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CEOs' Managerial Ability and Stock Market Crash Risk: Empirical Evidences from the Business Environment in Saudi Arabia

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Abstract: The main objective of the study is to examine the impact of CEOs' managerial ability on stock market crash risk faced by non-financial firms listed in Saudi stock exchange. The study is based on an analytic approach that is an analysis of annual reports from Saudi companies. A sample of 112 non-financial companies listed in Saudi stock exchange from 2018 to 2020 with total 336 views is examined. This sample is examined for the purpose of evaluating the impact of the managerial ability on crash risk of the stock market. In addition, multiple regression method is applied to test the hypotheses of the study. The findings of this paper show that CEOs' managerial ability is associated with a negative correlation, and also reveals stock market crash risk. Based on these findings, the study recommends that companies necessarily take into consideration CEOs' managerial ability (such as accounting background, expertise, office hours, personal skills, reputation, and communication skills) because of their positive effects on the company's economy. The study also recommends rules and regulations under which CEO should work, his/her overconfidence is reduced, employees are prevented from withholding bad news, and transparency is ensured. All of this reduces stock market crash risk. The findings of the study must be handled according to the sample size and methods of measuring the variables used. The study focused on the analysis of the impact of CEOs' managerial ability on stock market crash risk in non-financial companies listed in Saudi stock exchange. The findings of this study may be a matter of concern to boards of directors. The findings help them make the decisions to recruit CEOs, and stakeholders when they evaluate the role of managerial skills in reducing stock market crash risk. The study explains the role of the managerial ability in reducing crash risk of the stock market in the Saudi business environment as an example of the economy of developing countries.

Keywords: managerial ability, stock market crash risk, Upper Echelons Theory, Saudi non-financial companies.

1 Introduction

Managerial ability is regarded as a main determinant of the sustained success of companies in this day and age, particularly after the business environment has moved quickly towards internationalization and diversification [1]. Companies where CEOs have the highest managerial ability could attract external funders and access capital markets more easily, which in turn affects financial policies of the company. Managerial ability refers to CEOs' characteristics, such as knowledge, talent, reputation, skills, personal experience which enable them to use available resources and change them into revenues. Consequently, waste is at last minimized and the company's value is established [2,3]. This will also enable them to determine the changes in operational, legal and accounting environments as well as changes in markets, thus making better decisions as evidenced by [1]. They state that managerial ability is one of the intangible assets of the company which improves its performance, increases its value and makes the company more competitive in markets.

According to the Upper Echelons Theory which is based on the premise that managerial ability has an impact on the strategic choices and outputs [4], this ability may reduce stock market crash risk through using company resources, enhancing the transparency of financial reporting, improving the quality of internal control and preventing CEOs from withholding bad news [5].

In spite of the significance of managerial ability in evaluating the impact of administrative contributions on the performance of the company, investment decisions, and corporate governance, the impact of CEOs' administrative characteristics (such as talent, reputation, the managerial style, and ego) on stock market crash risk is still a matter of controversy in the literature on accountancy and management. From the perspective of efficient contracting, [6] concluded that CEOs who have high managerial abilities have the ability to predict future changes in the economy of

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the company, can prepare reliable reports on possible risks and evaluate economic revenues associated with corporate investment. They can also obtain more accurate information on possible investment opportunities, thereby reducing the possibility of stock market crash.

From the perspective of Rent Extraction, CEOs with the greatest ability tend to over-invest, over-promote their careers, and withhold bad news, consequently increasing agency costs. Moreover, overconfidence may make them overestimate returns, which leads to inefficient investments, unwise investment decisions and a decline in the value of the company. These measures lead in turn to increased likelihood of stock market crash risk.

Accordingly, there are several motivations for this study, the most important of which is that previous studies have not provided crucial evidence on the relationship between CEOs' managerial ability and stock market crash risk. As a result, the analysis of this relationship in a Saudi environment as one of the largest growing economies of emerging markets will help to explain the variation in the quality of the company's financial reports. Furthermore, it will help to determine the effect of CEOs' individual characteristics on the accounting options for financial reporting and their role in reducing potential bankruptcy risk. The majority of these studies were conducted in advanced environments that differ in their characteristics from developing environments in the Middle East, which could lead to the difficulty of generalizing their findings. In addition, those who set the accounting standards and regulatory bodies are more concerned about the impact of CEOs' managerial ability on the accounting policies and withholding bad news. They are also more concerned about reducing CEOs' overconfidence so as to minimize unwise investment decisions that could lead the company to stock market crash risk. Thus, there is a research gap in the studies on the relationship between CEOs' managerial ability and stock market crash risk. In addition, there is a difficulty of establishing criteria for managerial ability because it cannot be easily directly observed [6].

Based on the aforementioned argument, the present study aims to answer the main question; does CEOs' managerial ability affect stock market crash risk?

Given the importance of this study, the study is conducted in the following manner in order to achieve its objectives and to answer its questions: The second section handles the concept and the importance of CEOs' managerial ability to the accounting and management thought. While the third section deals with the evaluation of the impact of CEOs' managerial ability on stock market crash risk, the fourth section deals with the analysis of previous studies and formulate the study hypotheses. The fifth section handles the construction of paradigms of the applied study. The sixth section displays the outline of the applied study. As for the seventh section, it analyses and discusses the results of the applied study and tests the hypotheses. The eighth section displays findings and recommendations for future research [6].

2 The concept and importance of CEOs' managerial ability in the accounting and management thought:

The managerial ability is a determinant of the sustained success and survival of the company in the long run. It improves the information environment of the company, increases transparency, and reduces mismatch of information between internal and external parties [7].

According to the Upper Echelons Theory, the managerial ability refers to managerial characteristics such as knowledge, expertise, management skills and management style. In the beginning, these characteristics affect at least business outcomes [8]. CEOs' individual characteristics affect the different company policies, which in turn have an impact on the company decisions and performance [9]. In this respect, [10] confirmed that managerial ability refers to the knowledge and personal experiences that CEOs have. It is basically derived from domain experience including their consideration of market conditions, corporate strategies and technology. In addition, [11] defined managerial ability as CEOs' proficiency in generating revenues from the available economic resources in the company. Despite the difficulty of direct observation of managerial ability, it can be identified from some outputs, such as the decisions made by CEOs on the allocation of resources.

Furthermore, [12] found that the high managerial ability aids with overpowering the two sources of investment inefficiency: over- and under-investment. Also, the positive effect of CEO managerial ability on investment efficiency generally persists across different levels of board monitoring, whereas it gets weaker as the CEOs are overly exposed to equity risk. Robustness tests of using alternative measures of CEO managerial ability and controlling for potential endogeneity issues produce reliable outcomes. Overall, the results propose that higher managerial ability leads to more proficient investment decision-making.

Some studies have used managerial ability and managerial reputation terms interchangeably. [11] stated that managerial ability refers to the potential managerial talent, motivations and CEOs' characters. They stated that their reputation is determined by external parties in light of available information. Accordingly, it is assumed that the

managerial ability leads to improved reputation.

In light of the aforementioned explanation, true managerial ability refers to the characteristics that CEOs have (such as talent, reputation, management style, age, education, knowledge, expertise, personal skills, and inclination to face risks, personal beliefs, and good communication skills) that enable them to understand the economic environment, use available resources effectively, make the best decisions, particularly on complicated cases compared to other CEOs' having lower ability. All of this contributes to producing a positive impact on the quality of financial reports and achieving sustained competitive advantages to the company.

As for **the importance of managerial ability,** it has received considerable attention as it may contribute to the following:

a) The impact on the quality of information, more reliable estimates in the future, which consequently affects the quality of accounting profits. Furthermore, managerial ability may reduce CEOs' activities associated with tax avoidance. [13]. It also reduces earnings management practices (whether accounting earnings or real ones). These practices are followed because of their desire to keep their reputation and managerial positions. [14] concluded that companies having CEOs with great managerial abilities can get higher credit ratings than other companies.

b) Reduction in agency problems by means of providing stakeholders with information and enhancing transparency and financial disclosure in a timely manner. [15] CEOs having great managerial ability tend to inform investors of the economic opportunities available to the company so that their reputations could be kept and mismatch of information between the company and investors could be reduced. This will in turn affect the quality of the financial reports and increase the value of the company [16].

c) Use of company resources more efficiently and choosing the best projects that achieve the highest current net value, thereby increasing the wealth of shareholders [6]. In addition, managerial ability contributes to the reduction in the financial pressure on the company, determines the economic changes that the company undergoes. It also plays a role in explaining the variation in the performance of companies and its impact on the financial and financing policies of the company as it enables CEOs to access capital markets more easily. Moreover, [17] established that corporations managed by high-ability executives have the proclivity to invest with fewer risk.

3 Measure the impact of CEOs' managerial ability on stock market crash risk:

Stock market crash risk is a source of worry to investors and companies alike, as it affects the investor's decision making and the company's policy of running risks [18]. CEOs' personal characteristics play an important role in inferring the likelihood of this risk. The researcher can analyze the relationship between the CEOs' managerial ability and stock market crash risk as follows:

3.1 Share prices crash risk: Concept and determinants:

Many studies dealt with the concept of share prices crash risk from several aspects, thereby reflecting its growing importance to academics and practitioners. [18] defined this concept and focused on **the returns of share price**. They pointed out that it is considered as an extreme collapse in the market value of the shares, which leads to a sharp decline in the shareholders' wealth. [19,20] focused on **the distribution of the form of earnings per share**. They found that stock market crash risk represents negative skewness in the distribution of return on the company's share price. In this respect, [15] pointed out that it represents "the possibility of a significant decline in the company's share price, which can be noticed through the negative skewness in the distribution of return on the company's share price during a period of trading. Literature on accounting and finance includes many surveys that dealt with the determinants of stock prices crash which are categorized into five groups as follows [21].

A. Financial Reporting and Disclosures companies:

Francis et al. [22] concluded that the companies that practice real earnings management, and have Opaque Financial Reporting are more vulnerable to stock prices crash risk. [23] indicated that tax avoidance and reservation accounting strategies may provide CEOs with a way to withhold negative information which in turn increases this risk. On the other hand, [24] concluded that the adoption of International Financial Reporting Standards (IFRS) reduces the complexity of financial reporting and the chances of withholding bad news and thus reducing stock market crash risk. In addition, the use of optional disclosure tools, such as social responsibility leads to increased transparency of financial reporting, reduces the mismatch of information and reduces significantly this risk [25].

B. Managerial incentives and characteristics:

Managerial characteristics affect CEOs' decisions on withholding bad news, which is a fundamental determinant of stock market crash risk. [26,27] concluded that companies having younger CEOs with overconfidence are more

vulnerable to this risk. On the other hand, [28] concluded that the internal debt represents the company's firm commitment to future payments that CEOs should receive in the form of pensions and deferred compensation. This motivates in turn CEOs to present high-quality financial reports, and thus reducing the stock market crash risk.

C. Capital Market Determinants:

Capital market may provide an incentive to withhold bad news, which increases the stock market crash risk. [29] concluded that disclosing this news may prompt some transient investors to sell their shares, which could affect liquidity and lead to an increased stock market crash risk.

D. Corporate Governance:

Characteristics of governance play an important role in improving the quality of financial disclosure and financial reports, thus reducing stock market crash risk. [27,30] concluded that the increase in CEOs' independence in the Audit Committee and the adequate auditor's experience of the nature of industry, governance policy, which is clearly defined, and the quality of internal observation reduce stock market crash risk. [19] argued that institutional ownership and stakeholders' observation limit earnings management practices, thus reducing stock market crash risk. [22] concluded that coverage provided by financial analysts may reduce this risk through its role in reducing the mismatch of information. Moreover, the duration of auditing may increase the auditor's ability to detect and reduce the storage of bad news, thus reducing stock market crash risk [19].

E. Informal Institutional Mechanisms:

[19] concluded that informal mechanisms (such as the rules and principles of the company, management ethics) are of particular importance to emerging economies while the formal mechanisms in these countries, such as corporate governance, investor protection, accounting standards may be weak and less developed. [30] concluded that political events may create incentives for firms to withhold bad news because CEOs and politicians may bear enormous costs and heavy penalties in case of any disclosure of bad news about the critical political events. [19] concluded that CEOs' religious beliefs restrict their storage of bad news, thus reducing stock market crash risk. [31] concluded that stock market crash risk diminishes in companies having a high social trust.

In light of the aforementioned studies, the crash risk of stock market is affected by several determinants, the most important of which is opaque financial reporting (lack of the company's transparency), the reservation of accounting, and the practices of earnings management, and social responsibility assumed by companies, institutional ownership, the degree of accuracy of management expectations, the company's strategy in dealing with bad news, the company's practices of tax avoidance, and expectations held by financial analysts. The default risk, financial and leverage may serve as a prelude to stock market crash risk.

3.2 Explanatory theories of the relationship between stock market crash risk and managerial ability.

The theories and literature on accounting and finance give different interpretations of the nature of the relationship between CEOs' managerial ability and stock market crash risk. This can be illustrated as follows:

A) The Bad News Hoarding Theory:

As for the interpretation of stock market crash risk, this theory is based on the fact that CEOs are stockpiling or hoarding bad news (compared to good news) from external parties over a long period of time so as to gain certain advantages. The accumulation of bad news may last over time until it reaches the tipping point, a point when an administration cannot stockpile bad news any more due to the negative consequences of hiding bad news which are higher than positive ones. Accordingly, revealing this bad news all at once to the market is inevitable, causing a significant decline in the company's shares [20].

According to [22,32] accounting literature handled many reasons that impel CEOs to stockpile bad news, one of which may be their desire to improve their career path and maintain their bonuses or compensations which are often associated with the company's performance and profits [19]. And [33] confirmed that managerial overconfidence may allow them to do certain practices in their interests at the expense of other parties and thus withholding bad news. On the other hand, [34] found restrained confirmation that high-ability managers are likely to withhold bad news through the overinvestment channel and "other channels" when managers are overconfident. Finally, the authors found that the joint consequence of managerial overconfidence and managerial capability on firms' crash risk is more prominent when there is a material weakness in firms' internal controls, high investor belief heterogeneity and high information irregularity

B) Agency Theory:

[7] stated that the great administrative reputation contributes to reducing the costs of the agency, because CEOs having the greatest reputation are keen on acting in the investors' interests by selecting the best projects that give the highest

net positive value, thus increasing the future profits that investors could earn. This in turn reduces stock market crash risk. In this respect, [24] stated that CEOs' great managerial ability helps investors to predict future earnings. In addition, great managerial ability can contribute to reducing the costs of the agency through its role in improving the information environment. It allows the flow of more information to the capital market, which reduces the mismatch of information between internal and external parties of the company, avoids the problem of reverse selection and enhances the competitiveness of the company. This in turn reduces stock market crash risk [6].

C) Theory of Differences of Opinions:

This theory is based on the fact that CEOs with their great managerial ability can reduce the heterogeneity in investors' opinions or beliefs through CEOs' role in providing investors with reliable information on which they base their evaluation of stock prices [22]. That is why this theory is called the theory of heterogeneity in investors' beliefs. According to the theory of Differences in Opinions, every investor believes that his/her own information is more convenient and accurate than others'. Therefore, the greater the degree of transparency and information is strongly related to the greater objectivity and accuracy of determining the real value of the share and, thus, diminishing the stock market crash risk.

D) Upper Echelons Theory:

CEOs' individual characteristics play an essential role in decision-making, as they affect the company's strategic choices and consequently its performance and its ability to cope with potential risks [35]. CEOs having the greatest managerial ability have better knowledge about the company and the industry, and have a greater ability to process information so that they can formulate more accurate expectations. They also tend to improve the quality of the company's information environment and reduce storage of bad news, which could contribute to reducing the likelihood of stock market crash risk [36].

In light of the aforementioned discussion, CEOs' great managerial ability has a crucial role in reducing stock market crash risk through reducing the storage of bad news, as evidenced by some indicators such as the increase in the degree of transparency, low earnings management, low opacity of financial reporting, in addition to the role of the CEOs' managerial ability in reducing agency costs and reducing heterogeneity in investors' opinions or beliefs.

4 Literature Review and hypotheses:

There are many studies that dealt with stock market crash risk. [37] were the first to establish a relationship between stock market crash risk and information opacity. They argued that the absence of full transparency of the company's performance allows CEOs to intentionally hide the company's bad news for a long period of time although they are willing to absorb temporarily some losses resulting from poor performance to protect their personal jobs. However, if there is bad news that lasts for a long period of time, CEOs cannot absorb more losses. In addition, this bad news will be disclosed at one time, which in turn causes stock market crash risk [38].

Economic theory predicts that the increase in the accounting disclosure reduces the mismatch of information between the company and investors. Studies have concluded that increased transparency reduces stock market crash risk by means of reducing the role of the managerial ability in withholding bad news [39]. In contrast, information is more available to CEOs than to auditors and regulatory bodies. This in turn could enable them to exploit the flexibility, provided by accounting standards, in some opportunistical practices [40]. Studies have confirmed that CEOs can exploit their discretion to disclose good performance but hide the company's negative information from investors, which leads to an increase in stock market crash risk [41,27].

As for accounting literature, [25] concluded that increased transparency of the application of international financial reporting standards reduces stock market crash risk in non-financial companies. [38] also reached the same conclusion through applying these standards to American banks [23] concluded that the degree of conditional accounting reservation (timely recognition of bad news as losses compared to good news as gains) is associated with a negative relationship with stock market crash risk and has a considerable significance. [6] concluded that stock market crash risk may increase in companies where CEOs have greater managerial ability through inefficient investment as evidenced by Rent Extraction Theory. Therefore, the hypothesis on which the study is based can be expressed as follows:

There is a negative correlation between CEOs' managerial ability and stock market crash risk.

This correlation has a considerable significance.

5 Study Model:

Based on the research hypotheses, the model for measuring the relationship between CEOs' managerial ability and stock market crash risk can be formulated as follows:

$$\text{Crash Stock}_{it} = B0-\beta_1 (\text{DEASCOREit})- \beta_2 (\text{F SIZit}) - \beta_3 (\text{ROAit}) + \beta_4 (\text{LEVit}) - \beta_5 (\text{MTBit}) + \beta_6 (\text{SIGMAit}) + \varepsilon_{it}$$

Whereas:

- Crash stock: the company's stock market crash risk over one year. It is referred to by negative coefficient of skewness (NCSKEW) of unusual weekly returns of the share as well as the natural logarithm of the ratio of the standard deviation of the low-range views to the standard deviation of high views (DUVOL).
- DEAscore: indicator of managerial ability (DEA score), which is introduced by [11]
- F SIZE: the company's size which is estimated by usual logarithm of the book value of the total assets at the end of the year [42,46].
- ROA: Return On Assets: it is estimated through adding the net income obtained before unusual items to the total book value of assets at the end of the year [24].
- LEV: financial Leverage: It is measured by calculating the ratio of long-term liabilities to the total assets. [18].
- MTB: Market value to the book value of property rights is measured by dividing the closing price on the book value of the company's shares at the end of the fiscal year [18].
- SIGMA: The standard deviation of returns: It is measured by [43] square root of the sum squares of the standard deviation of weekly earnings per share (SIGMA) to its median [44,45].

6 Outline of the Applied Study:

The study population consists of all non-financial companies whose shares are traded in the Saudi Stock Exchange from 2018 to 2020. The companies, 160 in number, belong to 19 sectors until the end of 2020. (https://www.tadawul.com.sa). The researchers chose the study sample according to the following conditions:

The company's financial reports are available on a regular basis and must have sufficient information so that the variables of the study can be calculated. Also, they should not have been written off, merged or stopped during the study period. In addition, the company should have not sustained losses on a regular basis for more than a year.

The application of the aforementioned criteria has resulted in the selection of 112 companies that represent the study sample, equivalent to 70% of the total number of companies listed on the Saudi Stock Exchange (336 view) according to [9]

7 Analysis of the Applied Study Results and hypothesis testing:

This section is aimed at testing the validity of the data for statistical analysis, displaying descriptive statistics for the variables of the study, univariate analysis (correlation analysis) and regression analysis to exam the study hypotheses.

7.1 Testing the validity of the data for statistical analysis:

To verify how close, the data of continuous variables are to **its normal distribution**. Then, Kolmogrov-Smirnov test is used, and the results are as follows:

Table 1: Kolmogorov-Smirnov test

Variables	VIF	**Tolerance**
DEASCORE	0.324	.232
F SIZE	0.114	.146
ROA	0.173	.425
LEV	0.125	.128
MB	0.090	.234
SIGMA	0.266	.352

Table (1) indicates that the coefficient values (VIF) for all independent variables are less than (10). Also, the grace period values of tolerance test range from (0.128) to (0.425) which is lower than 1 at all levels of variables. This means that there is a very weak correlation between independent variables. Therefore, the study model does not suffer from the

problem of overlap or linear duplication.

Also, the stability of random errors variance is tested through the Test of Homogeneity of Variances. The results of this test can be illustrated with the following table:

Table 2: the results of the Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1.142	7	24362	.562

Table (2) indicates that the probability value (Sig = 0.562) is greater than the level of significance (0.05), which indicates that there is a stability in random errors variance or variances are homogeneous.

7.2 Test the validity of the data for statistical analysis:

Table 3: indicates the results of descriptive statistics for the continuous variables of the study

Variables	Year	Mean	Standard deviation	Minimum	Maximum
DEASCORE	2018	.281	.134	.084	.462
DEASCORE	2019	.098	.214	-.836	.289
DEASCORE	2020	-.161	.275	-.854	.078
DUVOL	2018	.413	.124	.157	.624
DUVOL	2019	.152	.106	-.178	.283
DUVOL	2020	.015-	.117	-.262	.163
NCSKEW	2018	2.131	.563	.037	2.632
NCSKEW	2019	.642	.542	.023	1.439
NCSKEW	2020	.005-	.043	-.054	.317
F SIZE	2018	4.823	..734	3.785	7.364
F SIZE	2019	7.635	.825	5.691	9.681
F SIZE	2020	10.234	.748	7.86	11.524
ROA	2018	.057	.136	-.236	.213
ROA	2019	.231	.046	.137	.416
ROA	2020	.307	.048	.179	.453
LEV	2018	8.263	.675	6.851	9.745
LEV	2019	5.374	1.113	3.562	8.361
LEV	2020	2.694	.489	2.134	4.681
MB	2018	1.123	.678	.124	3.250
MB	2019	2.459	.487	1.320	4.360
MB	2020	3.891	.396	3.010	5.270
SIGMA	2018	2.436	.514	.086	3.524
SIGMA	2019	1.271	.863	.029	2.462
SIGMA	2020	.189	.327	.005	1.423

Table (3) **shows a description of continuous variables**

The previous table indicates that the variable value of (DEASCORE) is close to zero in 2020 when its value reached (0.078), which is a good indicator of the great managerial ability in the study sample. This result is consistent with the research done by Habib and Hasan (2017), which is applied to a sample of Australian companies (76249) views from 1987 to 2012, who found that the average value of the natural logarithm of the degree of managerial ability is equivalent to (-0.01).

Results showed an average decrease in negative coefficient of skewness (NCSKEW) of unusual weekly returns from (2.131) in 2018 to (0.005-) in 2020. There is also a decrease in the average logarithm of the ratio of the standard deviation of the low-range views to the standard deviation of high views (DUVOL) from (0.413) in 2018 to (-0.015) in 2020, This indicates a decrease in the negative coefficient in the distribution of returns and thus reducing stock market crash risk in the study models, which is the degree of managerial ability, stock market crash risk, the size of the company, the rate of return on assets, financial leverage, the ratio of the market value to the book value of property rights, and the standard deviation of returns.

As for the control variables, the average natural logarithm of the total company's assets reached a maximum of (10.234) with a standard deviation (0.748) in 2020. In addition, the maximum value of the average return on assets reached (0.307) in 2020, while the average degree of leverage dropped to its lowest value (2.694) in 2020. The average market value rose to the book value of property rights to (3.391) in 2020. Furthermore, there is a deficiency in the variable of standard deviation of returns (SIGMA) as it reached the lowest average (0.189) in 2020.

7.3 The results of Correlation Analysis:

The Pearson correlation coefficient is applied to determine the strength and direction of the relationship between the CEOs' managerial ability and stock market crash risk. Table (4) shows the Pearson Correlation of the study variables.

Table 4: Pearson Correlation of the study variables

		DEASCORE	DUVOL	NCSKEW	F SIZE	ROA	LEV	MB	SIGMA	DEASCORE * IRQ
DEASCORE	Corr	1.000								
	Sig									
DUVOL	Corr	-.435**	1.000							
	Sig	.000								
NCSKEW	Corr	-.416**	.647**	1.000						
	Sig	.000	.000							
F SIZE	Corr	.468**	-.671**	-.723**	1.000					
	Sig	.000	.000	.000						
ROA	Corr	.361**	-.524**	-.531**	.571**	1.000				
	Sig	.000	.000	.000	.000					
LEV	Corr	-.473**	.632**	.753**	-.793**	-.637**	1.000			
	Sig	.000	.000	.000	.000	.000				
MB	Corr	.473**	-.576**	-.637**	.714**	.682**	-.736**	1.000		
	Sig	.000	.000	.000	.000	.000	.000			
SIGMA	Corr	.489**	.578**	.689**	-.631**	-.579**	.654**	-.672**	1.000	
	Sig	.000	.000	.000	.000	.000	.000	.000		

(**) means there is a statistically significant relationship at and less than (0.01) between the two variables.

(**) means there is a statistically significant relationship at and less than (0.05) between the two variables.

The above table indicates a negative correlation between managerial ability and stock market crash risk as there is a negative correlation coefficient for each of the coefficient of unusual returns of shares, the natural logarithm of the standard deviation ratio of a set of few views to the standard deviation of a set of high views, and the level of its significance (sig.) is less than (0.05).

7.4 Results of Multiple Regression Analysis:

Method of Ordinary Least Squares (OLS) is used in the formulation of the regression model of measuring the impact of CEOs' managerial ability as an independent variable on stock market crash risk as a dependent variable. This can be illustrated with the following table:

Table 5: Results of Multiple Linear Regression Analysis

Crash Stock $_{it}$= $\beta 0$-β_1(DEASCOREit) – β_2 (F SIZit) – β_3 (ROAit)+ β_4 (LEVit)- β_5 (MTBit)+ β_6 (SIGMAit) + ε_{it}										
Variables	DUVOL $_{it}$					NCSKEW $_{it}$				
Independent Variables	B	Std. Error	Beta	T	Sig.	B	Std. Error	Beta	T	Sig.
(Constant)	0.295	0.075		2.482**	0.001	1.632	0.352		3.217	0.000
DEASCORE	.0.263-	0.112	.0.381-	-2.392*	0.015	.1.174-	0.415	.0.256-	2.136*-	0.024
F SIZE	.0.012-	0.005	.0.162-	-2.163*	0.030	.0.117-	0.017	.0.327-	3.275**-	0.000
ROA	.0.046-	0.027	.0.030-	-2.126*	0.028	.0.123-	0.018	.0.021-	-5. 217**	0.000
LEV	0.014	0.006	0.172	2.172*	0.028	0.067	0.023	0.173	2.236*	0.015
MB	.0.031-	0.008	.0.273-	-3.295**	0.000	.0.123-	0.037	.0.186-	2.471**-	0.003
SIGMA	0.006	0.002	0.031	2.891*	0.024	0.062	0.039	0.104	2.063*	0.034
Multiple correlation coefficient $\boldsymbol{R}$ = .675						Multiple correlation coefficient $\boldsymbol{R}$ = .734				
Average coefficient of determination $\boldsymbol{Adj\ R^2}$ = .542						Average coefficient of determination $\boldsymbol{Adj\ R^2}$ = .612				

The previous table indicates that the value of (Adjust R^2) compared to the variable (DUVOL) is (0.542). As for the variable (NCSKEW), it is (0.612) which reflects the interpretive value of the model. Most changes can be interpreted

through this variable. The results of regression in table (5) indicates that the degree of CEOs' managerial ability has a negative effect on stock market crash risk as there is a minus sign next to (β). The possible value of variable is (Sig = 0.015). Concerning (NCSKEW), it is (0.024) which is less than (0.05). This proves the hypothesis of the study. This is also consistent with a study conducted by Kazemi and Ghaemi (2016) who confirmed that the success or failure of any institution depends on CEOs' managerial ability which contributes to the increase in transparency, solving of future problems and to the best exploitation of resources available and therefore reducing stock market crash risk.

According to the aforementioned findings, the regression model of the impact of the managerial ability on stock market crash risk can be formulated as follows:

a. According to the method of negative coefficient of distribution of revenues NCSKEW

$$\widehat{NCSKEW}_{it} = 1.632 - 1.174(\text{DEASCOREit}) - 0.117(\text{F SIZE}) - 0.123(\text{ROA}) + 0.067(\text{LEV}) - 0.123(\text{MB}) + 0.062(\text{SIGMA})$$

b. According to the method of down-to-up volatility DUVOL

$$\widehat{DUVOL}_{it} = 0.295 - 0.263(\text{DEASCOREit}) - 0.012(\text{F SIZE}) - 0.046(\text{ROA}) + 0.014(\text{LEV}) - 0.031(\text{MB}) + 0.006(\text{SIGMA})$$

8 Conclusion

CEOs' managerial ability generally refers to their talent, knowledge, management style, and personal skills. It is regarded as one of the key factors in the success of business enterprises. It enhances the use of the company's resources more efficiently, helps to understand and apply accounting standards, and reduce the activities of tax avoidance done by CEOs. In addition, it plays an important role in reducing agency complications and improving the company's information environment. The study concluded that there is a negative correlation with a significance between CEOs' managerial ability and stock market crash risk. The probable value in the method of negative coefficient of returns distribution, and the method of down-to-up volatility is less than that of level of significance (0.05), which proves the validity of the hypothesis. This is also consistent with a study conducted by [1]. This is explained by the fact that CEOs' managerial ability enhances transparency of disclosure, reduces storage of bad news and thus reducing overestimation. It also contributes to the improvement of institutional performance and to the increase in competitiveness in the market and therefore reducing stock market crash risk.

In light of the findings discussed in both the theoretical and applied study, it is recommended that companies pay attention to the importance of selecting CEOs with great managerial abilities (gender, age, educational and professional background, personal skills, and personal beliefs). This achieves many positive effects on all stakeholders, the most important of which is the improvement of the company's information environment and the increase in its transparency. It prevents CEOs from engaging in profit management activities, and tax avoidance. It helps to take advantage of available investment opportunities and use the company's resources and thus avoiding the company's share price crash risk. It is also recommended that researchers and investment stakeholders, especially in emerging economies, be interested in analyzing the economic impact of CEOs' managerial characteristics because they affect the company's policy, decisions, performance and path. Professional management of companies contributes to providing it with necessary financing, attracting investment, creating liquidity and thus achieving the sustained success of the company or expose it to stock market crash risk.

Conflict of interest

The authors declare that there is no conflict regarding the publication of this paper.

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