The Association between Sustainability Reporting Disclosure and Stock Price Crash Risk: Moderating Effect of Earnings Quality: An Empirical Study

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Abstract

Purpose – The purpose of this article is to investigate the moderating effect of earnings quality on the association between sustainability reporting disclosure and stock price crash risk in Egyptian listed firms.

Design/methodology/approach – This study uses secondary data from 2012 to 2019 to measure sustainability reporting disclosure for a sample of 383 firm-years Egyptian listed companies.

Findings – The results revealed that there is a quadratic relationship between sustainability reporting discourse and stock price crash risk. As the interaction between sustainability reporting disclosure and earning quality (MTB), increases the negative impact of sustainability reporting disclosure deviation from the optimal level on the expected stock price crash risk. Furthermore, the interaction between sustainability reporting disclosure and earnings quality reduces the negative impact of sustainability reporting disclosure deviation from the optimal level on the expected stock price crash risk.

Research limitations/ implications – Results are from a sample of firms from one country.

Originality/ value – This article contributes to the literature by shedding light on the relationship between sustainability reporting disclosure and stock price crash risk and the moderating effect of earnings quality on the association between them.

Keywords Sustainability reporting disclosure, Stock price crash risk, Earnings quality.

Paper type Research paper

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1. Introduction

stock price crash risk measures the possibility of a stock price collapse of a listed company, which can be attributed to principal-agent problems and information asymmetry. There is a principal-agent relationship between the shareholders and the management of listed companies, so the management may act to harm the interests of the external investors in the specific business management process for personal gain. It is generally believed that management has the motive to conceal negative news within the company for self-interest purposes, such as rights, remuneration and reputation, which makes the stock price deviates from the intrinsic value of the company. As negative information accumulates and erupts, invertors begin to sell the stocks, making the stock price of the company more likely to collapse. As a result, the stock price crash risk arises.

Sustainability reporting is the process whereby companies disclose their economic, environmental and social impacts on society and environment as a result of their daily business activities (Global Reporting Initiative [GRI], 2019). Business firms are not socially and environmentally responsible because their activities cause environmental degradation, climate change, pollution and even poverty in the environments and communities they operate in Scientists have also noted that the ecosystem has changed drastically as a result of firms' activities (Kusuma & Koesrindartoto, 2014). Firms' irresponsible attitude is evident in its' financial statements. That at the end of every financial year, firms report huge profits, and then claim to perform at the detriment of the environment and community where they operate in (Johari & Komathy, 2019). This irresponsible attitude exhibited by business firms can reduce their long-term value.

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Essentially, the stock price crash risk reflects the risk caused by the insufficient disclosure of negative information. However, the existing research on the relationship between sustainability reporting disclosure and stock price crash risk is still inconclusive. Also, there is a lack of detailed research from the presence of the moderating effect of earnings quality between them. Theoretically, enterprises that actively participate in social welfare and environmental protection activities tend to disclose sufficient and objective disclosure of sustainability reporting information to maintain relationships with employees, consumers and shareholders. Moreover, due to sustainable development considerations, the management will also actively disclose negative news inside the company to investors, so the stock price can more accurately reflect its intrinsic value and reduce the stock price crash risk. But if management uses the sustainability report as a self-interest tool to convey to investors a good image of sustainability reporting disclosure, this may increase the stock price crash risk. Therefore, the relationship between sustainability reporting disclosure and stock price crash risk with the moderating effect of earnings quality remains to be further explored.

The paper takes Egyptian listed companies in 2012-2019 years as samples to explore the association between sustainability reporting disclosure and stock price crash risk, and further examine the moderating effect of earnings quality between them. The innovation and contribution of this paper are mainly reflected in: (1) the research based on different motivations of sustainability reporting disclosure provide an empirical reference for the supervision of non-financial information disclosure behavior of listed companies; (2) the paper finds the nonlinear relationship between sustainability reporting disclosure and stock price crash risk, which will broaden the theoretical research on the economic consequences of sustainability reporting, provide reference for improving the quality of corporate governance. Also, the results the results provide a decision-making reference for policymakers and regulators in the normative of sustainability reporting disclosure.

The rest of this paper is organized as follows: The second part is the literature review and research hypothesis. The third part is the empirical study, mainly including explanations of the sample, variables and models. The fourth part is the analysis if empirical results for each hypothesis. The empirical results are summarized and the contribution in theory and practice is explained in the last part.

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2. Literature Review and Research Hypothesis

As the sustainability of society drawn more and more attention, the research on sustainability reporting disclosure has been increasing. But there is no consensus on whether sustainability reporting has safeguarded the interests of shareholders or has become a self-interest tool for management. In the early days, research on sustainability reporting mainly focused on its definition and meaning. Some scholars believe that sustainability reporting covers four aspects: Economy, society, environment and governance. Afterwards, scholars paid more attention to the economic consequences of sustainability reporting, mainly involving the impact of corporate social responsibility on stock price, corporate performance and value, and earnings management, etc. In addition, a few studies have examined the association between sustainability reporting disclosure and stock price crash risk with the moderating effect of earnings quality between them. Although various aspects of research were involved, there is a lack in-depth exploration on sustainability reporting disclosure.

As the information source of listed companies, sustainability reporting disclosure directly affects the negative information content inside the company obtained by investors and is reflected in the stock price crash risk. Chen et al. first proposed the measure of stock price crash risk, which was widely recognized and applied in subsequent research. According to the existing research, earnings quality influencing the stock price crash risk

The two major causes of stock price crash risk are the principal-agent and information asymmetry, while sustainability reporting disclosure is an important factor that directly affects the above two major causes. However, the existing literature has not yet reached a consensus on the quality and the effectiveness of sustainability reporting disclosure. Also, less attention is paid for the influence on earnings quality on the association between sustainability reporting disclosure and stock price crash risk. Therefore, whether sustainability reporting disclosure can alleviate information asymmetry and control the stock price crash risk has become the focus of this study.

2.1 Sustainability Reporting Disclosure and Stock Price Crash Risk

Harmadji et al. (2018) examined the relationship between implementation of sustainability reporting strategy on stock price crash risk with sustainability reporting quality and found that a good firm will give stakeholders with signal indications about sustainability reporting strategy that have a huge effect on the sustainability reporting quality as well as reduce stock price crash risk. Dai et al. (2019) examined the relationship between corporate social responsibility information disclosure and

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stock price crash risk and found that first, there is an inverted U-shaped nonlinear relationship between CSR information disclosure and stock price crash risk. Second, there is a significant difference in the influence of CSR information disclosure on stock price crash risk under different disclosure motives. Tang & Zhong (2019) focused on the impact of the enforcement of mandatory sustainability disclosure regulations on future stock price crash risk around the world and concluded that mandatory disclosure has a negative impact on future stock price as crash risk is more pronounced in the organizations that have significant opaqueness of ESG information .

Zahn & Cong (2019) investigated the association between the change in sustainability disclosure and firm-specific stock price crash risk and suggested that there is positive and moderately significant relationship between the change in sustainability and the likelihood of a firm-specific stock price crash. Harmadji et al. (2020) examined the relationship between stock price crash risk with strategy, practice, and quality of sustainability and found that the practice of the stand-alone sustainability report improves the quality of the sustainability report. The concept, quality, and implementation of stand-alone sustainability reports have a negative impact on stock price crash risk. Pereira da Silva (2020) examined whether the breadth of ESG disclosure influences firm-specific crash risk and the findings support that the breadth of ESG disclosure reduces (future) firm-specific crash risk.

Murata & Hamori (2021) investigated the relationship between environmental, social and governance disclosures and stock price crash risk and suggested that the significance of stock market determinants depends on the region and stock markets in different regions differ in their characteristics. Krueger et al. (2021) examined the effects of mandatory ESG disclosure around the world and found that mandatory ESG disclosure has beneficial informational and real effects. Feng et al. (2022) investigated the relationships between environmental, social, and corporate governance (ESG) ratings and stock price crash risk and found that Results will be of interest to scholars interested in the general impact of promotion of public goods on firm performance. The authors used a sample of listed Egyptian firms to examine the association between sustainability reporting disclosure and stock price crash risk.

Hence, there is a need to test whether the disclosure of sustainability reports is associated with the stock price crash risk. The following hypothesis presents this conjecture:

Hypothesis 1 (H1): There is a significant relationship between sustainability reporting disclosure and stock price crash risk.

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2.2 Earnings Quality and Stock Price Crash Risk

Hamm et al. (2018) investigated how guidance and bias in guidance are related to crash risk and found that that optimistic guidance drives this result due to its positive relationship with stock price crash risk. Silva (2019) Verified the role of financial disclosure quality and internal corporate governance mechanisms associated with the board of directors, executive compensation and audit committee and failed to find strong evidence of an association between pre-crisis internal corporate governance metrics and crash risk variation during the crisis.

Wongchoti et al. (2020) provided a comprehensive empirical examination on the impact of earnings quality on stock price crash risk in China and concluded that earnings quality is strongly associated with stock price crash risk. Xue & Ying (2020) investigated the effects of financial quality and internal control on stock price crash risk and found that financial quality reduces the risk of stock price crisis. Moreover, the relationship can be enhanced by improving the internal control.

Based on the above-mentioned analysis of prior studies; few studies have shown that the effect of earnings quality on the association between sustainability reporting disclosure and the stock price crash risk. Accordingly, the second hypothesis is expressed as follows:

Hypothesis 2 (H2): Earnings quality has a moderating effect on the significant relationship between sustainability reporting disclosure and stock price crash risk.

3. Research Design

3.1 Sample Selection

The sample consists of companies that constitute EGX 100 after excluding financial institutions and companies with missing data regarding their stock prices during the estimation and examination periods. Accordingly, the final sample consists of 61 firms (383 firm years) and will be divided into 8 sectors (materials, consumer staples, industrials, real estate, consumer discretionary, communication services, energy and health care).

The research depends on the secondary data collected from the firms' annual financial statements reports and S&P/EGX ESG index over the period from 2012 to 2019, which were available through Thomson Reuters global database, the Egyptian Stock Exchange website (www.egx.com.eg), Mubasher info (www.mubasher.info). The data were collected based on the panel data analysis technique. Consequently, the benefits of data collection through time-series and

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cross-sectional analysis will be achieved and this will result in increasing the number of observations and lead to improving the accuracy of the results.

3.2 Variable Construction

3.2.1 Dependent Variable: Stock Price Crash Risk

Existing research employs two measures to determine firm-specific crash risk. The first measure is based on the negative conditional return skewness (NSKEW), initially developed by Chen et al. (2001). This measure, which is often used in the literature, measures the asymmetry of the return distribution. Data that is skewed to the left are indicated by negative (positive) values for the skewness (right). Each year's negative third moment of firm-specific weekly returns is used to calculate NSKEW, which is then normalized by the standard deviation of firm-specific weekly returns increased to the third power. Specifically, NSKEW is determined as follows for each business j in year t:

$$\text{NSKEW} = -\left[n(n-1)^{3/2} \sum w^3_{j,t}\right] / \left[(n-1)(n-2)\left(\sum w^2_{j,t}\right)^{3/2}\right].$$
$$(1)$$

This measure is multiplied by -1 so that a higher value corresponds to greater crash risk.

The second measure of crash risk is the down-to-up volatility measure (DUVOL) of the crash likelihood. Firm-specific weekly returns are divided into two categories for each firm j throughout a fiscal-year period t: "down" weeks when the returns are below the annual mean, and "up" weeks when the returns are above the annual mean. For each of these two categories, the standard deviation of the firm-specific weekly returns is computed independently. The ratio of the standard deviation in the "down" weeks to the standard deviation in the "up" weeks is called DUVOL.

$$\text{DUVOL}_{j-t} = \log\left\{(n_u-1)\sum w^2_{j,t}/(n_d-1)\sum w^2_{j,t}\right\}. \qquad (2)$$

Greater crash risk is indicated by a higher DUVOL number. Since DUVOL does not require third moments, as Chen et al. (2001) suggested, it is less likely to be significantly impacted by extreme weekly returns.

3.2.2 Independent Variable: Sustainability Reporting Disclosure

EGX has initiated Environmental, Social, Governance (ESG) Index or Sustainability Index S&P/EGX ESG Index for listed on EGX. The methodology of the index depends on the evaluation of the 100 most performing companies listed on the EGX in terms of ESG reporting. Each company from the 100 companies obtains a score.

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Therefore, sustainability index for the Egyptian companies includes the top companies from 100 most companies listed on EGX in terms of ESG reporting. Thus, the study investigates determinants of sustainability reporting disclosure for the companies listed on the sustainability index in Egypt through the period (2012-2019).

There are several reasons to the focus of this period (2012-2019). During this time, sustainability issues have attracted attention on both a national and international scale. This is demonstrated by the fact that the United Nations Summit was held during this period and that the 2030 Sustainable Development Agenda and its implementation were adopted by all nations there, including Egypt. The "Egyptian Corporate Governance Code third release" was introduced locally by EIOD. The Model Guidance for Reporting on ESG Performance and Sustainable Development Goals (SDGs) was also published by EGX during this period.

3.2.3 Moderating Variable: Earnings Quality

The researcher takes into consideration measures that are based on the time series of earnings, their volatility or smoothness, and the unexpected component of accounting accruals as part of the group of accounting-based earnings quality measures. Persistent and predictable time-series measures. The level of future recurrence or persistence of present profits is measured by persistence. Due to the fact that investors set a high value on reliable, sustainable, and less variable methods of generating revenues, strong persistence is positively associated with higher earnings quality. The concept that earnings are of higher quality the better they are in predicting future earnings are represented by predictability. Predictability is regarded as a desirable quality of earnings, much the same as persistence, because it increases the accuracy of earnings forecasts. The unpredictable nature of operations, the environment of the economy, and the accounting methods used have an impact on the time series of earnings. (Pietro and Wagenhofer 2014). The second set of earnings quality measures considers smoothness of earnings. The researcher uses two smoothness measures derive from accruals relative to the volatility of operating cash flows or the volatility of earnings.

3.2.4 Control Variables: (leverage, earnings per share, the operating cash flow, current ratio and age)

Researcher considers a number of control variables that have been used in the literature and are related to stock price crash risk. First control variable is is leverage that is calculated as the ratio of total debts to total assets (Benlemlih et al., 2018). The next control variable is earnings per share, which is calculated as the net profit to the number of ordinary shares. The third control variable is the operating cash flow which is calculated as the total revenue minus operating expense. The forth control variable is the liquidity which is measured by the current ratio. The last

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control variable is age, which is measured by the time between the initial creation of a firm and the present time (in years).

3.3 Regression Models

The model used to study the impact of ESG disclosure and MTB as a measure of earnings quality on stock price crash risk is presented as follows:

$NCSKEW_{i,t} = \beta_0 + \beta_1 ESG_{t-1} + \beta_2 ESG^2_{t-1} + \beta_3 MTB_{t-1} + \beta_4 LEV_{t-1} + \beta_5 EPS_{t-1} + \beta_6 CFO_{t-1} + \beta_7 CR_{t-1} + \beta_8 AGE_{t-1} + \beta_9 NCSKEW_{t-1} + \varepsilon_t$

$DUVOL_t = \beta_0 + \beta_1 ESG_{t-1} + \beta_2 ESG^2_{t-1} + \beta_3 MTB_{t-1} + \beta_4 LEV_{t-1} + \beta_5 EPS_{t-1} + \beta_6 CFO_{t-1} + \beta_7 CR_{t-1} + \beta_8 AGE_{t-1} + \beta_9 DUVOL_{t-1} + \varepsilon_t$

And the model used to study the impact of ESG disclosure and INSM as a measure of earnings quality on stock price crash risk is presented as follows:

$NCSKEW_t = \beta_0 + \beta_1 ESG_{t-1} + \beta_2 ESG^2_{t-1} + \beta_3 INSM_{t-1} + \beta_4 LEV_{t-1} + \beta_5 EPS_{t-1} + \beta_6 CFO_{t-1} + \beta_7 CR_{t-1} + \beta_8 AGE_{t-1} + \beta_9 NCSKEW_{t-1} + \varepsilon_t$

$DUVOL_t = \beta_0 + \beta_1 ESG_{t-1} + \beta_2 ESG^2_{t-1} + \beta_3 INSM_{t-1} + \beta_4 LEV_{t-1} + \beta_5 EPS_{t-1} + \beta_6 CFO_{t-1} + \beta_7 CR_{t-1} + \beta_8 AGE_{t-1} + \beta_9 DUVOL_{t-1} + \varepsilon_t$

Where the model used to study the moderating effect of earnings quality (MTB) on the association between sustainability reporting disclosure and stock price crash risk is presented as follows:

$NCSKEW_t = \beta_0 + \beta_1 ESG_{t-1} + \beta_2 ESG_{2t-1} + \beta_3 ESG \times MTB_{t-1} + \beta_4 LEV_{t-1} + \beta_5 EPS_{t-1} + \beta_6 CFO_{t-1} + \beta_7 CR_{t-1} + \beta_8 AGE_{t-1} + \beta_9 NCSKEW_{t-1} + \varepsilon_t$

$NCSKEW_t = \beta_0 + \beta_1 ESG_{t-1} + \beta_2 ESG^2_{t-1} + \beta_3 ESG \times INSM_{t-1} + \beta_4 LEV_{t-1} + \beta_5 EPS_{t-1} + \beta_6 CFO_{t-1} + \beta_7 CR_{t-1} + \beta_8 AGE_{t-1} + \beta_9 NCSKEW_{t-1} + \varepsilon_t$

$DUVOL_t = \beta_0 + \beta_1 ESG_{t-1} + \beta_2 ESG^2_{t-1} + \beta_3 ESG \times MTB_{t-1} + \beta_4 LEV_{t-1} + \beta_5 EPS_{t-1} + \beta_6 CFO_{t-1} + \beta_7 CR_{t-1} + \beta_8 AGE_{t-1} + \beta_9 DUVOL_{t-1} + \varepsilon_t$

$DUVOL_t = \beta_0 + \beta_1 ESG_{t-1} + \beta_2 ESG^2_{t-1} + \beta_3 ESG \times INSM_{t-1} + \beta_4 LEV_{t-1} + \beta_5 EPS_{t-1} + \beta_6 CFO_{t-1} + \beta_7 CR_{t-1} + \beta_8 AGE_{t-1} + \beta_9 DUVOL_{t-1} + \varepsilon_t$

NCSKEW: Negative return skew coefficient for one lag

DUVOL: down-to-up volatility measure

ESG: Environmental, social and governance score

MTB: The ratio of market value to book value

INSM: Income Smoothing

LEV: The Leverage

EPS: Earnings per share

CFO: The operating cash flow

CR: The current ratio

AGE: Age of the firm

β: is the regression coefficient

ε: the model's error term

4. Results

4.1. Descriptive Statistics

The negative conditional skewness (NCSKEW) shows an overall mean of (0.607) with an overall standard deviation of (0.52), which is a large standard deviation relative to the overall mean. Moreover, between firms' standard deviation (0.34) indicates high dispersion around the overall mean, reflecting high heterogeneity in the stock price crash risk of the Egyptian listed firms. In addition, within standard deviation (0.42) indicates high dispersion around the overall mean for each period, reflecting high heterogeneity in the negative conditional skewness during the research period. The down-to-up volatility (DUVOL) shows an overall mean of (-0.0166), with a high dispersion around the mean (overall, between, and within), reflecting high heterogeneity in the negative conditional skewness of Egyptian listed firms. The environmental, social, and Governance (ESG) score shows an overall mean of (121.5), with a low dispersion around the mean (overall, between, and within), reflecting high heterogeneity in the disclosure of ESG of Egyptian listed firms. The market-to-book as a measure of earning quality shows an overall mean of (1.35), which means there is unrecorded goodwill, with a high dispersion around the mean (overall, between, and within), reflecting high heterogeneity in the earning quality of Egyptian listed firms. The income smoothing as a measure of earning quality shows an overall mean of (-0.17), with a high dispersion around the mean (overall, between, and within), reflecting high heterogeneity in the earning quality of Egyptian listed firms. The leverage shows an overall mean of (0.496), with a high dispersion around the mean (overall, between, and within), reflecting high heterogeneity in the capital structure of Egyptian listed firms. The EPS shows an overall mean of (0.364), with a high dispersion around the mean (overall, between, and within), reflecting high heterogeneity in the earning per share of Egyptian listed firms. The operating cash flow shows an overall mean of (0.048), with a high dispersion around the mean (overall, between, and within), reflecting a high heterogeneity of Egyptian listed firms. The current ratio shows an overall mean of

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(1.74), with a high dispersion around the mean (overall, between, and within), reflecting a high heterogeneity in the liquidity of Egyptian listed firms. Age is homogeneous around the mean, reflecting a high homogeneity in the age of Egyptian listed firms.

Table (4.1) Descriptive Statistics for Continuous Variables						
Variable		**Mean**	**Std. Dev.**	**Min**	**Max**	**Observations**
NCSKEW	Overall	0.6069834	0.5241341	-0.6015548	1.80619	N = 383
	Between		0.339213	-0.4548903	0.9994468	n = 61
	Within		0.422265	-0.5378915	2.121786	T-bar = 6.27869
DUVOL	Overall	-0.0166526	0.274561	-0.6210002	0.5859602	N = 383
	Between		0.1454257	-0.4450239	0.2005156	n = 61
	Within		0.2376399	-0.667489	0.7869128	T-bar = 6.27869
ESG	Overall	121.4969	8.60557	105.7735	143.3626	N = 383
	Between		7.287881	110.466	139.53	n = 61
	Within		4.445371	103.7433	139.5023	T-bar = 6.27869
MTB	Overall	1.34711	0.9733403	-0.6466574	3.102465	N = 383
	Between		0.8415087	-0.6466574	3.102465	n = 61
	Within		0.4851583	-1.464733	4.534723	T-bar = 6.27869
INSM	Overall	-0.1740974	0.1924607	-0.562875	-0.0003077	N = 383
	Between		0.1717368	-0.5542656	-0.0030744	n = 61
	Within		0.0750678	-0.4657912	0.1573088	T-bar = 6.27869
LEV	Overall	0.4962893	0.2556652	0.0222566	1.182423	N = 383
	Between		0.245426	0.0312106	1.182423	n = 61
	Within		0.0896648	0.1428972	0.860422	T-bar = 6.27869
EPS	Overall	0.3646855	0.5729527	-0.7442775	1.399507	N = 383
	Between		0.5024874	-0.7159222	1.399507	n = 61
	Within		0.3180042	-1.241377	1.408939	T-bar = 6.27869
CFO	Overall	0.0479565	0.0834787	-0.1188906	0.2109009	N = 383
	Between		0.0648497	-0.1188906	0.2109009	n = 61
	Within		0.0570829	-0.1702022	0.2659215	T-bar = 6.27869
CR	Overall	1.741106	0.9655153	0.2942415	3.645877	N = 383
	Between		0.8481153	0.372638	3.645877	n = 61
	Within		0.5107301	-0.2539602	3.381936	T-bar = 6.27869
AGE	Overall	1.035326	0.1343368	0.7728131	1.283962	N = 383
	Between		0.1347176	0.7728131	1.283962	n = 61
	Within		0.0420642	0.922207	1.147743	T-bar = 6.27869

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Table (4.2) correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) NCSKEW	1.000									
(2) DUVOL	0.245***	1.000								
	(0.000)									
(3) ESG	0.111**	0.092*	1.000							
	(0.029)	(0.071)								
(4) MTB	0.182***	0.205***	0.006	1.000						
	(0.000)	(0.000)	(0.911)							
(5) INSM	-0.292***	-0.171***	-0.320***	0.087*	1.000					
	(0.000)	(0.001)	(0.000)	(0.088)						
(6) LEV	0.059	0.020	0.210***	-0.032	-0.321***	1.000				
	(0.253)	(0.701)	(0.000)	(0.535)	(0.000)					
(7) EPS	0.089*	0.143***	0.122**	0.174***	-0.067	-0.301***	1.000			
	(0.082)	(0.005)	(0.017)	(0.001)	(0.188)	(0.000)				
(8) CFO	0.120**	0.073	0.092*	0.338***	0.024	-0.375***	0.402***	1.000		
	(0.018)	(0.152)	(0.071)	(0.000)	(0.645)	(0.000)	(0.000)			
(9) CR	-0.034	-0.068	-0.108**	0.179***	0.287***	-0.629***	0.249***	0.205***	1.000	
	(0.510)	(0.185)	(0.035)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
(10) AGE	-0.062	-0.039	-0.215***	-0.029	0.079	-0.031	0.118**	0.046	0.080	1.000
	(0.227)	(0.452)	(0.000)	(0.567)	(0.124)	(0.540)	(0.021)	(0.371)	(0.120)	
*** p<0.01, ** p<0.05, * p<0.1										

From the previous table (4.2), it can be concluded that

- NCSKEW model:

- There is a positive significant direct association between **sustainability reporting disclosure** (ESG) and stock price crash risk (NCSKEW) (r=-0.111; p-value=0.029).

- There is a positive significant direct association between **market to book (MTB) as a measure of earning quality** and stock price crash risk (NCSKEW) (r=0.182; p-value=0.000).

- There is a negative significant direct association between **income smoothing (INSM) as a measure of earning quality** and stock price crash risk (NCSKEW) (r=-0.292; p-value=0.000).

- There is a positive insignificant direct association between **leverage (LEV)** and stock price crash risk (NCSKEW) (r=0.059; p-value=0.253), which means leverage has no expected impact on NCSKEW.

- There is a positive significant direct association between the **profitability of stocks (EPS)** and stock price crash risk (NCSKEW) (r=0.089; p-value=0.082).

- There is a positive significant direct association between **operating cash flow (CFO)** and stock price crash risk (NCSKEW) (r=0.120; p-value=0.018).

- There is a negative insignificant direct association between the **current ratio as a measure of liquidity (CR)** and stock price crash risk (NCSKEW) (r=-0.034; p-value=0.510), which means liquidity has no expected impact on NCSKEW.

- There is a negative insignificant direct association between **age (AGE)** and stock price crash risk (NCSKEW) (r=-0.062; p-value=0.227), which means age has no expected impact on NCSKEW.

- DUVOL model:

- There is a positive significant direct association between **sustainability reporting disclosure** (ESG) and stock price crash risk (DUVOL) (r=-0.092; p-value=0.071).

- There is a positive significant direct association between **market to book (MTB) as a measure of earning quality** and stock price crash risk (DUVOL) (r=0.205; p-value=0.000).

- There is a negative significant direct association between **income smoothing (INSM) as a measure of earning quality** and stock price crash risk (DUVOL) (r=-0.171; p-value=0.001).

- There is a positive insignificant direct association between **leverage (LEV)** and stock price crash risk (DUVOL) (r=0.020; p-value=0.701), which means leverage has no expected impact on DUVOL.

- There is a positive significant direct association between the **profitability of stocks (EPS)** and stock price crash risk (DUVOL) (r=0.143; p-value=0.005).

- There is a positive insignificant direct association between **operating cash flow (CFO)** and stock price crash risk (DUVOL) (r=0.073; p-value=0.152).

- There is a negative insignificant direct association between the **current ratio as a measure of liquidity (CR)** and stock price crash risk (DUVOL) (r=-0.068; p-value=0.185), which means liquidity has no expected impact on DUVOL.

- There is a negative insignificant direct association between **age (AGE)** and stock price crash risk (DUVOL) (r=-0.039; p-value=0.452), which means age has no expected impact on DUVOL.

4.2. Stationarity Test

The stationarity test examines the time series of each variable used in testing concerning the moderating effect of earnings quality on the association between sustainability reporting disclosure and stock price crash risk for Egyptian listed firms. The variable has a stationary time series if its statistical properties, such as mean and variance, are time-invariant (constant over time). Therefore, the time series of a stationary variable exhibits a mean reversion. That is, the effect of shocks fades gradually because the time trend reverts to its variance and mean. Meanwhile, the variable has a non-stationary time series if its statistical properties are time-variant (changes over time). Hence, the series has a unit root. Therefore, the results of models that include non-stationary variables cannot be generalized for future periods.

A fisher-type unit-root test is conducted to examine whether the time series of each variable is stationary or has a unit root for unbalanced panel data. The null hypothesis states that the series contains a unit root. Conversely, the alternative hypothesis assumes that the series is stationary. The null hypothesis is accepted when the p-value is greater than 5%. However, the alternative hypothesis is accepted when the p-value is less than 5%.

Table (4.3) Fasher-type unit-root test	
Variables	P-Value
NCSKEW	0.000***
DUVOL	0.000***
MTB	0.000***
INSM	0.000***
LEV	0.000***
EPS	0.000***
CFO	0.000***
CR	0.000***
AGE	0.000***

Table (4.3) shows that all variables are stationary because their corresponding p-values are less than 5%. However, all variables have a stationary time series at their original levels because their corresponding p-values are less than 5%.

4.3. Testing hypotheses

The impact of ESG disclosure and market-to-book (MTB) as a measure of earning quality on stock price crash risk

The Hausman test is conducted to choose whether the fixed effect model or the random effect model best fits the data of the NCSKEW and DUVOL models. As shown in table (), the Hausman results indicate the rejection of the null hypothesis, which states that the fixed effect model should be applied because the p-value is less than 5%.

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Table (4.4) Hausman Test		
	NCSKEW	DUVOL
Chi-square test value	119.736	102.067
P-value	0.0000	0.0000

Fixed effect goodness of fit

Table (4.6) Fixed Effect Goodness of Fit Tests			
Test		**NCSKEW**	**DUVOL**
Heteroskedasticity	**p-value**	0.0000	0.0000
Autocorrelation	**p-value**	0.0075	0.0980

Before accepting the fixed effect model that has been chosen based on the results of the Hausman test as the fitted NCSKEW and DUVOL models, some goodness of fit tests should be conducted to confirm that the statistical techniques applied in the current study best fit sample data. The cut-off of p-values for each model fit test is 5%. Therefore, 5% is the cut-off value for each model acceptance. Table (4.6) reveals the existence of heteroscedasticity for DUVOL and NCSKEW models, which means that the standard errors of an investigated variable are not constant within the sample period. In addition, the existence of autocorrelation means that the residuals of the NCSKEW model are serially correlated because the p-value is less than 5%, and the residuals of the DUVOL model are not serially correlated because the p-value exceeds 5%.

Table (4.7) The impact of ESG disclosure and market-to-book (MTB) as a measure of earning quality on stock price crash risk Prais-Winsten regression, heteroskedastic panels corrected standard errors		
	NCSKEW	**DUVOL**
L_ESG	.19158034**	.08266557**
L_ESG2	-.00073314**	-.00032863*
L_MTB	.06589083***	.02254332*
L_LEV	.28367475*	.15189462**
L_EPS	.08790073*	.07484368***
L_CFO	0.478	-0.023
L_CR	-0.013	-0.017
L_AGE	-0.234	0.137
L_NCSKEW	.33636953***	--
L_DUVOL	--	.24021317***
Year fixed effect	Included	
Industry fixed effect	Included	
Number of obs	304	304
R-squared	0.402	0.381
Prob > chi2	0.000	0.000
*** p<.01, ** p<.05, * p<.1		

- Table (4.7) shows that Prais-Winsten regression is used to test DUVOL and NCSKEW models to consider the effect of heteroskedasticity and autocorrelation in the tested model.

- The overall model can be accepted as a reliable model to explain stock price crash risk as measured by DUVOL and NCSKEW because the Prob > chi2 is less than 5%.

- In addition, the NCSKEW and DUVOL model can explain 0.402 and 0.381 of stock price crash risk, implying that stock price crash risk is driven by ESG disclosure and earning quality for the Egyptian listed firms.

- This research reveals that a curvilinear relationship exists between ESG disclosure and stock price crash risk as measured by DUVOL and NCSKEW, which means the existence of an optimal level of ESG disclosure that minimizes stock price crash risk. Any deviation will lead to inefficiency in stock price crash risk; there is an inverted U-shape between them. Where the ESG parameter is positive (>0) and significant, and ESG squared is negative and significant, the optimal level of the ESG disclosure that minimizes stock price crash risk equal to the

- **Optimal level of ESG for NCSKEW model = -** (0.196)/ (2*-0.00073) = 130.66.

Curve fit for NCSKEW
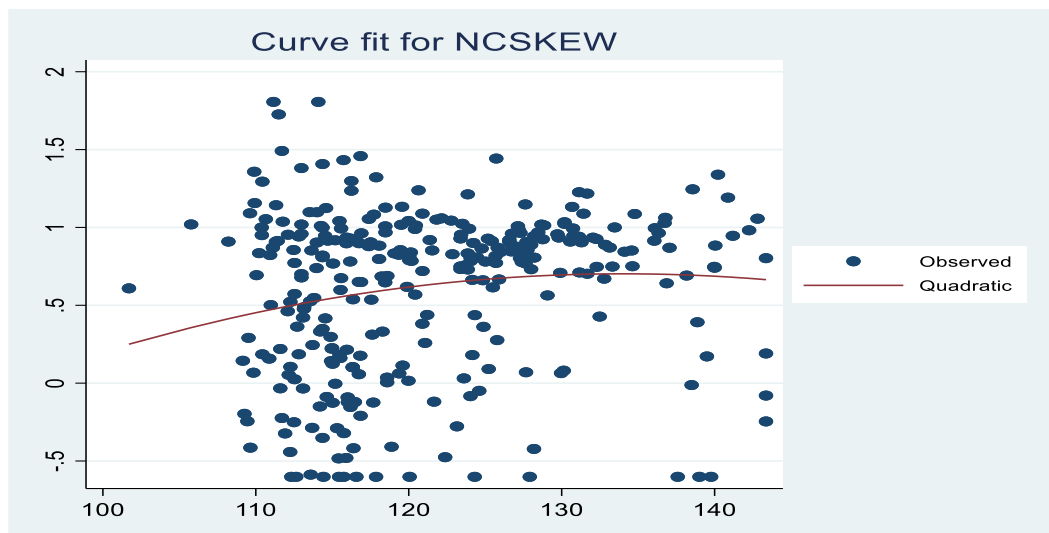
- **Optimal level of ESG for DUVOL model = - (0.08266557)/ (2*-0.00032863) = 125.7.**

Curve fit for DUVOL
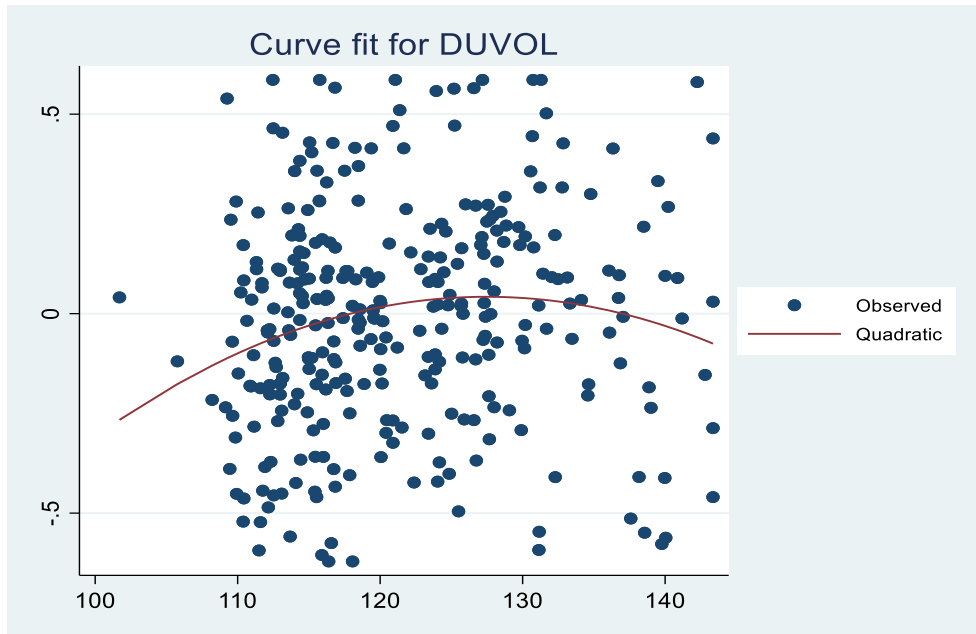
There is a positive significant direct impact of earning quality as measured by market-to-book (MTB) on stock price crash risk as measured by DUVOL and NCSKEW, which means high unrecorded goodwill will increase expected stock price crash risk (i.e., earning quality negatively impacts stock price crash risk).

- There is a positive significant direct impact of profitability (EPS) on the expected stock price crash risk as measured by DUVOL and NCSKEW, which means firms with high profitability have more exposure to a crash in stock prices.

- There is a positive significant direct impact of leverage on the expected stock price crash risk as measured by DUVOL and NCSKEW, which means high leveraged firms have more exposure to stock price crashes.

- There is no significant direct impact of operating cash flow(CFO), liquidity(CR), and age(AGE) on the expected stock price crash risk as measured by DUVOL and NCSKEW.

- The current level of stock price crash risk is positively impacted by the previous level of stock price crash risk as measured by DUVOL and NCSKEW(i.e., stock price crash risk is a dynamic phenomenon)

The impact of ESG disclosure and income smoothing (INSM) as a measure of earning quality on stock price crash risk

The Hausman test is conducted to choose whether the fixed effect model or the random effect model best fits the data of the NCSKEW and DUVOL models. As shown in table (), the Hausman results indicate the rejection of the null hypothesis, which states that the fixed effect model should be applied because the p-value is less than 5%.

Table (4.8) Hausman Test		
	NCSKEW	DUVOL
Chi-square test value	107.845	106.207
P-value	0.0000	0.0000

Fixed effect goodness of fit

Table (4.9) Fixed Effect Goodness of Fit Tests			
Test		**NCSKEW**	**DUVOL**
Heteroskedasticity	**p-value**	0.0000	0.0000
Autocorrelation	**p-value**	0.0075	0.0980

Before accepting the fixed effect model that has been chosen based on the results of the Hausman test as the fitted NCSKEW and DUVOL models, some goodness of fit tests should be conducted to confirm that the statistical techniques applied in the current study best fit sample data. The cut-off of p-values for each model fit test is 5%. Therefore, 5% is the cut-off value for each model acceptance. Table (4.9) reveals the existence of heteroscedasticity for DUVOL and NCSKEW models, which means that the standard errors of an investigated variable are not constant within the sample period. In addition, the existence of autocorrelation means that the residuals of the NCSKEW model are serially correlated because the p-value is less than 5%, and the residuals of the DUVOL model are not serially correlated because the p-value exceeds 5%.

Table (4.10) The impact of ESG disclosure and market-to-book (MTB) as a measure of earning quality on stock price crash risk **Prais-Winsten regression, heteroskedastic panels corrected standard errors**		
	NCSKEW	**DUVOL**
L_ESG	.13899498*	.07640154*
L_ESG2	-.00053654*	-.00030605*
L_INSM	-.38011065**	-.11305676*
L_LEV	0.145	0.107
L_EPS	.07323803*	.05947957**
L_CFO	0.376	-0.075
L_CR	-0.024	-0.018
L_AGE	.31403005***	.1789405**
L_NCSKEW	**.33636953***	--
L_DUVOL	--	.17125714***
Year fixed effect	**Included**	
Industry fixed effect	**Included**	
Number of obs	**304**	**304**
R-squared	**0.530**	**0.421**
Prob > chi2	**0.000**	**0.000**
*** p<.01, ** p<.05, * p<.1		

- Table (4.10) shows that Prais-Winsten regression is used to test DUVOL and NCSKEW models to consider the effect of heteroskedasticity and autocorrelation in the tested model.

- The overall model can be accepted as a reliable model to explain stock price crash risk as measured by DUVOL and NCSKEW because the Prob > chi2 is less than 5%.

- In addition, the NCSKEW and DUVOL model can explain the risk of 0.53 and 0.42 of stock price crash risk, which is driven by ESG disclosure and earning quality for the Egyptian listed firms.

- This research reveals that a curvilinear relationship exists between ESG disclosure and stock price crash risk as measured by DUVOL and NCSKEW, which means the existence of an optimal level of ESG disclosure that minimizes stock price crash risk. Any deviation will lead to inefficiency in stock price crash risk; there is an inverted U-shape between them. Where the ESG parameter is positive (>0) and significant, and ESG squared is negative and significant, the optimal level of the ESG disclosure that minimizes stock price crash risk equal to the:

- Optimal level of ESG for NCSKEW model = - (0.139)/ (2*-0.00053654) = 129.5.

- Optimal level of ESG for DUVOL model = - (0.07640154)/ (2*-0.00030605) = 124.8.

- There is a positive significant direct impact of earning quality as measured by income smoothing (INSM) on stock price crash risk as measured by DUVOL and NCSKEW, which means firms with high earning quality have low levels of stock price crash risk.

- There is a positive significant direct impact of profitability (EPS) on the expected stock price crash risk as measured by DUVOL and NCSKEW, which means firms with high profitability have more exposure to a crash in stock prices.

- There is a positive significant direct impact of age (AGE) on the expected stock price crash risk as measured by DUVOL and NCSKEW.

- There is no significant direct impact of leverage (LEV), operating cash flow (CFO), and liquidity (CR) on the expected stock price crash risk as measured by DUVOL and NCSKEW.

- The current level of stock price crash risk is positively impacted by the previous level of stock price crash risk as measured by DUVOL and NCSKEW (i.e., stock price crash risk is a dynamic phenomenon)

The moderating effect of earning quality (MTB) on the association between ESG disclosure and stock price crash risk

The Hausman test is conducted to choose whether the fixed effect model or the random effect model best fits the data of the NCSKEW and DUVOL models. As shown in table (), the Hausman results indicate the rejection of the null hypothesis, which states that the fixed effect model should be applied because the p-value is less than 5%.

Table (4.11) Hausman Test		
	NCSKEW	DUVOL
Chi-square test value	119.647	106.726
P-value	0.0000	0.0000

Fixed effect goodness of fit

Table (4.12) Fixed Effect Goodness of Fit Tests			
Test		**NCSKEW**	**DUVOL**
Heteroskedasticity	**p-value**	0.0000	0.0000
Autocorrelation	**p-value**	0.0075	0.0980

Before accepting the fixed effect model that has been chosen based on the results of the Hausman test as the fitted NCSKEW and DUVOL models, some goodness of fit tests should be conducted to confirm that the statistical techniques applied in the current study best fit sample data. The cut-off of p-values for each model fit test is 5%. Therefore, 5% is the cut-off value for each model acceptance. Table (4.12) reveals the existence of heteroscedasticity for DUVOL and NCSKEW models, which means that the standard errors of an investigated variable are not constant within the sample period. In addition, the existence of autocorrelation means that the residuals of the NCSKEW model are serially correlated because the p-value is less than 5%, and the residuals of the DUVOL model are not serially correlated because the p-value exceeds 5%.

Table (4.13) The impact of ESG disclosure and market-to-book (MTB) as a measure of earning quality on stock price crash risk **Prais-Winsten regression, heteroskedastic panels corrected standard errors**		
	NCSKEW	**DUVOL**
L_ESG	.19066154**	.08211387*
L_ESG2	-.00073172**	-.00032715*
L_ESG_MTB	.00044887***	.00016055*
L_LEV	.29707849*	.15606547**
L_EPS	.08803942*	.07490652***
L_CFO	0.490	-0.022
L_CR	-0.011	-0.017
L_AGE	-0.234	0.138
L_NCSKEW	.33810687***	--
L_DUVOL	--	.23955406***
Year fixed effect	Included	
Industry fixed effect	Included	
Number of obs	304	304
R-squared	0.403	0.382
Prob > chi2	0.000	0.000
*** p<.01, ** p<.05, * p<.1		

- Table (4.13) shows that Prais-Winsten regression is used to test DUVOL and NCSKEW models to consider the effect of heteroskedasticity and autocorrelation in the tested model.

- The overall model can be accepted as a reliable model to explain stock price crash risk as measured by DUVOL and NCSKEW because the Prob > chi2 is less than 5%.

- In addition, the NCSKEW and DUVOL model can explain 0.403 and 0.382 of stock price crash risk, implying that stock price crash risk is driven by ESG disclosure and earning quality and their interaction of the Egyptian listed firms.

- This research reveals that a curvilinear relationship exists between ESG disclosure and stock price crash risk as measured by DUVOL and NCSKEW, which means the existence of an optimal level of ESG disclosure that minimizes stock price crash risk. Any deviation will lead to inefficiency in stock price crash risk; there is an inverted U-shape between them. Where the ESG parameter is positive (>0) and significant, and ESG squared is negative and significant, the optimal level of the ESG disclosure that minimizes stock price crash risk equal to the

- Optimal level of ESG for NCSKEW model = - (0.19066)/ (2*-0..00073172) = 129.5.

- Optimal level of ESG for DUVOL model = - (0.08211378)/ (2*-0.00032715) = 125.5.

- There is a positive significant direct impact of the interaction between earning quality as measured market-to-book (MTB) on stock price crash risk as measured by DUVOL and NCSKEW, which means earning quality limits the negative impact of ESG disclosure on stock price crash risk (i.e., earning quality has a negative impact on the association between ESG disclosure and stock price crash risk.

- There is a positive significant direct impact of leverage (LEV) on the expected stock price crash risk as measured by DUVOL and NCSKEW, which means firms with high leverage have more exposure to crashes in stock prices.

- There is a positive significant direct impact of profitability (EPS) on the expected stock price crash risk as measured by DUVOL and NCSKEW,

which means firms with high profitability have more exposure to a crash in stock prices.

- There is no significant direct impact of age (AGE), operating cash flow (CFO), and liquidity (CR) on the expected stock price crash risk as measured by DUVOL and NCSKEW.

- The current level of stock price crash risk is positively impacted by the previous level of stock price crash risk as measured by DUVOL and NCSKEW (i.e., stock price crash risk is a dynamic phenomenon)

The moderating effect of earning quality (INSM) on the association between ESG disclosure and stock price crash risk

The Hausman test is conducted to choose whether the fixed effect model or the random effect model best fits the data of the NCSKEW and DUVOL models. As shown in table (4-14), the Hausman results indicate the rejection of the null hypothesis, which states that the fixed effect model should be applied because the p-value is less than 5%.

Table (4.14) Hausman Test		
	NCSKEW	DUVOL
Chi-square test value	106.726	100.02
P-value	0.0000	0.0000

Fixed effect goodness of fit

Table (4.15) Fixed Effect Goodness of Fit Tests			
Test		**NCSKEW**	**DUVOL**
Heteroskedasticity	**p-value**	0.0000	0.0000
Autocorrelation	**p-value**	0.0075	0.0980

Before accepting the fixed effect model that has been chosen based on the results of the Hausman test as the fitted NCSKEW and DUVOL models, some goodness of fit tests should be conducted to confirm that the statistical techniques applied in the current study best fit sample data. The cut-off of p-values for each model fit test is 5%. Therefore, 5% is the cut-off value for each model acceptance. Table (4.15) reveals the existence of heteroscedasticity for DUVOL and NCSKEW models, which means that the standard errors of an investigated variable are not constant within the sample period. In addition, the existence of autocorrelation means that the residuals of the NCSKEW model are serially correlated because the p-value is less than 5%, and the residuals of the DUVOL model are not serially correlated because the p-value exceeds 5%.

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Table (4.16) The impact of ESG disclosure and income smoothing (INSM) as a measure of earning quality on stock price crash risk Prais-Winsten regression, heteroskedastic panels corrected standard errors		
	NCSKEW	**DUVOL**
L_ESG	.14671626*	.0746734*
L_ESG2	-.00056037*	-.00029992*
L_ESG_INSM	-.00278367**	-.00099963*
L_LEV	0.204	0.102
L_EPS	0.075	.05944305**
L_CFO	0.401	-0.078
L_CR	-0.009	-0.018
L_AGE	-0.176	.1813261**
L_NCSKEW	.29318317***	--
L_DUVOL	--	.16966392***
Year fixed effect	Included	
Industry fixed effect	Included	
Number of obs	304	304
R-squared	0.404	0.422
Prob > chi2	0.000	0.000
*** p<.01, ** p<.05, * p<.1		

- Table (4.16) shows that Prais-Winsten regression is used to test DUVOL and NCSKEW models to consider the effect of heteroskedasticity and autocorrelation in the tested model.

- The overall model can be accepted as a reliable model to explain stock price crash risk as measured by DUVOL and NCSKEW because the Prob > chi2 is less than 5%.

- In addition, the NCSKEW and DUVOL model can explain 0.404 and 0.422 of stock price crash risk, implying that stock price crash risk is driven by ESG disclosure and earning quality and their interaction for the Egyptian listed firms.

- This research reveals that a curvilinear relationship exists between ESG disclosure and stock price crash risk as measured by DUVOL and NCSKEW, which means the existence of an optimal level of ESG disclosure that minimizes stock price crash risk. Any deviation will lead to inefficiency in stock price crash risk; there is an inverted U-shape between them. Where the ESG parameter is positive (>0) and significant, and ESG squared is negative and significant, the optimal level of the ESG disclosure that minimizes stock price crash risk equal to the:

- Optimal level of ESG for NCSKEW model = - (0.14671626)/ (2*-0..00056037) =130.9.

- Optimal level of ESG for DUVOL model = - (0.0746734)/ (2*-0..00029992) =124.5..

- There is a negative significant direct impact of the interaction between earning quality as measured income smoothing (INSM) on stock price crash risk as measured by DUVOL and NCSKEW, which means earning quality limits the negative impact of ESG disclosure on stock price crash risk (i.e., earning quality has a negative impact on the association between ESG disclosure and stock price crash risk.

- There is a positive significant direct impact of age (AGE) on the expected stock price crash risk as measured by DUVOL and NCSKEW.

- There is a positive significant direct impact of profitability (EPS) on the expected stock price crash risk as measured by DUVOL and NCSKEW, which means firms with high profitability have more exposure to a crash in stock prices.

- There is no significant direct impact of leverage (LEV), operating cash flow(CFO), and liquidity(CR) on the expected stock price crash risk as measured by DUVOL and NCSKEW.

- The current level of stock price crash risk is positively impacted by the previous level of stock price crash risk as measured by DUVOL and NCSKEW(i.e., stock price crash risk is a dynamic phenomenon**)**

Conclusion:

This paper aimed to investigate empirically through the existing literature the association between sustainability reporting disclosure and stock price crash risk with the presence of the moderating effect of earnings quality. In order to achieve the main objective of this study, the association between sustainability reporting disclosure and stock price crash risk is tested first. Findings of these tests revealed that a quadratic relationship exists between the ESG and stock price crash risk as measured by DUVOL, and NCSKEW, which means the existence of an optimal level of ESG that, minimizes stock price crash risk. Moreover, any deviation from the optimal level of ESG will increase stock price crash risk; there is an inverted U shape between ESG and stock price crash risk. The ESG parameter is positive and significant, and ESG squared is negative and significant. Finally, the optimal level of the ESG that minimizes the expected stock price crash risk.

In addition, earnings quality, as measured by accounting conservatism (market-to-book) as a market-based measure, positively impacts DUVOL and NCSKEW, which, in turn, accounting conservatism increases the expected stock price crash risk. Whereas earnings quality, as measured by the smoothness of income, negatively impacts the expected stock price crash risk: the higher income smoothing, the lower-earnings quality. It indicates that managers reduce earnings variability based on their belief that investors prefer lower variable earnings. This practice will lead to an increase in the expected stock price crash risk.

Furthermore, the interaction between the ESG and earnings quality as measured by accounting conservatism (MTB) increases the negative impact of ESG deviation from the optimal level on the expected stock price crash risk. The interaction between the ESG and earnings quality as measured by income smoothing (INSM) reduces the negative impact of ESG deviation from the optimal level on the expected stock price crash risk.

Finally, the current level of **stock** price **crash risk is positively impacted by the previous level of stock price crash risk, which means stock price crash risk is a dynamic phenomenon.**

Recommendations:

The present study results and conclusion provide some recommendations to different groups in the Egyptian context to enhance sustainability reporting practices as a way to reach sustainable development in a developing country. This includes the Egyptian government, Stock Exchange market, accounting professional bodies, and corporations. Recommendations for each group are presented in details in the following points:

- Egyptian government, professional accounting bodies, financial market participants need to realize the explicit as well as the implicit benefits of the enhanced ESG practices and reporting. The governors, regulators, accounting bodies, and firms should put more emphasis on sustainability reporting that does not receive enough attention in developing countries.
- The Egyptian government could play a vital role in improving sustainability reporting practices through providing tax incentives, creating additional rules and regulations, and developing general sustainability reporting and sustainable national plan.

- The Egyptian Stock Market needs also to support GRI standards of sustainability/CSR reporting through providing incentives for those corporations that adapt GRI.
- Raise awareness for sustainability knowledge and culture within the firms through; encouraging investment in enhancing social responsibility, capacity building, supporting business executives' decision makers to consider socially responsible business plans.
- Corporations' strategic goals need to be redirected from the maximization of shareholder value to the maximization of the benefits of a broader set of stakeholders.

Suggestions for Future Research:

Although the current research linked sustainability reporting disclosure to stock price crash risk and the impact of earnings quality on the association between them, there were some limitations in this research that could be considered as suggestions for future research as:

- Extending the empirical study by measuring the impact of each ESG dimension; labor, environment, society, and corporate governance practices on stock price crash risk.
- Future research might examine a broader regional and/or international setting in order to explore the effect of different institutional structures.
- It would be interesting to test the analyses the behavior of private firms.
- Employing other proxies for earnings quality such as earnings persistence, predictability, earnings avoidance, and earnings aggressiveness.
- Finally, the possible benefits of reporting sustainability to other stakeholders (e.g., regulatory bodies, non-governmental organizations, employees) could be another promising research avenue.

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Aml Badr Hafez Awad-Allah; Dr. Rola Samy Nowar and Dr. Menna Mortada Mahfouz

العلاقة بين الافصاح عن تقارير الاستدامة ومخاطر انهيار اسعار الاسهم: التأثير المعدل لجودة الأرباح: دراسة تطبيقية

أمل بدر حافظ عوض الله؛ د رولا سامي نوار؛ د. منة مرتضى محفوظ

الملخص: تهدف هذه الدراسة إلى قياس مدى تأثير جودة الأرباح كمتغير معدل على العلاقة بين الإفصاح عن تقارير الاستدامة ومخاطر انهيار أسعار الأسهم. ولأجل التوصل إلى طبيعة تلك العلاقة، فقد قامت الباحثة بالتطبيق على عينة تضم ٦١ شركة حكومية مقيدة بسوق الأوراق المالية المصري وذلك خلال الفترة من ٢٠١٢ إلى ٢٠١٩. وقد تم تحليل بيانات الدراسة باستخدام الإحصاء الوصفي ومصفوفة ارتباط بيرسون ونماذج الانحدار الخطي المتعدد. وقد توصلت نتائج الدراسة إلى وجود علاقة من الدرجة الثانية بين الإفصاح عن تقارير الاستدامة ومخاطر انهيار أسعار الأسهم , حيث تبين أن التفاعل بين الإفصاح عن تقارير الاستدامة وجودة الأرباح يزيد من إنحراف التأثير العكسي للإفصاح عن تقارير الاستدامة عن المستوى الأمثل وذلك على مخاطر انهيار أسعار الأسهم , وذلك في ظل استخدام نموذج القياس الأول MTB. علاوة على ذلك, فقد تبين أيضا وجود علاقة بين الإفصاح عن تقارير الاستدامة وجودة الأرباح والتي أدت بدورها إلي تخفيض التأثير العكسي للإفصاح عن تقارير الاستدامة على مخاطر انهيار أسعار الأسهم , وذلك في ظل استخدام نموذج القياس الثاني INSM.

الكلمات المفتاحية: جودة الأرباح ـ الإفصاح عن تقارير الاستدامة ـ ومخاطر انهيار أسعار الأسهم