



**Does board of directors mitigate stock price crash risk?
An empirical evidence from Egypt**

By

Sarah Sobhy Mohamed Hassan

Lecturer of Business Administration
Faculty of Commerce – Cairo University
sarah_sobhy@foc.cu.edu.eg

*Scientific Journal for Financial and Commercial Studies and
Researches (SJFCSR)*

Faculty of Commerce – Damietta University

Vol.2, No.2, Part 1, July 2021

APA Citation:

Hassan, S.S.M. (2021) Does board of directors mitigate stock price crash risk? An empirical evidence from Egypt, *Scientific Journal for Financial and Commercial Studies and Research*, Faculty of Commerce, Damietta University, 2(2)1, pp.349-371.

Website: <https://cfdj.journals.ekb.eg/>

Abstract

Purpose: The main aim of the current research is to investigate the role of board of directors in explaining the behaviour of stock price crash risk in the Egyptian context over 2014-2018.

Design / methodology / approach: The sample employed in this paper consists of the companies included in EGX30 from 2014 to 2018. Following literature (see for example: Chen et.al 2001; Tarkovska, V., 2014; Kwon et.al 2019; Kothari et.al 2008), one measurement was used in this research to measure stock price crash risk which is “down-to-up volatility”.

Findings: This research shows that board of directors’ characteristics are not associated with stock price crash risk. However, some control variables are related to stock price crash risk. leverage has a significant negative association with stock price crash risk which means that increasing debt as a finance source increases the probability of stock price crash exposure at 90% significance level. Also, firm size has a significant negative impact on stock price crash risk at 99% significance level.

Originality/ value: This article is one of the first to investigate whether board of directors ‘characteristics contribute to explain stock price crash risk in the context of Egyptian economy.

Key words: corporate governance, board of directors, stock price crash risk, CEO duality, board independence, board size, ROA, leverage, firm size.

1. Introduction

The growing empirical researches in corporate governance have shed light on the importance of corporate governance systems in protecting shareholders' welfare (Andreou, et.al 2016; Cunha & Rodrigues 2018; Bebchuk et.al 2004).

Corporate governance mechanisms decrease the probability of financial distress and bankruptcy (Darrat, et.al 2014). Also, Atanassov and Mandell (2017) confirmed that weak corporate governance mechanisms reduce firm's value. Consistent with this line of research, Paniagua,et.al (2018), Manzanque, et.al (2015), Zabri,et.al (2016), Ararat et.al (2016) empirically proved that corporate governance mechanisms enhance firms financial performance indicators.

Stock prices crash is a phenomenon which has a bad influence on the financial stability and competitiveness of companies. A lot of researchers have shed light on price crash issue especially after the scandals of major companies such as (e.g., WorldCom, Enron, and Xerox) (Lio 2016; Yang 2017; Cajueiro, et.al 2009; Chang et.al 2017; Chauhan et.al 2017; Kwon et.al 2019; Zichao et.al 2016).

Stock price crash risk is highly expected to happen among firms which have high agency risk (Andreou, et.al 2016; Kim and Li 2014). In such firms a decline in expected cash flows or NPV can motivate managers to hide bad news to protect their own interests. (Liao, 2016; Andreou, et.al 2016; Chen et.al 2001; Tarkovska, V., 2014; Kwon et.al 2019; Kothari et.al 2008). Number of researchers has highlighted the importance of corporate governance mechanisms in preventing such behaviours. (Li and Zheng 2019; Rao and Zhou 2019; Andreou, Horton and Louca 2016; Tarkovska 2014; Liu 2016; Kothari, Shu, Winsock 2008; Gao, Li and Drougas 2017). However, searching the impact of corporate governance on stock price crash risk is still limited outside USA (Tarkovska, V., 2014).

2- Research problem, questions and objectives

The existing research adds to finance literature in several ways; first, my research paper sheds light on the importance of agency problem. In particular, this research concentrates on examining the relation between board of directors and stock price crash risk, other researchers have scrutinized the association between stock price crash risk and stocks liquidity (Chang,et.al 2017; Chauhan,et.al 2017), cross-listing (Ghadha 2019), corporate social responsibility (Kim, et.al 2018), mutual funds herding behaviour (Deng, et.al 2018), insider sales (Hu, et.al 2017), debt structure (Zichao, et.al 2016), short sales (Ni and Zhau 2016), unexpected earnings (Yeung and Lento 2018). (Andreou, et.al 2016). Second, existing research extends previous studies on crash risk, as most of stock crash risk literature consider other variables such as accounting characteristics, market structure...etc. To my knowledge, very few numbers of research has investigated the role of board of directors in explaining stock price crash risk. Third, the results of the literature on the relationship between corporate governance and crash risk in advanced countries are inconclusive. Several scholars have examined this type of risk in the context of USA (see for example: Yeung and Lento 2018; Wang, Meric, Liu, Meric 2009; Habib, Hasan and Jiang (2014); Callen and Fang 2011). To the best of my knowledge, no researchers have investigated this issue in less developed countries or in developing countries. Additionally, the current research contributes to the previous studies, as it investigates the determinants of stock price crash risk and indeed it contributes to literature concerning of corporate governance attributes such as (Andreou, et.al 2016; Yeung and Lento 2018; Callen and Fang 2011; Gao, et.al 2017; Tarkovska 2014).

Based on the previous discussions, the current research tries to answer the following questions: (1) Are board of directors' characteristics main predictors of stock price crash risk in Egypt? (2) Does board size influence crash risk? (3) Does board independence influence crash risk?

Based on the previous questions, the main aim(s) of the current research is to investigate whether board size, independence affect stock price crash risk probability in the Egyptian context. This is the first empirical study to investigate governance and crash risk in Egypt.

The rest of this paper is organized as follows: Literature and hypotheses development are introduced in the second section. Research methodology is displayed in the third section of this research. Empirical results and discussions are displayed in the fourth section. Conclusions, implications and future research are shown in the fifth part of the current research.

2. Literature review and hypotheses development

(2.1) stock price crash risk

Many categories such as investors, legislators and academics have given more attention to stock price crash risk. The concept of stock price crash is a recent academic concept that has been introduced for the first time by Chen et.al (2001), (Wang, Han and Huang 2019).

Stock price crash is one of the most frequent phenomena among companies with high agency risk. Managers in such enterprises may exploit information asymmetry to hide bad news to achieve personal interests either through earnings management or by taking imperfect investment decisions. (Wang, Han and Huang 2019).

Literature indicate strong association between agency problems and stock price crash risk, since it suggests that crash risk is most probably be existed in companies suffer from agency problems (Habib,et.al 2018; Yeung and Lento 2018). In such organizations, managers conduct many behaviours that could adversely affect shareholder's rights. They can take an advantage of information asymmetry to hide negative information.

However, the negative information might be delayed temporarily. The disclosed information will inevitably conflict with the real information on the operational performance of the firm. (Habib, et.al 2018; Yeung and Lento 2018). Previous empirical studies confirmed the association between corporate governance and stock price crash risk (Andreou, et.al 2016), financial reporting (Kim and Zhang 2016), ownership structure, audit quality and board of directors (Yeung and Lento 2018). I extend this literature by being the first, to the best of my knowledge, to explore the effects of board of directors in reducing crash risk in the Egyptian context.

(2.2) corporate governance mechanisms:

Corporate governance is not a new topic in literature, as it begins with the birth of corporations. However, researchers gave this topic considerable attention after CEOs laying off in the first half of 1990s and after massive distress of Enron and world.com in the early of 2000 (Zabri,et.al 2016; Iqbal et.al 2018). As a result, corporate governance is an effective tool to solve any potential conflict between managers and shareholders by aligning their interests (Al-Najar and Clark 2016).

Literature reveals two important corporate governance mechanisms; internal mechanism and external mechanism (Zabri, et.al 2016). The current research is interested in scrutinizing two important internal mechanisms; board size and board independence.

Corporate governance in Egypt

In 2016, the third edition of the Egyptian governance code was issued, it is applicable to all business's entities (Shehata 2016). The Egyptian corporate governance code recommended that companies should follow the recommendations contained therein and in the case of violation of these instructions, these companies should explain the reasons for this. However, there are no mandatory requirements to this end. (Cigna et.al 2016).

(2.2.1) Board of directors:

Board of directors is a crucial factor in the internal governance as it plays a vital role in determining firm's plans (Al-Najar and Clark 2016). (Al-Najar and Clark 2016) highlighted the importance of board of directors, their research showed that a negative association between board size and cash holdings is existed. Also, Ghouma et.al (2018) confirmed that stronger boards (in terms of composition and structure) guarantee investor's rights protection which minimize agency problems with firms.

Board of directors also has positive influence on firm's financial performance measured by ROA, since smaller boards have the ability to increase ROA and ROE (Paniagua, et.al 2018), (Zabri, et.al 2015), Abdallah and Ismail (2016). Also, Chhaochharia and Grinstein (2007) confirmed that corporate governance practices have a great influence on firm's value. On the other hand, Manzaneque, et.al (2015) showed that small boards reduce financial distress, especially in the context where the ownership is highly concentrated.

The board of directors has two main functions; monitoring and advisory roles. The independence of the board of directors is related to the monitoring function while board size is related to advisory function (Darrat et.al 2014). Previous researches concentrate on scrutinizing monitoring role of the board and indicated that internal monitoring mechanism reduces the agency problems (Darrat et.al 2014). In regards to the advisory role, some research papers indicated that good advices could be introduced to CEOs from large and diversified boards. While others shed light on the role of independent directors' advices to CEO. On the other hand, some researchers find that outside directors provide valuable advices to firm's performance only if they can learn more about the firm (Andreou, et.al 2016).

- a) ***The composition of the board:*** this component is measured as the percentage of external directors on board of directors (Andreou, et.al 2016; Zabri, et.al 2015), in other words the percentage of executive and non-executive directors in the company (Othman,

et.al 2009). Literature indicates two contradictory points of view on the effectiveness of depending on high percentage of outside directors in the board. Some studies reveal that a board with outside directors is effective in monitoring management which has a positive influence on protecting shareholder's rights (see for example Bebchuk & Weisbach, 2010; Bhagat & Black, 2001; Paniagua et.al 2018) Contrary to the previous view, some researchers introduce empirical evidence that boards with major insider directors have a positive impact on shareholder's wealth (Dalton, et.al 1998; Dalton et.al 2003, Othman et.al 2009). Othman et.al (2009) indicated that a higher percentage of executive managers in board of directors is crucial in ensuring that all assets are being utilized effectively. Regardless of the conflicting point of views, literature indicate that the effectiveness of board of directors play a vital role in reducing agency risk. As a result, effective board of directors' composition would reduce stock price crash risk.

Based on the previously indicated discussion the formulation of the first hypothesis can be as follows:

H1: Firms with independent boards are expected to have low stock price crash risk.

- b) ***Board size:*** Is the total number of directors on a board (Zabri, et.al 2015 P.288). The ideal board size should include executive managers and non-executive managers (Zabri, et.al 2015; Othman et.al 2009). Zabri, et.al (2015) showed that there is no optimal no of board size, since they differ from one country to another. Two points of view are introduced by previous studies regarding the effectiveness of board size. Some research papers empirically proved the effectiveness of small boards in attaining higher monitoring, as depending on large board would result in less effective performance due to coordination problems (Bahgat and Black 1996; Yermack 1996). While others confirm that large size has more positive impact on corporate

governance and handling agency problems (Othman et.al 2009; Abdullah 2004; Ahmed et.al 2005).

Based on the previously indicated discussion, the formulation of the second hypothesis can be as follows:

H2: Firms with large board size are expected to have low stock price crash risk.

3. Research methodology:

(3.1) Data: The sample employed in this paper consists of the companies included in EGX30 from 2014 to 2018. The needed data are collected from the annual financial statements and the Co face Financial Yearbook over the period 2014-2018.

(3.2) Variables measurement and research design

(3.2.1) Measurement of firm-specific stock price crash risk

Stock crash risk literature reveal different measurements. Following literature (Andreou, et.al 2016; Kim and Li 2014; Liao, 2016; Andreou, et.al 2016; Chen et.al 2001; Tarkovska, V., 2014; Kwon et.al 2019; Kothari et.al 2008) one measurement will be used to calculate it which is, “down-to-up volatility” measurement. Hence, I should calculate firm-specific residual daily returns which can be estimated as follows:

$$r_{i,t} = \alpha_i + \beta_1, iRM, t-1 + \beta_2, iRM, t + \beta_3, iRM, t+1 + \varepsilon_{i,t}, \quad (1)$$

The previous equation reveals that there are different variables that determine how we can get the returns of stocks (I) on day (t). As it shows the returns of stock(i) today is determined by the value weighted market return on day (t-1), day(t) and (t+1) respectively. Then the firm’s specific return is determined as the natural logarithm of one plus firm specific residual daily return.

$\varepsilon_{i,t}$:

$$R_{i,t} = \ln (1 + \varepsilon_{i,t}). \quad (2)$$

The crash risk measure, the “down-to-up volatility”, of stock i during year T , $DUVOL_{i,T}$, can be computed as:

$$DUVOL_{i,T} = \frac{\log \left(\frac{(nu-1) \sum Down Ri,t}{(nd-1) \sum Up Ri,t} \right)}{(4)}$$

Equation (4) reveals that crash risk measure is determined by different factors which include the number of up days (nu) and down days (nd) during year (t). After calculating firm specific daily returns, I categorized it in to two main groups (up group) if the daily return is above the mean of the year t , and (down group) if the daily return is below the mean of the year t . If $DUVOL$ is high it means that crash risk in this company will expected to be high.

(3.2.2) Board structure variables

Two measures of board structure are employed in this research: board independence and board size. Board independence can be measured by the number of non-executive directors in board of firm i at the end of year t . Board size is measured by the number of directors on the board of firm i at the end of year t .

(3.2.3) Control variables:

Some of control variables are employed to reveal the influence of other variables on crash risk. These control variables include leverage ratio which is calculated as the percentage of total liabilities to total assets. Also, market capitalization is also employed and I calculated it as the natural logarithm of market value of equity of firms.

The measurement of stock price crash risk:

The starting point for measuring stock price crash risk is the regression equation of the following expanded market model (Habib et.al 2017):

$$R_{j,t} = \alpha_j + \beta_1 r_{m,t-2} + \beta_2 r_{m,t-1} + \beta_3 r_{m,t} + \beta_4 r_{m,t+1} + \beta_5 r_{m,t+2} + \epsilon_{j,t} \quad (1)$$

Since the error factor in the previous formula is highly skewed, it is converted to a more systematic distribution. So, the second step in calculating stock price crash risk is to determine the return for each company by calculating the natural logarithm of one plus the error factor in the previous formula according to the following formula:

$$D_{j,t} = \ln(1 + \epsilon_{j,t}) \quad (2)$$

The stock price crash risk is then measured using one of the four methods offered by previous studies in finance. The researcher chooses the most commonly method in previous studies which is the down-to-up volatility.

The down-to-up volatility

This scale has been proposed for the first time by Chen et.al 2001, which is a measure commonly used in previous studies. Under this measure, the daily returns are divided in to two groups. The primary group is the down group, which is the group consists of observations that the average calculated returns fell from the calculated average returns. The second group is the up group, which is the observations that exceeded this average and then the standard deviation for each group is calculated separately. The scale takes the following form:

$$DUVOL = \frac{\log(nu - 1) \sum_{down} D_{j,t}}{(nd - 1) \sum_{up} D_{j,t}}$$

Where,

Nu: represents the no of observations in up group.

Nd: represents the no of observations in down group.

The high values of this measurement means high probability of stock price crash risk.

(3.3) Model specification

The first hypothesis states that there is a negative association between board composition and stock price crash risk. I use the following equation to test this hypothesis:

$$NCSKEW_{i,T+1} = \alpha_i + \beta_1 INDEPENDENCE_{i,T} + \beta_2 BOARD_SIZE_{i,T} + \beta_3 LN_SIZE_{i,T} + \beta_4 LEV_{i,T} + \epsilon_{i,T}$$

And

$$DUVOL_{i,T+1} = \alpha_i + \gamma_1 INDEPENDENCE_{i,T} + \gamma_2 BOARD_SIZE_{i,T} + \gamma_3 LN_SIZE_{i,T} + \gamma_4 AMB_{i,T} + \gamma_5 LEV_{i,T} + \epsilon_{i,T}$$

4. empirical results and discussions

(4.1) Descriptive statistics and correlation matrix:

Table (1)

Descriptive statistics

	DUVOL	LEVERAGE	LOGASSET	ROA	BOARDIND	BOARDSIZ
Mean	-0.020942	6.604	6.523168	0.017765	71.68199	9.976852
Median	-0.037317	0.509104	6.476140	0.009189	75.00000	10.00000
Maximum	0.764302	51.2	6.672955	0.250688	100.0000	19.00000
Minimum	-0.910496	0.000000	6.412127	-0.121898	40.00000	4.000000
Std. Dev.	0.225743	41502.81	0.090851	0.045442	17.85548	3.675743
Skewness	0.108553	9.526882	0.451853	1.742469	-0.426773	0.513546
Kurtosis	4.589199	107.1159	1.531825	9.884868	1.831680	2.774509
Jarque-Bera	23.15419	100828.5	26.75001	535.9158	18.84162	9.951861
Probability	0.000009	0.000000	0.000002	0.000000	0.000081	0.006902
Sum	-4.523395	1410611.	1409.004	3.837337	15483.31	2155.000
Sum Sq.						
Dev.	10.95637	3.70E+11	1.774604	0.443978	68545.90	2904.884
Observations	216	216	216	216	216	216

Table (1) presents the descriptive statistics regarding the six ratios used in the model. The descriptive statistics are generated based on the entire sample; the mean value of crash measure is (-0.02094). The mean value of leverage or depending on debt is 6.604 in the same sample. The mean size of companies included in my sample is 6.523 while the ability of firms to generate profits is 1.7%. The mean size of board of directors is 9.9765. It seems clearly from the previous table that according to Jarque-Bera test all the series included in statistical tests do not follow the normal distribution.

Table (2)
The correlation between research variables

Covariance Analysis: Ordinary
Date: 08/05/20 Time: 13:57
Sample: 2015Q3 2018Q2
Included observations: 216
Balanced sample (listwise missing value deletion)

Correlation Probability	DUVOL	LEVERAGE	LOGASSET	ROA	BOARDIND	BOARDSIZ	CEODUALI
D01	1.000000 -----						
LEVERAGE	-0.000331 0.3961	1.000000 -----					
LOGASSET	-0.041908 0.4401	0.095823 0.1605	1.000000 -----				
ROA	0.029170 0.4699	-0.019561 0.7750	0.100342 0.1416	1.000000 -----			
BOARDIND	0.004184 0.3513	0.042447 0.5349	-0.054891 0.4222	-0.090035 0.1874	1.000000 -----		
BOARDSIZ	-0.043651 0.4234	0.037408 0.5845	0.054994 0.4213	0.054384 0.4265	0.405031 0.0000	1.000000 -----	
CEODUALI	-0.086876 0.2034	0.115020 0.0918	-0.075759 0.2676	-0.045377 0.5071	-0.180277 0.0079	0.122677 0.0720	1.000000 -----

Table (2) shows the results of correlation between study variables. The table shows weak correlation between the variables, meaning that multicollinearity problem does not exist in data.

(4.2) Testing the stationarity of time series

Table (3)
Outcomes of stationarity tests

Time series	Methods	Statistic	Prob
Leverage	Levin, Lin & Chu t*	-3.50865	0.0002
	Im, Pesaran and Shin W-stat	-2.13653	0.0163
	ADF - Fisher Chi-square	54.5923	0.0077
	PP - Fisher Chi-square	58.1904	0.0031
LOGASSET	Levin, Lin & Chu t*	2.04464	0.9796
	Im, Pesaran and Shin W-stat	3.91632	1.0000
	ADF - Fisher Chi-square	5.72764	1.0000
	PP - Fisher Chi-square	4.11216	1.0000
: D(LOGASSET)	Levin, Lin & Chu t*	-9.54081	0.0000
	Im, Pesaran and Shin W-stat	121.034	0.0000
	ADF - Fisher Chi-square	229.004	0.0000
	PP - Fisher Chi-square		
Board independence	Levin, Lin & Chu t*	-0.50873	0.3055
	Im, Pesaran and Shin W-stat	1.52186	0.9360
	ADF - Fisher Chi-square	35.8370	0.0947
	PP - Fisher Chi-square	14.2523	0.9695
D(BOARDIND)	Levin, Lin & Chu t*	-2.03172	0.0211
	Im, Pesaran and Shin W-stat	-4.89579	0.0000
	ADF - Fisher Chi-square	39.0858	0.0000
	PP - Fisher Chi-square	25.7303	0.0012
BOARDSIZ	Levin, Lin & Chu t*	2.82743	0.9977
	Im, Pesaran and Shin W-stat	4.62277	1.0000
	ADF - Fisher Chi-square	7.11887	0.9999
	PP - Fisher Chi-square	7.16083	0.9999
D(BOARDSIZ)	Levin, Lin & Chu t*	-2.75638	0.0029
	Im, Pesaran and Shin W-stat	-1.33275	0.0913
	ADF - Fisher Chi-square	35.1257	0.0666
	PP - Fisher Chi-square	116.695	0.0000

Table (3) reveals stationarity test of the variables included in my model. It can be seen clearly from this table that some variables are stationary and other variables are non-stationary. As it is shown in table (3) leverage time series is stationary as the probability of Levin, Lin & Chu t^* is (0.0002) which is less than 0.05, this indicates that we should accept the null hypothesis stating that the time series is stationary. Regarding firm's size variable which is measured using log assets, table (3) states that log asset variables is non-stationary time series as the probability of Levin, Lin & Chu t^* is (0.9796) which exceeds 0.05 indicating that we should reject the null hypothesis states that the time series is stationary. In this case I should transform the non-stationary time series into stationary time series through calculating the first difference of log assets. Table (3) also shows that the first difference of firm size is transformed to be stationary time series, as the probability of Levin, Lin & Chu t^* is (0.0000) which means I should accept the null hypothesis stating that the time series is stationary. Additionally, Board independence time series is a non-stationary time series and by calculating the first difference of this variable I could transform it in to stationary time series as it is shown in table (3). Board of directors' time series is a non-stationary time series which means I should calculate the first difference of this variable. After calculating the first difference, the variable has transformed in to stationary time series.

(4.3) The outcome of regression model

Table (4)

Regression outcomes

Dependent Variable: DUVOL
 Method: Panel Least Squares
 Date: 08/05/20 Time: 14:21
 Sample (adjusted): 2015Q3 2018Q2
 Periods included: 12
 Cross-sections included: 18
 Total panel (balanced) observations: 216

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DBIND	-0.000459	0.005059	0.090762	0.9278
DBSIZE	0.004644	0.029350	0.158225	0.8744
LEVERAGE	- 8.01E-07	4.73E-07	1.693535	0.0920
DLOGASS	-2.043738	0.434770	4.700728	0.0000
C	-0.019754	0.067354	0.293282	0.7696

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.169497	Mean dependent var	-0.020942
Adjusted R-squared	0.070010	S.D. dependent var	0.225743
S.E. of regression	0.217697	Akaike info criterion	-0.106982
Sum squared resid	9.099296	Schwarz criterion	0.268049
Log likelihood	35.55406	Hannan-Quinn criter.	0.044531
F-statistic	1.703705	Durbin-Watson stat	1.870741
Prob(F-statistic)	0.028388		

Table (4) shows the results of regression model. It seems clearly from the table that there is no statistical relation between board of directors' independence and crash risk, which means that the first hypothesis stating that Firms with independent boards are expected to have low stock price crash risk should be rejected. The conclusion of current research does not

conform to the conclusions of previous studies such as (Andreou, et.al 2016; Zabri, et.al 2015; Bebcuk & Weisbach, 2010; Bhagat & Black, 2001; Paniagua et.al 2018). However, it totally matched the conclusion of Yeung and Lentro (2018) which confirmed that board structure is not significantly associated with crash risk.

Regarding the second independent variable which is board size, it can be seen clearly that there is no significant association between board size and stock price crash risk, which suggests that I should reject the second hypothesis stating that “Firms with large board size are expected to have low stock price crash risk”. This conclusion actually confirms that my expectations have not been met. Inconsistent with the previous researches, many previous research papers confirmed that board size has a significant influence on crash risk (Zabri, et.al 2015; Othman et.al 2009; Othman et.al 2009; Abdullah 2004; Ahmed et.al 2005).

Some control variables reveal a significant impact on stock price crash risk, leverage has a significant negative association with stock price crash risk which means that increasing debt as a finance source increases the probability of stock price crash exposure at 90% significance level. Also, firm size has a significant negative influence on stock price crash risk at 99% significance level. It seems clearly from the previous table that the explanatory percentage of the model does not exceed 16.9%.

(5) Conclusions, implications and future research:

Aiming to predict the impact of corporate governance on stock price crash risk, I developed regression model to predict the impact of board of directors on stock price crash risk. My research concludes that board independence plays no role to explain changes in stock price crash risk. Also, the results confirmed that board size has no role in explaining changes in stock price crash risk. However, some control variables have an impact on stock price crash risk. Financial leverage has a significant negative association with stock price crash risk which means that

increasing debt as a finance source increases the probability of stock price crash exposure at 90% significance level. Also, firm size has a significant negative impact on stock price crash risk at 99% significance level.

This study is not free from limitations. First, regression model includes only two dimensions of board of directors, other dimensions of corporate governance could be included to explain stock price crash risk. Second, my research scrutinized data over four years only, more extended period might be required for more accuracy in results.

Important implications are introduced by this research for regulators and policy makers. An evidence has been introduced that debt is important determinant for crash risk. Depending heavily on debt increases the probability of crash risk. Consequently, regulators should consider the percentage of debt while deciding in sources of finance. Also, shareholders should consider debt percentage and firm size while make investment decisions in Egypt.

Understanding the impact of other boards of directors' characteristics such as board diversity, CEO duality is a promising avenue for future research.

(6) References

1. Andreou, P., Antoniou, C., Horton, J., Louca, C., (2016). Corporate Governance and Firm-specific Stock Price Crashes. *European Financial Management*, Vol.22, No.5, PP.916-956.
2. Ararat, M., Black, B., (2017). The effect of corporate governance on firm value and profitability: Time series evidence from Turkey. *Emerging Markets Review*, Vol.30, PP.113-132.
3. Cajueiro, D., Tabak, B., Werneck, F., (2008). Can we predict crashes? The case of the Brazilian stock market. *PhysicaA*, Vol.388, PP.1603-1609.

4. Callen, J., Fang, X., (2011). Institutional Investors and Crash Risk: Monitoring or Expropriation? Rotman School of Management Working Paper, PP.1-54.
5. Cao, F., Sun, J., Yuan, R., (2019). Board directors with foreign experience and stock price crash risk: Evidence from China. JBFA, Vol. 30. PP. 1-30.
6. Chang, X., Chen, Y., Zolotoy, L., (2017). Stock Liquidity and Stock Price Crash Risk. Journal of Financial and Quantitative analysis, Vol.00, No.00, PP.1-33.
7. Chen, D., Kim, J., Li, O., (2017). China's closed pyramidal managerial labour market and stock price crash risk. The Accounting Review.Vol.93, PP.105-131.
8. Chen, J., Chan, K., Dong, W., (2017). Internal control and stock price crash risk: Evidence from China. European Accounting Review, Vol. 26, PP.125-152.
9. Chen, J., Hong, H., Stein, J., (2001). Forecasting crashes: trading volume, past returns, and conditional skewness in stock prices, Journal of Financial Economics, Vol.61, PP.345-381.
10. Darrat, A., Gray, S., Park, J., (2014). Corporate governance and bankruptcy risk. Journal of Accounting, Auditing and Finance, Vol.31, PP. 163-202.
11. Deng, X., Hung, S., Qiao, Z., (2018). Mutual Fund Herding and Stock Price Crashes, Journal of Banking and Finance, Vol.94, PP.166-184.
12. Eom, C., Kaizoji, T., Scalas, E., (2019). Fat tails in financial return distributions revisited: Evidence from the Korean stock market. Physica A, vol.562, pp. 1-25.
13. Gao, W., Li, Q., Drougas, A., (2017). Ownership Structure and Stock Price Crash Risk: Evidence from China. Journal of Applied Business and Economics Vol. 19(4), PP.65-78.

14. Ghadhab, I., (2019). Does cross- listing in the US mitigate stock crash risk? International evidence. *International Review of Financial Analysis*, vol.63, PP.186-197.
15. Ghouma, H., Naser, H., Yan, R., (2018). Corporate governance and cost of debt financing: Empirical evidence from Canada. *The Quarterly Review of Economics and Finance*. Vol.67, PP.138-148.
16. Habib, A., Hasan, M., Jiang, H., (2011) Stock price crash risk: Review of the empirical literature, Vol. 30, P.1-53.
17. Habib, A., Hasan, M., Jiang, H., (2017). Stock price crash risk: review of the empirical literature, *Accounting and Finance*, Vol.30. PP. 1-50.
18. Harper, J., Johnson, G., Sun, L., (2020). Stock price crash risk and CEO power: Firm-level analysis. *Research in International Business and Finance*. Vol.51. P.94-101.
19. Jerban, K., Chen, S., Zhange, R., (2020). Board diversity and stock price crash risk. *Research in International Business and Finance*, Vol.51. PP.101-122.
20. Kim, J., Zhange, L., (2014). Accounting conservatism and stock price crash risk: Firm level evidence, *Contemporary accounting research*, Vol.33. PP.412-441.
21. Kim, Y., Li, H., Li, S., (2012). Corporate social responsibility and stock price crash risk, *Journal of Banking and Finance*, Vol. 20, PP.1-50.
22. Kim, Y., Li, Y., (2014) corporate social responsibility and stock price crash risk. *Journal of Banking and Finance*, Vol.43. PP.1-13.
23. Kothari, S., Shu, S., Wysoucki, P., (2008). Do Managers Withhold Bad News? *Journal of Accounting Research*, Vol.47, No.1, PP.1-36.
24. Kwon, S., Jung, T., Yim, S., (2019). Does stock price crash of firms in the same business group cause stock price crash in other

- member firm? Evidence from Korea. *Emerging markets Finance and Trade*. Vol. 55, PP.1566-1592.
25. Li, Y., Zeng, Y., (2019). The impact of top executive gender on asset prices: Evidence from stock price crash risk. *Journal of Corporate Finance*, Vol.58, PP.528-550.
26. Liao, Q., (2016). The Stock Price Crash Risk Prediction by Neural Network. *Accounting and Finance Research*, vol.5, no.2, PP.61-70.
27. Liu, J., (2016). Do Executives Have Fixed Effects on Firm-Level Stock Price Crash Risk? . *CUNY Academic Works*, Vol. 11. PP.1-13.
28. Ni, X., Zhu, W., (2016). Short-sales and stock price crash risk: Evidence from emerging markets. *Economic Letters*, Vol.144, PP.22-24.
29. Rao, L., Zhou, L., (2019). Crash risk, Institutional investors and Stock returns, *North American Journal of Economics & Finance*, Vol.50. PP.25-55.
30. Shehata, N., (2016). Assessment of corporate governance disclosure. *The Journal of Developing Areas*, Vol.50. PP.453-460.
31. Tarkovska, V. (2014) Corporate Governance and Stock Price Crash Risk: Evidence from UK Panel Data. Working paper published by Dublin Institute of Technology 2014. PP.1-15.
32. Wang, J., Meric, G., Liu, Z. (2009). Stock market crashes, firm characteristics, and stock returns, *Journal of Banking and Finance*, Vol.33, PP.1563-1574.
33. Wang, M., Han, M., Huang, W., (2019). Debt and Stock Price Crash Risk in Weak Information Environment. *Finance Research Letters*, Vol.33, PP.1-55.
34. Xing, K., Yang, X., (2019). How to detect crashes before they burst: Evidence from Chinese stock market. *PhysicaA*, vol.528, PP.1-63.

35. Yang, B., (2017). Stock Market Crash, New Market Failure Theory and Extremely Great Economic and Financial Crises. *World Review of Political Economy*, vol. 8, No.1, PP.4-34.
36. Yeung, W., Lento, C., (2018). Ownership structure, audit quality, board structure, and stock price crash risk: Evidence from China, *Global Finance Journal*, Vol.37, PP.1-24.
37. Yeung, W., Lento, C., (2018). Stock Price crash risk and unexpected earnings threshold, *Managerial Finance*, Vol.44, PP. 1012-1030.
38. Zabri, S., Ahmed, K., Wah, K., (2016). Corporate governance practices and firm performance: Evidence from top 100 public listed companies in Malaysia, *Procedia Economics and Finance*, Vol.35, PP.287-296.
39. Zichao, J., Lu, D., Ruiyang, X., (2016). How does stock structure influence stock price crash risk? *J Syst Sci Complex*, Vol.20, PP.1-20.
40. Zichoa, J., Deng, L., Xu, R., (2016). How does debt structure influence stock price crash risk? *Journal of Systems science*.Vol.31, PP.473-492.

هل يساهم مجلس إدارة الشركات في تخفيف حدة خطر انهيار سعر السهم

دليل عملي من مصر

د. سارة صبحي محمد حسن
مدرس بقسم إدارة الأعمال
كلية التجارة – جامعة القاهرة

الملخص

الهدف: إن الهدف الرئيسي للبحث الحالي يتمثل في التعرف على دور مجلس الإدارة في تفسير سلوك خطر انهيار سعر السهم في البيئة المصرية على مدار الفترة من ٢٠١٤-٢٠١٨.

التصميم / المنهجية / المدخل: اعتمد البحث الحالي على عينة متمثلة في مجموعة الشركات المدرجة في المؤشر EGX30 خلال الفترة من ٢٠١٤-٢٠١٨ توافقا مع العديد من الدراسات السابقة تم الاعتماد على أحد مقاييس خطر انهيار سعر السهم وهو تذبذب السعر من أسفل لأعلى

النتائج: أظهرت نتائج البحث الحالي أن خصائص مجلس الإدارة لا ترتبط بخطر انهيار سعر السهم، إلا أن بعض المتغيرات الحاكمة لها علاقة معنوية بهذا المتغير مثل الرافعة المالية والتي لها تأثير معنوي سلبي على خطر انهيار سعر السهم، الأمر الذي يعني أن زيادة الاعتماد على الديون يزيد احتمالية التعرض لخطر انهيار سعر السهم. أيضا أشارت النتائج أن حجم الشركة له تأثير سلبي على خطر انهيار سعر السهم.

القيمة: يعد هذا البحث من أوائل الدراسات التي اهتمت ببحث تأثير خصائص مجلس الإدارة على خطر انهيار سعر السهم في الاقتصاد المصري.

الكلمات الافتتاحية: حوكمة الشركات، مجلس الإدارة، خطر انهيار سعر السهم، استقلال مجلس الإدارة، حجم مجلس الإدارة، الرافعة المالية، حجم المنشأة.