial risk of the corporate, and therefore we find that a business corporate that operates with a high financial leverage degree (that is, whose financing structure includes a high percentage of debt) bears high financial risks, but at the same time (with other factors remaining unchanged); This Magnify maximizes the impact of changes in net operating profit on the profits available to ordinary shareholders, as well as the return on equity, or in other words, there is a direct relationship between the financial leverage degree on the one hand and the level of financial risk on the other hand.

Total Leverage

The concept of "total leverage" meant the combined effect of both operational leverage and financial leverage on the return of common stocks, as a change in revenues leads to greater changes in net operating profit (±), and changes in net operating profit (±) leads to Significant changes in the profits available to shareholders, and hence EPS (±), which has led some to consider total leverage as an indicator of the business risks that characterize the corporate.

Board Governance

Role of board governance

There is academic and professional interest in Board Governance in international and emerging markets (Aluchna and Kuszewski, 2022; Chang et al., 2015; Del Brio et al., 2018; Di Miceli da Silveira, 2022; Pekovic and Vogt, 2021; San-Jose et al., 2021; Shwairef et al., 2021; Villarón-Peramato et al., 2018). This interest included interactive relationships with CEO, as well as implications for financial performance, social responsibility, its risk and preparing financial reports, in addition to responses to corporate governance code.

Agency theory has significantly influenced the field of corporate governance by highlighting the inherent conflicts of interest that arise between shareholders and managers. As the principal-agent relationship forms the crux of this theory, the role of the board governance emerges as a critical element in addressing these conflicts and fostering efficient decision-making processes. In this section, the study delve into the various dimensions of the board's functions under agency theory, exploring its impact on corporate strategy, risk management, and long-term sustainability.

The composition and structure of the board governance played a pivotal role in ensuring effective oversight and accountability. The presence of independent directors, board diversity, and the separation of the CEO and Chairman roles serve as key determinants of board effectiveness. Empirical evidence suggests that a diverse and independent board is more likely to challenge managerial decisions, promote transparency, and safeguard shareholder interests. Moreover, the establishment of specialized board committees, such as audit, compensation, and nomination committees, contributes to enhancing the board's monitoring capabilities and decision-making processes.

Under agency theory, the board governance served as a crucial monitoring and control mechanism to minimize agency costs and prevent managerial opportunism. Active monitoring through regular board meetings, performance evaluations, and the implementation of executive compensation schemes linked to corporate performance can align the interests of managers with those of shareholders. Additionally, the adoption of robust internal control systems and the establishment of risk management frameworks aid in mitigating agency risks and ensuring compliance with regulatory requirements.

The board's strategic role extended beyond monitoring to actively shaping the corporate's strategic direction and fostering value creation for stakeholders. By providing strategic guidance, evaluating investment opportunities, and overseeing mergers and acquisitions, the board contributed to enhancing the corporate's competitive position and long-term sustainability. Effective board involvement in strategic decision-making processes can foster innovation, promote responsible corporate behavior, and enhanced overall corporate performance, thereby maximizing shareholder wealth.

Governance and its mechanisms

The first appearance of the concept of governance dates back to Berle and Means after the Great Depression of 1929 AD (Tricker, 2015), where it appeared implicitly accorporationing the separation of ownership from management, and over the past decades governance issues have gained increasing attention, as the beginning of the current interest in the concept of governance was It came as a reaction to the multiple scandals that emerged in corporation as a result of the agency problem, which is considered a major result of applying the principles of separation between “ownership” and “management,” as many corporation witnessed some crimes of bribery, fraud, and corruption. The beginning of these scandals was from Watergate in the United States of America, which was followed by the collapse of Penn Central Corporation in the 1970s, following which the Foreign Corrupt Practices Act was drafted in 1977, which included the formulation and review of the internal control system.

Calling for disclosure and transparency, and maximizing the performance of these corporations.

Although the concept of governance appeared mainly within financial thought, this concept is considered an intersection between different fields, including economics, organization theory, sociology, and politics, which was reflected in the intellectual enrichment of this concept, so governance is viewed from different perspectives and is applicable to All levels of micro and macro analysis (Charreaux, 2004).

Where governance is known as an integrated system of financial and non-financial control, through which the corporation is managed and controlled, and there are those who define governance as a system of directing, controlling and supervising all activities of corporations, on the basis of organizing the decision-making process and dividing powers and responsibilities among the main parties. In this corporation, with the aim of serving stakeholders in general (Rijsenbilt and Commandeur, 2013).

From the above it became clear that governance must be a culture that emanated from the corporation itself as a strategic goal and vision that is applied permanently. Therefore, the expected role of all corporate managers, professional associations, businessmen's associations, investors, and regulatory and legislative bodies is to spread and promote the culture of governance, given that applying Governance is considered one of the signs of its success and distinction.

The researchers provided the following definition of the concept of governance: "It is a set of internal and external mechanisms that characterize a corporation to organize the powers of strategic and tactical decision-making, and to govern its operational decisions during its interaction with the elements of the surrounding business environment to carry out its mission efficiently, as well as working to achieve its vision effectively, in Under an ethical, regulatory and legal framework that makes the balance of relationships between stakeholders one of the foundations of its organizational culture, in light of sustainable performance, while upholding the principles of disclosure and transparency, which achieves rational management of the organization's resources."

The internal governance mechanisms included the "Corporate board," the "Audit Committee," "Internal Audit," and the "Ownership Structure," each of which has a set of roles, powers, and responsibilities that complemented each other. To strengthen and achieved governance objectives within the corporation, through previous and ongoing oversight of administrative practices and decisions within the corporation.

On the other hand, external governance mechanisms included all parties concerned with subsequent oversight of the administrative practices and decisions that the corporation applied, to ensure the ability of the financial reports issued by the corporation to express the reality of the corporation's financial performance on the one hand, and to determine the extent of its obligations to protect shareholders' rights. And other relevant parties, through monitoring and supervising the extent of the corporation's compliance with the laws, regulations and ethical standards that govern administrative practices within the corporation on the other hand. Thus, external governance mechanisms include "external audit" and "supervisory and regulatory bodies."

The concept of governance spread after the collapses and scandals that affected major corporations, such as the case of Enron Energy. What followed was a series of scandals related to corporations' manipulation of their financial statements, which did not reflect their actual reality, and these manipulations created many risks for corporation. Since information is one of the outcomes of governance mechanisms, Al-Thuneibat, 2016; Oriakhi, 2020) explained that the lack of information related to the risks to which corporations are exposed exposes them to the risks of bankruptcy and liquidation, and harming stakeholders..

The corporate board sets the strategic objectives of the corporation and approves the general plans and policies that govern its workflow, as well as monitors the performance of executive management, ensures the effectiveness of the internal control system, manages the corporation's risks, determines the optimal method for applying governance, and approves the professional policies and standards that must be followed by the corporation. staff; Which is reflected in their performance and actions.

Since the Corporate board assumed the affairs of the corporation based on a mandate from the General Assembly, the decisions of the corporate board usually have a significant impact on the corporation's performance. In order to ensure the proper exploitation of its materials and maximize the wealth of its shareholders, through developing effective strategies for the benefit of all stakeholders, which are implemented by CEO. The Corporate board also bears the task of supervising and monitoring the behavior of CEO when making decisions. The efficiency and effectiveness of the corporate board in carrying out its tasks depends on the size and independence of the Board. The separation between the positions of Chairman of the Corporate board and CEO, the number of Board meetings, etc.

Thus, the corporate board - as one of the administrative mechanisms - plays an important role in preserving the rights of all stakeholders, and taking measures that reduce information asymmetry through adequate disclosure and distancing itself from the risks surrounding the corporation to enable stakeholders to make their decisions by evaluating the corporation's performance. These practices and decisions are evaluated in light of two variables: the expected returns and the degree of risk surrounding them.

Governance and risk management

The Risk Management Framework included two basic assumptions: the first is that corporations seek to add value to shareholders, while the second is that all corporations face the problem of uncertainty, which is represented by the opportunities, challenges, and threats that corporations may face (COSO, 2004). The Risk Committee - which is one of the committees affiliated with the corporation's corporate board - helps deal with the risks of uncertainty efficiently and effectively, as the corporate strategy must be consistent with confronting and managing risks, exploiting opportunities and improving the efficiency and use of capital, and risk disclosure is the core of the risk management process, as It reflects interest in the efficiency and effectiveness of the risk committee. Disclosure of risks provides information about what the corporation may face currently or in the future, as this information is one of the bases for the decision-making process by stakeholders.

With the increased in cases of collapses and financial crises that many corporations have been exposed to worldwide, interest and focus have increased on the importance and necessity of having an effective governance framework within corporations, especially in light of the global financial crisis in 2008, the effects of which shook confidence in some international financial markets. The importance of governance in relation to the risks of corporation can be highlighted in the following points

A- Reducing the risks related to financial and administrative corruption faced by corporations.
B- Raising the performance levels of the corporation and the resulting development process and economic progress of the countries to which these corporations belong.
C- Attracting foreign investments and encouraging local capital to invest in national projects by increasing the efficiency of using the corporation's resources, reducing risks, improving management performance, and achieving transparency.
D- Increasing the ability of national corporations to compete globally and opening new markets for them
E- Ensuring the integrity of all employees of corporations, starting from the board to the lowest employee.
F- Achieving the effectiveness of the internal control system and increasing the effectiveness of external audit.
G- Helping to strengthen the disclosure system and achieving transparency through the internal control system and the information contained in financial reports.

Managerial Overconfidence

Concept: Excessive managerial confidence is described as a behavioral or physiological tendency associated with the CEO of the corporation, especially if there is a combination of the positions of the CEO of the corporation and the Chairman of the Corporate board. This tendency causes future estimates of current events to be exaggerated and better than average effect. These estimates are led in their entirety by the manager. The executive, in the presence of excessive managerial overconfidence, leads to excessive optimistic estimates that ultimately lead to influencing the policies of the corporation under his management, as this excessive managerial overconfidence usually leads to a greater tendency to take risks, which affects the performance and value of that corporation.

The study of the issue of excessive managerial overconfidence has received great controversy in administrative thought. On the one hand, the effect of excessive managerial overconfidence on investment decisions, as Malmendier and Tate (2005) indicated that corporations in which the CEO enjoys excessive managerial overconfidence, their investment decisions are always characterized by excessive investment in... Capital-intensive projects, as Ben-David, et al. (2007) indicated, corporations in which the CEO has excessive managerial confidence have greater investment spending than other corporations. Seputra (2018) also indicated that corporations in which the CEO has excessive management confidence tend to over-invest in a way that leads to inefficient investment decisions, as they have great tendencies towards acquisition and merger decisions.

Managerial Overconfidence and corporate risk

Previous studies focused on analyzing the tendencies of managements of corporations in which the CEO has excessive managerial overconfidence towards determining the appropriate financing structure, as the Park and Kim (2009) that managers have the intention to rely on debt sources when the CEO has excessive managerial overconfidence, and therefore there is a direct relationship between excessive managerial overconfidence and financial leverage.

In a different context, the study by Purhanudin and Zakaria (2015) indicated the existence of an inverse relationship between managerial overconfidence and external debt. Long-term in small-sized corporations, where managers rely on the fact that the greater the corporation’s profits, the less reliance on debt as a source of financing. The study also indicated that executive managers with a low level of education tend to rely on long-term external sources of financing, unlike managers with a background. Finance and technology tend towards proprietary financing based on excessive managerial confidence.Zaher (2019) also indicated the positive impact of managerial overconfidence on debt financing, which means that Managers with managerial overconfidence tend to rely on external sources of funding more than internal sources of funding more than their counterparts from other managers.

The role of the Board under managerial overconfidence

In terms of the relationship between managerial overconfidence and the characteristics of the Corporate board, Baccar et al. (2013) pointed to the positive role of the independence of the Corporate board in reducing the bias resulting from the administrative optimism of CEO.

Regarded the interactive relationship between excessive managerial overconfidence and dividend policies, Seputra (2018) study indicated that a CEO who enjoys excessive managerial overconfidence is less inclined to pay cash dividends, and on the contrary, the results of most studies were (Deshmukh et al., 2013; Anilov, 2019; Vinh, 2020) addresses the positive impact of excessive managerial confidence on dividend policies on the premise that broadcasting good news about the corporation's estimates of future profits through dividends creates good indicators of the corporation's performance and deepens the optimistic view of prospective and current shareholders about the corporation's good financial situation in the form Which prompts the CEO to use dividend policies in order to create shareholder value that helps achieve the CEO's personal interests in leading the corporation.

Study methodology

This section included all of Identifying the research gap, the study problem, and formulating hypotheses:

Research gap

As the corporate board exercised its powers on behalf of the owners, it is like an agent who completes the authority with the aim of achieving a balance between the parties related to the corporation in light of the Stakeholder Theory of related parties' groups like owners and creditors on the part and those in charge of managing the corporation from the CEO under the Agency Theory in particular (Jensen and Meckling, 2019).

As for the relationship between managerial overconfidence and debt structure, the study by Park and Kim (2009) indicated that there is a direct relationship between financial leverage and managerial overconfidence, in addition to the tendency towards using long-term debt over short-term debt in financing. In a different context, the study by Purhanudin and Zakaria, (2015) indicated that there is an inverse relationship between excessive managerial overconfidence and long-term external debt, as managers base their decisions on the fact that the corporation's achievement of profits leads to a decrease in reliance on debt as a source of financing.

However, previous studies conducted in the Emerging market environment did not test the moderating role of the Corporate board on the relationship between Managerial Overconfidence and corporation risks in the Egyptian business environment - as far as the researchers know - and in light of what previous studies concluded regarding Managerial Overconfidence that may It is reflected negatively in the absence of an effective role for the corporation's Corporate board, which the researchers sought to test to fill that knowledge gap by presenting the current study.

Study problem

The Corporate board did not make daily decisions within the corporation, but rather CEO, who has executive authority with regard to determining the corporation's policies, especially with regard to working capital management, which are policies that are concerned with managing current assets and liabilities rather than determining the corporation's financing methods for its permanent assets, which are the assets that must be paid. Maintained it to ensure the continuation of the corporation's operational operations without interruption at its minimum level of exploitation of the available production capacity, instead of financing its variable assets, which are directly proportional to the size of the exploitation of the available production capacity. This is reflected in the policies and practices of managing inventory, customers and suppliers, rather than managing short-term investments and how to complete projects under implementation.

The study found that CEO's attitudes towards risk, in addition to their characteristics, especially with regard to excessive managerial overconfidence , is one of the factors governing the corporation's risks, especially since CEO's decisions in light of excessive management confidence have a direct impact on the choice of the production mix, rather than the pricing of the corporation's products. , in addition to its credit policies towards customers, which are the most important variables that indicate the extension of the corporation's operational, financing and overall leverage.

As for the position of the operational, financing, and overall levers of the corporation, we found that the decisions of the CEO are related to the reflection of his decisions on the cost structure, rather than the impact resulting from the decisions to rely on commercial credit by suppliers as the basis for the corporation's work, which is directly reflected in the risks of those corporations. **From the above, the research questions can be formulated as follows**:

A. Is there a significant effect of Managerial Overconfidence on the operational risks of corporation?
B. Is there a significant effect of Managerial Overconfidence on the financial risks of corporation?
C. Is there a significant effect of Managerial Overconfidence on the total risks of corporation?

If there is an effect of excessive managerial overconfidence on the risks of corporation, the study can test the moderating role of the corporate board through the following questions:

D. Is there a significant effect of Managerial Overconfidence on the operational risks of corporation within the moderating role of board governance?
E. Is there a significant effect of Managerial Overconfidence on the financial risks of corporation within the moderating role of corporate board' governance?
F. Is there a significant effect of Managerial Overconfidence on the overall risks of corporation within the moderating role of board governance?

Study hypotheses

After completed the presentation of the intellectual framework for the variables under analysis, in addition to reviewing the results of previous studies on those variables, the researchers were able to formulate the hypotheses as follows:

There is significant effect of the moderating role of board governance on the relationship between managerial overconfidence and operational leverage degree.

There is significant effect of the moderating role of board governance on the relationship between managerial overconfidence and financial leverage degree.

There is significant effect of the moderating role of board governance on the relationship between managerial overconfidence and total leverage degree.

Study Objectives

The primary objective of the study is to analyzed the nature of the relationship between the CEO's excessive managerial overconfidence and corporate risks in light of the moderating role of the Board. This objective can be achieved through the following sub-objectives:

a. Determining the nature of the relationship between managerial overconfidence and corporate operational, financial and aggregate risks in emerging markets.

B. Analyzing the impact of managerial overconfidence in light of the moderating role of the corporate board on corporate risks at different levels in emerging markets.

C- Providing some recommendations to parties related to corporations and regulatory bodies and supervisory bodies, to benefit from the relationships between the variables under analysis.

D- Providing proposals for future studies that work to reduce the limitations faced by the current study, instead of completing the filling of knowledge gaps regarding the relationship between the variables under analysis.

Study importance: The study derived its importance from the following group of contributions:

A. Alert corporations in emerging markets to the importance of the role of board governance in attracting prospective investors and stakeholders interested in directing their investments in corporation shares.

B. Directing the attention of stakeholders in emerging markets to the relationship of excessive administrative trust based on excessive investments in the corporation's risks, whether operational, financial, or overall.

C. Analyzing the impact of the interactive relationship between managerial overconfidence and corporation risk according to role of board governance in emerging markets.

D. Applying the study to a variety of emerging markets, which contributes to understanding the nature of the relationship between these variables in the markets without the level of imposing the efficient forces of the financial markets.

Study approach

The current study was conducted according to the inductive approach, which is one of the scientific research approaches, which is concerned with deducing facts through studying a scientific problem resulting from a knowledge gap, towards the moderating role of the board. Reducing the negative repercussions of the CEO's excessive managerial overconfidence on the risks of the corporation under his management; In light of the tendency of that manager with excessive managerial overconfidence towards risk-taking, which may cause him to make irrational decisions when there are practices that carry risks that are not justified by the benefits resulting from them, as the Corporate board is one of the governance mechanisms that worked to control the processes of making and taking administrative decisions to be characterized by rationality. . Along with the rest of the other governance mechanisms, whether internal (ownership structure - internal audit - audit committee) or external (external audit - regulatory and supervisory bodies).

Analytical Technique and Data

descriptive analytical Technique is used to determine the pattern of the relationship between its three variables by reviewed the data collected from the financial and non-financial reports issued by the corporation that make up the study sample, which are non-financial corporation listed on the seven emerging equity markets, namely Brazil, Egypt, India, Russia, Saudi Arabia, South Africa, and Turkey, Based on annually data, from 2013 to 2022.

In addition to their periodic and non-periodic disclosures. Which is announced by this emerging equity markets, instead of the data published on the financial database of Reuters, with the aim of estimating the variables of the study, which are the resulting variable, which is the risks of corporation, the modified variable, which is the governance of the corporate board, and finally the predictor variable; It is excessive managerial overconfidence.

This data has been processed with appropriate statistical methods in order to determine the extent of acceptance or rejection of the study's hypotheses, and to arrive at results and recommendations from the statistical inference processes, which explore the nature of the moderating role of the Corporate board in conveying the effect of excessive managerial overconfidence on the risks of corporation. Appendix (A) contains a list of the sample's components.

Under the pattern of the relationship between the three study variables, which include both the independent variable (managerial overconfidence), and the dependent variable (the risks of corporations managed) instead of the moderating variable (represented by the governance of the board in those corporations), the study adopt a method Path Analysis is a general concept for describing the causal model. Applying this method requires verifying the normal distribution of the study variables, that there be linear relationships between the variables, and that there is no co-linearity between the variables included in the analysis.

Study variables

Table No. (1) showed the study's three variables,

Table No. (1) study's variables

No.	variable		ymbol	Previous study
	Dependent variables: corporation's risk	The logarithmic value of Operational leverage Degree	LD	Harjoto, 2017 Sarkar, 2020
		The logarithmic value of Financial Leverage Degree	LD	
		The logarithmic value of Total Leverage Degree	LD	
	Moderating Variable: Governance Board	The logarithmic value of the board Size	S	Malik, 2015 Xu at el., 2023
		Separation and non-duplication between the Chairman of the Corporate board and the CEO	p	
		The logarithmic value of Weight of independent board members		
		The logarithmic value of Weight of Non-executive board members		
		The logarithmic value of the number of meeting the Board meets		
	Independent Variable: Managerial Overconfidence	The logarithmic value of over-investment	i	Duellman et al., 2015 Kermani et al., 2014 Mitra et al., 2019 Salehi et al., 2020

<u>Dependent variables: corporation's risk</u>

<u>Operational leverage Degree (OLD)</u>

The operational leverage degree is considered a measure of the operational risk of a corporation. The higher the degree of operational leverage, the higher the operational risk, and vice versa. The degree of the corporation's operational leverage can be measured by measuring the effect of the change in the volume of revenues on the corporation's net operating profit through Equation No. (1):

Operational leverage Degree
= percentage change in net operating profit ÷ Percentage change in revenue
Equation (1)

Also, the operational leverage degree at a certain level of production or units sold can be calculated through equations (2) and (3) as follows:

OLD = (Revenue - Variable cost)
÷ (Revenue - variable cost - fixed cost)
Equation No. (2)

OLD = Contribution
÷ (Contribution - fixed cost)
Equation No. (3)

What is meant by operational risk is the degree of variability in operating profits as a result of changes in revenues, and the higher that degree is, the higher the operational risks are as well (with other factors remaining unchanged), or in other words, there is a direct relationship between the degree of operational leverage on the one hand; And the level of operational risk on the other hand, assuming all other business environment factors remained constant.

Financial leverage degree (FLD)

The financial leverage degree can be measured by dividing the percentage change in profits available to ordinary shareholders, or the percentage change in the profitability of ordinary shares to the percentage change in net operating profit, and the financial leverage degree is considered a measure of the financial risk to which the corporation may be exposed.

Financial leverage degree
= percentage change in earnings available to common stockholders
÷ Percentage change in net operating profit

Equation No. (4)

The financial leverage degree at a certain level can also be calculated through operating profits (net profit before interest and taxes) with the following equation:

FLD = Net Profit Before Interest and Taxes
÷ (Net operating profit – Interest)
Equation No. (5)

FLD = Operating Profit
÷ Operating Profit - Interest
Equation No. (6)

From the above, it is cleared that there is a direct relationship between the financial leverage degree on the one hand and the level of financial risk on the other hand, assuming all other business environment factors remain constant.

Total Leverage Degree (TLD)

The total leverage degree can be measured in terms of the rate of change in the return of common stocks to the percentage of change in revenues. The total leverage degree is considered a measure of the overall degree of risk of the corporation (operational and financial). The higher the degree of total leverage; The higher the overall risk of the corporation, meaning that there is a direct relationship between the degree of overall leverage on the one hand and the level of business risk on the other hand. The total leverage degree is measured through Equation No. (7):

$$\text{Total leverage degree} = \text{percentage change in earnings available to common stockholders} \div \text{Percentage change in revenue} \quad \text{Equation No. (7)}$$

The same result can be obtained by multiplying the degree of operational leverage with the financial leverage degree. Thus, the total leverage degree is considered a comprehensive measure of the total risk of corporation, as it represents the combined effect of both operational and financial risks. From the above it is clear that there is a direct relationship between the degree of total leverage. On the one hand, and the level of business risks on the other hand, assuming all other business environment factors remain constant.

In this regard, the study found it important to point out that the study relied on the logarithmic values of the degree of operating, financial and total leverage as a basis for constructing time series of observations of the resulting variable during statistical analysis processes, to obtain more stable time series.

Moderating Variable: Governance Board

The board is one of the internal governance mechanisms, and the extent to which the Board practices are consistent with the principles of governance can be determined under the indicators shown in table No.2 .

Table No. (2): Measuring board governance

o.	Measure	High level of corporate governance	Low level of corporate governance
	Number of board members	Positive relationship	Inverse relationship
	Separation and non-duplication between the Chairman of the Corporate board and the CEO	Separation and non-duplication	No intercourse
	Number of non-executive board members	Positive relationship	Inverse relationship
	Number of independent board members with experience	Positive relationship	Inverse relationship
	Periodicity of Corporate board meetings	Positive relationship	Inverse relationship

According to Table No. (2), it is clear that the current study relied on five indicators to measure board governance, included a descriptive indicator, which is “the extent of separation and non-duplication between the Chairman of the Corporate board and the CEO”; Against four quantitative variables: “the logarithmic value of the number of board members,” “the weight of the number of non-executive board members,” “the weight of the number of independent board members with experience,” and “the logarithmic value of the number of times the Corporate board meets.”

__Independent Variable: Managerial Overconfidence__

Managerial overconfidence has been addressed in several foreign studies (Duellman et al., 2015; Kermani et al., 2014; Mitra et al., 2019; Salehi et al., 2020; Schrand and Zechman, 2012). Managerial overconfidence is usually expressed through the value of the residuals (ε_{it}) resulting from the regression model between the “asset growth rate” and the “revenue growth rate”, where a positive value of the residuals indicates the presence of a state of excessive investment in assets, that is, by the CEO. The corporation under analysis has managerial overconfidence, while the negative value of the residuals indicates a case of low investment in the corporation’s assets, which indicates a decrease in Managerial Overconfidence among CEO of this corporation. The aforementioned regression model can be reviewed as shown in Equation No. (8)

$$RG_{jt} = \beta_0 + \beta_1 AG_{jt} + \varepsilon_{jt}$$

Equation No. (8)

whereas:

RG_{jt} : Revenue growth rate at the end of the financial period (t) of the corporation (j)
AG_{jt}: Asset growth rate at the end of the financial period (t) of the corporation (j)
ε_{jt} : the residual random error resulting from the estimated regression relationship between the two variables.

As for estimated the growth rates of both the corporation's revenues and its assets, they are estimated using equations (9) and (10) as shown as follows:

$$R_{jt} = (R_{jt} – R_{jt-1}) \div R_{jt-1}$$

Equation No. (9)

whereas:

RG_{jt}: Revenue growth rate at the end of the financial period (t) of the corporation (j)
R_{it}: Value of revenue at the end of the financial period (t) of the corporation (j)
R_{it-1}: Value of revenues at the beginning of the financial period (t) of the corporation (j).

$$AG_{jt} = (TA_{jt} – TA_{jt-1}) \div TA_{jt-1}$$

Equation No. (10)

whereas:

AG_{jt} : Asset growth rate at the end of the financial period (t) of the corporation (j)
TA_{it} :the value of assets at the end of the financial period (t) of the corporation (j)
$TA_{it -1}$:Value of assets at the beginning of the financial period (t) of the corporation (j)

Data analysis and hypothesis testing

Stationary of Data

The assumption of stationary (constant variance) existed in many time series methods. One of the defined characteristics of a stationary process is that the mean, variance, and autocorrelation values do not vary over time; The study examined the data stationary to ensure that the mean and variance were invariant according to a unit root test, the stationarity of the time series of the basic independent and dependent indicators at level zero was evaluated according to the constant level. This was done through the Augmented Dickey–Fuller (ADF), Philips–Perron (PP), Im, Pesaran and Shin W-stat (IPSW), Levin, Lin and Chut (LLC) tests at a significance level of less than 0.05. In addition to the Tau-statistic, the Z-statistic criteria were at a significance level of less than 0.05.

Study models

The study used cross-sectional analysis to investigate the impact of managerial overconfidence on corporate risk in emerging markets under the moderating role of board governance. but initially, the study removed the

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outliers using winsorization at 1% for the continuous variables. The model is tested on a sample of 700 observations over a ten-year period.

Function No. (1) expresses the directness relation managerial overconfidence on corporate risk, but Function No. (2) expresses the directness this relation under the moderating role of board governance.

$$\text{Corporations' risk} = \int \textit{Managerial Overconfidence}$$

Function No.1

$$\text{Corporations' risk} = \int \text{Managerial Overconfidence} + \text{Board Governance}$$

Function No.2

The study used four measures to estimate the corporations' risk based on operational leverage degree (OLD), financial leverage degree (FLD), total leverage degree (TLD). So, the study presents an independent model for each measure that is examined through the cross-sectional analysis method.

Without moderating role of board governance

without moderating role of board governance, the study tested three hypotheses, according the following

$$OLD_{J,T} = \beta_0 + \beta_1 \, OI_{j,t} + \varepsilon_{j,t}$$

Equation No. (11)

$$FLD_{J,T} = \beta_0 + \beta_1 \, OI_{j,t} + \varepsilon_{j,t}$$

Equation No. (12)

$$TLD_{J,T} = \beta_0 + \beta_1 \, OI_{j,t} + \varepsilon_{j,t}$$

Equation No. (13)

Equations (11), (12) and (13) were drafted to test these hypotheses. Where (j) represent the corporation and (t) represents time. But OLD represents operational leverage degree as a dependent variable to testing the first hypothesis. On other hand, FLD represents financial leverage degree as a dependent variable, to testing the second hypothesis filly, TLD represents Total leverage degree as a dependent variable to testing the third hypothesis. β_0 is a constant term addition to β_1 the population parameters but ε_{jt} represents the random error term (unobservable).

Within moderating role of board governance

within moderating role of board governance; the study adds five variables as following:

$$OLD_{J,T} = \beta_0 + \beta_1\, OI_{j,t} + \beta_2\, BS_{j,t} + \beta_2\, SP_{j,t} + \beta_2\, I_{j,t} + \beta_2\, U_{j,t} + \beta_2\, M_{j,t} + \varepsilon_{j,t}$$

Equation No. (14)

$$FLD_{J,T} = \beta_0 + \beta_1\, OI_{j,t} + \beta_2\, BS_{j,t} + \beta_2\, SP_{j,t} + \beta_2\, I_{j,t} + \beta_2\, U_{j,t} + \beta_2\, M_{j,t} + \varepsilon_{j,t}$$

Equation No. (15)

$$TLD_{J,T} = \beta_0 + \beta_1\, OI_{j,t} + \beta_2\, BS_{j,t} + \beta_2\, SP_{j,t} + \beta_2\, I_{j,t} + \beta_2\, U_{j,t} + \beta_2\, M_{j,t} + \varepsilon_{j,t}$$

Equation No. (16)

Equations (14), (15) and (16) were drafted to test these hypotheses. Where (BS) represent the board Size based on the number of boards, (SP) represent the Separation and non-duplication between the Chairman of the Board and the CEO, (I) represent the Weight of independent board members, (U) represent the Weight of Non-executive board members, and (M) number of meeting the Board per years. These equations were used to test hypotheses four to six.

Examining the effect of Managerial Overconfidence on the corporations' risks without moderating role of board governance.

Examining for operational leverage degree

In this section, the inferential analysis of the first hypothesis is conducted, and it was found that the statistical outputs were as follows:

Table no (3) statistical outputs for the first hypothesis

Model 1: WLS, using 700 observations Included 70 cross-sectional units Dependent variable: OLD Weights based on per-unit error variances					
	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	1.25532	0.0196384	63.92	<0.0001	***
IO	0.250184	0.0100382	24.92	<0.0001	***
Statistics based on the weighted data					
Sum squared resid	692.8897	S.E. of regression	0.996333		
R-squared	0.270877	Adjusted R-squared	0.270119		
F(1, 698)	621.1638	P-value(F)	1.46e-98		
Log-likelihood	−989.6837	Akaike criterion	1983.367		
Schwarz criterion	1992.469	Hannan-Quinn	1986.886		
Statistics based on the original data					
Mean dependent var	0.774029	S.D. dependent var	0.179421		
Sum squared resid	14.42640	S.E. of regression	0.143764		

Source: Gnu Regression, Econometrics and Time-series Library

The study was found through the results of inferential analysis, according to Table No. 3. On the one hand, the estimated value of the coefficient (F) was 621.1638; the model as all was significant at the (1%) level. On the other hand, the estimated value of the coefficient (t-ratio) for managerial overconfidence was significant at the (1%) level, this mean has an effect of managerial overconfidence on operational leverage degree; according to adjusted r-squared, the explanatory managerial overconfidence, contributes to 27% of the variation in operational leverage degree as a dependent variable. Now, the study rejects the null hypothesis and accepts the following alternative hypothesis:

There is significant effect of Managerial Overconfidence on the operating risks of corporation.

Examining for financial leverage degree

In this section, an inferential analysis is conducted for the second hypothesis, and the statistical outputs are as follows:

Table no (4) statistical outputs for the second hypothesis

Model 2: WLS, using 700 observations Included 70 cross-sectional units Dependent variable: FLD

Weights based on per-unit error variances					
	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	1.25858	0.0230803	54.53	<0.0001	***
IO	0.206562	0.0117788	17.54	<0.0001	***
Statistics based on the weighted data					
Sum squared resid	698.2304	S.E. of regression	1.000165		
R-squared	0.305846	Adjusted R-squared	0.304851		
F(1, 698)	307.5399	P-value(F)	2.53e-57		
Log-likelihood	−992.3711	Akaike criterion	1988.742		
Schwarz criterion	1997.844	Hannan-Quinn	1992.261		
Statistics based on the original data					
Mean dependent var	0.866100	S.D. dependent var	0.179685		
Sum squared resid	16.88454	S.E. of regression	0.155531		

Source: Gnu Regression, Econometrics and Time-series Library

The study was found through the results of inferential analysis, according to Table No. 4. On the one hand, the estimated value of the coefficient (F) was 307.5399; the model as all was significant at the (1%) level. On the other hand, the estimated value of the coefficient (t-ratio) for managerial overconfidence was significant at the (1%) level, this mean has an effect of managerial overconfidence on financial leverage degree; according to adjusted r-squared, the explanatory managerial overconfidence, contributes to 30.48% of the variation in financial leverage degree as a dependent variable. Now, the study rejects the null hypothesis and accepts the following alternative hypothesis:

There is significant effect of Managerial Overconfidence on the financial risks of corporation.

Examining for total leverage degree

In this section, the inferential analysis of the third hypothesis is conducted, and the statistical outputs are as follows:

Table no (5) statistical outputs for the third hypothesis

Model 3: WLS, using 700 observations Included 70 cross-sectional units Dependent variable: TLD Weights based on per-unit error variances					
	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	2.47236	0.0695245	35.56	<0.0001	***
IO	0.501383	0.0354930	14.13	<0.0001	***
Statistics based on the weighted data					
Sum squared resid	698.4922	S.E. of regression	1.000353		
R-squared	0.222328	Adjusted R-squared	0.221214		
F(1, 698)	199.5510	P-value(F)	4.92e-40		
Log-likelihood	−992.5023	Akaike criterion	1989.005		
Schwarz criterion	1998.107	Hannan-Quinn	1992.523		
Statistics based on the original data					
Mean dependent var	1.507107	S.D. dependent var	0.506953		
Sum squared resid	144.7042	S.E. of regression	0.455316		

Source: Gnu Regression, Econometrics and Time-series Library

The study was found through the results of inferential analysis, according to Table No. 5. On the one hand, the estimated value of the coefficient (F) was 199.55; the model as all was significant at the (1%) level. On the other hand, the estimated value of the coefficient (t-ratio) for managerial overconfidence was significant at the (1%) level, this mean has an effect of managerial overconfidence on total leverage degree; according to adjusted r-squared, the explanatory managerial overconfidence, contributes to 22.12% of the variation in total leverage degree as a dependent variable. Now, the study rejects the null hypothesis and accepts the following alternative hypothesis:

There is significant effect of Managerial Overconfidence on the total risks of corporation.

Examining the effect of Managerial Overconfidence on the corporations' risks within moderating role of board governance.

Examining for operational leverage degree

In this section, the inferential analysis of the fourth hypothesis is conducted, and the statistical outputs are as follows:

Table no (6) statistical outputs for the fourth hypothesis

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Model 4: WLS, using 700 observations Included 70 cross-sectional units Dependent variable: OLD Weights based on per-unit error variances					
	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	1.21390	0.0137254	88.44	<0.0001	***
IO	0.0666685	0.00565493	11.79	<0.0001	***
BS	−0.0889964	0.0210107	−4.236	<0.0001	***
SP	0.0287256	0.00565450	5.080	<0.0001	***
I	−0.461710	0.0252171	−18.31	<0.0001	***
U	−0.0934436	0.0429199	−2.177	0.0298	**
M	−0.343940	0.0260582	−13.20	<0.0001	***
Statistics based on the weighted data					
Sum squared resid	655.7654	S.E. of regression	0.972764		
R-squared	0.589156	Adjusted R-squared	0.588196		
F(6, 693)	926.5033	P-value(F)	0.000000		
Log-likelihood	−970.4099	Akaike criterion	1954.820		
Schwarz criterion	1986.677	Hannan-Quinn	1967.135		
Statistics based on the original data					
Mean dependent var	0.774029	S.D. dependent var	0.179421		
Sum squared resid	5.406734	S.E. of regression	0.088329		

Source: Gnu Regression, Econometrics and Time-series Library

The study was found through the results of inferential analysis, according to Table No. 6. On the one hand, the estimated value of the coefficient (F) was 926.5; the model as all was significant at the (1%) level. On the other hand, the estimated value of the coefficient (t-ratio) for managerial overconfidence, the board Size, Separation and non-duplication between the Chairman of the Board and the CEO, the Weight of independent board members, and number of meeting the Board per years was significant at the (1%) level, but the Weight of Non-executive board members was significant at the (5%), this mean has an effect of managerial overconfidence on operational leverage degree; according to adjusted r-squared, the explanatory managerial overconfidence and board governance, contributes to 58.8% of the variation in operational leverage degree as a dependent variable. Now, the study rejects the null hypothesis and accepts the following alternative hypothesis:

There is significant effect of the moderating role of board governance on the relationship between managerial overconfidence and operational leverage degree.

Examining for financial leverage degree

In this section, an inferential analysis of the fifth hypothesis is conducted, and the statistical outputs are as follows:

Table no (7) statistical outputs for the fifth hypothesis

Model 5: WLS, using 700 observations Included 70 cross-sectional units Dependent variable: FLD Weights based on per-unit error variances					
	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	1.22918	0.0240900	51.02	<0.0001	***
IO	0.0740402	0.0105979	6.986	<0.0001	***
BS	−0.0157460	0.0391759	−0.4019	0.6879	
SP	0.0201732	0.0106830	1.888	0.0594	*
I	−0.470189	0.0430500	−10.92	<0.0001	***
U	−0.167902	0.0858589	−1.956	0.0509	*
M	−0.257840	0.0466551	−5.527	<0.0001	***
Statistics based on the weighted data					
Sum squared resid	683.0765	S.E. of regression	0.992814		
R-squared	0.538986	Adjusted R-squared	0.535860		
F(6, 693)	204.4321	P-value(F)	1.2e-149		
Log-likelihood	−984.6912	Akaike criterion	1983.382		
Schwarz criterion	2015.240	Hannan-Quinn	1995.697		
Statistics based on the original data					

Z

The study was found through the results of inferential analysis, according to Table No. 7. On the one hand, the estimated value of the coefficient (F) was 204.43; the model as all was significant at the (1%) level. On the other hand, the estimated value of the coefficient (t-ratio) for managerial overconfidence, the Weight of independent board members, and number of meeting the Board per years was significant at the (1%) level, Separation and non-duplication between the Chairman of the Board and the CEO, the Weight of Non-executive board members was significant at the (6%), this mean has an effect of managerial overconfidence on financial leverage degree; according to adjusted r-squared, the explanatory managerial overconfidence and board governance, contributes to 53.6% of the variation in financial leverage degree as a dependent variable.

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On other hand; The study explained the non-significance of all board governance measures when test financial risks based on stating that the greatest aspect of that risk is regular risks outside the control of the board, as the decisions of central banks are usually in addition to risk compensation. Credit is the basis of those risks along with the characteristics of the corporation's capital structure. Now, the study rejects the null hypothesis and accepts the following alternative hypothesis:

There is significant effect of the moderating role of board governance on the relationship between managerial overconfidence and financial leverage degree.

<u>Examining for total leverage degree</u>

In this section, an inferential analysis of the sixth hypothesis is conducted, and the statistical outputs are as follows:

Table no (8)   statistical outputs for the sixth hypothesis

Model 6: WLS, using 700 observations Included 70 cross-sectional units Dependent variable: TLD Weights based on per-unit error variances					
	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	2.69475	0.0769745	35.01	<0.0001	***
IO	0.185050	0.0323619	5.718	<0.0001	***
BS	−0.601151	0.119202	−5.043	<0.0001	***
SP	−0.108024	0.0331058	−3.263	0.0012	***
I	−1.00011	0.134966	−7.410	<0.0001	***
U	2.51004	0.245530	10.22	<0.0001	***
M	−0.786128	0.140950	−5.577	<0.0001	***
Statistics based on the weighted data					
Sum squared resid	663.8575	S.E. of regression	0.978748		
R-squared	0.566538	Adjusted R-squared	0.562785		
F(6, 693)	150.9596	P-value(F)	3.1e-122		
Log-likelihood	−974.7025	Akaike criterion	1963.405		
Schwarz criterion	1995.262	Hannan-Quinn	1975.720		
Statistics based on the original data					
Mean dependent var	1.507107	S.D. dependent var	0.506953		
Sum squared resid	115.6608	S.E. of regression	0.408532		

Source: Gnu Regression, Econometrics and Time-series Library

The study was found through the results of inferential analysis, according to Table No. 8. On the one hand, the estimated value of the coefficient (F) was 150.9; the model as all was significant at the (1%) level. On the other hand, the estimated value of the coefficient (T-ratio) for managerial overconfidence, the board Size, Separation and non-duplication between the Chairman of the Board and the CEO, the Weight of independent board members, the Weight of Non-executive board members, and number of meeting the Board per years was significant at the (1%) level, this mean has an effect of managerial overconfidence on total leverage degree; according to adjusted r-squared, the explanatory managerial overconfidence and board governance, contributes to 56.28% of the variation in total leverage degree as a dependent variable. Now, the study rejects the null hypothesis and accepts the following alternative hypothesis:

There is significant effect of the moderating role of board governance on the relationship between managerial overconfidence and total leverage degree.

Conclusions and Recommendations

Discuss the results

In an agency relationship, one party acts on behalf of another. the agency theory is particularly relevant in the context of business and corporate governance. In an agency relationship, Common stockholders' delegates decision-making authority to CEO as the agent, who is expected to act in the best interests of the common stockholders. However, because the agent may have different goals, incentives, and information than the common stockholders, conflicts of interest can arise (Panda and Leepsa, 2017).

In the corporate context, agency theory is frequently used to analyses the relationship between shareholders (principals) and managers (agents). Shareholders delegate decision-making authority to managers but face challenges in ensuring that managers act in the shareholders' best interests. This study investigated agency relationships within the effect of managerial overconfidence on corporate risk under the moderating role of board governance in emerging markets. Key concepts in agency theory are agency relationships, information asymmetry, and contractual arrangements, this study cover first topic.

This study examined the moderating role of board governance on the relationship between managerial overconfidence and corporate risk in emerging markets. Managerial overconfidence, characterized by an excessive belief in one's abilities, has been linked to various corporate outcomes, including corporate performance and risk-taking behavior.

Through inferential analysis of the relationships between the three study variables, the study found a positive impact of managerial overconfidence rates on the corporation’s risks with its three measures: operational, financial, and total leverage. That was significant at the (1%) level. The study explained this result according to the overlapping nature between the test metrics, where “over-investment” is related to operational risks, on the one hand, and the search for sources of funds for the purpose of acquiring those assets supports financial risks, which is necessarily reflected in the corporation’s overall degree of leverage.

On the other hand, board governance, as a variable moderating this relationship, has contributed to explaining the change in those risk scores.... As board governance, which was characterized by an inverse relationship with risks, has contributed to raising the ability to explain those risks.

Table no. (10) showed the pattern of the relationship between the variables, rates of significance and explanatory power according to the Adjusted R-squared

Table no. (10): Adjusted R-squared of managerial overconfidence on corporation’s risk

Corporation’s Risk	Adjusted R-squared without board governance	Adjusted R-squared within board governance
Operational leverage Degree	27.0119%	58.8196%
financial leverage degree	30.4851%	53.5860%
Total leverage degree	22.1214%	56.2785%

According to table no. (10); There is an increase in Adjusted R-squared of managerial overconfidence with all type of corporation’s risk when adding board governance as the moderating variable. So; the study concluded that board governance as the moderating variable has contributed positively to explaining the corporation's risks within the managerial overconfidence of the CEO in emerging markets.

The previous result is consistent with Aabo et al., 2021, which did not test the moderating effect of board governance, as indicated by that the positive association between overconfident CEOs and corporate risk only exists in the sphere of high CEO incentive compensation. The current study believed that effective board governance limits these compensations.

Limitations

The study did not use all available measures to estimate managerial overconfidence. Weak disclosure and the lack of data is the reasons in many emerging markets for settling on over-investment as the single measure of managerial overconfidence.

Implications

The findings shed light on the significant role that board governance plays in shaping the consequences of managerial overconfidence and provide practical implications for corporations operating in emerging markets. The implications of the study's inferential analysis suggest that greater emphasis should be placed on corporate governance mechanisms, given that it is one approach to overseeing executive management that addresses the adverse consequences stemming from the conduct of CEO.

Recommendations

Mechanisms to reduce managerial overconfidence

Reducing managerial overconfidence in corporations within emerging markets requires a multi-faceted approach that combines structural, behavioral, and cultural interventions. Here are some mechanisms that can be employed:

A. ***Diverse Board Composition***: Establishing a diverse board with members from different backgrounds, cultures, and expertise can introduce alternative perspectives, challenging the status quo and minimizing the risk of groupthink.
B. ***Enhanced Risk Management Processes***: Implementing rigorous risk management processes and stress testing to assess the potential impact of different scenarios can provide a more realistic understanding of the risks involved in decision-making.
C. ***Encouraging Dissenting Voices***: Creating a culture that values dissenting opinions and encourages open discussions can help prevent decisions from being made without careful consideration of potential downsides.
D. ***Increased Transparency and Accountability***: Implementing transparent reporting mechanisms and holding managers accountable for their decisions can help reduce the tendency to overestimate their capabilities and the outcomes of their actions.
E. ***Training and Education***: Providing specialized training on decision-making biases, risk assessment, and the importance of empirical evidence can help managers become more aware of their cognitive biases and improve their decision-making processes.
F. ***Peer Review and External Consultation***: Encouraging managers to seek advice and feedback from external consultants and industry peers can provide valuable insights and prevent them from relying solely on their own judgment.
G. ***Long-Term Incentive Structures***: Introducing long-term incentive structures that align managerial compensation with the corporation's long-

term performance can encourage managers to focus on sustainable growth rather than short-term gains.

H. ***Regular Performance Evaluation***: Conducting regular performance evaluations that focus not only on results but also on the process and decision-making can help identify and address instances of overconfidence in a timely manner.
I. ***Emphasizing Data-Driven Decision-Making***: Encouraging the use of data-driven analysis and decision-making processes can help managers rely more on empirical evidence rather than intuition or gut feelings.
J. ***Cultural Change and Awareness Campaigns***: Implementing cultural change initiatives and awareness campaigns to highlight the risks associated with overconfidence and the benefits of a more measured approach can foster a more cautious and balanced decision-making culture.

By adopting these mechanisms, corporations in Emerging Markets can promote a more cautious and evidence-based decision-making culture, ultimately reducing the negative impacts of managerial overconfidence.

Future studies about managerial overconfidence

Future studies on managerial overconfidence can focus on several key areas to further deepen our understanding of this phenomenon and its implications. Some potential avenues for research include:

A. ***Cross-Cultural Analysis***: Conducting cross-cultural studies to examine the impact of cultural differences on the prevalence and manifestation of managerial overconfidence, considering how cultural contexts may influence the degree and nature of overconfidence in different managerial settings.
B. ***Longitudinal Studies***: Conducting longitudinal studies to track the development and persistence of managerial overconfidence over an extended period, examining how it evolves, its impact on decision-making, and its consequences for corporate performance and stability.
C. ***Behavioral Interventions and Mitigation Strategies***: Investigating the effectiveness of various behavioral interventions and mitigation strategies aimed at reducing managerial overconfidence, assessing their practical implications and potential for application in real-world corporate contexts.
D. ***Impact on Corporate Governance and Firm Performance***: Examining the relationship between managerial overconfidence, corporate governance practices, and firm performance, evaluating how overconfidence influences decision-making processes, strategic choices, and overall organizational outcomes.

E. ***Technological Advancements and Decision-Making Biases***: Exploring the role of technological advancements, such as artificial intelligence and machine learning, in mitigating the impact of managerial overconfidence by providing data-driven insights and decision support tools that can counteract cognitive biases.
F. ***Sector-Specific Analysis***: Conducting sector-specific analyses to understand how managerial overconfidence varies across different industries and sectors, investigating how the specific characteristics of each sector influence decision-making and the consequences of overconfidence within those contexts.
G. ***Stakeholder Perspectives and Social Impact***: Examining the perspectives of various stakeholders, including employees, investors, and customers, to understand how managerial overconfidence affects their perceptions, behaviors, and the overall social impact of corporate decisions.
H. ***Behavioral Finance***: that exploring the implications of managerial overconfidence for financial markets, asset pricing, and the overall stability of the financial system.
I. ***Ethical Considerations and Corporate Social Responsibility***: Investigating the ethical implications of managerial overconfidence, examining its effects on corporate social responsibility initiatives, ethical decision-making, and the broader societal impact of overconfident managerial behavior.

These potential avenues for future research can contribute more comprehensive understanding of managerial overconfidence, its underlying dynamics, and its implications for corporate decision-making and performance.

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Appendix A: list of the sample's components

arket	Corporation	Code
Brazil	3R Petroleum Oleo E Gas Sa	RRRP3
	Arezzo Industria e Comercio SA	ARZZ3
	CompanhiaBrasileira De Distribuica	PCAR3
	Brazilian Electric Power Co	ELET3
	Cielo SA	CIEL3
	CSN Mineracao SA	CMIN3
	Dexco SA	DXCO3
	EDP - Energias do Brasil SA	ENBR3
	Meliuz SA	CASH3
	TransmissoraAlianca	TAEE11
arket	**Corporation**	**Code**
Egypt	El Sewedy Electric Co SAE	SWDY
	GB AUTO	AUTO
	Oriental Weavers	ORWE
	Telecom Egypt	ETEL
	Juhayna food industries	JUFO
	Ezz steel	ESRS
	Electro Cable Egypt	ELEC
	Arab Cotton Ginning	ACGC
	Delta sugar	SUGR
	Arabian Cement Co SAE	ARCC
arket	**Corporation**	**Code**
India	Asian Paints Ltd.	ASPN
	Bharti Airtel Ltd.	BRTI
	HCL Technologies Ltd	HCLT
	Hindustan Unilever Ltd.	HLL
	Infosys Ltd	INFY
	ITC Ltd	ITC
	Larsen & Toubro Ltd	LART
	Nestle India Ltd	NEST
	Tata Steel Ltd	TISC
	Wipro Ltd	WIPR
arket	**Corporation**	**Code**
Russia	Aeroflot	AFLT
	NK Lukoil PAO	LKOH
	VK Corporation Ltd DRC	VKCODR
	ALROSA ao	ALRS
	Novolipetsk steel PAO	NLMK
	PhosAgroao	PHOR
	NK Rosneft PAO	ROSN
	Unipro	UPRO
	Yandex NV	YNDX
	Rostelekom PAO	RTKM
arket	**Corporation**	**Code**
Sa udi Arabia	Alamar foods CJSC	6014
	Abdullah Al Othaim markets corporation	4001
	Al Yamamah steel industries co	1304
	City cement co	3003
	Electrical industries co	1303
	Naqi water co	2282

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	Saudi telecom	7010
	Mobile telecommunications corporation	7030
	Savola group	2050
	Saudi electricity corporation	5110
arket	**Corporation**	**Code**
South Africa	AngloGold Ashanti Ltd	ANGJ
	Bidvest Group Ltd	BVTJ
	British American Tobacco PLC	BTIJ
	Gold Fields Ltd	GFIJ
	Naspers Ltd	NPNJn
	Vodacom Group Ltd	VODJ
	Prosus	PRXJn
	Mondi PLC	MNPJ
	Clicks	CLSJ
	MTN Group Ltd	MTNJ
arket	**Corporation**	**Code**
Turkey	Adel KalemcilikTicaretve Sanayi AS	ADEL
	AkcansaCimento Sanayi veTicaret AS	AKCNS
	Aksa EnerjiUretim AS	AKSEN
	Coca-Cola Icecek AS	CCOLA
	Arena Bilgisayar Sanayi veTicaret AS	ARENA
	ArzumElektrikliEvAletleri Sanayi veTicaret AS	ARZUM
	Aygaz AS	AYGAZ
	CelebiHavaServisi AS	CLEBI
	Anadolu EfesBiracilikve Malt Sanayi AS	AEFES
	DatagateBilgisayarMalzemeleriTicaret AS	DGATE